

Iowa Comprehensive HIV Plan 2017-2021



Our Plan

# Common Acronyms Found In This Document

ACA	Affordable Care Act (also called the Patient Protection and Affordable Care Act)
ACEs	Adverse Childhood Experiences
ADAP	AIDS Drug Assistance Program
AEGP	Abstinence Education Grant Program
AETC	AIDS Education and Training Center
AIDS	Acquired Immune Deficiency Syndrome
AMIS	American Men's Internet Survey
ART	Antiretroviral Therapy
BRFSS	Behavioral Risk Factor Surveillance System
CARE Act	Ryan White Comprehensive AIDS Resource Emergency Act/Ryan White HIV/AIDS Treatment Extension Act of 2009
CasPre	Case Management Supportive Services and Prevention With PLWH Committee
CBO	Community Based Organization
CBSS	Community-Based Screening Services
CDC	Centers for Disease Control and Prevention
CHAIN	Community HIV/Hepatitis Advocates in Iowa Network
CLEAR	Choosing Life: Empowerment, Action, Results
CNA	Consumer Needs Assessment
CPG	HIV and Hepatitis Community Planning Group
CTR	Counseling, Testing, and Referral
CQI	Continuous Quality Improvement
DIS	Disease Intervention Specialist
DTC	Data-To-Care
EBIs	Effective Behavioral Interventions
eHARS	Enhanced HIV/AIDS Reporting System
FBS	Field Benefits Specialist
FP	Family Planning
FPL	Federal Poverty Level
FQHC	Federally Qualified Health Centers
GMHC	Gay Men's Health Committee
HCV	Hepatitis C Virus
HHS	Health and Human Services (Department of)
HIHO	Healthy Iowans Healthy Outcomes Committee
HIV	Human Immunodeficiency Virus
HOPWA	Housing Opportunities for Persons with AIDS
HRSA	Health Resources and Services Administration
HUD	Housing and Urban Development
IDE	Iowa Department of Education
IDHS	Iowa Department of Human Services
IDOC	Iowa Department of Corrections
IPCA	Iowa Primary Care Association
IDPH	Iowa Department of Public Health
IDU	Injecting Drug Use
IFA	Iowa Finance Authority
IHWP	Iowa Health and Wellness Plan



IME	Iowa Medicaid Enterprise
LGBTQ	Lesbian/Gay/Bisexual/Transgender/Questioning
LPHA	Local Public Health Agencies
MSM	Men who have Sex with Men
MATEC	Midwest AIDS Training and Education Center
MCO	Managed Care Organization
MMWR	Morbidity Mortality Weekly Report
MOA	Memorandum of Agreement
MOBE	Membership Orientation Bylaws and Engagement Committee
MSM/IDU	Men who have Sex with Men and who Inject Drugs
NHAS	National HIV/AIDS Strategy
OOC	Out-of-Care
PDG	Plan Development Group
PITCH	Positive Iowans Taking Charge
PLWH	People Living With HIV
PR	Public Relations Committee
PrEP	Pre-Exposure Prophylaxis
PREP	Personal Responsibility Education Program
PS	Partner Services
PRISM	Programs, Research, and Innovation in Sexual Minority Health
PROMISE	Peers Reaching Out and Modelling Intervention Strategies
PSC	Preventive Services Coordinator
PWID	People Who Inject Drugs
QA	Quality Assurance
QM	Quality Management
RSR	Ryan White Services Report
RW	Ryan White
RWCA	Ryan White Care Act
SAMHSA	Substance Abuse and Mental Health Services Administration
SCSN	Statewide Coordinated Statement of Need
STDs	Sexually Transmitted Diseases
USPSTF	United States Preventive Services Task Force
YRBS	Youth Risk Behavior Survey

The 2017-2021 Comprehensive HIV Plan serves as a statewide guide to responsive, effective, and efficient HIV service delivery in Iowa. Goals and strategies included in this strategic plan are designed to meet the specific needs of Iowans who are at high-risk for HIV infection, who are members of populations disproportionately impacted by HIV, and/or who are living with HIV/AIDS.

In accordance with direction from the Iowa Department of Public Health's (IDPH) primary federal funding agencies for HIV-related programs, the U.S. Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA), this comprehensive plan has been developed to improve the effectiveness of the state's HIV prevention and care programs by strengthening the scientific basis, relevance, and focus of prevention and care strategies.

Iowa is at a critical juncture in addressing HIV. Significant changes to the health care environment, combined with recent studies that demonstrate the utility of treatment as prevention, have significantly altered the way in which state and local programs deliver prevention, care, and treatment services. Some of these developments include:

- Further scientific evidence demonstrating that HIV antiretroviral treatment (ART) not only provides tremendous clinical benefit to an HIV-infected person, but it can also significantly reduce the risk of HIV transmission to partners;
- The full implementation of the Affordable Care Act (ACA), which has increased access to preventive health and health care services for thousands of Iowans, including people with HIV;
- Approval of pre-exposure prophylaxis and single-dose drug regimens for HIV, and effective oral-only therapies for viral hepatitis; and
- An increase in Ryan White funding through the Part B Supplemental Program. These funds will significantly increase the state's capacity to address the stages of the HIV Continuum of Care to assist more people to ultimately attain viral suppression.

These advances place Iowa's HIV service providers, public health experts, and advocates in a new position to address the HIV epidemic. To capitalize on these advances, Iowa's resources and programs must be directed so as to achieve the best health outcomes and to avert the most new infections. This is the role and responsibility of the Plan Development Group that was formed to develop this plan as well as that of the HIV and Hepatitis Community Planning Group (CPG) that will be involved in the implementation and monitoring of this plan.

The plan is divided into three sections:

#### Section 1- Statewide Coordinated Statement of Need:

1

Section one contains information that answers the question, “what is the state of HIV prevention and care in Iowa?” This section presents an epidemiological summary of the state’s current HIV epidemic which is designed to provide an overview of HIV among the state’s populations in terms of sociodemographic, geographic, behavioral, and clinical characteristics. A thorough understanding of the epidemic, including trends and future forecasting, is necessary for determining how best to reduce the impact of HIV in the state. The current HIV Continuum of Care is presented along with results from the most recent Consumer Needs Assessment (CNA) and HIV Prevention Provider Services Survey.

#### Section 2- HIV Prevention & Care Plan:

2

Section two explores the contrast between the current state of Iowa’s HIV/AIDS epidemic and the preferred future in which the impact of HIV is reduced by improved prevention and care efforts. A strategy is presented in this section that both responds to the needs identified in Section I of the Statewide Coordinated Statement of Need (SCSN) and that aligns with the three National HIV/AIDS Strategy (NHAS) goals: (1) reducing new HIV infections; (2) increasing access to care and improving health outcomes for people living with HIV (PLWH); and (3) reducing HIV related disparities and health inequities.

#### Section 3- Monitoring and Improvement:

3

This final section describes the process for monitoring and evaluating implementation of the goals and objectives from Section II. A description of how surveillance and program data will be used to improve health outcomes along the HIV Continuum of Care is included. Additionally, the process for regularly updating planning bodies and stakeholders on the progress of plan implementation, soliciting feedback, and using the feedback from stakeholders for plan improvements is included in this section.

The resulting document provides a blueprint for the delivery and prioritization of prevention and care and reducing HIV-related health disparities in Iowa. The completed Comprehensive Plan will be used by the IDPH to prioritize the utilization of federal funds for HIV prevention and care, including the funding it awards to community-based organizations and local health departments. IDPH expects funded activities to help the state achieve the goals and objectives described in the strategic plan found in section two.



## Epidemiological Overview

The full epidemiological profile of HIV in Iowa is attached. Below is a brief summary of the main points.

There were 124 HIV diagnoses in 2015, the highest since 126 in 2009. This was up 26 (27%) from 98 diagnoses in 2014 and 10 (9%) above the 5-year (2010-2014) average of 114. Since 2006, males have accounted for over 80% of HIV diagnoses and sex with another male is the reported mode of exposure to HIV for over 75% of male diagnoses. By far the greatest numbers of diagnoses occur among persons 25 to 44 years of age. Diagnoses among persons 13 through 24 years of age increased to a new peak of 33 (27%) in 2015 after increasing from a low 12 (10%) in 2007. The ten year average diagnosis among persons 13 through 24 years of age remained steady with a ten year average of about 20 diagnoses annually.

Black, non-Hispanic males, black, non-Hispanic females, and Hispanic males are over-represented among persons with HIV/AIDS when their population sizes are taken into account. Black, non-Hispanic males had HIV diagnosis rates more than six times that of white, non-Hispanic males in 2015. Hispanic males had rates over two times that of white, non-Hispanic males in 2015. Black, non-Hispanic females had the highest diagnosis rate among females at more than 14 times that of white, non-Hispanic females in 2015.

Diagnoses of AIDS peaked in 1992 at 157 diagnosed cases. This period coincided with the expansion of the Centers for Disease Control and Prevention (CDC) definition of AIDS to include CD4+ cell counts less than 200 cells per microliter or less than 14% of total lymphocytes. However, the introduction of highly active antiretroviral therapy (HAART) sparked a dramatic decline in AIDS diagnoses from 1995 through 1998. After reaching a low of 60 diagnosed cases in 1998, the number of Iowa AIDS diagnoses gradually increased to an annual average of 73.2 diagnoses from 2006 through 2015.

Iowa continues to struggle to get people tested and diagnosed soon after infection. The percentage of persons that received an AIDS diagnosis within three months of initial HIV diagnosis ("late testers") reached a low of 32% among people diagnosed in 2011. However, the proportion of late testers remains high in Iowa with a 10-year (2006-2015) average of 39%. In 2015, it was 38%.

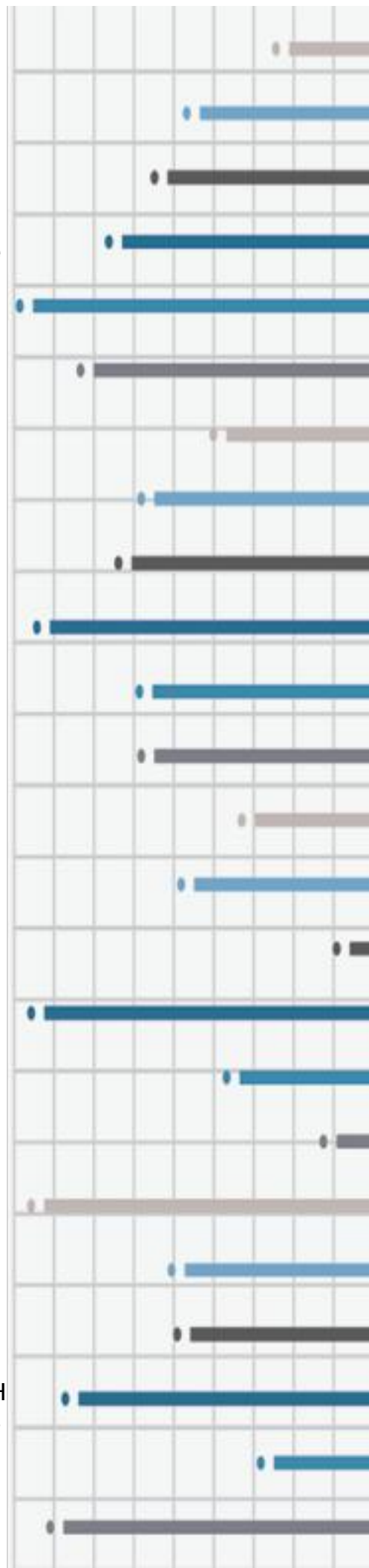
The number of deaths among HIV-infected persons diagnosed in Iowa continues to decrease after peaking at 103 deaths in 1995. From 2005 through 2014, death numbers have fluctuated from a low of 24 in 2008 to a high of 44 in 2014. Of the 44 deaths among Iowans with HIV disease in 2014, the last year for which death ascertainment is partially complete, 17 (39%) were caused in some part by the underlying HIV disease, 18 (41%) were determined to not be caused by underlying HIV disease,

and the cause of 9 (20%) is unknown.. The 44 deaths reported in 2014 are in line with the average of 31 for the 10 years, 2004 through 2013. Twenty deaths have been reported so far for 2015. Death ascertainment for 2015 is incomplete pending linkage to state and national death registries.

The most significant feature of HIV in Iowa 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 decreased the number of deaths among persons with HIV disease, have increased the number of persons living with HIV to unprecedented levels and have taxed limited resources for care and treatment. In previous prevalence calculations, IDPH included only persons who were residents of Iowa at first diagnosis of HIV or AIDS regardless of where they currently lived. Although consistent with CDC methodology, this did not take into account the fact some of the cohort had moved from the state or the fact some persons diagnosed in other states had moved to Iowa. Based on outcomes of two special projects and full implementation of the re-engagement project, IDPH decided to use “current address” rather than “Iowa residence at diagnosis” to calculate HIV prevalence for 2015.

Using current address, there were 2,496 persons diagnosed and living with HIV disease (PLWH) in Iowa as of December 31, 2015, a prevalence of 80 per 100,000 persons. Iowa’s prevalence is lower than the Midwest prevalence of 162 per 100,000 and the U.S. prevalence of 291.5 per 100,000. While the ten most populous counties (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury) account for 51% of the total population of Iowa, 73% of persons living with HIV infection in 2015 were living in these counties and 69% of persons newly diagnosed with HIV disease in 2015 were diagnosed as residents of those counties. Among counties with at least 15 persons living with HIV disease, Polk, Scott, Johnson, Linn, Pottawattamie, and Buena Vista counties have prevalence rates greater than 100 per 100,000 or 0.1%. Woodbury and Black Hawk counties have prevalence rates above the state average but less than 100 per 100,000 persons.

Iowa’s HIV Continuum of Care shows that there were 2,922 people living with HIV disease and residing in Iowa on December 31, 2015. Of these, 81% had been diagnosed, leaving 529 Iowans who have yet to be diagnosed with HIV. Of the 124 diagnosed cases in 2015, 88% of people diagnosed with HIV were linked to care within one month; and 97% were linked within three months. Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa. Of the PLWH in Iowa at the end of 2015, 83% were retained in care according to Iowa’s definition of retention in care. Among Iowans diagnosed and living with HIV, 76% were virally suppressed, but among those who were retained in



care, 91% had achieved viral suppression. The same groups that take longer to link are less likely to be retained in care or to achieve viral suppression. Based upon the continuum, testing, retention, and re-engagement in care should be focused on to improve health outcomes for Iowans living with HIV and to reduce transmission of HIV to others.

Other points of interest include:

- Iowa has an unusually disperse distribution of PLWH compared to other states. Polk County, which is the most populous county in Iowa and includes the Des Moines metropolitan area, contains only approximately 29% of all Iowans living with HIV. Despite this, there has been a gradual trend toward a more urban distribution of HIV infection and other STDs in Iowa. Over 74% of persons diagnosed with HIV between 2006 and 2015 were residents of one of Iowa's ten most populous counties at time of initial diagnosis. These counties house 51% of Iowa's general population, but account for two-thirds of new chlamydia infections and nearly 80% of new gonorrhea infections.
- The median age of adolescents and adults (13 years of age and older) diagnosed with HIV in 2015 was 35.0 years, slightly lower than the five-year (2010-2014) median of 37.2 years. In 2015, the median age at diagnosis for adult/adolescent males was 35.0 years, the same as for adult/adolescent females. In 2015, 42% of females and 45% of males were 25 to 44 years of age at time of diagnosis. This was lower than the five-year (2010-2014) averages of 50% for females and 49% for males.
- The general population of Iowa is 87.1% white, non-Hispanic; 3.3% black, non-Hispanic; 5.6% Hispanic, all races; and 4.1% other races and ethnicities. However, only 60% of HIV diagnoses in 2015 were among white, non-Hispanic persons, highlighting a substantial disparity in diagnoses among some racial and ethnic minorities. Nineteen percent of HIV diagnoses were among black, non-Hispanic persons, 13% were Hispanic, and 8% were other races. The HIV diagnosis rate in 2015 was 22.9 diagnoses per 100,000 persons for black, non-Hispanic persons, 9.0 for Hispanics, and 2.7 for white, non-Hispanic persons in Iowa.
- Fifty-four percent of persons living with HIV or AIDS as of December 31, 2015, reported male-to-male sexual contact (MSM) as their primary risk. Heterosexual contact was the primary risk for 18% of persons living with HIV or AIDS, while 8% were injection drug users (IDU), 7% reported both IDU and MSM and 11% had no risk identified.
- Chlamydia is the most frequently reported STD in Iowa, with 12,133 cases, the highest number ever, reported in 2015. Other than a slight decrease in 2013, the incidence of chlamydia has climbed steadily with a 64% increase in the number of diagnoses in the last ten years. Similarly, the incidence of gonorrhea has increased by 38% since 2005. In contrast, the incidence of syphilis has changed dramatically in recent years. There was a 450% increase in the number of infectious syphilis cases (primary, secondary, and early latent) between 2011 and 2013. Although incidence has decreased by 18% since 2013, numbers continue to remain relatively high. Men who have sex with men are disproportionately impacted by syphilis, and account for approximately 70% of the cases among men.
- The male-to-female ratios for chlamydia and gonorrhea differ between minority populations and the white, non-Hispanic population. White, non-Hispanic females with gonorrhea diagnoses outnumber white, non-Hispanic males by 1.2 to 1 (male-to-female ratio of 0.83), while black, non-Hispanic males outnumber black, non-Hispanic females 1.4 to 1 (male-to-female ratio of 1.4).



This may indicate that minority females are not being screened for asymptomatic infection at the same rate as other women in the state.

- As of March 31, 2016, the Iowa Department of Public Health had received 21,334 reports of hepatitis C infection among Iowans. Based upon this number of reports, there are likely to be 35,216 to 129,127 Iowans with hepatitis C infection, with 15,061 to 109,758 of these cases undiagnosed. Since 2000, approximately 9,000 hepatitis C tests were conducted at IDPH-supported counseling, testing, and referral sites, with an average annual positivity of 10%. HIV-HCV co-infection rates have not been determined.

### **Behavioral Surveillance Data**

The 2013-2014 American Men's Internet Survey (AMIS), an online HIV behavioral survey of men who have sex with men (MSM) was conducted by Programs, Research, and Innovation in Sexual Minority (PRISM) Health at Emory University, Atlanta, Georgia.

Recruitment of Iowa MSM occurred through targeted Facebook ads, Google ads and MSM web sites. Eligibility criteria included that the survey respondent be male, over age 18, a U.S. resident, reported ever having oral or anal sex with a man and able to complete the survey in English. A total of 156 Iowa MSM provided complete survey responses. Race and ethnicity of the respondents was as follows: White, non-Hispanic (88%); Hispanic (5%); other or multiple races (8%). Over half the sample, 58% were below age 40. Almost half, 49%, of the respondents indicated having a college degree or postgraduate education.

Intermittent condom use was reported. For example, 63% of respondents reported anal sex without a condom in the past 12 months, with the highest rate, 72%, in the 15-24 age group. Unprotected anal sex without a condom with a male partner of discordant or unknown HIV status in the last 12 months was reported in 18% of participants. Again, with the highest rate, 34%, in the 15-24 age group.

Drug use was reported less frequently. Fifteen percent of respondents reported using illicit drugs other than marijuana in the past 12 months.

Having received free condoms was reported among 36% of the respondents, with the most common demographics being those age 25-29, college degree or post-graduate education and earning >\$75,000/year (46%, 43%, 44%, respectively). This percentage did not vary by rural or urban residence.

Younger respondents indicated they had not regularly accessed HIV testing. In fact, 47% of MSM age 15-24 years old had never been tested for HIV compared to 29% or less for other age groups. Regardless of age group, most respondents were not testing for sexually transmitted diseases (STD) regularly; only 42% reported STD testing in the last 12 months. HIV testing occurred most frequently in private doctor's office and public health/community health clinic (50% and 28%, respectively). In addition, 43% had not received hepatitis A/B vaccinations.

Participants in the study were also asked about pre-exposure prophylaxis (PrEP). Forty-three percent of respondents said they had heard of PrEP and 38% said they would be willing to use PrEP. However, only 5.6% of respondents reported having ever used PrEP. Willingness to use PrEP appeared to be lower among respondents age 30 and older and individuals having a college degree or postgraduate education.

This section focuses on the HIV care continuum in Iowa, also referred to as HIV treatment cascade. The bars in the HIV care continuum represent the number of Iowans living with HIV who have achieved each progressive stage in the care continuum – from diagnosis, to linkage to care, to retention in care, and finally, to viral suppression.

Now incorporated in the NHAS for the United States, the HIV care continuum provides a framework for understanding where there are major barriers or obstacles to being engaged in care, and it helps to illuminate population-level disparities in accessing care and treatment services and in achieving optimal health outcomes. Understanding the characteristics of specific populations of Iowans living with HIV that do not achieve viral suppression can help target services or interventions to populations or geographical areas of the state that are most in need.

Laboratory data (diagnostic tests, CD4+ cell counts, and viral loads) are used as proxies for estimating PLWH who are engaged in HIV-related care.

The stages along HIV care continuum are described as:

## Diagnosis of HIV infection

People have to be tested and diagnosed with HIV to be able to access HIV care and treatment services. CDC recommends testing for adults and adolescents at least once in their lifetimes and at least annually for certain populations at risk. According to CDC, an 12.8% of people living with HIV in the US were unaware of their infections in 2012 (MMWR 2015;64:[657-662]).

## Linkage to HIV care

Newly diagnosed HIV infected persons should be promptly connected to HIV care and treatment services to help them stay healthy and prevent transmission to others. Linkage should occur within one month of diagnosis.

## Retention in HIV care

People living with HIV infection should regularly receive care through a qualified HIV care provider to remain healthy and potentially prevent HIV transmission to others. Ideally, regular care should involve at least two visits a year to an HIV specialist, or to a primary care provider in conjunction with an HIV specialist.

## Receipt of antiretroviral therapy

Treatment with antiretroviral therapy (ART) helps to control HIV virus in the body. ART treatment is recommended for every PLWH. Treatment should begin as soon as a person is diagnosed.

## Viral suppression

ART can help achieve viral suppression (a very low level of HIV in body) and also greatly reduce HIV transmission in the population. Studies have shown viral suppression optimizes individual health outcomes and may reduce the likelihood of transmitting HIV by up to 96%.

Late diagnosis of HIV, delays in linkage to HIV care, and poor adherence to ART treatment could be

barriers to achieving the goal of the HIV care continuum. In a 2015 CDC study, 91.5 percent of new HIV infections in 2009 were attributable to people with HIV who were either not in medical care or who didn't know they were infected compared to less than 6 percent of new infections attributed to people with HIV who were in care and receiving antiretroviral therapy. This means that 9 in 10 new HIV infections in the United States could be prevented through early diagnosis and prompt, ongoing care and treatment (CDC 2009)

### **Definition of Measures in Iowa**

PLWH - number of people diagnosed with HIV on or before December 31, 2014, and living in Iowa at the end of 2015 plus an estimated 19% who are undiagnosed. Iowa has almost 100% reporting of diagnosed cases.

HIV Diagnosed - number of people diagnosed with HIV on or before December 31, 2014, and living in Iowa at the end of 2015. People may have been initially diagnosed with HIV while living in Iowa or diagnosed in another states before moving to Iowa. This estimate serves as the underlying population for retention in care and viral suppression measures (described below).

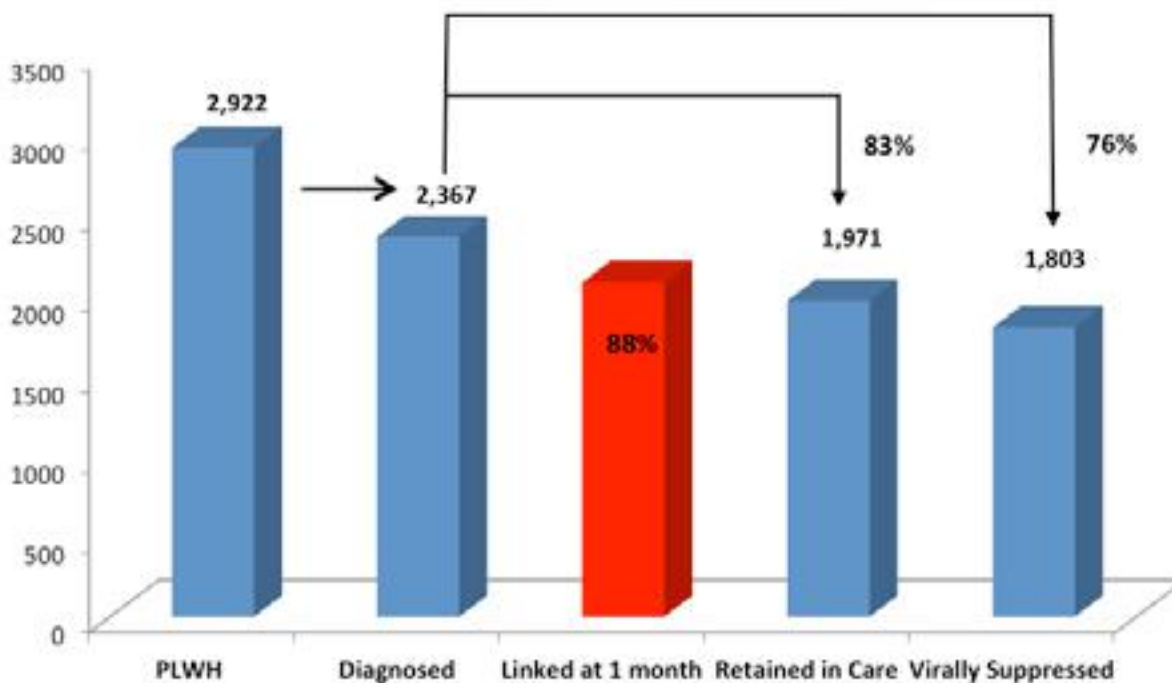
Linked to Care - number of people ( $\geq 13$  years of age) newly diagnosed with HIV while residing in Iowa in 2015 that are linked to HIV care services. The denominator here is different from the one used to calculate other stages of the continuum. Linkage to care can also be defined based on a timeline, for example: linkage within 3 months or 12 months.

Retained in Care - number of HIV Diagnosed cohort who have two CD4+ cell counts or viral load test results in 2015 at least three months apart or who have one viral load test result in 2015 with the result  $\leq 200$  copies/ml of blood. This definition is different than that of the national or other jurisdictions' definitions.

Viral Suppression - number of HIV Diagnosed cohort with a viral load test result of  $< 200$  copies/ml at the most recent test during 2015.

## Section Highlights

- There were 2,922 people living with HIV disease and residing in Iowa on December 31, 2015. Of these, 2,367 (81%) had been diagnosed, leaving 529 Iowans who have yet to be diagnosed with HIV.
- In 2015, 88% of people diagnosed with HIV were linked to care within one month; and 97% were linked within three months.
- Of the 124 diagnosed cases in 2015, 89% were linked to care within a month of diagnosis and 97% were linked to care within 3 months of diagnosis. Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa.
- Of the 2,367 PLWH in Iowa at the end of 2015, 83% were retained in care according to Iowa's definition of retention in care. Among Iowans diagnosed and living with HIV, 76% were virally suppressed, but among those who were retained in care, 91% had achieved viral suppression. The same groups that take longer to link are less likely to be retained in care or to achieve viral suppression.
- Iowa's Continuum of Care demonstrates the testing, retention, and re-engagement in care should be focused on to improve health outcomes for Iowans living with HIV and to reduce transmission of HIV to others.



Using back-calculation methods established by CDC to estimate the number of PLWH who are undiagnosed (based upon previous diagnoses in Iowa), Iowa estimates that there are 529 people who have yet to be diagnosed. Using the state's diagnosed prevalence of 2,367 people living with HIV, we estimate that there are a total of 2,896 persons living with HIV (Figure 59). Approximately 19% of PLWH in Iowa are undiagnosed, which is considerably above the national average of 12.8%. As of December 31, 2015, there were 2,367 persons diagnosed and living with HIV disease in Iowa. Some of these persons may have been first diagnosed with HIV infection from other states before moving to Iowa. Of the 2,367, 1,971 (83%) were retained in HIV care in 2015, and 1,803 (76%) were virally suppressed at the end of 2015.

Viral suppression can also be calculated as a proportion of all people who are in care. Of the 1,971 persons retained in HIV care, 91% were virally suppressed at the end of 2015. This indicates the importance of linkage to and retention in care. People who are retained in care are very likely to reach viral suppression, an important predictor of positive health outcomes.

In the continuum, linkage to care is measured among those who were diagnosed in 2015. Therefore, this is not a subset of all people diagnosed, but only of the 124 diagnosed in 2015. The linkage to care bar in Figure 50 is in red to indicate that the definition is different from the rest of the continuum. Eighty-eight percent of persons diagnosed in 2015 who were linked to HIV care within a month of their diagnosis.

## Linkage to Care

To get linked to care, individuals have to be tested and diagnosed with HIV infection. Iowa has a relatively high proportion of “late diagnoses,” which increased from 41% of diagnosed cases in 2004 to 46% in 2013, but dropped to 38% in 2015. This high proportion of late diagnoses means that delays in testing is one of the barriers to achieving the goals of the HIV care continuum in Iowa. Early diagnosis and prompt linkage to care and treatment services ensures timely partner services and case management. Linkage to HIV care is measured by documentation of a CD4+ cell counts or viral load test within a given time interval after diagnosis.

The table below shows linkage to HIV care of newly diagnosed HIV cases in Iowa in 2015. Of the 124 diagnosed cases, 109 (88%) were linked to care within a month of diagnosis and 120 (97%) were linked within 3 months of diagnosis.

**Numbers and Percentage of People Diagnosed and Linked to Care  
by Demographic Characteristics  
2015**

Characteristics	# HIV Diagnosis (>13yrs)	% Linked ≤1 month	% Linked ≤3 months
<b>Sex at Birth</b>			
Male	98	88	96
Female	26	88	100
<b>Age at Diagnosis</b>			
14-24	33	85	97
25-44	35	87	96
45 or older	36	92	97
<b>Ethnicity/Race</b>			
Not Hispanic, White	74	93	97
Not Hispanic, Black/African American	24	71	92
Hispanic	16	88	100
Not Hispanic, Asian	6	100	100
Not Hispanic, Multi-race	4	75	100
<b>Mode of Exposure – Adult/Adolescent<sup>3</sup></b>			
Men who have sex with men (MSM)	77	88	96
Injection Drug Use (IDU)	10	100	100
MSM and Injection Drug Use (MSM/IDU)	4	100	100
Heterosexual Contact	23	78	96
Risk not reported (NIR)	10	90	100
<b>Region<sup>1</sup></b>			
Urban	85	87	96
Rural	39	90	97
<b>Country</b>			
US born	95	89	97
Foreign born	29	83	97
<b>TOTALS</b>	<b>124</b>	<b>88</b>	<b>97</b>

<sup>1</sup> Urban counties are Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury]

There was little difference in rates of linkage to HIV care by sex at one or three months. People ages 45 years and over were more likely to be linked to HIV care within a month of diagnosis (92%) compared to ages 14 to 24 years (85%) and 25 to 44 years (87%), although those differences disappeared by three months. Linkage among black, non-Hispanic and multi-racial people was much lower at one month than among other racial and ethnic groups, although linkage among both of these groups improved substantially by three months.

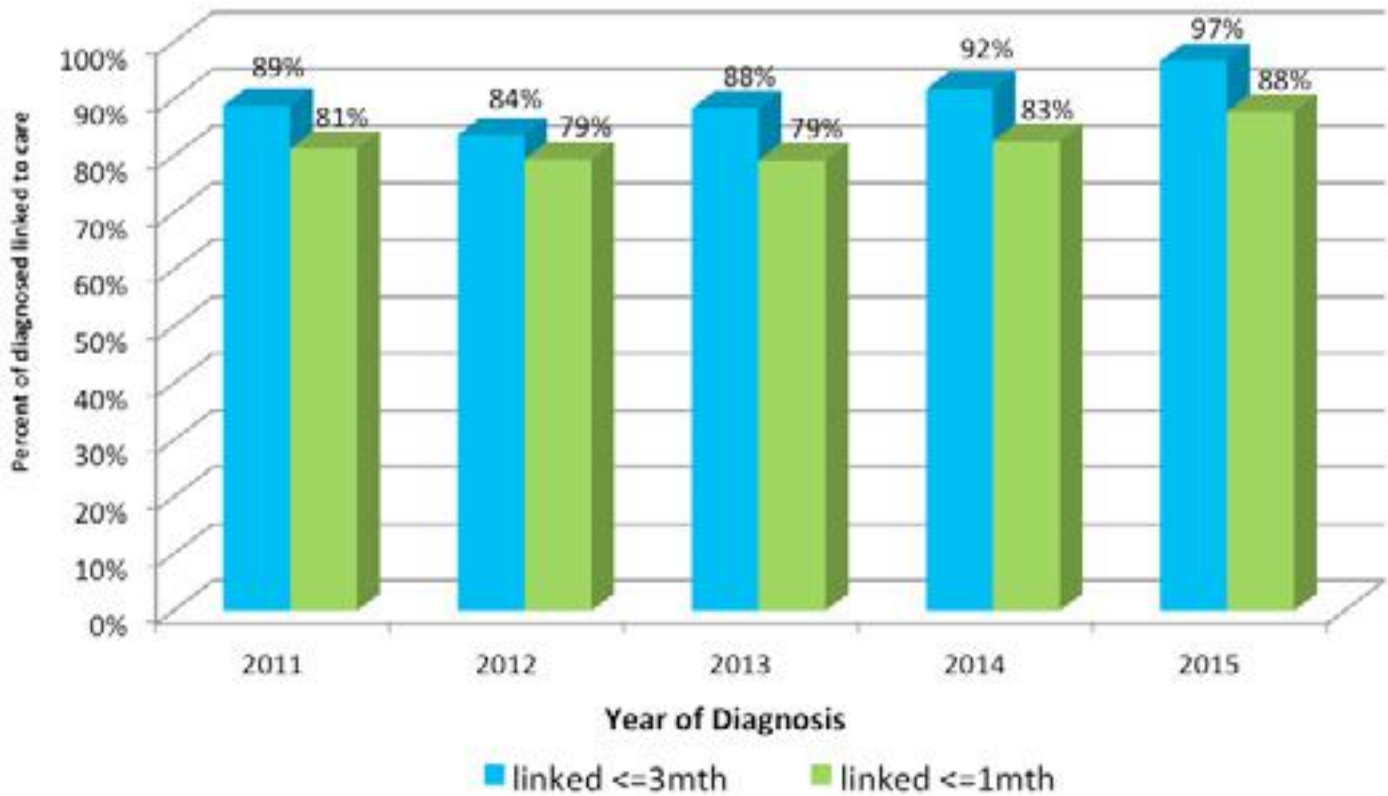
Persons with infection attributed to injection drug use (IDU) were all linked to HIV care within a month of diagnosis, compared to 88% of persons with infection attributed to MSM and 78% of persons with infection attributed to heterosexual contact. Interestingly, people diagnosed in a regions classified as rural areas had higher linkage rates at one month compared to those in urban areas, but these differences had disappeared by three months. Urban areas are defined as any of the ten most populous counties in Iowa (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, or Woodbury). Finally, more U.S.-born people were linked within a month of diagnosis than foreign-born people. Again, both groups achieved high linkage rates by three months.

The table below shows linkage to HIV care of newly diagnosed HIV cases in Iowa in 2015 by sex and mode of exposure. Linkage lagged for males with heterosexual or unknown risk and females with heterosexual modes of contact.

**Numbers and Percentage of People Diagnosed and Linked to Care  
by Sex and Mode of Exposure  
2015**

Mode of Exposure by sex – Adult/Adolescent <sup>5</sup>	HIV Diagnosis (>13yrs)	% Linked ≤1 month	% Linked ≤3 months
<b>Male</b>	#	%	%
Men who have sex with men (MSM)	77	88	96
Injection Drug Use (IDU)	6	100	100
MSM and Injection Drug Use (MSM/IDU)	4	100	100
Heterosexual Contact	7	71	86
Risk not reported (NIR)	4	75	100
<b>Female</b>			
Injection Drug Use (IDU)	4	100	100
Heterosexual Contact	16	81	100
Risk not reported (NIR)	6	100	100
	<b>126</b>	<b>88</b>	<b>97</b>

Examination of linkage to HIV care data of people ≥ 13 years over the last 5-years (2011-2015) is shown in the following figure. Linkage of people within a month of diagnosis increased steadily from 81% of diagnosed cases in 2011 to 88% in 2015.



### Retention in Care and Viral Suppression

After consulting with HIV specialists in Iowa, the definition of retention in care was modified from that recommended by the Health Resources and Services Administration and CDC. Because Iowa is a rural state with a diffuse distribution of PLWH, medical providers in Iowa may recommend that only one visit per year is necessary for people who are stable and doing well on the HIV medications they receive. For that reason, for the purposes of retention in care, we have chosen to include people who have had only one viral load in a given year, if that viral load was below the level of detection (i.e., the person was virally suppressed). Therefore, retention in care is measured by documentation of two CD4 or viral load test results performed in 2015 at least three months apart or at least viral load test result in 2015 if the result was  $\leq 200$  copies/ml of blood. Viral suppression is measured by a documentation of at least one viral load test result in 2015 with the most recent result  $\leq 200$  copies/ml of blood. These lab results must be received at the health department.

As shown in the next table, of the 2,367 PLWH in Iowa at the end of 2015, 83% were retained in care according to Iowa's definition of retention in care. Among Iowans living with HIV, 76% were virally suppressed, but among those who were retained in care, 91% had achieved viral suppression.

**Retention in Care and Viral Suppression among People Diagnosed with HIV  
and Living on December 31, 2015**

Characteristics	Diagnosed Iowans	Retained in Care per HRSA definition		Retained in Care per Iowa Definition		Viral Suppressed ( $\leq 200$ copies/ml)		
		#	#	(%)	#	(%)	Total	Among PLWH
		#	(%)	#	(%)	#	(%)	(%)
<b>Sex at Birth</b>								
Male	1,875	1,512	(81)	1,560	(83)	1,439	(77)	(92)
Female	492	401	(82)	411	(84)	364	(74)	(89)
<b>Age at Diagnosis</b>								
$\leq 12$	33	27	(82)	29	(88)	28	(85)	(97)
13-24	367	267	(73)	276	(75)	235	(64)	(85)
25-44	1,534	1,247	(81)	1,277	(83)	1,174	(77)	(92)
45 or older	433	372	(86)	389	(90)	366	(85)	(94)
<b>Ethnicity/Race</b>								
White, Not Hispanic	1,538	1,285	(84)	1,333	(87)	1,238	(80)	(93)
Black, Not Hispanic	473	359	(76)	368	(78)	319	(67)	(87)
Hispanic, All Races	197	135	(69)	137	(70)	127	(64)	(93)
Asian, Not Hispanic	53	44	(83)	43	(81)	41	(77)	(95)
Multi-race/other	106	90	(85)	90	(85)	78	(74)	(87)
<b>Mode of Exposure</b>								
MSM	1,262	1,026	(81)	1,073	(85)	996	(79)	(93)
IDU	191	159	(83)	160	(84)	141	(74)	(88)
MSM/IDU	181	149	(82)	145	(80)	126	(70)	(87)
Heterosexual Contact	435	359	(83)	364	(84)	329	(76)	(90)
Hemoph./Coag./Blood	9	7	(78)	8	(89)	7	(78)	(88)
NIR	257	187	(73)	193	(75)	177	(69)	(92)
Pediatric/other	32	26	(81)	28	(88)	27	(84)	(96)
<b>Region<sup>1</sup></b>								
Urban	1,741	1,427	(82)	1,457	(84)	1,323	(76)	(91)
Rural	626	486	(78)	514	(82)	480	(77)	(93)
<b>Country</b>								
US born	1,969	1,631	(83)	1,684	(86)	1,543	(78)	(92)
Foreign born	398	282	(71)	287	(72)	260	(65)	(91)
<b>TOTALS</b>	<b>2,367</b>	<b>1,913</b>	<b>(81)</b>	<b>1,971</b>	<b>(83)</b>	<b>1,803</b>	<b>(76)</b>	<b>(91)</b>

<sup>1</sup> Urban counties are Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury.

Note the high viral suppression rates among those who are retained in care. This demonstrates the importance of having strong programs to retain people in care. If people regularly attend at least two appointments for HIV primary medical care, they are very likely to achieve a suppressed viral load.

Males and females did not vary in their retention in care, although a slightly higher percentage of males achieved viral suppression.

Among adults and adolescents (i.e., those over 12 years of age), younger people are less likely be retained in care (75%) or to achieve viral suppression (64%) than people who are older. People 45 years of age are most likely to be retained in care (90%) and to achieve viral suppression (85%).

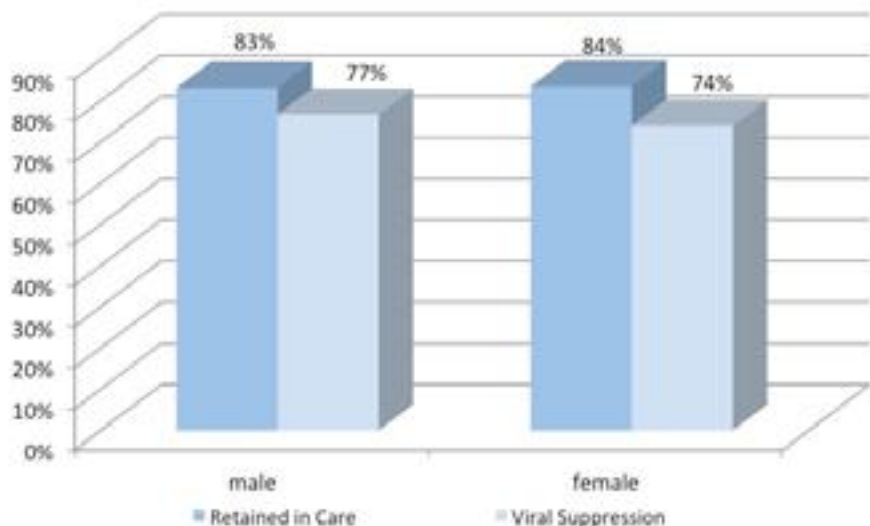


Minority PLWH were the least likely to be retained in care or to achieve viral suppression. Among Hispanic PLWH, 70% were retained in care, and only 64% achieved viral suppression. Among Black, non-Hispanic people, 78% were retained and 67% achieved viral suppression. Asian PLWH did a little better with 81% retained and 77% achieving viral suppression. White, non-Hispanic people had retention and viral suppression rates of 87% and 80%, respectively.

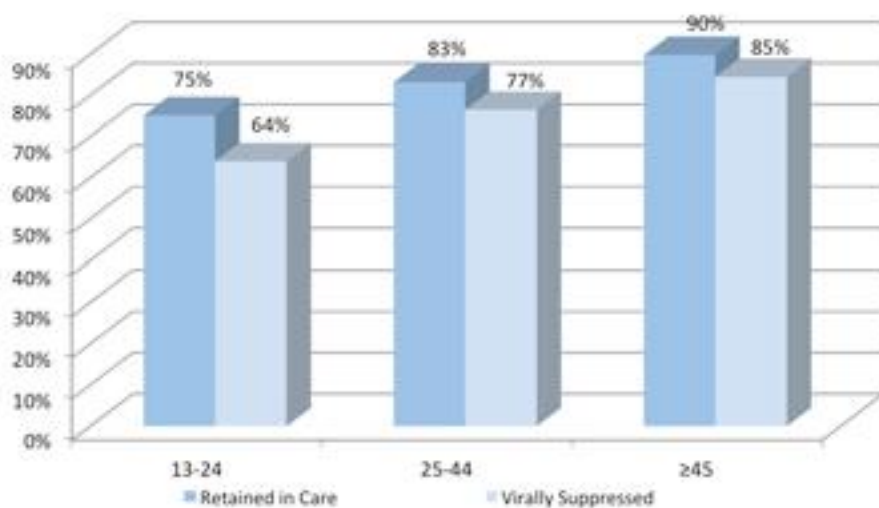
There was less variation in retention and viral suppression by mode of exposure, except among those without an identified risk. Their retention was 75% and their viral suppression was 69%. There was also little difference in retention between people who lived in rural areas of the state and people who lived in more urban areas. However, foreign-born people were less likely to be retained or to achieve viral suppression than U.S.-born people. Among people who were foreign born, 72% were retained in care and 65% achieved viral suppression. This compared to 86% and 78%, respectively, for those born in the U.S.

The following figures illustrate the differences in retention and viral suppression described in the text above.

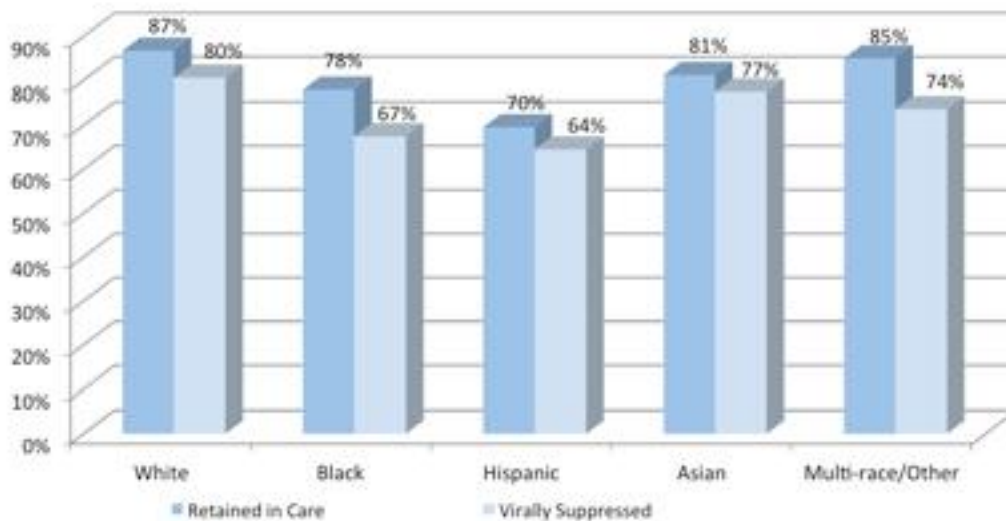
Retention and Viral Suppression by Sex, 2015



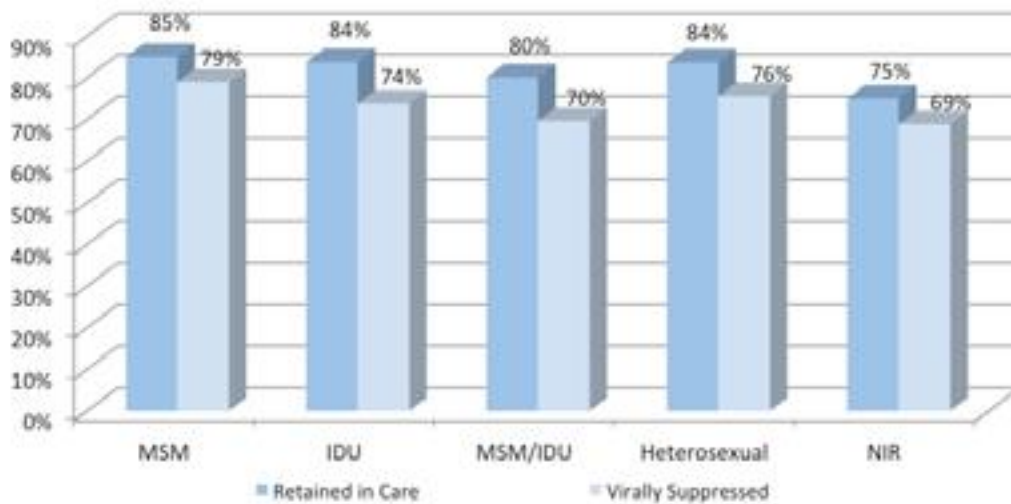
Retention and Viral Suppression by Age Group, 2015



## Retention and Viral Suppression by Race and Ethnicity, 2015

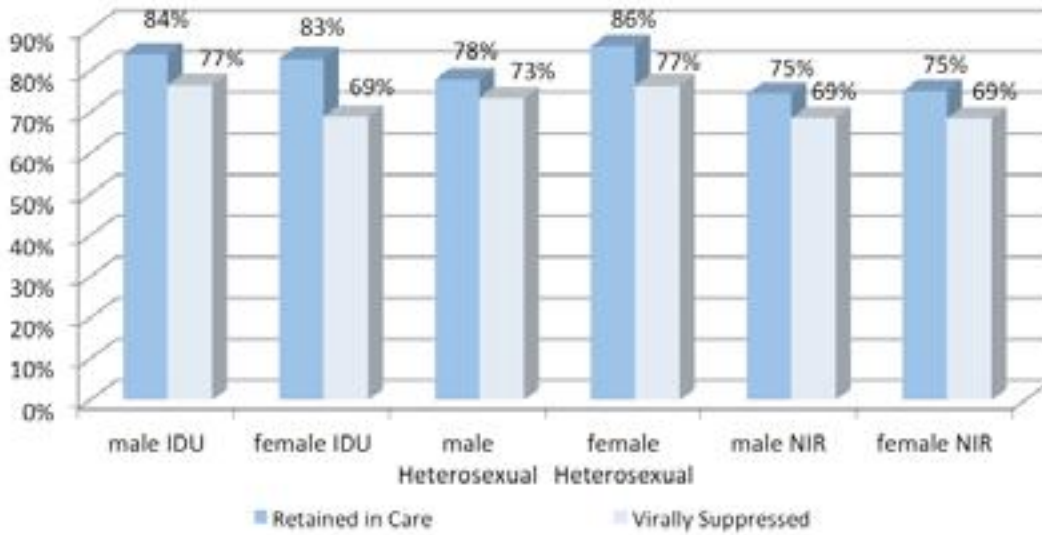


## Retention and Viral Suppression by Mode of Exposure, 2015

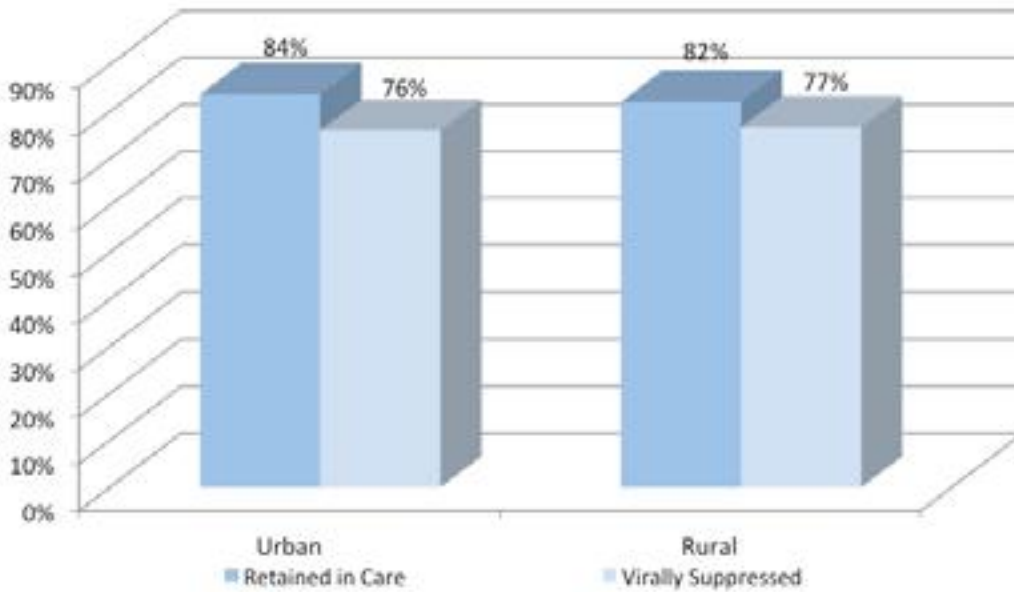


Looking at mode of exposure by sex (for those modes of exposure that include both males and females) adds another layer of complexity. These data are not included in Table 54. As Figure 65 shows, females who inject drugs are retained in care at lower rates than are males who inject drugs. On the other hand, males who had heterosexual exposures were both linked and retained at lower rates than females who were exposed through heterosexual exposures. Among people without risk, sex did not affect rates of linkage or retention.

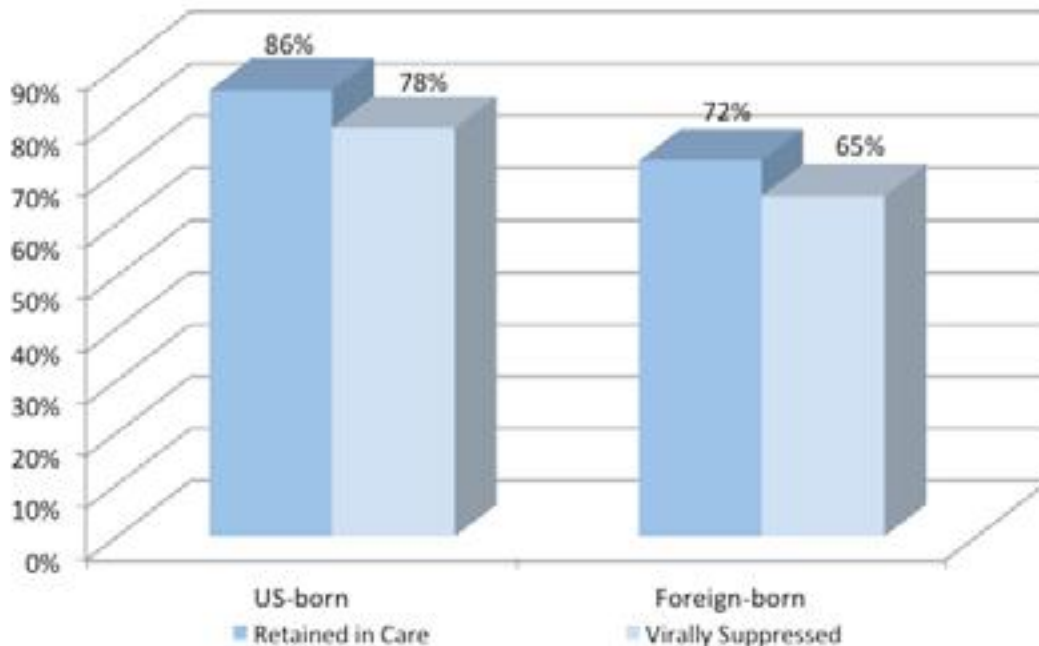
## Retention and Viral Suppression by Mode of Exposure and Sex, 2015



## Retention and Viral Suppression by Geographical Population, 2015



## Retention and Viral Suppression by Country of Origin, 2015



In summary, Iowa's continuum of care demonstrates that there are substantial numbers of people who have yet to be diagnosed. With 19% of Iowans living with HIV still undiagnosed, Iowa ranks among the bottom five states for the proportion of people who are undiagnosed. Some of this may reflect the very disperse distribution of PLWH in Iowa. Des Moines, the largest metropolitan area in the state, houses less than 30% of all PLWH in the state. Given the comparatively low prevalence of HIV in Iowa, that means that no area or medical provider is likely to encounter many people who have HIV. Clearly, a focus on increasing routine and targeted testing in Iowa will be an important strategy for reducing the number of transmissions occurring in the state and improving long-term health outcomes for those who are currently undiagnosed.

Once people are diagnosed, Iowa has high rates of linkage to care, although a number of populations take longer to link. Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa.

Retention in care and re-engagement of those who have been lost to care should also be focuses for future prevention and care strategies. Only 83% of people diagnosed with HIV are retained in care, and this differs by population. The same groups that take longer to link are less likely to be retained in care or to achieve viral suppression.

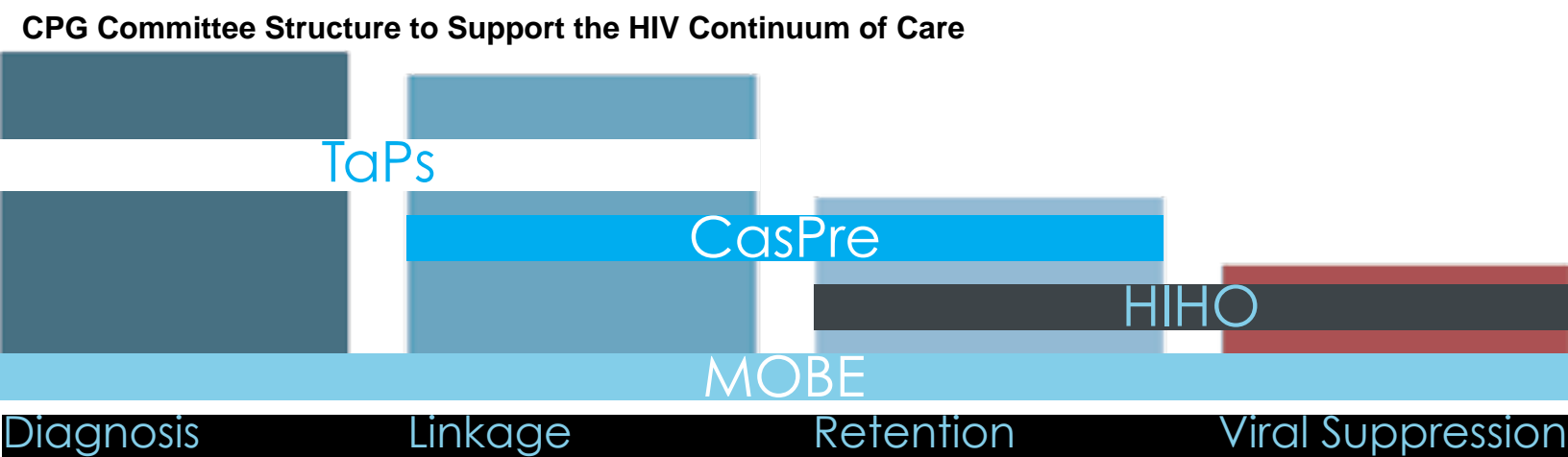
### Utilization of the HIV Continuum of Care

The care continuum demonstrates where prevention and care efforts should be targeted to have the greatest effect on reducing transmission of HIV and improving health outcomes for Iowans living with HIV. It gives a visual representation of where the weakest links are in our system of care in Iowa.

The HIV and Hepatitis Community Planning Group (CPG) works with the Iowa Department of Public Health to plan and evaluate prevention and care strategies and activities. In 2011, the CPG and IDPH

worked with a consultant to realign the CPG committees with the concept of the HIV Continuum of Care.

The committee structure, is shown below.



Each committee examines and uses relevant epidemiological data, conducts and/or reviews needs assessments, examines health equity and social determinants, and identifies policies and regulations that impede or encourage the delivery of prevention and care services.

All committee members engage in the following activities:

- Gather and evaluate information and data to enrich and strengthen discussions and decisions;
- Discuss opportunities and challenges to ensure the highest success of current goals, objective and strategies;
- Monitor the engagement process to ensure that the identified strategies promote a coordinated, collaborative, and seamless approach to HIV and HCV prevention, care, and treatment services; and that they address health disparities related to HIV and HCV; and
- Review and update the plans and the components therein.

More specifically, the committee charges are detailed below:

#### Outreach and Linkage Committee (TaPs)

This committee advises IDPH on implementation, monitoring, and evaluation of testing, linkage, partner services, re-engagement, and condom distribution activities.

#### Support and Engagement Committee (CasPre)

This committee advises IDPH on case management, support services, and prevention with PLWH programming activities.

#### Health Outcomes Committee (HIHO)

This committee advises IDPH on treatment, adherence, and viral load suppression activities.

#### Planning Coordination Committee - Member and Stakeholder Engagement (MOBE)

The committee identifies and implements strategies to recruit, engage, and retain CPG members who represent:

- The diversity of people living with HIV and hepatitis;
- Other key stakeholders in HIV and viral hepatitis prevention, care, and related services;
- Organizations that can best inform and support the development and implementation of comprehensive, statewide plans.

This committee is responsible for maintaining an orientation and training curriculum for new members and providing them with member roles and responsibilities. The committee will also advise IDPH on ongoing leadership development and technical assistance needs of the CPG.

In addition, the CPG works closely with the Quality Management (QM) Team. In 2014, Iowa launched its the QM Team. The QM Team guides the work of the Ryan White Quality Management Program, which aims to ensure the highest quality of medical and support services to achieve optimal health outcomes for Iowans living with HIV. Currently, the QM Team is monitoring 23 performance measures aligned along the HIV continuum of care. In addition to statewide outcome measures, there are several indicators focused on the Ryan White system of care in Iowa, such as churn within the AIDS Drug Assistance Program and the percent of men who have sex with men (MSM) tested for syphilis at three Iowa Part C clinics. In the future, the Quality Management Plan will be expanded to incorporate more HIV Prevention and STD Program performance measures.

# Iowa's Investment in the HIV Continuum of Care

The Iowa Department of Public Health's Bureau of HIV, STD, and Hepatitis utilizes federal and state funding to increase the number of Iowans living with HIV who are able to move through the continuum of care and attain viral suppression. The Continuum is an obvious model for care services in our state, but it is also an integrated model that addresses Iowa's HIV prevention efforts of testing and prevention with PLWH as well. For example, PLWH who are virally suppressed are not only healthier, they are also unlikely to transmit the virus to others. Because prevention is care and care is prevention, therefore, the Continuum of Care is a helpful model for structuring the programs and services available to address HIV in Iowa.

The remainder of this section will detail the current HIV-related resources available in Iowa and group them according to the section of the Continuum that they are designed to affect.

The IDPH HIV Prevention program receives federal funds from the Centers for Disease Control and Prevention (CDC) through PS12-1201 to provide targeted integrated HIV, STD, and HCV testing, comprehensive prevention with persons living with HIV including partner services, condom distribution, and policy initiatives. These activities are targeted to individuals at greatest risk for acquiring HIV as defined in Iowa's Comprehensive HIV Plan and the Epidemiological Profile. The funding is also awarded to support HIV jurisdictional planning, technical assistance, and capacity building activities. In fiscal year (FY) 2012, the Centers for Disease Control and Prevention (CDC) reallocated their HIV prevention funding to U.S. states, territories, and some cities so as to be more highly correlated with 2008 HIV prevalence. A jurisdiction's HIV prevention funding could drop as low as \$750,000 for FY 2016. Iowa was one state that experienced a substantial funding drop, and in 2012 and 2013 IDPH chose to undertake a mathematical modeling exercise to inform the following questions: (a) given current HIV prevention funding for the state, what is the optimal allocation of resources to maximize infections averted? (b) with this "optimal" resource allocation, how many (and what percentage of) HIV infections in the state can be averted? (c) is the optimal resource allocation sufficient to achieve the National HIV/AIDS Strategy goal of 25% reduction in HIV incidence? and (d) with the "optimal" resource allocation, is the return on the investment such that it might be considered cost-effective?

To accomplish this task, IDPH contracted with David Holtgrave, Ph.D., Professor and Chair, Department of Health, Behavior & Society, Bloomberg School of Public Health, at Johns Hopkins University to conduct a mathematical modeling exercise to determine the ideal prevention portfolio for Iowa, given limited resources. The modeling exercise demonstrated that targeted HIV testing (with attendant linkage to care, prevention, and partner services) and prevention for people living with HIV were the most impactful and cost-effective interventions. No funding was recommended for programs for high-risk negatives or for enhanced linkage programs. The modeling work was published in *AIDS Education and Prevention*, October, Vol. 25, No. 5: pp. 423-429. This finding lends support to the integrated approach to prevention and care in that the outcomes of both are integrally tied to one another.



### **Counseling Testing and Referral (CTR) Services**

CTR services are targeted to populations with a high prevalence of and/or a disproportionate impact from HIV. The following populations have been prioritized by the CPG as those at greatest risk for acquiring HIV or disproportionately impacted populations:

- Men Who Have Sex with Men (MSM),
- Black/African-Americans;
- High-Risk Heterosexuals (HRH);
- Hispanic/Latinos; and
- Persons who Inject Drugs (PWID).

IDPH currently contracts with 10 agencies located in the most populous counties in Iowa to provide confidential HIV and HCV counseling, testing, and referral (CTR) services and adult hepatitis A and B immunizations. Efforts to identify newly infected persons have been improved by raising standards and performance measures for contracted agencies to reach high-risk and disproportionately impacted populations.

In 2013, agencies worked toward ensuring that 90% of all HIV tests were administered to persons from high-risk or disproportionately impacted populations. As a means to achieve this, contracted agencies have improved accessibility to services by extending service hours and increasing outreach efforts. They also utilize social marketing strategies to promote testing.

In addition to increased standards and expectations, contractors have been and continue to be provided ongoing training regarding the role of social determinants of health in predicting who is at risk or who has a higher likelihood of transmission among certain populations.

The provision of test results has been greatly improved by the use of rapid HIV testing technology that enables the test to both be conducted and results to be delivered within a single visit. This ensures receipt of test results and also increases portability of testing, thereby improving accessibility to people from rural areas.



IDPH test sites require that counselors are trained through the *Fundamentals of HIV Prevention Counseling* course. It is during this training process that counselors are taught to assess client risk and provide risk-reduction counseling and referrals to meet additional needs. Trainees also learn to integrate hepatitis and STD education and risk screening as well as other referrals into the counseling sessions. Most importantly, counselors are trained to link people who are confirmed HIV-positive to medical care and support services.



### **IDPH STD Prevention Program**

The STD Prevention Program is primarily funded via a cooperative agreement with the Division of STD Prevention at the CDC. The STD Prevention Program works to reduce the burden of chlamydia, gonorrhea, and syphilis in Iowa, reduce the risk of HIV acquisition and transmission, and reduce health disparities, through a number of strategies. These strategies include accessible STD testing and treatment in accordance with CDC guidelines, maintenance of a network of 65 clinics that provide safety net clinical services via the Community-Based Screening Services (CBSS) program, delivery of partner services through deployment of DIS, training and technical assistance to STD care and treatment providers, and assuring care, treatment, and prevention services for persons newly diagnosed with an STD. The STD Prevention Program oversees STD surveillance, and monitors the quality and timeliness of the public health response to these infections.

### **Iowa Primary Care Association (IPCA)**

Since March 2014, IDPH has supported a Preventive Services Coordinator (PSC) position at the IPCA to work with the thirteen federally qualified health centers (FQHCs) and one Migrant Health Center to improve screening by promoting routine opt-out testing for HIV, STDs, and HCV per United States Preventive Services Task Force (USPSTF) and the CDC guidelines. The PSC conducted a needs assessment to identify current practices, lessons learned from previous efforts at improving screening rates, best practices from other FQHCs, barriers, and/or challenges with conducting routine testing in FQHC settings. The ultimate goal is to create sustainable screening/testing practices that take advantage of the Affordable Care Act's provision that allows for HIV and HCV testing without patient cost-sharing. A Best Practices Manual was developed and continues to be updated to assist participating FQHCs with implementing the project. IDPH purchased rapid HIV test kits to be utilized at the participating FQHCs. The use of rapid tests allowed for easier implementation in the primary care clinic flow. However, the participating clinics often perform conventional testing inclusive with other laboratory testing. Nine of the FQHCs are currently participating in the routine opt-out screening project and two will implement screening in the fall, 2016.

## Family Planning (FP) Agencies

Family Planning agencies play an important role in Iowa to provide access to sexual and reproductive health services, including HIV and STD testing. FP clinics are located in a variety of settings such as community health centers, county health departments, and community-based organizations. Sixteen agencies have clinic sites located throughout the state, including rural areas where individuals may not have access to other providers. Family planning clinics provide confidential HIV testing as part of preventative medical exams and additional testing to those at high-risk. They also provide education and outreach to communities within their region and can respond to specific requests from members of the community for HIV-related workshops, materials or training.

## Iowa Department of Corrections (IDOC)

The IDOC maintains nine prisons across the state. In FY 2016, the average number of offenders in the Iowa prison system was 8,179 per quarter and 30,033 offenders in community-based correctional settings. Iowa's correctional facilities provide both opportunities and challenges to ensuring care for incarcerated PLWH. Incarceration also provides a unique opportunity to identify and address HIV infection, with direct access to testing and healthcare. Offenders continue to receive HIV and HCV testing when they enter the state's prison system. STD testing is provided if clinical symptoms are present.



## Partner Services (PS)

Partner Services is a program in which highly trained individuals, known as Disease Intervention Specialists (DIS), offer assistance to persons newly diagnosed with HIV or other STDs in notifying their sex and needle-sharing partners of their exposure. DIS interview newly diagnosed individuals and elicit information about their partners within a specific timeframe. This information is used to locate and confidentially notify partners of their exposure so that they may be linked with medical care, including testing and treatment. If the original patient prefers, he or she may notify partners directly with assistance from the DIS. The PS program is voluntary, and DIS uphold the strictest standards of confidentiality. DIS also counsel patients on how to manage their infection and how to reduce the risk of complications or transmitting the infection to others. DIS also have access to a wide range of other resources to which they can refer the patient for additional assistance, as needed.

The State of Iowa employs seven DIS who serve individuals in seven different geographical regions in Iowa. Additionally, the counties of Polk, Black Hawk, Linn, and Scott employ their own DIS who

serve individuals in their respective counties. Although DIS in these four counties are employed by their county health departments rather than the Iowa Department of Public Health (IDPH), they all work closely with IDPH's PS program and the seven state DIS. Together, the state and county DIS are able to cover all of Iowa and offer PS to individuals infected with HIV or many other STDs, thus improving both the health of individuals and the public.



Numerous federal departments and agencies are involved in the HIV response and key government programs that provide health insurance coverage, care, and support to people with HIV in the U.S. include the Ryan White HIV/AIDS Program, Medicaid, Medicare, and the Housing Opportunities for Persons with HIV/AIDS Program (HOPWA). In addition, the passage of the Affordable Care Act (ACA) in March 2010 provided new opportunities for expanding health care access, prevention, and treatment services for millions of people in the U.S., including many people with or at risk for HIV.

Importantly, for people living with HIV there are protections in the law that make access to health coverage more equitable including the expansion of Medicaid and in the private market, prohibition on rate setting tied to health status, elimination of preexisting condition exclusions, and an end to lifetime and annual caps.

The next two sections concerning retention and viral suppression will describe in detail the following programs and health coverage options for people living with HIV (PLWH) in Iowa to receive the care and support services that they need:

- Ryan White HIV Program
  - o Parts B, C, and F
- Medicaid
- Medicare
- Insurance Options
  - o Employer, Marketplace, Off-Marketplace
- HOPWA

All of these programs combine to create a web of support for retaining PLWH in care and assisting them to achieve optimal health outcomes.

### **Ryan White (RW) HIV Program**

The Ryan White Program is administered by the U.S. Department of Health and Human Services (HHS) through the Health Resources Services Administration (HRSA), and is the largest federal program focused exclusively on HIV/AIDS care. The program is for individuals living with HIV/AIDS

who have no health insurance (public or private), have insufficient healthcare coverage, or lack financial resources to get the care they need for their HIV disease. As such, the Ryan White Program fills gaps in care not covered by other funding sources.

The legislation is called the Ryan White HIV/AIDS Treatment Extension Act of 2009 (Public Law 111-87, October 30, 2009). The legislation was first enacted in 1990 as the Ryan White CARE (Comprehensive AIDS Resources Emergency) Act. It has been amended and reauthorized four times: in 1996, 2000, 2006, and 2009. The Ryan White legislation has been adjusted with each reauthorization to accommodate new and emerging needs, such as an increased emphasis of funding of core medical services and changes in funding formulas.

The Ryan White Program is divided into multiple “parts” that fund different categories of services. The majority of Ryan White funds in Iowa support primary medical care (Part C) and essential support services (Part B). A smaller but equally critical portion funds technical assistance, clinical training, and research on innovative models of care (Part F). These three programs and how they operate in Iowa are described below. To learn more about all the parts of Ryan White visit <http://hab.hrsa.gov/abouthab/aboutprogram.html>.

### **RW Part B Support Services and the AIDS Drug Assistance Program**

Part B provides grants to all 50 States, the District of Columbia, Puerto Rico, Guam, the U.S. Virgin Islands, and 5 U.S. Pacific Territories or Associated Jurisdictions to improve the quality, availability, and organization of HIV/AIDS health care and support services, including the AIDS Drug Assistance Program (ADAP).

IDPH is Iowa’s grantee for the Part B program. The grant consists of a base award, the AIDS Drug Assistance Program (ADAP) award, and an ADAP supplemental award. Additional resources have expanded program offerings through an ADAP Emergency Relief award, state funding, and rebates from copays on medications.

RW Part B Support Services provided along the HIV care continuum is a complex network of medical and social service agencies that can be challenging for PLWH to navigate. In Iowa, PLWH face many barriers to navigating and accessing HIV care, such as transportation, stigma, and financial resources. RW Part B staff, especially case managers, play a vital role in helping clients navigate and access HIV care and other critical services that enable them to stay in care.

RW Part B Services are provided in a variety of settings in Iowa. These settings include AIDS Service Organizations, health departments, and medical facilities. IDPH currently contracts with 10 agencies to provide RW Part B Services. Ryan White providers provide essential health and supportive services to financially eligible clients living with HIV. All Ryan White programs are “payers of last resort,” meaning that all other resources, including Medicaid and Medicare, need to be exhausted before an applicant is eligible. In 2015, more than 1,100 persons living with HIV received services through the RW Part B Program.

Part B provides funding to cover core medical services including, but not limited to:

- Outpatient and ambulatory health services;
- ADAP;
- Oral health care;
- Early intervention services;
- Health insurance premium and cost-sharing assistance;

- Medical nutrition therapy;
- Mental health;
- Outpatient substance abuse care;
- Medical case management; and
- Treatment adherence services.

Support services funded through Part B include, but are not limited to:

- Outreach services;
- Non-medical case management;
- Psycho-social support;
- Medical transportation;
- Housing;
- Emergency Financial Assistance;
- Linguistic services; and
- Referrals for health care and support services.

RW Part B case management provides the mechanism for the delivery of all other services. In Iowa, case management is a multi-step process to ensure timely access to and coordination of medical and psychosocial services for PLWH.

The goal of case management is to promote and support independence and self-sufficiency. As such, the case management process requires the consent and active participation of the client in decision-making, and supports a client's right to privacy, confidentiality, self-determination, dignity and respect, nondiscrimination, compassionate non-judgmental care, a culturally competent provider, and quality case management services.

Recognizing changes occurring in the HIV/AIDS epidemic and in the needs of PLWH, IDPH uses a four tiered approach to case management services: Medical case management (MCM), Non-medical case management (Non-MCM), Brief contact management (BCM) and Maintenance Outreach Support Services (MOSS).

As previously stated, these four tiers of case management may be provided in health care or social settings, in large institutions or small community-based organizations.

Medical Case Management is a proactive case management model intended to serve persons living with HIV/AIDS with multiple complex medical and/or adherence health-related issues. The model is designed to serve individuals who may require assistance with access, utilization, retention and adherence to primary health care services. Medical case management clients need ongoing support from case management to actively engage in medical care, and continued adherence to treatment. Non-Medical Case Management is a proactive case management model intended to serve PLWH with multiple complex psychosocial needs and their families/close support systems. The model is designed to serve individuals who may require a longer time investment to stabilize their psychosocial needs. Non-medical case management is also an appropriate service for clients who have completed medical case management but still require a maintenance level of periodic support from a case manager or case management team. Non-medical case management clients manage their care well enough to avoid chronic disruption to their medical care but require psychosocial support to maintain a stable lifestyle.

Brief Contact Management is an empowerment case management model intended to assist persons living with HIV/AIDS to independence in decision-making and accessing services for their health-related and/or psychosocial needs. This model is designed to assist individuals whose needs are minimal and infrequent. Brief contact management is suitable for persons that are doing very well and exhibits a high level of understanding and acceptance of HIV. Brief contact Management clients have the life skills and personal resources to self-manage their care with occasional assistance from a case manager.

Maintenance Outreach Support Services targets people living with HIV who were formally engaged in more intensive tiers of case management and have progressed to self-management. Maintenance outreach is intended to assess the sufficiency of self-management and to provide additional services, when appropriate, to prevent lapses in care. Outreach clients experience their share of life problems (e.g. co-morbidities, low income, social isolation and bad relationships), but have the life skills and personal resources to deal with them without assistance from a case manager.

Ryan White Part B AIDS Drug Assistance Program (ADAP) provides life-saving drugs for low income, HIV-positive lowans without health insurance. It also pays for health insurance premiums, co-pays, and deductibles for eligible clients. ADAP is comprised of two components: the Medication Assistance Program and the Insurance Assistance Program. The Medication Assistance Program provides medications to HIV Positive individuals who lack access to insurance. The Insurance Assistance Program provides assistance with premiums, copayments, and/or deductible cost to clients who have adequate insurance coverage but are low income. Both the Medication Assistance Program and the Insurance Assistance Program require the clients recertify their ADAP every 6-months as well as meet the Iowa residency and income eligibility requirements.

In 2015 approximately 500 individuals were served by Iowa ADAP (approximately 20% of the people diagnosed and living with HIV/AIDS in the state) were enrolled in Iowa's ADAP. This is significantly from a high of 800 individuals served in 2013. Since the writing of the last comprehensive plan, much has changed in providing medications for PLWH in Iowa.

ADAP saw consistent increases in enrollment each year through calendar year (CY) 2013; however, the implementation of the Affordable Care Act (ACA) in Iowa created significant instability in ADAP enrollment CY2014-2016. A detailed description of the impact of full implementation of the ACA will be included in this plan. At the forefront of the challenges is a combination of the instability of clients' lives and the ACA resulting in a significant amount of "churn" (clients moving from one form of coverage to another and then back again). Strategies to ensure the least amount of impact in clients' lives during this time will be critical to ensure engagement in care. Another critical issue is around the needs of client health literacy, especially in the new era of health care reform. The Iowa Part B Program, including ADAP, is prioritizing addressing client health literacy through



planning and quality improvement initiatives.

During FY2015 Iowa's ADAP program made a programmatic shift to purchase insurance off of the Marketplace. The challenges faced during FY2014 proved to outweigh the benefits of the tax-credits available through HealthCare.gov. The shift to buy clients an insurance plan off the Marketplace provided consistent premium payments, continuity of coverage and less churning, and removed the requirement to reconcile taxes with clients.

### **Housing Opportunities for People with AIDS (HOPWA)**

HOPWA is a federal program funded by the United States Department of Housing and Urban Development (HUD). HOPWA provides housing assistance and related supportive services to address specific needs of low-income people living with HIV/AIDS to establish or maintain a stable living environment. HOPWA also works to reduce the risk of homelessness, and to improve access to health care. Services include tenant-based rental assistance (TBRA), short-term rent, mortgage, and utility assistance (STRMU), housing case management, and other supportive services for those living with HIV/AIDS. According to data reported by project sponsors, 135 households received housing subsidy assistance through HOPWA in 2015.

- Tenant-based Rental Assistance (TBRA): used to help participants obtain permanent housing that meets housing quality standards at a reasonable rent in the private rental housing market.
- Short-term Rent, Mortgage, & Utilities (STRMU): needs-based, time-limited housing assistance designed to maintain stable living environments for people who are experiencing a financial crisis and potential loss of their housing arrangement.
- Support Services: a wide range of services that may include education, employment assistance, legal, life skills management, outreach, transportation, health, mental health assessment, permanent housing placement, drug and alcohol abuse treatment and counselling, day care, personal assistance, nutritional services, intensive care when required, and assistance in gaining access to local, state, and federal government benefits and services.

Iowa means...



In 2001, on behalf of the State of Iowa, the Iowa Finance Authority received competitive HOPWA funding. In 2004, the State of Iowa qualified instead for formula-based HOPWA funding, which is statutorily determined by HUD based on cumulative AIDS cases and area incidence. Since then, the annual formula funding has been lower than the previous competitive award. In recent years, HOPWA funding in Iowa has been approximately \$400,000 annually, with modest increases each year as determined by the federal budget. The Iowa Finance Authority partners with five AIDS service organizations to offer services across the state.

## **Comprehensive Prevention for People Living with HIV (PLWH)**

Prevention for PLWH has become an important tool in Iowa's toolbox to address HIV. Several interventions are implemented across Iowa to address adherence and engagement challenges that impact PLWH and their ability to obtain and maintain a suppressed viral load. IDPH-funded Ryan White (RW) contractors have implemented CLEAR (Choosing Life: Empowerment! Action! Results!), Partnership for Health (PfH), and pharmacy-based medication adherence programs.

CLEAR, a CDC-approved intervention, uses cognitive behavioral techniques to change behavior. CLEAR is implemented by trained staff who work one-on-one with individuals to create goals, identify barriers, and develop strategies to achieve viral suppression or engagement in medical care.

PfH, a CDC- approved intervention, is used as a framework for conversations about sexual health and treatment adherence. This brief intervention takes place in a clinic setting where all staff within the agency are trained to implement the intervention and are able to recognize opportunities for sexual health and medication adherence discussions.

Pharmacy-based adherence programming is implemented by the AIDS Drug Assistance Program's (ADAP) contract pharmacy, and a large HIV medical provider in Iowa. The adherence programs provide brief, ongoing interventions delivered by a pharmacist to address medication adherence issues. Additionally, to formalize the adherence programming at all IDPH-funded Ryan White contractors, an adherence tool kit was developed to provide case managers with additional training and tools to assess and address clients' adherence barriers.

## **Re-Engagement Program**

In November 2014, Iowa began developing its re-engagement program using Data-To-Care (DTC), a public health strategy using HIV surveillance data to identify HIV-diagnosed individuals not in care, link them to care, and support the HIV Care Continuum. EpiInfo was chosen as the database for Iowa's DTC program. Quarterly, an out-of-care (OOC) list is generated from eHARS that includes those with an Iowa address who have no evidence of labs in the last 12 months. This list is imported into EpiInfo and all DTC activities are documented and tracked using the EpiInfo database. An internal investigation is completed to confirm status and prioritize people for referral to outreach and reengagement services. OOC cases are prioritized for outreach based on the following criteria: never linked to medical care, named as a contact in an STD/HIV case investigation, recently diagnosed with syphilis, gonorrhea or chlamydia, high viral load/low CD4 count, or based on high risk behaviors identified during the internal investigation or based on information provided from case managers and health care providers.



### **Ryan White Part C**

Part C of the Ryan White HIV/AIDS Treatment Extension Act of 2009 provides grants directly to service providers such as ambulatory medical clinics to support outpatient HIV early intervention services and ambulatory care. The Part C Early Intervention Services component of the Ryan White HIV/AIDS Program funds comprehensive primary healthcare in an outpatient setting for people living with HIV disease.

In fiscal year 2015, Iowa's Part C clinics received approximately \$1.6 million in Ryan White Part C funding and were able to provide the following services to approximately 1,500 patients:

- Risk-reduction counseling, antibody testing, medical evaluation, and clinical care;
- Antiretroviral therapies; protection against opportunistic infections; and ongoing medical, oral health, medical nutritional therapy, psychosocial, ophthalmology, and other care services for HIV-infected clients;
- Case management to ensure access to services and continuity of care for HIV-infected clients;
- Some support services such as linguistic services; and
- Addressing other health problems that occur frequently with HIV infection, including tuberculosis and substance abuse.

### **Ryan White Part F-Midwest AIDS Education and Training Center**

Part F provides funds for a variety of programs: Special Projects of National Significance Programs (SPNS), The AIDS Education and Training Centers Program, The Dental Programs, and The Minority AIDS Initiative.

The AIDS Education and Training Centers (AETC) Program of the Ryan White HIV/AIDS Program supports a network of 8 regional centers (and more than 130 local affiliated sites) that conduct targeted, multidisciplinary education and training programs for health care providers treating people living with HIV. The AETC Program is a national network of leading HIV experts serving all 50 States, the District of Columbia, the Virgin Islands, Puerto Rico, and the 6 U.S. Pacific Jurisdictions. The AETC Program increases the number of health care providers who are educated and motivated to counsel, diagnose, treat, and medically manage people living with HIV and to help prevent behaviors that lead to HIV transmission.

The AETC Program focuses on training a diverse group of clinicians, including physicians, advanced practice nurses, physician assistants, nurses, oral health professionals, and pharmacists. The AETC Program also works with other multidisciplinary HIV care team members working in Ryan White HIV/AIDS Program and sexually transmitted disease clinics, hospitals, community-based organizations, health departments, mental health and addiction treatment facilities, and other health care facilities. The Midwest AETC (MATEC) serves Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin through its central office in Chicago, Illinois and local partners (LP). Until 2016, Iowa had its own local partner in Iowa City. However, due to funding cuts, the viability

of a robust local partner in Iowa was lost. As a result, the Minnesota AIDS Education and Training Center (MN MAETC) (LP) at the University of Minnesota has proposed a collaborative model to create capacity for three years between the IDPH and the University of Minnesota AETC LP (MN MATEC). Both entities will cooperate to build capacity among Iowa organizations and to determine capabilities and scope of a local partner site in Iowa with the express purpose of encouraging an Iowa organization to assume leadership in 2020 of a new AETC LP in Iowa. The Iowa Collaborative AETC will replace the previous administrative and other functions of the Iowa AETC LP at the University of Iowa, Iowa City, Iowa.

## **MEDICAID**

Medicaid is the largest public health insurance program in the United States, covering health and long-term care services for more than 60 million low-income individuals. Medicaid has played a critical role in HIV care since the epidemic began, and is the single largest source of coverage for people with HIV in the U.S. Before full implementation of the ACA it was estimated to cover half of all people with HIV in regular care, although this represents only a small fraction (<.01%) of the overall Medicaid population.

Iowa expanded its Medicaid program on January 1, 2014, by adding the Iowa Health and Wellness Plan (IHWP). This plan provides medical and pharmaceutical coverage for adults age 19 to 64 whose income is at or below 138 percent of the FPL. Effective April 1, 2016, the State Medicaid Program formally adopted a managed care organization structure with three participating companies. The new MCO structure houses four Medicaid service groups, including the IHWP, and all eligibility standards and covered services have remained the same for each service group. Each MCO has been responsible for building its own provider networks based on DHS requirements and have the option of providing “value-added benefits” in addition to the required covered services. In 2014, many low-income Iowans living with HIV transitioned from ADAP to the IHWP. However, due to the infancy of the IHWP program coupled with the new MCO overhaul, the Iowa Ryan White Part B Program continues to provide support for these individuals through benefits counseling and enrollment assistance at each of the case management agencies across the state.

## **MEDICARE**

Medicare is the federal health insurance program for seniors and people under age 65 with permanent disabilities. Though post-ACA Medicare data is not available, pre-ACA, it accounted for approximately one quarter of federal spending on HIV care in the U.S. and is an important source of coverage for PLWH. Historically, Iowans living with HIV qualified for Medicare through the permanent disability pathway. In 2013, forty-three Ryan White case managed clients were enrolled on a Medicare Part D prescription drug plan. In 2015, the number had risen to 96 clients-a 123% increase in just two years. In 2015, all eligible field benefits specialists became SHIIP (Senior Health Insurance Information Program) certified to better serve Ryan White clients enrolled in Medicare. The goal is for the FBS to meet with each Ryan White client enrolled in a Medicare Part D plan and review their plan to ensure they are enrolled in the best plan for their needs. In the past, this service needed to be referred out to other agencies. As a result, case managers could not always confirm clients followed through with the referral or guarantee they were assisted by someone with a full understanding of their coverage needs. Since the implementation of the partnership with SHIIP, there has been a significantly increased number of eligible Ryan White clients on Medicare screened and enrolled in Medicare savings programs which provide assistance with Medicare Part B and Part D premiums and copays.

## **Insurance Options**

The most significant changes brought about by the ACA include the elimination of the exclusion for pre-existing conditions and the federal requirement for all Americans to maintain health insurance. As such, PLWH now have options to acquire health insurance from three places: their employer, on the ACA created 'Marketplace', or directly from an insurance carrier.

In response to these changes, the Iowa ADAP began purchasing private insurance plans for PLWH who are not eligible for Medicare and have incomes between 138-400% of the Federal Poverty Level. Initially, the ADAP purchased the insurance plans through the Marketplace, but due to the complexity and instability of Iowa's Marketplace, the ADAP moved to purchase plans through "off-marketplace" private insurance companies starting in 2015 and continuing at the time of this writing. About 80-85% of 2016 Iowa ADAP participants are enrolled on a private insurance plan purchased by the ADAP which has almost doubled since the implementation of the ACA. To accommodate the increased enrollment on the insurance assistance portion of the ADAP, the Iowa Part B Program created eight .5-1 FTE equivalent positions called field benefit specialists (FBS). Each FBS is located in a Part B case management agency and assist clients to enroll on the private insurance plans offered through ADAP, and navigate any benefit home or insurance billing issues. In 2015, the Part B Program hired a full-time Enrollment and Benefits Specialist in response to the increasing complexity of the post ACA insurance system and the upcoming overhaul of Iowa's Medicaid system. This position provides technical assistance to both case managers and FBS to ensure PLWH are enrolled in the appropriate private and public benefit homes.

The Iowa 'Marketplace' has struggled since its inception in 2014. For 2016 the Marketplace added two new insurance companies and but one has stated that it will not renew plans for 2017. The Iowa ADAP no longer purchases insurance through the Marketplace, but instead purchases one of two approved off-Marketplace private plans. In this way, clients experience increased stability and simplicity. Insurance Assistance Program enrollees have access to high-quality health insurance with no tax reconciliation. Unfortunately, this policy and the purchased plans need to be re-evaluated every year and it is uncertain for how long this option will remain stable.



In addition to the aforementioned programs and services, a number of initiatives affect more than a single part of the HIV Continuum of Care. These efforts are outlined below.



### **Condom Distribution**

All funded IDPH CTR programs are required to distribute condoms to persons living with HIV and persons at highest risk of acquiring HIV infection. Each agency has a condom distribution plan that includes both individual-level and community-level strategies that focus on making condoms accessible, available, and acceptable, along with innovative education about correct and consistent condom use (including proper disposal). Agencies are provided with condom dispensers, as well, to increase distribution efforts. In 2013, there were almost 260,000 condoms distributed by CTR programs and the DIS. In 2014, there were 390,000 condoms distributed. In 2015, this increased to 480,000.

### **Project Healthy Iowa Men (HIM)**

Project HIM is an online prevention initiative based out of The Project of Primary Health Care in Des Moines. The Project works to change norms related to routine HIV testing among gay, bi, and transgender men. From 2012 through 2015, funding for prevention activities came directly from CDC as part of the Funding Opportunity Announcement PS10-1003: HIV Prevention Projects for Community-based Organizations. The initiative was based on the behavioral intervention, Peers Reaching Out and Modeling Intervention Strategies (PROMISE). Foundational to this project was a dynamic, multimedia-intensive website, <http://www.projecthim.org/>. The site features accurate and up-to-date information and resources on all components of gay and bi men’s wellness—physical

health, emotional health and relationships, sexual health, and spirituality. Although CDC funding for the PROMISE program ended on June 30, 2015, the resource website has been maintained and remains Central Iowa's sexual health resource for free and confidential HIV and STD testing, prevention education, and referrals.

### **Mpowerment**

Mpowerment Iowa City is a community-level intervention approach to HIV prevention for MSM. The project focuses on creating opportunities for MSM to socialize in a safe atmosphere. HIV prevention and safer-sex messages are disseminated via social events by project staff. Participants in the project are trained to act as lay health advisors and disseminate HIV prevention and safer-sex messaging through their personal social networks. The project is an implementation of the Mpowerment Project, an intervention scientifically proven to reduce rates of unprotected anal intercourse and HIV transmission among MSM. In FY16, 4,400 contacts were made through informal outreach and 99 MSM attended M-groups to discuss factors contributing to infrequent or no HIV testing and unsafe sex among the men (e.g., increasing motivation for frequent HIV testing, meeting partners online, beliefs that safer sex is not enjoyable, and poor sexual communication skills). Through skills-building exercises, the men practice safer sex negotiation and correct condom use skills. They are also trained to conduct informal outreach.

### **Personal Responsibility Education Program (PREP)**

Iowa's PREP (Personal Responsibility Education Program) provides sexuality education to adolescents that is medically accurate, culturally and age-appropriate, and evidence-based and informed. PREP is implemented in Iowa with the goal of assisting youth to reduce their risk of unintended pregnancy, HIV/AIDS, and other sexually transmitted infections (STIs). In addition to education on abstinence and contraceptive use, PREP also addresses other topics to prepare young people for a successful adulthood. Adult preparation subjects include healthy relationships, adolescent development, healthy life skills, parent-child communication, financial literacy, and educational and career success. Iowa PREP grantees deliver services in nine Iowa counties with the highest teen birth rates. The priority population for programming is youth who are 10 to 19 years old. PREP contractors implement one of two evidence-based and evidence-informed teen pregnancy prevention programs to youth in their area. PREP is delivered through a mix of school and community-based settings, as well as after-school programs. The selected evidence-based and informed curricula are Teen Outreach Program® (TOP) and Wise Guys. TOP is a comprehensive, evidence-based youth development curriculum that promotes the positive development of adolescents ages 12–18 years through a combination of group discussion and community service learning. Core activities across the curriculum include values clarification, healthy relationships, communication, goal setting, decision-making, development, service learning, and sexual health. Wise Guys is a 12-week curriculum designed to prevent adolescent pregnancy by educating and



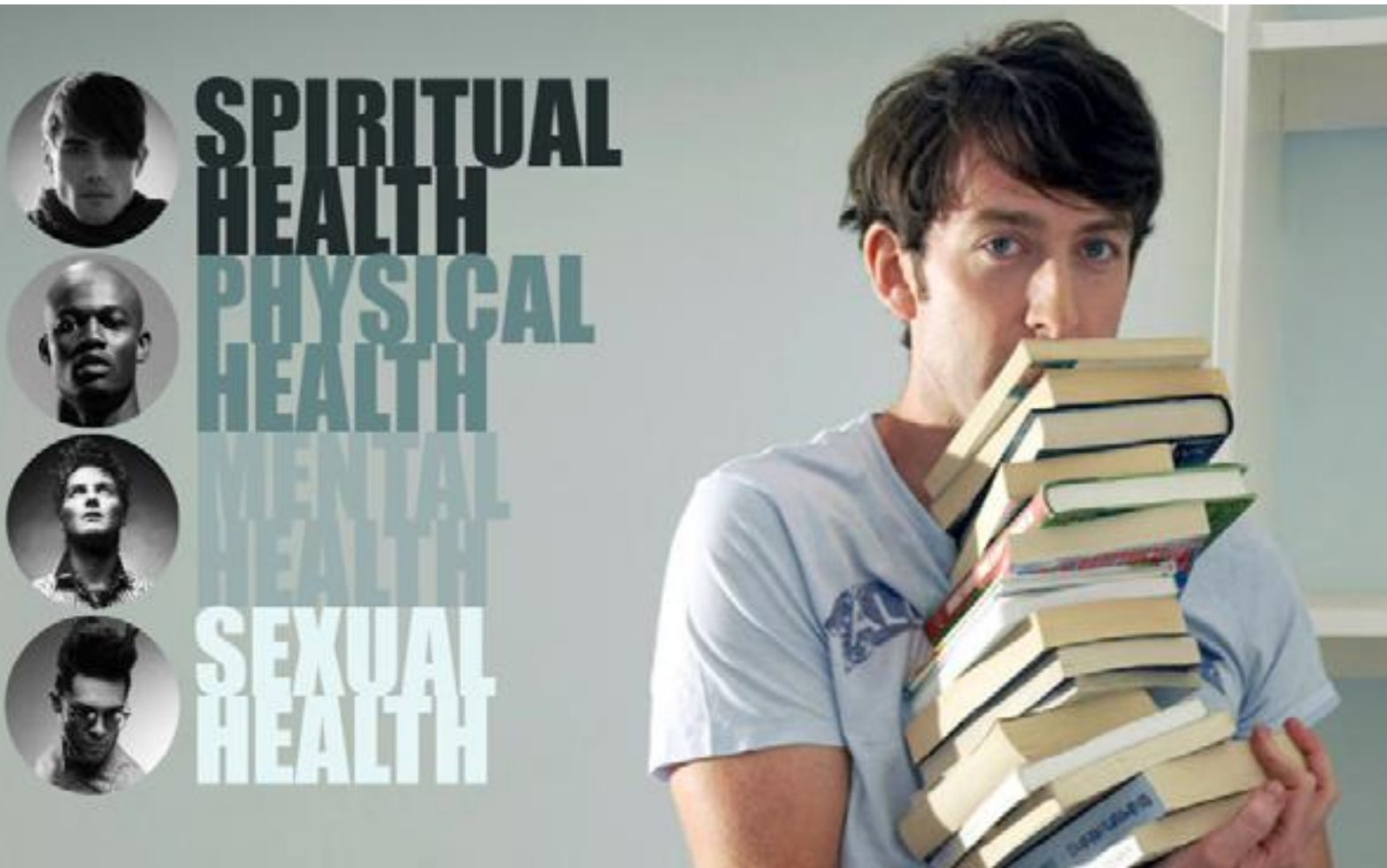
empowering 11–17-year-old males to make informed sexual decisions. The evidence-based program is designed to empower young male participants with the knowledge and skills needed to make educated decisions, encourage participants to respect themselves and others, helping participants to understand the importance of male responsibility, and improving communication with parents, educators, peers, and others. Since programming began in 2012, more than 2,500 youth have attended at least one PREP session.

### **Abstinence Education Grant Program**

The Abstinence Education Grant Program has local contractors delivering Wyman’s Teen Outreach Program® (TOP®), to youth ages 12-19. Programming is delivered through a mix of school and community based settings within several of Iowa’s counties. TOP® is an evidence-based best practice program designed specifically for young people in 6th to 12th grade. The TOP® curriculum is packed in four age/ stage appropriate levels, and includes: values clarification, relationships, communication/assertiveness, influence, goal-setting, decision-making, human development and sexuality and community service learning. The TOP® has the power to influence community-level change, thanks in part to TOP’s unique focus on reconnecting teens to their communities through community service learning opportunities.

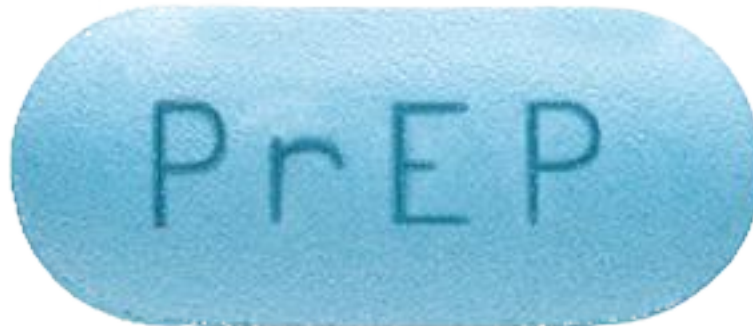
### **Gay Men’s Health Committee**

The Gay Men’s Health Committee (GMHC), an ad-hoc committee of the HIV and Hepatitis Community Planning Group developed a website focusing on resources for gay and other men who have sex with men in Iowa, <http://iowaguys.wix.com/resources>. This website directs consumers to spiritual, physical, mental, and sexual health resources, as well as pre-exposure prophylaxis (PrEP) resources. Also, based on the recommendations of the GMHC, a business-like resource card was developed to direct MSM to the website and included information testing that an MSM should discuss with their provider.



## **Pre-Exposure Prophylaxis (PrEP)**

The HIV prevention program continues to work with Iowa's GMHC to identify providers in Iowa who will prescribe PrEP. The list of providers was added to the website developed by the GMHC <http://iowaguys.wix.com/resources>. The program has shared best practices and protocols with various requesting clinics and practitioners. Two brochures, have been developed, one for potential PrEP consumers and one for providers.



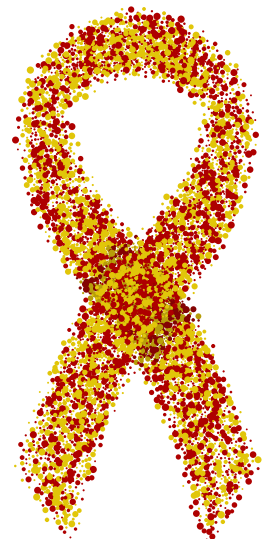
## **Substance Use and Treatment Programs**

The IDPH, Division of Behavioral Health, is responsible for regulating and licensing more than 120 different substance use disorder evaluation and treatment programs. Services offered include: Assessment/Evaluation; Continuing Care; Extended Outpatient; Intensive Outpatient; Day Treatment; and Residential Care. Of these providers, 23 of them make up the IDPH-funded treatment network that covers all 99 counties. These providers offer subsidized treatment services to eligible individuals through funding from the Substance Abuse and Mental Health Services Administration (SAMHSA) and State of Iowa Appropriations. Annually, over 47,000 Iowans seek assessment and treatment services for substance use disorders through IDPH-licensed programs.

## **IDPH Hepatitis Prevention Program**

In January 2016, the IDPH, Bureau of HIV, STD, and Hepatitis received a grant from the Association of State and Territorial Health Officials (ASTHO) to develop a hepatitis C epidemiologic profile. The purpose of a hepatitis C epidemiologic profile is to document, interpret, and frame the dimensions and burden of the epidemic in local terms that can be used to heighten awareness and drive decision making.

IDPH receives state general funding from the Iowa General Assembly to administer viral hepatitis prevention services. There are 9 CTR sites that administer HCV testing and hepatitis A and B immunizations. Testing is offered free-of-charge to people who report having ever injected drugs. The test is a 20-minute rapid HCV-antibody test. People who test antibody-positive undergo a blood draw, which is sent to a laboratory to conduct RNA confirmatory testing. Although most testing occurs within the health department or FQHC clinic, the CTR sites also conduct outreach testing at substance abuse facilities and county jails. The CTR sites only test people who report ever having injected drugs.



## **HIV/AIDS Surveillance Program**

The goal of the Iowa HIV/AIDS Surveillance Program is to provide a comprehensive picture of the HIV/AIDS epidemic through data collection, quality assurance, and analysis, in order to support prevention and health service activities delivered by the Department of Public Health and a

statewide system of health care and social service organizations. Epidemiologists are responsible for the collection, analysis, and interpretation of adult and pediatric HIV/AIDS case data. HIV/AIDS Surveillance data are disseminated widely throughout the state; to governmental agencies, public and private providers, advocacy groups, and consumers. The program distributes specialized and routine data reports. The program also works collaboratively with the HIV and Hepatitis Planning Group, other planning and policy groups, health care providers and other Bureaus within the Department of Public Health, providing surveillance information and assisting with assessment of resource distribution and ongoing planning to ensure that the needs of people living with or at risk for infection are met.

### **Social Marketing, Media, and Mobiliation**

Advertising for 2015 included a public awareness campaign based on the CDC's *Act Against AIDS, Let's Stop HIV Together* using a variety of new images. The print portion for this target audience was in 13 of Iowa's largest metro papers, offering a readership of nearly 2 million. Digital advertising is also being used to reach the general public and the Gay Ad Network during this time period. In addition, 186 publications were added to target CHC sites across the state.

In addition, an MSM campaign was created based on the CDC's *HIV Treatment Works* and *Start Talking Stop HIV* campaigns. This targeted effort uses the digital arena to reach this segment of the population throughout their internet browsing. Some of the tactics used are: Audience Targeting, Remarketing, Facebook, Twitter, and the Gay Ad Network.





## **Use of Surveillance Data**

During the 2012 Legislative Session, the IDPH Bureau of HIV, STD, and Hepatitis worked with the Iowa Legislature to propose changes to the section of Iowa Code that governs the uses of HIV surveillance data. Iowa Code 141A.9 limited the use of data collected by HIV surveillance to departmental employees who could use the data only to prevent the spread of disease. The department proposed to expand the uses of surveillance data to include care of persons with HIV and to include use of data by agents of the department or agents of other local, state, or federal governments. This language allows for better use of laboratory data for case management, for matching of the surveillance registry with the National Death Index (to estimate prevalence more accurately), and for better exchange of partner service information with prevention and surveillance programs in other states. The new language went into effect on July 1, 2012.

## **Administrative Rules**

The IDPH Bureau of HIV, STD, and Hepatitis drafted revised administrative rules (Iowa Administrative Code 641 Chapter 11 – Acquired Immune Deficiency Syndrome). The revised rules implemented changes that were made to Iowa Code 141A and 139A, including removing the laboratory certification procedures; describing reportable events and conditions for HIV/AIDS; describing partner notification services; updating procedures for occupational exposures to blood-borne pathogens; and removing prohibitions on home testing. In addition to the Code changes, the rules clarified and added detail to consent procedures for HIV testing. They also update references and Code citations. During the development of the draft rules, the Bureau solicited comments from many partners across the state. These updated rules were submitted to the state Board of Health and the legislature's Administrative Rules Review Committee for adoption in November 2013.

## **Iowa Code 709C, HIV Exposure Law**

IDPH, with the Iowa Attorney General's office, worked with advocates, including the Community HIV/Hepatitis Advocates in Iowa Network (CHAIN), Lambda Legal, the SeroProject, and the Iowa Chapter of the American Civil Liberties Union to urge Iowa legislators to reexamine Iowa Code 709C, which criminalized exposing someone to HIV without first disclosing an HIV-positive serostatus and obtaining the partner's consent. It also criminalized the donation of blood, plasma, or tissue and the sharing of needles or other drug paraphernalia by a person who had been diagnosed with HIV. A person who was convicted of criminal transmission of the human immunodeficiency virus was guilty of a class "B" felony with up to 25 years in prison per count. If there was sexual contact, the offender was placed on the sex offender registry for a minimum of 10 years. On May 1, 2014, the Iowa House passed Senate File 2297, the Contagious or Infectious Disease Transmission Act, which had previously been passed unanimously by the Senate.

The bill was signed into law by the Governor on May 30 2014. The news was heralded by advocates and major news outlets across the country as an historic step forward for all states with HIV-specific criminal statutes. The bill removed people who were formerly convicted of Iowa Code 709C from the sex offender registry if they have been convicted of no other offense requiring registration. The



bill requires that a person infected with a number of serious contagious or infectious diseases (i.e., HIV, hepatitis in any form, meningococcal disease, and TB) protect others from exposures by taking practical means to prevent transmission. Disclosure of status is not required. The practical measures include substantial good-faith compliance with a treatment regimen (if applicable) and use of barrier methods when an exposure would present a “substantial risk” of transmission. It establishes a range of penalties for exposing and/or infecting others by acting with reckless disregard or intent to transmit the disease agent. The bill took effect immediately, rather than beginning on July 1 like many new statutes. IDPH developed a brochure Living with HIV, which is intended for PLWH and for those who may be in the position of educating people about the statute. The bureau staff also provides guidance for testers, counselors, and case managers on the implementation of the Act.

### **Medical Billing**

The HIV and STD Prevention Programs worked with HS Medical Billing Services (MBS) on a Revenue Generation Collaborative to provide technical assistance to eight local public health agencies (LPHA) that provide HIV, STD, and hepatitis-related services. As a result of this work a [Revenue Generation Toolkit](http://idph.iowa.gov/hivstdhep/hiv/prevention) (<http://idph.iowa.gov/hivstdhep/hiv/prevention>) was developed to assist the LPHAs.

### **Needlestick Injuries**

The Bureau developed a Protocol for Needlestick Injuries or Exposure to Other Potentially Infectious Materials. The policy was developed to provide guidance to the Disease Intervention Specialists (DIS) in the event they experience a needlestick or exposure to potentially infectious materials while performing venipunctures. This policy allows the DIS to perform phlebotomy for follow-up HIV testing and for clustering of syphilis cases.

### **Medicaid Coverage for HIV Testing**

In 2015, the Bureau worked with contacts at the Iowa Medicaid Enterprise (IME) to encourage them to shift their HIV testing policy from “medically necessary” to “routine.” IME agreed to shift their policy to support routine testing.

### **Tests of Public Health Significance (TOPHS)**

IDPH and the State Hygienic Laboratory (SHL) developed criteria for TOPHS in response to Iowa Code 263.8, which states that “...the laboratory shall perform without charge all bacteriological, serological, and epidemiological examinations and investigations which may be required by the Iowa department of public health and said department shall establish rules therefor.” TOPHS are laboratory tests that are of particular importance to public health. In November 2015, the Iowa Board of Health noticed Administrative Rules in Iowa Administrative Code 641, Chapter 1, to establish the conditions and criteria for TOPHS. The Administrative Rules were adopted by the Iowa Board of Health in January 2016. Iowa Code requires SHL to offer these tests at no cost to patients or designated clinics. The costs of the testing are included in the legislature’s appropriation to SHL. IDPH drafted the Rules, and included HIV, syphilis, hepatitis B and C in TOPHS when a person at risk (a) presents at any one of 65 CBSS sites designated by IDPH and (b) is un/under-insured or chooses confidential services. One goal of TOPHS is to expand HIV testing beyond the ten IDPH-funded CTR sites.

### **Naloxone Overdose Prevention**

On April 6, 2016, Governor Terry Branstad signed SF2218 into law, which removes barriers for first responders, family, and others in a position to assist to administer Naloxone to people who have overdosed on heroin or other opioids. This bill was further amended by HF2460. Naloxone (offered as Narcan® and Evzio®) is an opioid antagonist that can reverse an opioid or heroin overdose when

administered intramuscularly or as a nasal spray. These bills were introduced in part because there was an 80% increase in opioid-related overdose deaths between 2010 and 2014 in Iowa. Iowa law previously prohibited non-medical first responders, such as police, family, and friends, from administering Naloxone.

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### **HIV Health Improvement Affinity Group (IDPH and IDHS Collaboration)**

The Center for Medicare and Medicaid Services (CMS) has engaged the National Academy for State Health Policy (NASHP) to support an HIV Health Improvement Affinity Group in partnership with the federal agencies. The HIV Health Improvement Affinity Group aims to improve health outcomes— including rates of sustained virologic suppression--among Medicaid and CHIP beneficiaries living with HIV. To accomplish these goals, the group will support state collaborations between public health and Medicaid programs (including Iowa’s managed care organizations (MCO) to improve the availability, accessibility, and quality of HIV prevention and care services delivered to HIV-infected Medicaid and Children’s Health Insurance Program enrollees. The Iowa’s HIV Affinity Group project will be to increase the utilization of claims data-sharing agreements. Building on the work previously taken by IDPH and Medicaid, the Affinity Group will develop an infrastructure and expertise to meaningfully use claims and surveillance data to improve the HIV Continuum of Care.

# Financial and Human Resources Inventory

The geographic distribution of HIV in Iowa provides a unique and often overlooked context from which to assess levels of resources and to ensure their appropriate distribution. Iowa does not have a single epicenter of disease, such as a large metropolitan area, which would allow for efficiencies in the delivery of services. Instead, there are ten mid-sized (micropolitan) population centers that together contain just over 70% of PLWH. The Des Moines metropolitan area, Iowa's largest city, contains fewer than 30% of PLWH in Iowa. This creates an added challenge for delivering services. Expert services are needed in each of those ten population centers, but even this means that nearly one-third of PLWH must travel to reach one of these centers. It also means that Iowa's resources must be divided to support infrastructure, staff, and supplies in many different areas.

## **Financial Resources**

The table on the next two pages provides an inventory of public and private funding sources for HIV prevention, care, and treatment services in Iowa. Unless otherwise indicated, funding is indicated for the most recently completed fiscal year.

Resource	Dollar Amount	Funded Service Provider Agencies	Services Provided	HIV Care Continuum Steps Impacted
Medicaid	Total: \$7,273,953 (2011)	Iowa Department of Human Services	Medical	linkage through viral suppression
Corrections	\$1,035,225 (2014)	Iowa Department of Corrections	Testing all offenders upon entry; medications	diagnosis through viral suppression
HRSA RW Part B  Base+ADAP+-ADAP Supplemental+ADAP Emergency Relief	\$3,607,090 (2016)	Iowa Department of Public Health  Contractors: Siouxland Community Health Center, University of Nebraska Medical Center, Mid-Iowa Community Action Agency (MICA), North Iowa Community Action Organization (NICA), The Project of Primary Health Care, Cedar AIDS Support System (CASS), University of Iowa Hospitals and Clinics, Linn County Community Services, The Project Quad Cities, Finley Visiting Nurse Association	core medical services and support services	diagnosis through viral suppression
Rebates from ADAP	\$2,419,905 (2015)	Iowa Department of Public Health	Case finding, core and support services, capacity building, outreach services	diagnosis through viral suppression
State of Iowa Funding	\$547,982	Iowa Department of Public Health	ADAP	viral suppression
Ryan White Part B Supplemental	\$6,913,713 (2017)	Iowa Department of Public Health	Case finding, core and support services, capacity building, outreach services	Diagnosis through viral suppression
HRSA RW Part C	\$151,322  (46.4% of a total grant award of \$326,126 for services delivered in Iowa)	Genesis	Outpatient ambulatory health service and support services	linkage through viral suppression
	\$399,005	Primary Health Care	same as above	linkage through viral suppression
	\$253,450	Siouxland Community Health Center	same as above	linkage through viral suppression
	\$605,732	University of Iowa Health Care	same as above	linkage through viral suppression
	\$100,680  (28% of a total grant award of \$359,574 for services rendered in Iowa)	University of Nebraska Medical Center	same as above	linkage through viral suppression
HRSA RW Part D	\$15,730  (4.5% of a total grant award of \$349,571 for services rendered in Iowa)	University of Nebraska Medical Center	Outpatient ambulatory primary and specialty medical care and support services for women, infants, children, and youth	linkage through viral suppression

# Iowa Financial Resources Inventory

Resource	Dollar Amount	Funded Service Provider Agencies	Services Provided	HIV Care Continuum Steps Impacted
HOPWA	\$425,607	Iowa Finance Authority (IFA)  Project Sponsors: <ul style="list-style-type: none"> <li>• Primary Health Care</li> <li>• Siouxland Community Health Center</li> <li>• Cedar AIDS Support System (CASS)</li> <li>• The Project of the Quad Cities</li> <li>• University of Iowa Hospitals and Clinics</li> </ul>	Short-term rent and utility assistance, Tenant-based rental assistance, Supportive services	linkage through viral suppression
CDC Surveillance	\$194,237	Iowa Department of Public Health	HIV surveillance activities, including collection of HIV-related diagnoses and care indicators, data analyses and dissemination of data to stakeholders	measurement of all steps
CDC Prevention	\$753,824 (\$189,560 to 10 test sites and SHL)	Iowa Department of Public Health  Funded contractors: <ul style="list-style-type: none"> <li>• Black Hawk County Health Dept, Waterloo</li> <li>• Cerro Gordo Public Health, Mason City</li> <li>• Council Bluffs Health Department, Council Bluffs</li> <li>• Dubuque County, Dubuque</li> <li>• Polk County Health Department, Des Moines</li> <li>• Linn County Public Health, Cedar Rapids</li> <li>• Polk County Health Department, Des Moines</li> <li>• Primary Health Care, Des Moines</li> <li>• Scott County Health Department, Davenport</li> <li>• Siouxland Community Health Center, Sioux City</li> </ul>	HIV testing, counseling, and referral	diagnosis and linkage
Abstinence Education Grant Program	\$516,176 (\$300,000 to local agencies)	<ul style="list-style-type: none"> <li>• Unity Healthcare (Trinity Muscatine), Muscatine</li> <li>• Community Opportunities (New Opportunities), Carroll</li> <li>• Planned Parenthood of the Heartland, Linn and Polk Counties</li> <li>• Youth and Shelter Services, Story and Boone Counties</li> <li>• Iowa State University Extension Ctr, Statewide</li> <li>• Community! Youth Concepts, Polk County</li> <li>• Marshalltown Community School District, Marshalltown</li> <li>• University of Iowa Policy Center, Statewide</li> </ul>	HIV prevention education	diagnosis and linkage
Iowa's Personal Responsibility Education Project	\$514,313 (\$293,554 out to local agencies)	<ul style="list-style-type: none"> <li>• American Home Finding Association, Wapello County</li> <li>• Bethany for Children &amp; Families, Scott County</li> <li>• Cerro Gordo County Department of Public Health</li> <li>• Henry County ISU Extension</li> <li>• Marshalltown Community School District</li> <li>• Planned Parenthood of the Heartland; Polk, Pottawattamie, and Woodbury Counties</li> <li>• Women's Health Services of Eastern Iowa, Clinton County</li> </ul>	HIV prevention education	diagnosis and linkage
HIP Program	\$34,259	Iowa Department of Human Services	Helps attain or retain health insurance	linkage through viral suppression

# Iowa Financial Resources Inventory

## Human Resources and Workforce Capacity

Iowa has developed a system of “centers of excellence” for HIV primary medical care, with the centers being in or contiguous to the ten most populous counties that also have the highest prevalence of PLWH. There are five Ryan White Part C clinics available across the state (and in Nebraska), two Veterans Affairs clinics (Des Moines and Iowa City), and nine state correctional facilities that treat PLWH. In addition, all ten counties have at least one private infectious disease specialist and/or clinic that care for PLWH. Other FQHCs and safety net providers in the state refer patients to these centers of excellence and/or work collaboratively with the centers. Despite this, 22% of PLWH who responded to the 2016 Consumer Needs Assessment travel more than an hour to reach an HIV specialist.

Prevention service providers, mainly counseling, testing, and referral sites, are also evenly distributed throughout the state in similar centers of excellence in or near the ten most populous counties. There have been recent efforts to expand preventive services (mainly testing and PrEP/nPEP) throughout the state’s network of safety net providers, including 65 clinics in the Community-based Screening Services Program and the 13 state FQHCs. This would extend easier access to prevention services beyond the ten population centers.

The healthcare system in Iowa provides people living with HIV, and those at elevated risk, with a wide range of access to medical providers, including internal medicine and specialty and subspecialty providers located in community health centers, local health departments, hospitals, an academic medical center, family planning agencies, substance abuse treatment programs, and other community-based health and social service programs. These programs include a range of clinical and non-clinical staff, including HIV testing counselors, phlebotomists, medical case managers, behavioral health providers, and PLWH peers. These individuals often work directly, or in collaboration with, registered nurses, nurse practitioners, infectious disease physicians, and primary care providers.

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## Iowa Primary Care Association (IPCA) and Federally Qualified Health Centers (FQHC)

Iowa currently has thirteen FQHCs located within its borders with 36 locations



throughout Iowa and Illinois. Iowa also has one migrant worker health program with three locations across Iowa. The Community Health Center in Davenport was first FQHC in Iowa in 1975 and Peoples Community Health Center in Waterloo followed in 1976. During 2015, Iowa FQHCs served 184,520 patients, 5,846 homeless patients and 2,569 veterans. In total, 641,600 patient visits were completed, including 129,556 dental; 32,872 behavioral health; 1,168 substance abuse; 160 vision and 14,900 enabling services (ie case management, enrollment into other support services). Iowa's FQHC employees in 2015 amounted to a combined total of 1,350 full-time employees (FTEs). Iowa FQHCs received a total of \$32,207,006.00 in funding from the Health Resources and Services Administration's Bureau of Primary Health Care; \$6,517,362.00 in federal grants, including Ryan White Part C funding; and \$49,210,736.00 in state and local funding.

### Hospital and Medical Centers

There are 118 acute care hospitals; two Iowa-based Veterans Administration Hospitals (Iowa City and Des Moines) and one in Sioux Falls, South Dakota; and one major academic medical center, the University of Iowa Hospitals and Clinics (UIHC) in Iowa City. UIHC receives RW Part B and Part C funding and the University of Nebraska Medical Center receives RW Part C funding to serve southwest Iowa PLWH. There are three other RW Part C clinics in Iowa in Des Moines (Primary Health Care, Inc.), Sioux City (Siouxland Community Health Center), and Davenport (Genesis Health System).

### Mental Health Programs

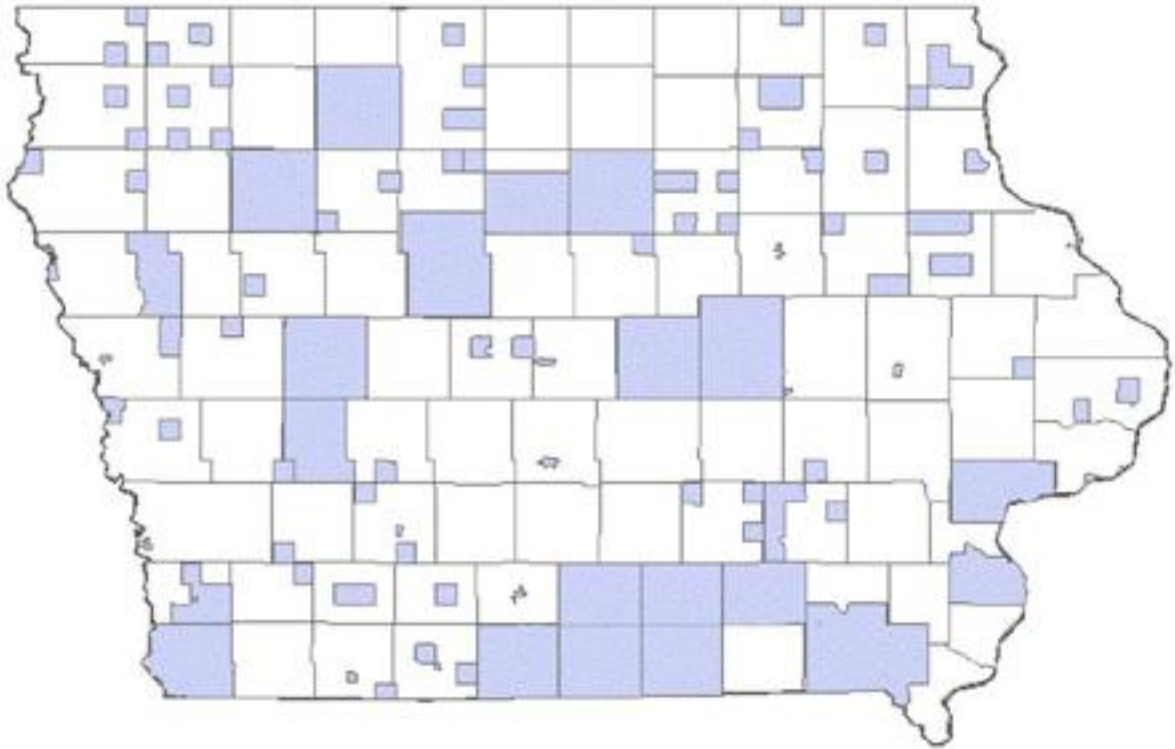
There are 25 accredited Community Mental Health Centers (CMHC) and 61 accredited Mental Health Services Providers in Iowa. There are also other providers of mental health services available through private organizations, hospitals, and other health care facilities. In 2015, Iowa closed two of the four state mental health facilities. This reduced the number of available state mental health hospital beds from 239 (2005) to 149 (2010) to 64 (2016). This reduction equates to 2 beds per 100,000 population. This is significantly lower than the national average of 11.7 beds per 100,000 population, which means Iowa has the fewest number of beds per 100,000 population in the nation.

The table below outlines the number of health care professionals currently (as of July 2016) providing specific health care services in Iowa.

Health Care Professionals, Iowa (July 2016)	
Occupation	Total
Physicians (all)	7,319
Primary Care Physicians	552
Physician Assistants	1,382
Registered Nurses	46,194
Licensed Practical Nurses	10,586
Nurse Practitioners	3,611
Dentists	1,546
Psychiatrists	221



## Medically Underserved Areas/Populations



### **Medically Underserved Areas**

At least 19 of Iowa's 99 counties are considered to be medically-underserved areas. In addition, there are many more localized underserved areas spread throughout the state.



### **Needed Services & Resources**

There are three main steps being taken in regard to resources for Iowa to better address the HIV epidemic: First is to increase targeted prevention funding. Since 2012 the funding provided by CDC to the health department for prevention efforts has dropped from \$1,600,000 to \$753,000 in Fiscal Year 2016. The CDC has stated that in FY 2018 the funding will be increased to \$1,000,000. The restoration of some of the funding lost will help to fill the gap in some of the state's prevention services. Next, steps have been taken to remove restrictive earmarks tied to state funding. Finally, efforts to secure Part B Supplemental funding to expand services in unprecedented ways and to address gaps and barriers described in the next session are underway. The addition of these resources, if promptly and efficiently implemented, have the potential to meet most goals and objectives laid out in this strategic plan and to change the tide of the HIV epidemic.

# Assessing Needs, Gaps, & Barriers

During Iowa's plan development process, the HIV Continuum of Care model was adopted to evaluate the needs, gaps, and barriers for people to a) successfully avoid HIV infection, b) get diagnosed and linked to care, c) become, and remain, engaged in care and treatment, or d) attain viral suppression.

By identifying the continuum steps where PLWH fall out of care, Iowa planners can better determine where to target efforts and to which populations. Efforts can then be developed to strengthen systems, enact policy, and develop programming to help more people living with HIV attain viral suppression. Iowa's numbers of people living with HIV who attain each step of the engagement process, then, provide opportunities to measure success and identify barriers that keep people from progressing along the continuum. The next section of this plan provides an analysis of these gaps and needs that are not currently being met at an optimal level.

A variety of sources were accessed to complete this analysis:

- HIV/AIDS Surveillance Data;
- The 2016 Consumer Needs Assessment;
- The American Men's Internet Survey (AMIS);
- 2015 Prevention and Care Program Reports;
- Presentations and data from MATEC-Iowa, HOPWA, Corrections, Mental Health and Substance Use Prevention & Treatment Services, and Medicaid;
- 2016 Iowa HIV Prevention Provider Resource Survey; and
- Key Informant Interviews and Care Continuum-Related Panels.

The remainder of this section will focus on the gaps and priority needs identified as a part of the planning process.



## Prevention

Although the Continuum of Care is a useful framework for assessing Iowa's response to HIV, an additional category of needs, gaps, and barriers for HIV prevention must be examined. This category is commonly referred to as "the bar before the bars" in that it represents HIV-negative individuals, who with adequate access to prevention tools, are able to avoid sero-conversion.

### **PrEP**

**PrEP Needs:** In July, 2012, the US Food and Drug Administration approved a combination pill of tenofovir and emtricitabine (marketed as Truvada, Gilead Sciences, USA) for pre-exposure prophylaxis (PrEP) for HIV. For those at very high risk for HIV, PrEP can significantly reduce the risk of HIV infection if taken daily. Daily PrEP use can lower the risk of getting HIV from sex by more than 90% and from injection drug use by more than 70%. HIV prevention and care providers and other stakeholders lauded this new biomedical intervention for its potential to change the epidemic, perhaps even end it. PrEP is viewed as a critical component to ending the HIV epidemic.

**PrEP Gaps:** More than four years later, however, a national conversation is taking place about the slow uptake of PrEP.

The 2016 Iowa Consumer Needs Assessment (CNA) asked Iowans living with HIV whether their sexual partners used PrEP. Twenty-four percent of the sexually active respondents stated that at least one of their past HIV-negative sexual partners was on PrEP and 23% did not know if their partners were on PrEP. To further explore the potential of PrEP and to assess gaps and barriers to PrEP uptake, several panel discussions have been held around the state, including one that occurred as part of the planning process.

Furthermore, as found in the 2013-2014 AMIS online behavioral survey of MSM, 43% of the respondents said they had heard of PrEP and 38% said they would be willing to use PrEP.

The SCSN process of identifying gaps led to the identification of the following:

- Access point availability is lacking;
- Culturally competent medical providers that prescribe PrEP to impacted populations, notably MSM, young MSM, and MSM of color are lacking;
- Real and perceived costs;

- The promotion of PrEP as an option for HIV prevention, especially outside of the white, gay, cisgendered male population is lacking;
- Hesitancy on the part of prevention providers and advocates who worry that PrEP will reduce condom use, and in turn, increase the transmission of STDs; and
- Fear of stigma on the part of medical providers and pharmacy staff.

## **Condoms**

### Condoms Needs:

Condoms continue to be an important tool in preventing the spread of HIV. When used consistently and correctly, condoms are highly effective in preventing HIV. They are also effective at preventing STDs that are transmitted through bodily fluids, such as syphilis, gonorrhea, and chlamydia.

Condom Gaps: Condoms are readily available both through the IDPH condom distribution program and through retail outlets. Additional venues for distribution will further expand condom availability.

## **Sexual Health Education**

Sexual Health Education Needs: On the 2013 Iowa Youth Risk Behavior Survey, 78.5% of youth reported that they had ever been taught about HIV or AIDS in school. This was part of a downward trend since 1997, when 92% of youth reported having learned about HIV in school. In 2014, 87% of high schools reported teaching about human sexuality, while nearly 86% taught about pregnancy prevention and/or STD prevention. Nearly 89% of high schools reported educating students on HIV prevention.

The IDPH funds sexual health education through two main grants:

PREP (Personal Responsibility Education Program) provides sexuality education to adolescents that is medically accurate, culturally and age-appropriate, and evidence-based and informed. PREP is implemented with the goal of assisting youth to reduce their risk of unintended pregnancy, HIV/AIDS, and other sexually transmitted infections (STIs).

The Abstinence Education Grant Program funds local contractors to deliver Wyman's Teen Outreach Program® (TOP®), to youth ages 12-19. Programming is delivered through a mix of school and community-based settings within several of Iowa's counties. The TOP® curriculum is packed in four age/ stage appropriate levels, and includes: values clarification, relationships, communication/ assertiveness, influence, goal-setting, decision-making, human development and sexuality and community service learning.

Sexual health education Gaps: Among Iowa high school students who participated in the Youth Risk Behavior Survey (YRBS) in 2013, nearly 40% reported ever having had sexual intercourse. Nearly 30% of students reported they had sexual intercourse within the past three months. Over 59% reported that they used a condom during their last sexual intercourse, while 23% reported the use of birth control pills, and 12% of students reported the use of another birth control method. Although the teenage birth rate has declined in Iowa (and nationwide), there were still 2,048 births to teenagers (ages 15-19) in 2014. The estimated annual costs in Iowa associated with teenage childbearing are \$85 million.

In 2015, only one in three schools provided curricula or supplementary materials that included sexual health information relevant to LGBTQ youth, and only 1 in 4 schools provided parents and families with health information designed to increase knowledge of HIV, STDs, or teen pregnancy prevention. Since there is not a requirement for specific topics on sexual health education in Iowa schools, it varies greatly as to what is taught. For example, while nearly 70% of high schools (grades 9, 10, 11,

and 12) teach the importance of using condoms consistently and correctly, less than 49% of middle schools (grades 6, 7, and 8) teach that information. Additionally, slightly over 78% of high schools educate students on how to access reliable health information and services related to HIV, other STDs, and pregnancy, compared to 63% of middle schools.

Although many Iowa schools are teaching information on evidence-based sexual health education, standardizing the curriculum would help ensure that all relevant topics are included, especially sexual health for LGBTQ youth.

### **Clean Syringes and Equipment**

**Clean Syringes and Equipment Needs:** Injection of heroin and opioids is a public health crisis that is associated with increasing numbers of accidental overdose deaths, exposure to and transmission of HIV, viral hepatitis, and other infection diseases, and a range of other health and social problems. Hepatitis C virus can survive outside the body, under certain conditions, for days in dried blood on inanimate surfaces, cookers, and filters (e.g., cotton or a cigarette filter used to strain particulates from a drug solution); and for even longer under favorable conditions, including the barrel of a syringe. In order to reduce the transmission of HIV and HCV, it is critical that people who inject drugs have access to clean syringes and equipment.

**Clean Syringes and Equipment Gaps:** In Iowa, syringe exchange is not legal. This means that people who inject drugs are forced to purchase new syringes or reuse existing syringes. Syringe services programs (including disposal) serve as a safe, effective HIV and HCV prevention method for people who inject drugs to exchange their used syringes for sterile needles, which significantly lowers their risk of HIV and HCV transmission.



### **HIV Testing**

**HIV Testing Need:** People who know their HIV status have the information they need to modify their behavior to protect others and get the treatment and counseling they need to live longer and healthier lives. This is the first critical step in the HIV care continuum for PLWH to achieve the best health outcomes and to end the HIV epidemic. The earlier a person discovers that they are HIV positive after becoming infected, the better their health outcomes and the less likely they are to transmit the virus to someone else.

**HIV Testing Gap:** As described in the epidemiological profile section of this section of the integrated plan, 19% of Iowans living with HIV are unaware of their statuses. Iowa ranks 47th in the nation in the proportion of undiagnosed people living with HIV as well as the percentage of people who report ever having been tested for HIV. Because Iowa lacks a strong epicenter of disease, no one medical

provider likely encounters patients who have HIV frequently in his or her practice. In addition, CDC testing guidelines include a cost-effectiveness threshold below which it is not cost effective to screen for HIV in a given patient population (1 per 1,000 patients or 0.1% HIV prevalence). Nearly all of Iowa's medical providers likely fall below that threshold, and few seem to believe that routine testing is warranted in Iowa. In addition, those living with HIV, diagnosed or not, are often subject to severe stigma and ignorance, especially in the most rural areas of the state. Consequently, many who are at risk don't seek testing. As Iowa moves closer to ending the epidemic, new strategies must be deployed to find those remaining undiagnosed individuals.

In addition, although rates have improved, the number of late testers (diagnosed with AIDS within 3 months of initial HIV diagnosis) remains a concern in Iowa, especially for minorities. African Americans are much less likely in general to access health care in a timely manner and often enter the system when their medical conditions are more complicated and pronounced. 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. Thirty-eight percent of persons diagnosed with HIV in Iowa in 2015 received a diagnosis of AIDS within 3 months.

### **STD Testing**

**STD Testing Need:** According to the CDC, persons who have an STD are at least two to five times more likely than uninfected persons to acquire HIV infection if they are exposed to the virus through sexual contact. In addition, if a person who is HIV positive also has an STD, that person is more likely to transmit HIV through sexual contact than other HIV-infected persons.

Regular testing for STDs is an important part of reducing the risk of contracting or spreading STDs. For sexually active people, STDs can compromise their general health or lead to an incurable, lifelong affliction. Getting tested for STDs is the only way for a sexually active person to be sure of their STD status and stop the spread of STDs, including HIV, among their sexual partners and beyond. The possibility of having co-infections (more than one STD at a time) makes it especially important to get tested for all of the most common STDs on a regular basis.

Iowa has very disproportionate diagnoses of three reportable sexually transmitted diseases among African Americans/blacks in the state: chlamydia, syphilis and gonorrhea. When standardized for population size, African American/black, non-Hispanic Iowans had a chlamydia case rate in 2015 that was more than seven times higher (2,181/100,000) than white, non-Hispanic Iowans (292/100,000) and more than five times higher than the overall state case rate. Despite constituting 3% of Iowa's population, the African American/black population accounted for 18% of the total chlamydia cases reported in 2015. According to national data from the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), Iowa has the highest rate of chlamydia in the U.S. among the African American/black, non-Hispanic population. African American/black, non-Hispanic people accounted for 23% of reported syphilis infections (all stages) in 2015, and had a case rate five times higher (52/100,000) than that of white, non-Hispanic people in the state (5/100,000).

Gonorrhea is the most disproportionately diagnosed condition in the state. In 2015, African American/black, non-Hispanic people accounted for 35% of reported cases of gonorrhea, and had a case rate that was 18 times higher than that for white, non-Hispanic people in the state, at 758/100,000 compared to 342/100,000, respectively. According to national data from NCHHSTP, Iowa is ranked #7 among U.S. states for the rate of gonorrhea among the African American/black, non-Hispanic population.



## STD Testing Gap:

Although progress has been made in increasing STD testing among persons living with HIV, MSM, and other disproportionately impacted populations, there remains a great deal of work to be done to routinize this testing. Efforts have been made to increase testing at oropharyngeal and rectal sites for MSM. Over the past year, The Project at Primary Health Care has submitted 256 specimens from the oropharyngeal or rectal sites. The chlamydia positivity rate at rectal sites was 9.2% and the gonorrhea positivity at rectal sites was 6.7%. Other agencies primarily serving PLWH and MSM have yet to significantly increase their testing at these anatomic sites, yet the positivity seen by one agency indicates that there is likely a large proportion of chlamydia and gonorrhea diagnoses we may be missing. Many providers in the state only test at urogenital sites, which leaves persons with infections at the oropharyngeal and rectal sites undiagnosed. Data from a network of other safety net clinics in Iowa that test for STDs (Community-Based Screening Services, CBSS) also indicate high positivity at the rectal site. In 2015, 12.6% of specimens were positive for chlamydia and 6.4% for gonorrhea. Uptake of extragenital testing has been slow at a large number of sites within CBSS. Because untreated chlamydia and gonorrhea can lead to other complications, including increasing the likelihood of acquiring HIV, it is important to diagnose and promptly treat these infections.

Data from three Part C clinics in 2015 indicate that only 6% of MSM clients were tested for gonorrhea during the year. Despite the low testing rate, a positivity rate of 10% was found at these agencies, suggesting that there may be a significant number of undiagnosed gonorrhea among their patient populations. These data also indicate that 63% of MSM clients were tested for syphilis with a positivity rate of 16%. Although a much larger proportion of MSM were tested for syphilis than gonorrhea, there is still significant work to be done to ensure that we are identifying undiagnosed STDs among these populations and treating them before complications arise and the infections spread further within our communities.



**Linkage Need:** Newly diagnosed HIV infected persons should be promptly connected to HIV care and treatment services to help them stay healthy and prevent transmission to others. Linkage should occur within one month of diagnosis.

Data from the epidemiological profile indicate that of the 124 diagnosed cases, 109 (88%) were linked to care within a month of diagnosis and 120 (97%) were linked within 3 months of diagnosis.

**Linkage Gap:** Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa.

Interestingly, people diagnosed in a region classified as rural areas had higher linkage rates at one month compared to those in urban areas, but these differences had disappeared by three months. Urban areas are defined as any of the ten most populous counties in Iowa (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, or Woodbury). Finally, more U.S.-born people were linked within a month of diagnosis than foreign-born people. Again, both groups achieved high linkage rates by three months.



### **Re-engagement services**

**Re-engagement Needs:** Iowa aspires to keep its HIV positive population continually engaged in care to achieve sustained viral suppression and optimize their individual health outcomes. Studies have shown that newly diagnosed PLWH who missed a clinical visit within the first year of diagnosis have mortality rates twice as high as those who attend all of their medical appointments. Poor health outcomes, such as virologic failure (failure to reach undetectable viral load levels), clinical disease progression (including AIDS-defining illnesses), and death are associated with missing a HIV medical care appointment. Retention in care depends on successfully connecting to an HIV clinic and being actively engaged in care, but this is not an all-or-nothing process. Many clients cycle in and out of care. Iowa's HIV surveillance data suggest that many of those diagnosed with HIV are not accessing medical care and adhering to treatment as indicated. It is estimated that of the approximately 2,367 Iowa residents living with HIV at the end of 2015, an estimated 402 (17%) are not engaged in care with a medical provider.

**Re-engagement Gaps:** To address this challenge, the IDPH - Bureau of HIV, STD, and Hepatitis is pursuing a High-Impact HIV Prevention approach called Data-to-Care (DTC) endorsed by the CDC to use surveillance data to locate and re-engage PLWH in care in order to improve health outcomes and reduce the risk of HIV transmission. By using combinations of scientifically proven, cost-effective, and scalable interventions targeted to the right populations in the right geographic areas, this approach promises to increase the impact of HIV prevention efforts – an essential step in achieving the goals of the NHAS and improving Iowa's HIV Continuum of Care.

Since 2014, the DTC initiative employed a part-time employee housed in the surveillance office to develop and manage an out-of-care database and to conduct initial case investigations to determine whether persons who appear lost to care may have relocated to other surveillance jurisdictions. This employee engaged in case follow up, evaluation of HIV care status and provider information, and monitored viral load suppression. To perform these activities, traditional data sources such as eHARS and CDC's Soundex matching system to determine when a case has potentially moved to another state has been used, as well as non-traditional sources such as HIV client services and case management data, STD surveillance, and partner services data for co-morbidities (and more recent addresses), and LexisNexis for locator information.

## Benefit Management

Benefit Management Needs: Iowa's ADAP and client services program has been on an incredible journey since implementing the provisions of the ACA in January of 2014. Over half of Iowa's 750 ADAP clients were enrolled into the Medicaid expansion program beginning in January 2014, and from 2014 to 2016 the ADAP insurance assistance program has grown from approximately 160 enrollees to over 300 enrollees. While at first glance this seems as if it would be a significant reduction in program costs, initially these two groups were very dynamic. Clients often moved from one program to another and then back again. "Churn" as it has been dubbed, is one of the most important challenges for both the ADAP and client services program. This fluctuation has created substantial administrative and client stress and confusion. In addition, the increased proportion of ADAP clients with insurance coverage has increased the time and knowledge needed to successfully case manage ADAP and other RW Part B clients. Most clients are still unfamiliar with insurance, and thus require considerable guidance to understand and avoid losing their coverage. In addition, some private policies change from year to year by adding prior authorizations for HIV medications or other barriers to obtaining medications.



These changes to the health care landscape has increased paperwork for clients and the service delivery system, and created potential gaps in care for those who are moving between systems of care. Iowa Ryan White case managers and newly developed "field benefits specialists" have absorbed the added responsibility of tracking and assuring completion of these activities. It is critical to note that a reduction in the numbers of participants in the ADAP program has not translated to a reduction in caseloads for case managers or for the need for support services. Indeed, in most ways it has only served to increase the complexity of all cases along the acuity continuum. Health literacy has been the largest area of need for health department staff, case managers, and field benefits staff to address amongst PLWH in Iowa. The ability to obtain, process, and understand basic health information is essential to making informed health decisions. As health care has become more complex the concern of low health literacy presents even more challenges. According to the CDC, low health literacy is directly linked to poor health outcomes, higher rates of hospitalization, and less frequent use of preventative services. Low health literacy is also linked to a person's ability to seek out treatment and management of chronic conditions, which is critical for PLWH to reach suppressed viral loads.

Benefit Management Gaps: In the fall of 2013, IDPH provided funding for 5 regional "field benefits specialists" to deliver education, outreach and in-person assistance to Iowans living with HIV to select, enroll in, and maintain health insurance coverage. These staff ensure that PLWH find their appropriate benefit home expeditiously. Though the strategy is sound, the first 12-18 months were fraught with turnover, training and competency challenges. The turnover, combined with an ever-changing benefits landscape, creates a significant gap in knowledgeable assistance for PLWH in Iowa.

## Case management

Case Management Needs: According to CDC, more than 1.2 million Americans are living with HIV, and approximately 14% (almost 1 out of every 7) are unaware they are infected with the virus. In Iowa, 19% are unaware of their status. For those infected with the disease, the medical outlook is vastly different today than it was in the early days of the epidemic, when treatment was largely

palliative, and life expectancies following diagnosis were relatively short. Today's treatments have transformed HIV from what was once an acute, fatal condition to a chronic, manageable disease. Individuals with the virus have the potential to live long, productive, fulfilling lives. However, many face barriers that prevent them from receiving the full benefit of available treatment options.

A high percentage of PLWH come from populations historically underserved by traditional health care systems. Many struggle with substance abuse problems, homelessness, and mental illness. Men who have sex with men, youth, and people of color (men and women) are disproportionately affected.

Despite years of public awareness and education campaigns meant to dispel misconceptions about the disease, PLWH still experience stigma from society and within health care systems that can discourage them from seeking care. Further, HIV impacts individuals in multiple domains, including the biomedical, psychosocial, sexual, legal, ethical and economic. For those with access to long-term treatment, HIV medications can be very effective but may be accompanied by significant side effects that affect quality of life and add to the complexity of managing co-morbidities like substance abuse, mental illness, or other chronic medical conditions.

If HIV progresses to AIDS, the damage to the immune system makes clients more susceptible to opportunistic infections that may lead to greater need of acute care and hospitalizations. These episodes can be followed by periods of relatively good health, thus illustrating potential changes in a client's level of need over time.

Studies have found a high level of need for care and support services among PLWH. Research suggests that case management is an effective approach for addressing the complex needs of chronically ill clients. Case management can help improve client quality of life, satisfaction with their care, and use of community-based services. Case management also helps reduce the cost of care by decreasing the number of hospitalizations a client undergoes to address HIV-related medical conditions. On the behavioral front, case management has been effective in helping clients address substance abuse issues, as well as criminal and HIV risk behavior.

Clients who access case management are also more likely than those without to follow their drug regimens. One study found that use of case management was associated with higher rates of treatment adherence and improved CD4+ cell counts among PLWH who were homeless and marginally housed. More intensive contact with a case manager has been associated with fewer unmet needs for income assistance, health insurance, home care, and treatment. Recent studies have found that even brief interventions by a case manager can improve the chances that a person newly diagnosed with HIV will enter into care.

It is apparent that optimal care for PLWH requires a comprehensive approach to service delivery that incorporates a wide range of practitioners, including doctors, mental health professionals, pharmacists, nurses, and dietitians, to monitor disease progression, adherence to medication regimens, side effects, and drug resistance. With regard to support services, most programs serving PLWH provide or have referrals to HIV prevention programs, mental health counseling, substance abuse treatment, housing, financial assistance, legal aid, childcare, transportation and other similar services, both inside and outside HIV systems of care. Case managers perform a critical role in facilitating client access to and use of these services, in part, by ensuring they are well coordinated.

**Case Management Gaps:** The HIV continuum of care includes a complex network of medical and social service agencies that can be challenging for PLWH to navigate. In Iowa, PLWH face many barriers to navigating and accessing HIV care, such as transportation, stigma, and financial

resources. Case management services are a vital piece of navigating, accessing, and retaining PLWH in HIV care in Iowa. The Iowa case management model includes four levels of case management each intended to meet the varying needs of PLWH. The client-centered model is designed to provide an appropriate level of case management to best meet a client's needs. Intense medical and non-medical case management are available for individuals with multiple complex medical and psychosocial needs such as medication adherence, mental health/substance abuse issues, homelessness, etc. Less intense levels of case management are available for individuals whose needs are minimal and infrequent and to support individuals toward independence.

Intensive case management services require a team-based approach, low caseloads, and community-based case managing strategies. Building relationships and developing rapport with clients are keys to helping clients meet their goals and maintain regular HIV care. Relationship-based case management that takes place in the community, provided by a multidisciplinary team with a low client to staff ratio, will most likely have a positive effect on high-acuity PLWH. Caseloads include clients with varying needs enrolled in all four levels of case management.

Though the Iowa case management program has a solid design and has in many ways been successful at meeting the needs of clients, many case managers have incredibly high case loads, are considerably underpaid, and lack the time to conduct community-based case management.

### **Transportation**

**Transportation Needs:** Iowans living with HIV often travel great distances to access providers. Few specialized HIV medical providers practice in rural areas, limiting access to medical care for PLWH. Federally funded primary medical providers are located in four cities in Iowa, as well as in Omaha, NE. This means that many rural Iowans must travel great distances to access their services. According to the 2016 CNA, 22% of respondents travel between 30 minutes and one hour one-way to reach a medical clinic and 22% travel over one hour one-way to reach a medical clinic. Twenty-six percent of these individuals travel between 30 minutes and one hour one-way to access support services and 13% reported travelling over one hour one-way to access support services. Thirty-one percent of clients responding to the 2016 CNA needed transportation services to get to appointments in the past 12 months.

**Transportation Gaps:** Almost 20% of the 2016 CNA respondents who needed transportation services found them either very difficult to access or weren't able to access them at all. Transportation gaps exist in both rural and urban locations. Rural patients may not have access to any form of public transportation and may live hours from core services. Some clients who live in urban areas find it difficult to get to their appointments because the agency is located blocks from the bus stop or in a neighborhood where sidewalks are not available. Volunteers from some organizations drive patients to their appointments, but strong networks of buddy systems and volunteers have declined. Providers often do not have the time to coordinate transportation for clients.

### **Housing**

**Housing Needs:** Homelessness and housing instability negatively affect an individual's ability to stay in care and adhere to medical appointments and medications, leading to poor health outcomes and an increased risk that the virus can be transmitted to others. A growing body of research shows that housing is a stronger predictor of HIV health outcomes than individual characteristics such as gender, race, age, drug and alcohol use, mental health issues and receipt of social services.

**Gap:** Current programming to address housing stability for PLWH, namely HOPWA, is not able to fully address the current needs due to funding availability and eligibility requirements. There are

many barriers to utilizing HOPWA assistance for many PLWH in Iowa. The HOPWA legislation was authorized in the Cranston-Gonzalez National Affordable Housing act in 1992 and expired in 1994. The program has continued through annual appropriations; however, many aspects of the program are outdated. Aspects that are considered outdated include the formula and the allowable services, and the overall strategy of the program to address the HIV epidemic. The formula to determine funding available across the county is based on cumulative AIDS cases, which is not considered the best measure of the epidemic. Additionally, the services available through HOPWA do not meet the current needs of the epidemic. For example, the need for homelessness prevention, rapid rehousing services, and medium term rent assistance. Updates to the HOPWA legislation have been proposed, as the National HIV/AIDS Strategy directs HUD to work with Congress to develop a plan to update the HOPWA formula and address distribution disparities.

Data collected during the 2016 Iowa HIV Consumer Needs Assessment indicated that 38% of Iowans living with HIV had experienced homelessness in their lifetime. Many more experience some form of housing instability. Unfortunately, there are few Ryan White case managers who have specialized training, skills, and outreach capabilities to provide intense outreach and support to people experiencing homelessness. Lackin in agencies across the state are homeless outreach workers who are dedicated to PLWH who could provide subject matter expertise on homelessness and HIV overlapping issues, conduct HIV testing and outreach, and build capacity in the community by training other outreach workers on HIV competencies.

### **Prevention for PLWH**

**Prevention for PLWH Need:** As previously discussed, Iowa contracted with Dr. David Holtgrave at to conduct resource allocation modeling for Iowa. The goals of the project were to (1) determine how best to allocate prevention and care funding in Iowa to achieve the most cost-effective prevention of HIV transmission; and (2) to determine whether Iowa could achieve any of the goals of the NHAS given the funding that was available to it.

Dr. Holtgrave recommended a two-pronged approach to prevention in Iowa . First, he recommended spending 35% of available funding on finding HIV-positive persons who were unaware of their infections. Secondly, he recommended spending all remaining funding on reaching HIV positive persons with unsuppressed viral loads who were engaging in risk behaviors with HIV-negative persons or people whose statuses were unknown. Compelling data that a majority of new infections are transmitted by PLWH who know their status was cited in the report. According to a study conducted by Skarbinski, et al., 2015, using 2009 data from CDC, 61% of HIV transmissions come from people who have been diagnosed but who are not in care. Another 8.5% of transmissions are from people who are diagnosed and engaged in the care continuum but who have not achieved viral suppression. Only 30% of transmissions result from people who are undiagnosed. As the proportion of people who are diagnosed increases over time, the proportion of transmissions that come from those who are already diagnosed will only increase. This second recommendation demonstrates the need for expanded prevention for PLWH initiatives in Iowa as well as a more robust re-engagement initiative (described previously in re-engagement services).

**Prevention with Positives Gaps:** Implementing the recommendations from the resource allocation modeling process has proven difficult. There are a small number of PLWH that fit the description of the study and due to the distribution of Iowa's population they are spread out across a large geographical area. The agencies who have working relationships with PLWH vary drastically in size, setting, and staff capacity making a "one-size-fits-all" approach impossible. Very few staff could be dedicated to implement these interventions, and even if this was possible, it is only a very small part of their job.

The 2016 CNA provided basic prevention background information as well as behavioral surveillance information. Fifty-six percent of the 432 respondents indicated they had been sexually active in the past year. About as many respondents use condoms “always” or “most of the time” (48%) as who report using condoms “never” or “some of the time” (52%). Situations in which condoms were not used are detailed below.

When compared to the 2011 CNA, condom use was (always or most of the time) was down (2011:54%, 2016: 48%). It is possible that with expanded prevention options, such as PrEP and with increasing evidence as to the effectiveness of treatment as prevention, condom use is just one of many options for reducing one’s risk of transmitting HIV to others. In other words, reduced condom use doesn’t necessarily mean that respondents have an increased risk of transmitting HIV. As can be seen in the tables below, reduced condom use was associated with PrEP usage among partners and also viral suppression.



### **Medication Adherence Services**

**Adherence Needs:** According to the Guidelines for the Use of Antiretroviral Agents in HIV-1 Adolescents and Adults, strict adherence to ART is key to sustained HIV suppression, reduced risk of drug resistance, improved overall health, quality of life, and survival, as well as decreased risk of HIV transmission. Conversely, poor adherence is the major cause of therapeutic failure. Achieving adherence to ART is a critical determinant of long-term outcomes in PLWH. For many chronic diseases, such as diabetes or hypertension, drug regimens remain effective even after treatment is resumed following a period of interruption. In the case of HIV infection, however, loss of virologic control as a consequence of non-adherence to ART may lead to the emergence of drug resistance and loss of future treatment options. Many patients initiating ART, or already on therapy, are able to maintain consistent levels of adherence with resultant viral suppression, CD4 count recovery, and improved clinical outcomes.

**Adherence Gaps:** Unfortunately, many who start ART, have poor adherence from the beginning and/or experience periodic lapses in adherence over the lifelong course of treatment. Identifying those with adherence-related challenges that require attention and implementing appropriate strategies to enhance adherence are essential roles for all members of the treatment team. Recent data underscore the importance of conceptualizing treatment adherence broadly to include early engagement in care and sustained retention in care. In Iowa, there are opportunities to better integrate adherence principals and strategies at all levels of the care continuum and the services provided along the continuum.

## Social and Structural Barriers

### Population Distribution Barriers and Challenges

One of the most impactful challenges that Iowa faces also seems to be fairly unique to this jurisdiction. Unlike most states, Iowa does not have a single epicenter of disease, such as a large metropolitan area, which would allow for efficiencies in the delivery of services. Instead, there are ten mid-sized population centers (i.e., micropolitan areas) that together contain just over 70% of PLWH. Almost 30% of PLWH in Iowa live in rural areas (defined as counties with populations  $\leq 50,000$ ), compared to the national average of 8%. The Des Moines metropolitan area, Iowa's largest city, contains less than 29% of PLWH in Iowa. This creates an added challenge for delivering services as well as for case finding. Expert services are needed in each of those ten population centers, but even this means that nearly one-third of PLWH must travel to reach one of these centers. It also means that Iowa's resources must be divided to support infrastructure, staff, and supplies in many different areas.

### Stigma

Throughout history, societies have stigmatized groups of all kinds for various reasons, mostly as a result of ignorance, misconception, and superstition. People living with HIV are frequently confronted with stigma, and often face overt and covert discrimination. Outside of HIV service providers and specialized clinics, clients encounter ignorance, bias, and lack of education about HIV disease. Theodore de Bruyn, who has studied stigma among persons with HIV, says that "stigma and discrimination feed on cultural differences and block out common humanity. This happens through social processes whereby the negative associations of HIV lead people - inadvertently or deliberately - to shun, avoid, shame, degrade, or discriminate against [PLWH]."

The stigma associated with HIV is pervasive in many areas where PLWH work and live. For groups already facing discrimination as ethnic or sexual minorities in a predominantly white and heterosexual state, the added stigma of HIV can have an amplified effect. It sometimes even permeates the system established to provide care and often prevents people from accessing or remaining in care.

According to the World AIDS Campaign, stigma and discrimination are the major obstacles to effective HIV prevention and care. Fear of discrimination may prevent people from seeking treatment for HIV or from acknowledging their HIV status publicly. People with, or suspected of having HIV, may be turned away from health care services, denied housing and employment, shunned by friends and colleagues, refused insurance coverage or entry into foreign countries. In some cases, they may be evicted from home by their families, divorced by their spouses, and suffer physical violence or even murder.

The CPG was so concerned about this topic that they included a 40-question section on stigma in the 2005 Consumer Needs Assessment. The HIV Stigma Scale, developed by Barbara Berger, is a self-report questionnaire developed to assess stigmatization perceived and experienced by PLWHA. It is the standard instrument for assessing HIV stigma in psychosocial studies of PLWHA. The stigma scale includes an overall measure of stigma and four subscales that measure personalized stigma,



stigma associated with disclosure of HIV status, negative self-image, and public attitudes. Results of the assessment were combined with results from South Carolina and published. The combined survey had 541 respondents (224 African American/black and 317 white).

In Iowa, the stigma scale illustrated that HIV-positive Hispanic persons reported significantly more stigma than other groups.

The 2011 and 2016 the Consumer Needs Assessment also included ten of the most poignant questions to assess issues around stigma. Fear of disclosing one's HIV status and fear of discrimination have remained the highest levels of stigma among respondents since the 2011 survey. Overall, stigma has slightly increased in the categories measured since 2011 except in termination of employment, fear of discrimination, and delaying HIV testing.

### **Rural Barriers and Challenges**

Although the HIV/AIDS epidemic first appeared in urban areas, it is now widespread across the country. The Ryan White CARE Act with its four-title/part system was first enacted during a time when the epidemic was concentrated in urban areas. Not only has the epidemic changed over the 26 years since the CARE Act was first enacted, but there are unique challenges to providing care in a rural state. According to a fact sheet compiled by the Rural Assistance Center, some of the main challenges to providing care in rural areas are as follows:

- Concerns and fears about breach of confidentiality, discrimination, and stigma are heightened in small communities.
- Rural residents must often travel long distances to access care because adequate services are not available nearby.
- People living in rural areas are less likely than urban residents to have public or private insurance.
- Availability of social services is limited in many rural areas, leading to a host of challenges to retention in care.
- Opportunities for organizations to collaborate to help clients obtain care are restricted.
- Mental health and substance abuse challenges are difficult to address.
- Rural PLWH have less support in following complex drug regimens.

### **Poverty**

Many PLWH in Iowa are very poor. Poverty has been shown to be a strong indicator of overall health, and the income gap in the U.S. is expanding. Given current demographic trends, health disparities affect more Americans every year and will continue to worsen for the next half century. Much of these disparities materialize as unequal access to health care. This leads to increased risks of cancer, birth defects, infant mortality, asthma, diabetes, and cardiovascular disease, as well as lower overall life expectancy.

Many PLWH require assistance with meeting basic needs like food, shelter, and transportation, and have substantially increased likelihoods of co-existing conditions, such as mental illness or substance abuse. In addition, the economic downturn and natural disasters, like floods and tornadoes, create particular hardship for Iowans already struggling to maintain employment and housing stability.

## Trauma History

In recent years, trauma-informed care has been diffused as a model of service provision across a variety of health and social service settings. Trauma is broadly defined as experiences that produce intense emotional pain, fear, or distress, often resulting in long-term physiological and psychosocial consequences.

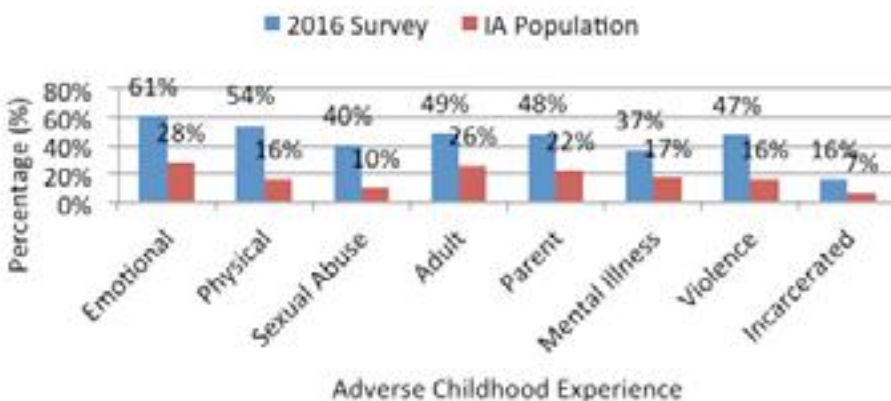
Evidence suggests that a strong relationship exists between childhood trauma and poor physical, social, and mental health outcomes decades later. The Adverse Childhood Experiences Study was the first to examine the relationship between adverse childhood experiences (ACEs) and a range of long-term health and social outcomes. The study supports that ACEs significantly increase the risk of developing heart disease, depression, substance use disorders, intimate partner violence, acquisition of sexually transmitted diseases, and early death. This is because frequent and prolonged activation of the body's stress response during childhood disrupts brain development, causes social, emotional, and cognitive impairment, and ultimately the adoption of health-risk behaviors, disease, disability, and social problems.

The ACE questions were included in the 2016 HIV Consumer Needs Assessment survey to determine the impact of childhood trauma on people living with HIV. The results were compared to the ACE study conducted in the 2012 Iowa Behavioral Risk Factor Surveillance System (i.e., general population of Iowa). The results suggest that experiences of childhood trauma is markedly higher among PLWH versus the general population. See figures below.

## ACE Scores



## Prevalence of Individual ACEs



## Service Provider Barriers and Challenges

### Data

Several Ryan White Part B and C providers have identified the integration of Ryan White programs and their associated data systems as a significant challenge. This is especially true since the implementation of the Affordable Care Act. These agencies are located in Iowa City, Des Moines, Sioux City, and Davenport. Integration of data systems is a challenge and a barrier for case managers and other programmatic staff to focus on clients and service delivery.

### Workforce Shortages

Iowa currently faces a shortage in core medical and support service providers as detailed in the workforce capacity section. This is expected to continue and become a larger barrier as many physicians and providers retire.

### HIV Prevention Provider Barriers

In 2016, the Iowa HIV and Hepatitis Community Planning Group conducted an HIV Prevention Provider Survey. The purpose of the survey was to assess HIV prevention services that currently exist in Iowa to identify services gaps and barriers that impede access to existing services. The electronic survey was distributed widely to agencies throughout the state, including to HIV prevention contractors, family planning agencies, Ryan White Part B and Part C agencies, drug and alcohol prevention and treatment providers, federally qualified health centers (FQHCs), Community-Based Screening Services sites, and community-based organizations. In all, 53 agencies participated in the survey.

Overall, 44 of the 53 respondents indicated that HIV prevention services were offered at their agency. More specifically, 37 agencies provided the services themselves, while seven indicated the prevention services are provided by another agency, but at their location. Among the respondents, 75% reported that their clients include men who have sex with men (MSM), and two-thirds reported serving persons who inject drugs (PWID). Additionally, over half (55%) reported serving clients or patients who are living with HIV. The majority of respondents served clients or patients who are African American (88%) and Latino (94%). Barriers to not providing services included insufficient funding, lack of training for staff, and insufficient staffing.

Over 90% of respondents reported that their agencies provide basic HIV education and condom distribution. Additionally, 86% (n=37) of respondents provide STD screening and treatment, while 60% (n=26) provide HIV rapid testing. Among the respondents who provided HIV prevention services (n=44), the following related services were also provided:

	% Responses	(n)
Hepatitis C Virus testing	58	(25)
Pre-exposure Prophylaxis (PrEP) services	19	(8)
Prevention for People Living with HIV (PLWH)	16	(7)
Medication Adherence Programming for PLWH	12	(5)

Although more than one-third of respondents (37%) reported no significant barriers to providing services, a majority reported one or more of the following challenges.

Barriers to Provision of Services	% Responses	(n)
Insufficient funding	40	(16)
Training for staff	25	(10)
Insufficient staffing	25	(10)

Staff retention	12	(5)
Recruiting qualified staff	10	(4)
Difficulty in prioritizing diverse client needs	10	(4)
We do not have significant barriers to providing services	37	(15)

Respondents were assessed about their training needs related to HIV, STDs, and hepatitis. The following trainings and topics were most requested:

- HIV/STD-related laws
- HIV 101
- HIV Treatment update
- PrEP
- Sexual history taking
- Hepatitis 101
- HIV and Substance Abuse/ Mental Health
- Working with Clients who Identify as Transgender
- STDs 101
- HIV Disclosure Trauma Informed Care
- Prevention for PLWH
- Social Marketing
- HIV Medication Adherence.

## **Client Barriers**

### **Mental Health Barriers**

Mental illness affects PLWH all along the HIV Continuum of Care, especially a person’s retention in medical care and ultimately their ability to reach a suppressed viral load. Mental illness impacts an individual’s ability to keep medical appointments, take medications on time, adapt and practice healthy behaviors, and deal with stress. Data collected from the 2016 Iowa HIV Consumer Needs Assessment indicates that 23% of Iowans living with HIV have severe mental illness, compared to 3% of the general Iowa population. Additionally, barriers to accessing mental health services were assessed. Of the individuals who indicated they needed mental health services, 42% stated the service was not available, and 27% indicated they were nervous or afraid of what people might think or say about accessing services. Utilizing the Behavioral Health Model to integrate mental health services into current clinic settings will increase the availability of services as well as reduce the stigma associated with accessing mental health services.

### **Substance Use**

According to the CDC, substance use and dependence has been closely associated with HIV infection since the beginning of the epidemic. Although injection drug use (IDU) is a direct route of HIV transmission, drinking, smoking, ingesting, or inhaling drugs such as alcohol, crack cocaine, methamphetamine (“meth”), and amyl nitrite (“poppers”) are also associated with increased risk for HIV infection. These substances may increase HIV risk by reducing users’ inhibitions to engage in risky sexual behavior.

Substance use and addiction are public health concerns for many reasons. In addition to increasing the risk of HIV transmission, substance use can affect people’s overall health and make them more susceptible to HIV infection. In those already infected with HIV, substance use can hasten disease progression and negatively affect adherence to treatment.

## **Homelessness**

A stable home environment is critical for persons managing complex drug therapies and potential side effects. Lack of adequate housing affects a large number of PLWH in Iowa, as evidenced by the 2016 Consumer Needs Assessment. Forty-two percent of respondents reported needing help paying for housing. Of those, 47% were African American/black and not Hispanic, 39% were white and not Hispanic, and 48% were Hispanic.

Thirty-eight percent of respondents reported ever having been homeless. Of those who reported being homeless at some point, 48% were African American/black, non-Hispanic, 39% were Hispanic, and 34% were white, non-Hispanic. Categorized by risk factors, the CNA showed that individuals infected with HIV through sharing needles or works, were much more likely than others to have experienced homelessness at some point in their lives. Seventy percent of people who report having injected drugs reported ever being homeless.

# Data: Access, Sources, and Systems

Data were compiled from a number of sources to develop the needs assessment of this plan. A brief description of each data source (and its accompanying data system, when applicable) follows.

## **HIV Surveillance Data**

AIDS has been a reportable disease in Iowa since February 1983. HIV became reportable by name in Iowa on July 1, 1998. HIV disease diagnosis data include persons reported to have tested positive for HIV while a resident of Iowa. Also included are persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown. Only cases reported in Iowa and for whom last name, date of birth, race and ethnicity, gender, date of first HIV disease diagnosis, and vital status (living or deceased at time of report) are known are included in this report. Cumulative HIV infected cases include all reported cases (HIV or AIDS), living or deceased. The data system that houses HIV surveillance data is the electronic HIV/AIDS Reporting System (eHARS). All people living with HIV who were first diagnosed while living in Iowa, or who have lived in Iowa at some point while infected with HIV, or who have accessed care at an Iowa facility and have been reported to IDPH, are included in eHARS. HIV surveillance data were utilized in this plan for the development of the continuum of care.

## **Ryan White Part B 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 Part B Program. Part B services include, but are not limited to, medical case management, non-medical case management, psychosocial service, service outreach, housing assistance, transportation services, oral health care, mental health services, and substance abuse services. CAREWare is the client-level data system used by Iowa's Ryan White Part B Program (including the ADAP) to collect, monitor, and report data (i.e. RSR data). Iowa's CAREWare is networked, which allows the sharing of information between agencies, thereby improving referral times, the tracking of clients, and the tracking of quality indicators.

Information collected from the service providers includes basic demographic and risk information, eligibility verification data, 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, current pregnancy status, etc.). 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 serostatuses, (2) are currently seeking care and treatment services from Ryan White Part B-funded providers, and (3) are financially eligible to receive services. For Part B services reporting purposes, individuals that switched from one Part B service provider to another Part B service provider may be counted twice during the service year.

## **AIDS Drug Assistance Program (ADAP) Data**

The ADAP provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured persons living with HIV/AIDS and who qualify. Iowa's ADAP also provides insurance assistance to qualifying insured persons living with HIV/AIDS who are unable to pay for their premiums, medication copayments, and deductibles. For this report, when "ADAP" data are presented, they represent unduplicated client-level data. However, data presented in the "medication assistance" and "insurance assistance" sections may contain information or counts on the same person if that person utilized both medication assistance and insurance assistance within the same year. An example of

this would be a person previously receiving medication assistance and then later gaining employment and qualifying for insurance coverage. Data on ADAP clients are limited to basic demographic information on each client, eligibility verification data in regards to income and insurance coverage, prescription fills through Iowa's centralized pharmacy (including cost of full-pay medications, or applicable insurance copays and/or deductibles), insurance premium payment information, and laboratory information. Data on ADAP clients are contained in CAREWare.

### **Counseling, Testing, and Referral (CTR) Data**

The Iowa Department of Public Health funds 10 free, confidential HIV testing and counseling sites in Iowa. Participants complete risk assessments as part of a testing visit or during outreach. 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. The CTR sites utilize EvaluationWeb, a web-based data collection and reporting system designed by Luther Consulting, LLC, to collect and report on HIV and hepatitis prevention data.

### **Ryan White Part C Data**

Four Ryan White part C providers in Iowa administer ongoing medical care, medical case management, oral health care, psychosocial services, nutritional, and other care services for persons with HIV infection. Each Part C has a different method of collecting and storing data. Ryan White Service Data Reports (RSR) are submitted to the HRSA annually, and IDPH receives a copy of these summary reports. The RSR data are in aggregate form only. Clients who used more than one provider in a year may be counted more than once. In addition, Ryan White Part C 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 statuses and (2) are currently seeking care and treatment services from Part C-funded providers. Three of the four Part C providers in Iowa utilize CAREWare that is networked with the Part B CAREWare system. The other Part C clinic utilizes CAREWare to maintain their client-level data, but they are not currently networked with the Ryan White Part B CAREWare system.

### **Sexually Transmitted Diseases (STD) Surveillance**

IDPH'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 higher risk 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. STD surveillance data are collected in the Iowa Disease Surveillance System (IDSS), which is a web-based system designed to facilitate reporting, investigation, and surveillance of communicable diseases in Iowa.

### **Hepatitis C (HCV) Surveillance**

IDPH's HIV and Hepatitis Prevention Program conducts surveillance on hepatitis C virus (HCV) infection to monitor the number of reported cases. Acute and chronic cases are reportable, as are positive antibody tests and viral tests, such as viral loads. Positive antibody tests without additional testing do not indicate whether a person is actively infected or had prior exposure and cleared the virus. HCV surveillance data are collected in the Iowa Disease Surveillance System (IDSS).

### **Consumer Needs Assessment (CNA)**

In 2016, the Iowa CNA for people living with HIV was administered online. IDPH contracted with a third party, RDE Systems, to program the online survey making it accessible on computers, tablets, and smartphones. The survey incorporated skip logic, so consumers were only presented with relevant questions within the survey. In addition, the survey was translated into Spanish, and audio was recorded in English and Spanish to reach a larger population of people living with HIV in Iowa who may have a low literacy level or English as their second language. There were 432 total respondents to the CNA. Results from the survey were used in the development of the needs assessment section in this plan.

### **HIV Prevention Provider Resources Survey**

The Iowa CPG administered an online HIV provider survey in 2016. The survey assessed HIV prevention service providers to identify service gaps, as well as barriers which impede access to existing services. There were 53 total organizations that responded to the survey. Results from the survey were discussed in this plan.

### **American Men's Internet Survey (AMIS)**

The AMIS is an online HIV behavioral survey of men who have sex with men conducted by Emory University in Atlanta, Georgia. It collects data on condom use, drug use, HIV and STD testing, and PrEP. Results from Iowans who completed the AMIS study were discussed in this plan.

### **Out-of-Care Key Informant Interviews**

The Data-to-Care (DTC) coordinator administered interviews with Iowans living with HIV who were currently out of care, or were out of care at one point. She utilized HIV surveillance data (CD4 and viral load) and referrals from case managers or medical providers to identify participants. The interviews consisted of several questions, including reasons why the participants never accessed or stopped getting HIV medical care, barriers to linking to care or staying in care, their support system, and factors that would have made it easier to link to care or stay in care. Additionally, she offered assistance to getting into care, when applicable. The qualitative data collected from these interviews were used to inform Iowa's reengagement program, as well as develop the objectives, strategies, and activities included in Section 2 of this plan.

b. Describe any data policies that facilitated and/or served as barriers to the conduct of the needs assessment, including the development of the HIV Care Continuum.

There several data policies in place that facilitated the development of the needs assessment for this plan. They are described below:

- The Bureau of HIV, STD, and Hepatitis has data sharing agreements in place between data systems to facilitate the seamless transfer and sharing of data to improve programs. Data sharing agreements exist between eHARS and CAREWare, as well as eHARS and IDSS. In addition, data sharing agreements are in place between the three CAREWare networked RW Part C providers and the RW Part B Program. Lastly, the RW Part B Program is currently exploring the creation of a data sharing agreement with Iowa Medicaid through the HIV Health Improvement Affinity Group sponsored by the Centers for Medicaid and Medicare Services, the CDC, and HRSA.
- In 2014, an import from eHARS to CAREWare was created to provide viral load and CD4 cell count results in client CAREWare files. The HIV surveillance office imports lab results every other



week. This relieves case managers from the burden of contacting individual medical providers for lab results, allowing them more time to focus on clients and service delivery. This also gives case managers more real-time viral load data, making it easier and quicker for them to identify clients with an unsuppressed viral load and prioritize them for medication adherence interventions. Conversely, medical providers are spared the time-consuming task of providing the results to case managers outside their clinic.

- Currently, the three RW Part C providers that utilize the networked CAREWare are working to create imports from their respective electronic medical record (EMR) system to CAREWare. This will eliminate the data entry duplication that occurs between CAREWare and the EMRs.
- The transition to electronic reporting of CD4 and viral load results to the HIV surveillance office has improved data quality and the timeliness of reporting.
- Iowa's data-to-care program has improved the validity and quality of the HIV surveillance database by identifying who is currently living in Iowa, and who is deceased.
- The 2016 CNA was administered electronically for the first time. Contracting with RDE Systems to create an online CNA streamlined the process of administering the survey and analyzing the results.

c. Describe any data and/or information that the planning group would like to have used in conducting the needs assessment including developing the HIV Care Continuum and the plan, but that was unavailable.

After the CNA was conducted in 2016 and the results were analyzed, it was realized that more specific questions regarding alcohol use should have been asked to align better with the Iowa Behavioral Risk Factor Surveillance System (BRFSS). In particular, the CNA asked if the respondent had consumed more than 4 drinks if female, or 5 drinks if male, in a day within the past 12 months. An additional question should have asked the same question as above, but within the past 30 days.



## GOAL 1: Reducing new HIV infections

**OBJECTIVE A:** By December 31, 2021, decrease the proportion of people who are infected yet unaware of their statuses from 20% in 2014 to 10%.

Strategy 1. Increase the percentage of people who have ever been tested for HIV.

Activities:

- a. Promote preventive health services among current and future health care providers, including discussions of sexual health and adherence to United States Preventive Services Task Force (USPSTF) and Centers for Disease Control and Prevention (CDC) HIV testing guidelines.
- b. Promote opt-out testing at all primary care facilities.
- c. Promote testing and decrease stigma through a coordinated social marketing initiative to the general population and those at increased risk.
- d. Increase testing in non-traditional settings (e.g., substance abuse prevention and treatment facilities, homeless shelters, etc.) by strengthening community partnerships.
- e. Continue to support the expansion of preventive services (i.e., USPSTF and CDC screening recommendations) at Iowa's Federally Qualified Health Centers (FQHCs).

Data Indicators:

- Back calculation estimate
- Number of testing sites and partners
- Proportion of tests administered to priority populations at IDPH-supported sites
- Percentage of eligible partners identified through partner services who received an HIV test

Strategy 2. Expand HIV testing among prioritized populations.

Activities:

- a. Increase HIV testing among people who test positive for syphilis, gonorrhea, and hepatitis C.
- b. Increase the percentage of eligible partners identified through partner services who receive an HIV test.
- c. Focus testing on those at greatest risk for HIV infection (especially MSM) at IDPH-supported test sites.
- d. Recruit individuals at increased risk for HIV infection for testing via social networking



strategy (SNS).

### Strategy 3. Promote new HIV testing technologies.

#### Activities:

- a. Partner with local agencies (e.g., laboratories, Iowa Medical Society, healthcare providers) to promote and disseminate information regarding new testing technologies as they become available.

### Strategy 4. Maintain HIV, STD, and HCV testing in correctional settings.

#### Activities:

- a. Continue to collaborate with the Iowa Department of Corrections to maintain testing and treatment for HIV, HCV, and STDs in state prisons.

### Strategy 5. Remove structural and policy barriers to HIV testing.

#### Activities:

- a. Modernize and update Iowa's law that requires written consent and parental notification for minors.
- b. Ensure that Explanations of Benefits (EOBs) are not barriers to confidential HIV/STD/Hepatitis testing services.
- c. Modernize the HIV testing law to promote routine HIV testing.

*Activities will be carried out by the HIV Prevention Program in collaboration with the Iowa Medical Society, other professional medical associations, medical schools, Iowa Primary Care Association, Iowa Department of Corrections, Iowa Medicaid Enterprise, IDPH-supported test sites, and other community partners.*



**OBJECTIVE B:** By December 31, 2021, reduce the number of new HIV diagnoses by 25% (reduce to 93 from baseline of 124 in 2015).

**Data Indicators:**

- Number of new HIV diagnoses
- Number of providers prescribing PrEP
- Number of STD tests performed
- Number of condoms distributed
- Number of PLWH who participate in CLEAR

Strategy 1: Increase the number of providers prescribing pre-exposure prophylaxis (PrEP) by 100%.

**Activities:**

- a. Promote the uptake of PrEP and nonoccupational post-exposure prophylaxis (nPEP) through the dissemination of educational opportunities (including webinars, trainings, materials, toolkits, telehealth, conferences, etc.) to healthcare providers.
- b. Promote PrEP/nPEP among people at increased risk through the use of a variety of venues, including a PrEP/nPEP access website, provision of literature, marketing campaigns, telehealth, cost assessment, etc.
- c. Develop a social marketing campaign specific to PrEP use for those at increased risk for HIV infections.

- d. Evaluate the need for a PrEP Drug Assistance Program, cost assessment tools, etc.
- e. Formalize a PrEP/nPEP referral protocol for disease intervention specialists.

Strategy 2. Expand STD testing (including oropharyngeal and rectal) among people at increased risk.

**Activities:**

- a. Expand HIV testing among any people testing for chlamydia, gonorrhea, or syphilis; and promote testing of chlamydia, gonorrhea, and syphilis among persons presenting for HIV testing.
- b. Increase STD testing (syphilis, gonorrhea, chlamydia, HCV, HBV) among people living with HIV.

Strategy 3. Expand condom distribution.

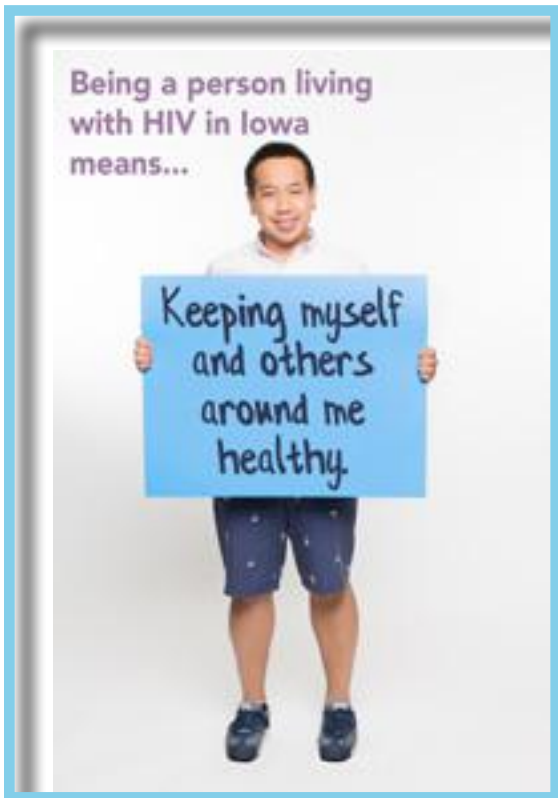
**Activities:**

- a. Increase the number of condoms distributed to prioritized populations in a variety of venues.

Strategy 4. Expand and integrate prevention interventions for people living with HIV (PLWH).

**Activities:**

- a. Increase implementation of appropriately-scaled prevention interventions at current IDPH-funded sites.
- b. Develop mechanisms to collect data and evaluate prevention interventions for PLWH.



Strategy 5. Support evidence-based sexual health education.

Activities:

- a. Continue to partner with the Iowa Department of Education and other agencies and individuals to support this strategy.

Strategy 6. Increase access to clean syringes and equipment among people who inject drugs.

Activities:

- a. Modernize Iowa's paraphernalia law to allow access to clean syringes and equipment by working with community partners and policymakers.
- b. Apply to CDC for approval to utilize federal funds for syringe access.
- c. Expand access to sterile works, injection equipment, and referrals to treatment for Persons Who Inject Drugs (PWID).
- d. Ensure appropriate and accessible disposal systems for drug preparation equipment and syringes.
- e. Expand the availability of substance abuse prevention and treatment programs by working with community partners and policymakers.

*Activities will be carried out by the HIV and STD Prevention Programs in collaboration with CPG, the Gay Mens Health Committee, and the PrEP Advisory Committee.*



# GOAL 2: Increasing access to care and improving health outcomes for PLWH

**OBJECTIVE A:** By December 31, 2021, link 95% of people living with HIV to care services within one month of diagnosis (baseline of 88% in 2015).

Strategy 1. Update protocols for linking PLWH to HIV medical care within 1 month of diagnosis rather than 3 months.

Activities:

- a. Ensure awareness of new standard of linkage.
- b. Assess capacity to meet new standard of linkage.
- c. Strengthen partnerships between clinical and non-clinical sites to enhance linkage of persons living with HIV to access care and treatment within 1 month of diagnosis.

Data Indicators:

- The percentage of people diagnosed with HIV in a given calendar year that had one or more documented medical visits, viral load or CD4 tests within 1 month after diagnosis

Strategy 2. Reduce barriers to accessing HIV care within 1 month of diagnosis.

Activities:

- a. Conduct surveys, key informant interviews, etc. to determine barriers to timely access.
- b. Develop strategies to overcome identified barriers to timely access to care.

Strategy 3. Develop an independent, statewide website to improve access to HIV services in Iowa.

Activities:

- a. Elicit feedback from providers and consumers on the development and information to be contained on the website.
- b. Build the website in response to feedback.

*Activities will be carried out by the HIV and STD Prevention Programs, HIV Surveillance, IDPH-supported test sites, and RW Care Program.*



**OBJECTIVE B:** By December 31, 2021, reduce the proportion of lowans diagnosed with HIV who are out-of-care to 10% or less (baseline of 17% in 2015).

Strategy 1. Maintain an active out-of-care (OOC) surveillance system.

Activities:

- a. Ensure there is dedicated staff to manage the out-of-care information, e.g., referrals, priority lists, discharges, internal investigations, etc.
- b. Determine most effective way to measure the accuracy of the OOC list and the effectiveness of the active surveillance program.

Strategy 2. Implement re-engagement protocols.

Activities:

- a. Educate Ryan White (RW) Part B and Part C providers, IDPH-funded testing sites, and DIS (including county-level DIS) on referrals to the OOC program and their roles in outreach.
- b. Engage private medical providers to make them aware of the initiative and encourage their participation.
- c. Conduct outreach to medical community to ensure consistent messaging with new and current providers.
- d. Conduct outreach and re-engagement services to PLWH who are out-of-care.

Strategy 3. Monitor and evaluate implementation of OOC activities and modify them, as needed.

Activities:

- a. Ensure re-engagement measures are included in the Ryan White Quality Management Plan.
- b. Study trends in data and the most impactful approaches for specific OOC populations.

*Activities will be carried out by the IDPH Bureau of HIV, STD, and Hepatitis.*

Data Indicators:

- Unmet need for HIV primary care as defined by the number of individuals who did not have at least one CD4 and/or viral load test in the preceding year.



**OBJECTIVE C:** By December 31, 2021, increase the retention in care of people living with HIV to 90% (baseline of 83% in 2015).

Strategy 1. Ensure all Iowans living with HIV are enrolled in the appropriate benefit home, understand their benefits, and utilize them appropriately.

**Data Indicators:**

- The percentage of diagnosed individuals who had two or more documented medical visits, viral load or CD4 tests, performed at least 3 months apart if virally unsuppressed, or who had only one viral load lab result but it demonstrated viral suppression during the observed year.

**Activities:**

- a. Develop training for Field Benefit Specialists and educational materials for clients that will increase the abilities of PLWH to understand and maximize use of their health benefits.
- b. Maintain Field Benefit Specialists as part of the comprehensive care team.
- c. Develop partnerships and referral processes with Navigators and Certified Application Counselors (CAC) to ensure PLWH have access to HIV Benefits Specialists.

Strategy 2. Increase awareness of Ryan White services for those outside of the Ryan White care system to ensure all those in need have the opportunity to enroll.

**Activities:**

- a. Develop comprehensive toolkits and provide in-person outreach to private HIV providers, FQHCs, substance abuse and mental health facilities, and other social service agencies.
- b. Include Ryan White service information on the new state website and the accompanying application.
- c. Develop partnerships and referral processes with navigators and CACs to ensure PLWH have access to HIV benefits specialists.

Strategy 3. Develop strategies to address Iowa's geographical population distribution challenge.

**Activities:**

- a. Investigate the potential of expanding telehealth options.
- b. Investigate the potential of expanding satellite clinics for Ryan White core services.
- c. Increase capacity of local primary care providers in rural areas to better co-manage the complexities of treating HIV.
- d. Identify innovative solutions to address transportation barriers.

Strategy 4. Focus efforts on reducing system fragmentation for both patients and providers.

**Activities:**

- a. Promote "one-stop-shop" model, including HIV medical and support services, mental health, dentistry, housing, etc., where feasible.
- b. Investigate need and models for a peer navigator program that would work well in a lower morbidity jurisdiction like Iowa.
- c. Assess system fragmentation on a regional level and develop strategies to reduce fragmentation.





Supporting  
rural  
communities.

## Quality HIV care in Iowa means...



Strategy 5. Utilize current technology to provide care messaging to enhance communication with PLWH and their providers.

### Activities:

- a. Implement a statewide text messaging system for RW-enrolled clients.
- b. Launch customized content management system for RW Part B services.
- c. Ensure RW Part C clinics have the capacity to import their electronic medical record data into CAREWare.

Strategy 6. Ensure robust system of case management.

### Activities:

- a. Achieve a client/case manager ratio to 45:1 at RW Part B case management sites.
- b. Support and encourage increased community-based case management for RW clients with higher need levels.
- c. Ensure each RW Part B agency has access to a qualified Field Benefit Specialists.
- d. Facilitate and develop mechanisms of sharing best practices among RW Part B and Part C providers.

Strategy 7. Address common and significant barriers to staying in care.

### Activities:

- a. Identify innovative solutions to address transportation barriers to medical related appointments.
- b. Increase and streamline resources to address housing barriers.
- c. Provide client-level interventions to identify and address mental health issues.
- d. Provide client-level interventions to identify and address substance use disorders.

*Activities will be carried out by the IDPH Bureau of HIV, STD, and Hepatitis and Ryan White sub-recipients.*

**OBJECTIVE D:** By December 31, 2021, promote adherence to treatment guidelines to increase the number of PLWH who have attained viral suppression to 90% (baseline of 76% in 2015).

Strategy 1. Expand, develop, and maintain programs addressing common and significant health issues affecting PLWH.

**Data Indicators:**

- The percentage of individuals whose most recent HIV viral load within the measurement year was less than 200 copies/mL
- Percentage of women living with HIV seen at a RW Part B/C provider who received a cervical pap smear
- Percentage of PLWH seen at a RW Part B/C provider who completed the hepatitis B vaccine series.
- Percentage of PLWH seen at a RW Part B/C provider who were screened for HCV since their HIV diagnosis.
- Percentage of PLWH who report using tobacco products

**Activities:**

- a. Formalize medication adherence programs at the IDPH-contracted pharmacy and Ryan White providers.
- b. Incorporate medication adherence as a performance measure in Ryan White Quality Management Plan.

Strategy 2. Ensure comprehensive health care for PLWH.

**Activities:**

- a. Increase cancer screenings including anal and cervical Pap smears, mammograms, colonoscopies, etc.
- b. Increase coordination of care for chronic co-morbidities including cardiovascular diseases, diabetes, etc.
- c. Increase promotion of timely vaccinations.
- d. Reduce the number of PLWH who use tobacco products.
- e. Increase access to treatment for hepatitis C among PLWH.



# GOAL 3: Reducing HIV-related disparities and health inequities

**OBJECTIVE A:** By December 31, 2021, reduce the diagnosis disparity rate of African Americans/Blacks (baseline 20 diagnoses per 100,000 in 2015) and MSM by 15% (baseline 362 diagnoses per 100,000 in 2015).

## Data Indicators:

- Number trained on trauma-informed care.
- Number of DIS and prevention contractors trained to assess clients for insurance status.
- Diagnosis disparity rate of African Americans/Blacks
- Diagnosis disparity rate of MSM

Strategy 1. Implement a coordinated statewide marketing initiative to address stigma.

## Activities:

- a. Conduct statewide focus groups with at-risk and disproportionately impacted populations.
- b. Implement social marketing campaigns using media that is relevant to the prioritized populations.
- c. Support the MSM-specific website that contains information about HIV and STD prevention, testing, and treatment.

Strategy 2. Address prejudice and discrimination (racism, ethnocentrism, homophobia, transphobia) by incorporating social movements into programming and other public health work.

## Activities:

- a. Research programs or training on how to understand and address prejudice and discrimination at a community level.
- b. Develop and report findings, including recommendations.

Strategy 3. Promote the integration of cultural humility into organizations' hiring practices and client/patient services.

## Activities:

- a. Identify curricula and provide training.
- b. Provide on-going technical assistance.
- c. Designate a person to coordinate.



Strategy 4. Ensure HIV prevention and care programs use a trauma-informed approach.

Activities:

- a. Require trauma-informed training for all HIV, STD, and Hepatitis Bureau employees and HIV prevention and care contractors.
- b. Continue HIV program involvement in trauma-informed activities at IDPH.
- c. Develop strategies to ensure integration of trauma-informed practices into service delivery.
- d. Develop strategies to measure and evaluate the impact of implementing trauma-informed care practices on health-related quality of life.

Strategy 5. Address HIV-related stigma, provide education and outreach to rural doctors, providers, pharmacists, etc.

Activities:

- a. Strengthen relationships between HIV programs and rural providers.
- b. Develop strategies to address stigma in rural areas.
- c. Provide in-person outreach to rural providers.

Strategy 6. Increase insurance enrollment for people at risk for HIV.

Activities:

- a. Provide training for DIS and IDPH prevention-funded sites to assess for insurance status.
- b. Create data collection tools for assessing insurance status to be used by IDPH-funded testing sites and DIS.
- c. Formalize referral process to access assistance in applying for insurance.



## Supporting people living with HIV in Iowa means...



Strategy 7. Ensure impacted communities are engaged in HIV and Hepatitis Community Planning Group (CPG) and related activities.

### Activities:

- a. Continue to recruit infected and affected communities in CPG activities.
- b. Investigate other community engagement models.
- c. Obtain feedback from highly-impacted communities about barriers and solutions to participation in HIV planning activities.
- d. Develop strategies to minimize the barriers to participation in HIV planning activities.
- e. Supplement the CPG process with innovative approaches to further community engagement.
- f. Ensure appropriate dissemination of information to members of the community.

*Activities will be carried out by the IDPH Bureau of HIV, STD, and Hepatitis, CPG, the Gay Men's Health Committee, and the regional outreach liaison health committee.*

**OBJECTIVE B:** By December 31, 2021, adopt structural approaches to increase viral suppression among African Americans/Blacks (baseline 67% in 2015) and Latino/as (baseline 64% in 2015) to at least 90%.

**Data Indicators:**

- Viral suppression among African Americans/Blacks
- Viral suppression among Latino/as

Strategy 1. Partner with mental health stakeholders to better serve persons at increased risk and PLWH with co-occurring mental health issues.

**Activities:**

- a. Strengthen relationships between HIV programs at IDPH and mental health programs at the Iowa Department of Human Services.
- b. Develop a mental health and HIV-specific toolkit and/or presentation then provide in-person outreach to mental health providers.
- c. Improve HIV providers' understanding of mental health concerns to appropriately screen and refer for services.

Strategy 2. Partner with substance abuse stakeholders to better serve persons at increased risk and PLWH with co-occurring substance use disorders.

**Activities:**

- a. Expand and maintain relationship between HIV, STD, and HCV programs and substance abuse prevention and treatment programs within the IDPH.
- b. Develop a substance abuse and HIV-specific tool-kit and/or presentation then provide in-person outreach.
- c. Investigate the feasibility of Screening, Brief Interventions, and Referral to Treatment (SBIRT) integration into Ryan White Care programs.
- d. Promote the provision of naloxone and medication-assisted therapy for opioid addiction.

Strategy 3. Partner with correctional facilities to better coordinate services for PLWH.

**Activities:**

- a. Build partnerships with community-based corrections.
- b. Partner with County jails to improve post incarceration continuity of care.

Strategy 4. Partner with refugee services and communities to improve HIV prevention and care services for refugees and immigrants.

**Activities:**

- a. Develop relationships with existing refugee/immigrant community based service organizations.
- b. Develop strategies to increase testing and linkage among refugees and immigrants.
- c. Develop strategies to improve engagement, retention, and viral load suppression among refugees and immigrants.

*Activities will be carried out by the IDPH Bureau of HIV, STD, and Hepatitis, the regional outreach liaison health committee, and the Community HIV/Hepatitis Advocacy in Iowa Network (CHAIN).*

# Anticipated Barriers to Implementation

In addition to the barriers described in the *Assessing Needs, Gaps, and Barriers* section, the award of nearly seven million dollars in RW Part B Supplemental funding ironically creates several challenges for Iowa's current infrastructure. In order to launch needed strategies to end the epidemic, additional capacity must be created for new initiatives to be successful.

We have a strong track record of changing policy in the state of Iowa, however, these efforts take time and often include swaying public opinion and building support among key stakeholders, including legislators. As such the policy initiatives, such as syringe access and barriers to testing, may require substantial time.

Addressing social determinants of health requires strong relationships with a coalition of stakeholders and partners outside of public health.

As the HIV program grows, so do the reporting and monitoring requirements.



# Collaborations, Partnerships, & Stakeholders

Since 2012, discussions between IDPH and the broader community have been held to solicit advice for improved programs and insight into barriers encountered. Many of these discussions were recorded in CPG minutes and posted to the IDPH website for public reference. This information was then used during the 2017-2021 planning process to identify successful strategies, barriers, and ongoing needs.

A coordinating committee consisting of IDPH staff, the CPG co-chairs, and a planning consultant meets before and after each CPG meeting, evaluates and makes process recommendations, and identifies opportunities for community engagement extending beyond mere CPG meeting attendance. This process has consisted of inviting community members to visit and speak with the CPG and/or IDPH, conducting focus groups, soliciting CPG membership among prioritized populations, and facilitating two-way communication about HIV, STDs, and hepatitis and the issues with which our work intersects.

The coordinating committee was also tasked with forming the ad hoc plan development group to create this statewide plan. The Plan Development Group (PDG) was comprised of more than 70 people, including all CPG members as well as key stakeholders that included RW Parts B, C, and F (Midwest Training and Education Center-Iowa site), prevention providers, consumers of HIV care and prevention services, and collaborators from the fields of substance abuse, mental health, housing (HOPWA), corrections, STD, hepatitis, Medicaid, education, family planning, community health centers, and the Iowa Primary Care Association.

The PDG met twice in-person. During the first meeting, the group reviewed epidemiological data, state and national trends, program updates, survey results, CPG meeting minutes and other stakeholder discussions, personal experiences, and general information about HIV in Iowa. Input and participation was solicited from group members through small group discussions based on the “world cafe” model. The purpose of this first stage of the planning process was to ensure all participants had a shared knowledge of Iowa’s HIV epidemic. In addition to the day-long meeting held in January, information was also solicited and shared through webinars and an interactive website providing access to slide presentations, research articles, and videos. Virtual discussions were also held on the website to solicit ideas for objectives, strategies, and activities to reach identified goals.





Taking care  
of each other.

A second face-to-face meeting was held to review a draft of the strategic plan that was created by the coordinating committee based on information gathered from the website discussions, in-person meetings, previous CPG meetings, and other input gathered in recent years. The group was divided into small groups and given time to focus on each of the three plan goals. Small group members were asked to review the objectives, strategies, and activities to identify potential barriers, additional ideas that should be included, and ideas for implementation. Facilitators recorded the information and the coordinating committee used the feedback to make final revisions to the plan. The final draft of the plan was submitted to the CPG for final approval and concurrence.

Due to changes in Medicaid expansion and structural changes related to MCOs, we were unable to connect with the appropriate Medicaid delegate. Fortunately, the formation of the HIV Affinity Group Project previously described in Section 1 under Policy Initiatives, this will not be a barrier moving forward.

### **People Living With HIV & Community Engagement**

IDPH is committed to meaningful and responsive engagement with PLWH. The MOBE committee of CPG strives to maintain a balance of PLWH as well as members who reflect the profile of the HIV epidemic in Iowa in terms of race/ethnicity, gender, sexual orientation, exposure mode, and geographic region. Recruitment of PLWH is conducted through HIV providers, peers, and word-of-mouth. PLWH serve in all capacities of the CPG, including leadership roles. A number of CPG members who are living with HIV are also members of their local advisory councils, nonprofit boards, advocacy organizations such as CHAIN, and a state-wide organization called Positive Iowans Taking Charge (PITCH). In this way, PLWH serve in a dual ambassador role serving both local communities and the statewide planning process.



## Updating CPG & Stakeholders, Soliciting Feedback

The 2017-2021 plan development process may be seen as an extension of that which was created in 2012. To accomplish the goals laid out in the 2012-2016 integrated Comprehensive HIV Plan, the department worked with a consultant to realign the CPG committees with the concept of the HIV Continuum of Care. The HIV Continuum of Care is a useful framework that helps evaluate where gaps in HIV prevention and treatment services are occurring. It has been extremely successful and will continue to be used to measure progress and barriers.

Once the comprehensive plan is finalized, the process does not end for the CPG. In fact, the CPG is involved in the ongoing monitoring and implementation of the plan up to and including the time when a new plan is developed. CPG also helps to advise IDPH staff and to determine necessary changes in strategy or activities based on emerging issues or trends.

Once the plan is finalized, each of the CPG committees are assigned the objectives that correspond with their role and they serve in a monitoring and advisory capacity to the IDPH. In addition, as each meeting agenda is developed, the corresponding goal/objective/strategy is indicated next to each agenda item and announced as the topic is introduced. These activities ensure our planning work is tied directly to the comprehensive plan.



## Concurrence

During the September meeting of CPG, the strategic plan was presented to members and each was provided a copy for review. Members were given the opportunity to discuss and provide final feedback on the plan. A motion and second was then made in support of concurrence with the plan and it passed unanimously. The letter signed by the co-chairs follows.



September 8, 2016

Mary Allen  
Centers for Disease Control and Prevention  
Project Officer  
Preventions Program Branch  
1600 Clifton Road, MS E-58  
Atlanta, GA 30333

Magnus Azuine  
Health Resources and Services Administration  
HIV/AIDS Bureau  
5600 Fishers Lane, MS 09W27A  
Rockville, MD, 20857

Dear Mary Allen and Magnus Azuine,

On behalf of the statewide Iowa HIV and Hepatitis Community Planning Group (CPG), we unanimously concur with the submission by the Iowa Department of Public Health of the 2017-2021 Iowa HIV Comprehensive Plan in response to the guidance set forth for health departments and HIV planning groups funded by the CDC's Division of HIV/AIDS Prevention (DHAP) and HRSA's HIV/AIDS Bureau (HAB) for the development of an Integrated HIV Prevention and Care Plan.

The CPG has reviewed the Integrated HIV Prevention and Care Plan submission to the CDC and HRSA to verify that it describes how programmatic activities and resources are being allocated to the most disproportionately affected populations and geographical areas that bear the greatest burden of HIV disease. The CPG concurs that the Integrated HIV Prevention and Care Plan submission fulfills the requirements put forth by the Funding Opportunity Announcement PS12-1201 and the Ryan White HIV/AIDS Program legislation and program guidance.

In late 2015, a plan development group (PDG) was established. It was comprised of all CPG members as well as key stakeholders that included Ryan White Parts B, C, and F (Midwest Training and Education Center-Iowa site), prevention providers, consumers of HIV care and prevention services, and collaborators from the fields of substance abuse, mental health, housing (HOPWA), corrections, STD, hepatitis, Medicaid, education, family planning, community health centers, and the Iowa Primary Care Association. The PDG met twice in-person. During the first meeting, the group reviewed epidemiological data, state and national trends, program updates, survey results, personal experiences, and general information about HIV in Iowa. The purpose of this first stage of the planning process was to ensure all participants had a shared knowledge of Iowa's HIV epidemic. During the second day-long meeting, input and participation was solicited from group members through small group discussions based on the "world cafe" model. In addition, to the two day-long meetings, information was also solicited and shared through webinars and an interactive website providing access to slide presentations, research articles, videos.

The community co-chair and the health department co-chair have been designated by the CPG as signatories to this letter of concurrence. The signatures below confirm the concurrence of the HIV and Hepatitis Community Planning Group with the Integrated HIV Prevention and Care Plan.

Sincerely,

Colleen Bornmueller  
Iowa CPG Community Co-chair  
Family Planning Council of Iowa  
108 3<sup>rd</sup> Street Ste. 220  
Des Moines, IA 50309

Patricia A. Young, R.N., B.S  
IDPH CPG Co-chair  
Iowa Department of Public Health  
Bureau of HIV, STD, and Hepatitis  
Lucas State Office Building, 5<sup>th</sup> Floor  
Des Moines, IA 50319

Iowa's Strategic Plan includes multiple data indicators to monitor progress towards achieving the objectives. Attached is a table compilation of the data indicators, how they will be measured, and the data sources. Progress toward achieving the objectives will be monitored by IDPH and the CPG committees, as well as shared with the CPG annually. This will allow IDPH to remain accountable to stakeholders and the CPG to continue to improve prevention and care efforts to achieve the three goals set forth by the strategic plan.

Annual workplans with shorter time frames and more specific details are also created to correspond with the Comprehensive Plan. During the plan development process, participants were given the opportunity to provide input into the more precise details of the workplans. This input was recorded and will be considered as each department at IDPH develops their workplan.

## **Strategy to Utilize Surveillance and Program Data to Assess and Improve Health Outcomes**

In 2014, Iowa launched its Ryan White Quality Management (QM) Team. The QM Team guides the work of the Ryan White Quality Management Program, which aims to ensure the highest quality of medical and support services to achieve optimal health outcomes for Iowans living with HIV. Currently, the QM Team is monitoring 23 performance measures aligned along the continuum of care. In addition to statewide outcome measures, there are several indicators focused on the Ryan White system of care in Iowa, such as churn within the AIDS Drug Assistance Program and the percent of men who have sex with men (MSM) tested for syphilis at three Iowa Part C clinics. In the future, the Quality Management Plan will be expanded to incorporate more HIV Prevention and STD Program performance measures.

Performance measure data are kept in the web-based dashboard software, ClearPoint. The Ryan White Part B Program, the HIV Prevention Program, the STD Program, and the Bureau of HIV, STD and Hepatitis all have their own scorecards in ClearPoint that contain their respective performance measures. The QM Team uses performance measure data to identify areas for improvement and develop short-term continuous quality improvement (CQI) projects. Currently, the team is designing a CQI project to improve real-time entry of unstable housing status among Ryan White Part B clients in CAREWare. Housing, or lack thereof, affects every bar on the continuum of care. In order to identify and target PLWH who are unstably housed and at risk of falling out of care or virally unsuppressed, real-time data are needed. Thus, this was identified as a priority for the team to address.

Looking ahead, the QM Team will participate more in long-term planning regarding HIV prevention and care in Iowa. Additionally, there are several members of the QM Team who participate on Iowa's HIV and Hepatitis CPG committees, and they will make recommendations to CPG through their respective committees.

# Supporting people living with HIV in Iowa means...



## Iowa Comprehensive Plan Data Indicators

Iowa’s Strategic Plan includes multiple data indicators to monitor progress towards achieving the objectives. The table below is a compilation of the data indicators, how they will be measured, and the data sources. Progress towards achieving the objectives will be monitored by IDPH and the CPG committees, as well as shared with the CPG annually. This will allow IDPH to remain accountable to stakeholders and the CPG to continue to improve prevention and care efforts to achieve the three goals set forth by the strategic plan.

<b>Goal 1, Objective A: By December 31, 2021, decrease the proportion of people who are infected yet unaware of their statuses from 20% to 10%.</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
Back calculation estimate	2016	Number of persons living with HIV infection who are undiagnosed at the end of the calendar year	Number of persons living with HIV infection (diagnosed or undiagnosed) at the end of the calendar year	Enhanced HIV/AIDS Reporting System (eHARS)
Number of HIV testing sites and partners	2016	Number of IDPH-funded agencies implementing HIV testing	None	HIV Prevention Program data
Proportion of tests administered to priority populations at IDPH-supported sites	2016	Number of HIV tests administered to African Americans and Hispanics at IDPH-supported CTR sites	Number of HIV tests administered at IDPH-supported CTR sites	EvaluationWeb
Percentage of eligible partners identified through Partner Services who receive an HIV test	2016	Number of eligible partners identified through Partner Services in the measurement period who receive an HIV test	Number of eligible partners identified through Partner Services in the measurement period	Iowa Disease Surveillance System (IDSS)



<b>Goal 1, Objective B: By December 31, 2021, reduce the number of new HIV diagnoses by 25% (reduce to 93 from baseline of 124 in 2015).</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
Number of new HIV diagnoses	2016	Number of HIV diagnoses reported during the calendar year	None	eHARS
Number of prescribers providing PrEP	2016	Number of providers in Iowa who are prescribing PrEP	None	Gay Men's Health Committee
Percentage of PLWH tested for syphilis seen at a Ryan White Part B/C Provider	2016	Number of PLWH tested for syphilis seen at a Ryan White Part B/C Provider	Number of PLWH seen at a Ryan White Part B/C Provider in which a syphilis test is medically indicated	CAREWare
Number of condoms distributed	2016	Number of condoms distributed by the Iowa Department of Public Health HIV and STD programs	None	HIV and STD Prevention Programs Data
Number of PLWH who participate in CLEAR	2016	Number of PLWH who participate in Choosing Life: Empowerment! Action! Results! (CLEAR)	None.	CAREWare

<b>Goal 2, Objective A: By December 31, 2021, link 95% of people living with HIV to care services within one month of diagnosis (baseline of 88% in 2015).</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
The percentage of people diagnosed with HIV in a given calendar year who had one or more documented medical visits, viral load or CD4 tests within one month of diagnosis.	2016	The number of lowans diagnosed with HIV in a given calendar year who had one or more documented medical visits, viral load or CD4 tests within one month of diagnosis	The number of lowans diagnosed with HIV in a given calendar year	eHARS

<b>Goal 2, Objective B: By December 31, 2021, reduce the proportion of lowans diagnosed with HIV who are out-of-care to 10% or less.</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
Unmet need for HIV primary care as defined by the number of individuals who did not have at least one CD4 and/or viral load test in the preceding year	2016	Number of lowans living with HIV, aware of their status, and have not had a CD4 cell count and/or viral load lab result in the 12 month measurement period	Number of lowans living with HIV in the measurement period	eHARS

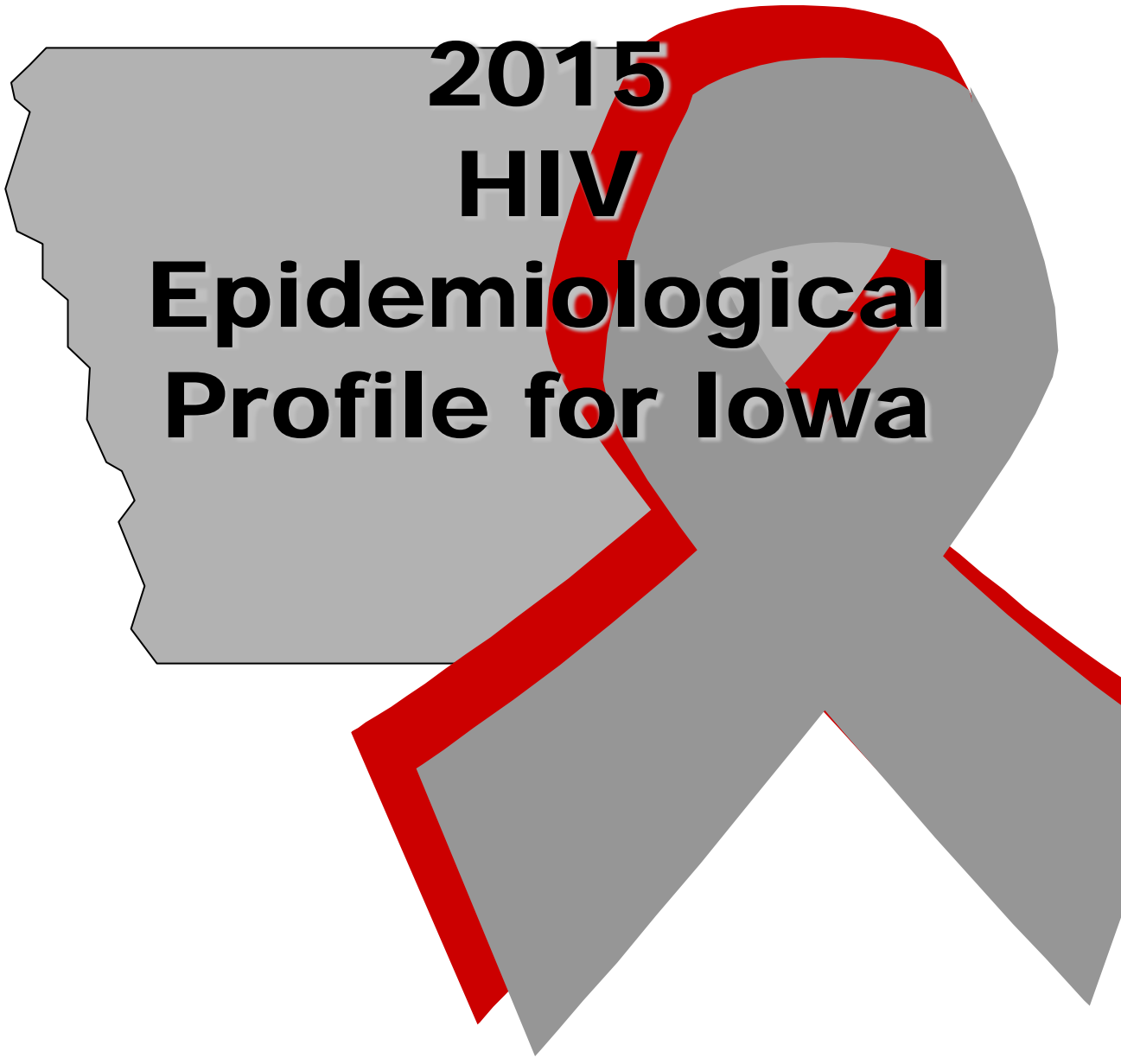
<b>Goal 2, Objective C: By December 31, 2021, increase the retention in care of people living with HIV to 90% (baseline of 83% in 2015).</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
The percentage of diagnosed individuals who had two or more documented medical visits, viral load or CD4 tests, performed at least 3 months apart if virally unsuppressed, or who had only one viral load lab result but it demonstrated viral suppression during the observed year	2016	Number of people with two or more documented medical visits, viral load, or CD4 tests performed at least 3 months apart if virally unsuppressed, or who had only one viral load lab result but it demonstrated viral suppression, during the measurement period	The number of lowans with HIV during the measurement period who were diagnosed by previous year-end and alive at year-end	eHARS

<b>Goal 2, Objective D: By December 31, 2021, promote adherence to treatment guidelines to increase the number of PLWH who have attained viral suppression to 90% (baseline of 76% in 2015).</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
The percentage of individuals whose most recent HIV viral load within the measurement year was less than 200 copies/mL	2016	Number of lowans living with HIV whose most recent viral load within the measurement period was <200 copies/mL	Number of lowans living with HIV during the measurement period	eHARS

The percentage of women living with HIV seen at a Ryan White Part B/C provider who received a cervical Pap smear	2016	Number of women living with HIV who were seen at a Ryan White Part B/C provider and received a cervical Pap smear during the measurement period	Number of women living with HIV who were seen at a Ryan White Part B/C provider in which a cervical Pap smear was medically indicated during the measurement period	CAREWare
The percentage of PLWH seen at a Ryan White Part B/C provider who completed the Hepatitis B vaccine series	2016	Number of PLWH seen at a Ryan White Part B/C provider who have ever completed the Hepatitis B vaccine series	Number of PLWH seen at a Ryan White Part B/C provider in which the Hepatitis B vaccine series was medically indicated	CAREWare
The percentage of PLWH seen at a Ryan White Part B/C provider who were screened for HCV since their HIV diagnosis	2016	The number of PLWH seen at a Ryan White Part B/C provider who were ever screened for HCV since their HIV diagnosis	Number of PLWH seen at a Ryan White Part B/C provider in which Hepatitis C screening is medically indicated.	CAREWare
Percentage of PLWH who report using tobacco products	2016	The number of PLWH who report using tobacco products on the Consumer Needs Assessment	The number of PLWH who complete the Consumer Needs Assessment	Consumer Needs Assessment

<b>Goal 3, Objective A: By December 31, 2021, reduce the diagnosis disparity rate of African Americans/Blacks (baseline 20 diagnoses per 100,000) and MSM by 15% (baseline 362 diagnoses per 100,000)</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
Diagnosis disparity rate of African Americans/Blacks	2016	Diagnosis rate for African Americans, as calculated by the number of HIV diagnoses among lowans identifying as African American in the measurement period	The rate (per 100,000 population) of HIV diagnoses for the overall population of lowans in the measurement period	eHARS The diagnosis disparity rate is calculated by subtracting the diagnosis rate for the overall population from the diagnosis rate for the specific group
Diagnosis disparity rate of men who have sex with men (MSM)	2016	Diagnosis rate for MSM, as calculated by the number of HIV diagnoses among lowans identifying as MSM in the measurement period	The rate (per 100,000 population) of HIV diagnoses for the overall population of lowans in the measurement period	eHARS The diagnosis disparity rate is calculated by subtracting the diagnosis rate for the overall population from the diagnosis rate for the specific group
Number of Bureau staff and Prevention and Care contractors trained on trauma-informed care	2016	Number of Bureau staff and Prevention and Care contractors who complete the web-based training on trauma-informed care.	None.	Coldspring Center
Number of DIS and prevention contractors trained to assess clients for insurance status	2016	Number of DIS and prevention contractors trained to assess clients for insurance status	None.	HIV Prevention Program data

<b>Goal 3, Objective B: By December 31, 2021, adopt structural approaches to increase viral suppression among African Americans/Blacks (baseline 67% in 2015) and Latino/as (baseline 64% in 2015) to at least 90%</b>				
<b>Data Indicators</b>	<b>Baseline Year</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>
Viral suppression among African Americans/Blacks	2016	Number of African American lowans living with HIV whose most recent viral load within the measurement period was <200 copies/mL	Number of lowans who identify as African American and are living with HIV during the measurement period	eHARS
Viral suppression among Latino/as	2016	Number of Latino lowans living with HIV whose most recent viral load within the measurement period was <200 copies/mL	Number of lowans who identify as Latino and are living with HIV during the measurement period	eHARS



2015  
HIV  
Epidemiological  
Profile for Iowa

Bureau of HIV, STD, and Hepatitis  
Iowa Department of Public Health





# Acknowledgments and Dedication

We dedicate this profile to Jerry Harms, who spent 27 years working as an HIV/AIDS Surveillance Coordinator in Houston, TX, and Des Moines, IA. We'll miss Jerry's attention to detail, his commitment to making a difference, and his great appreciation of all things "punny."

## *In Memoriam*

Jerry Harms  
September 24, 1943 – August 26, 2016

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## EXECUTIVE SUMMARY

### EPIDEMIOLOGY OF HIV, AIDS, AND STDs IN IOWA

There were 124 HIV diagnoses in 2015, the highest since 126 in 2009. This was up 26 (27%) from 98 diagnoses in 2014 and 10 (9%) above the 5-year (2010-2014) average of 114. Since 2006, males have accounted for over 80% of HIV diagnoses and sex with another male is the reported mode of exposure to HIV for over 75% of male diagnoses. By far the greatest numbers of diagnoses occur among persons 25 to 44 years of age. Diagnoses among persons 13 through 24 years of age increased to a new peak of 33 (27%) in 2015 after increasing from a low 12 (10%) in 2007. The ten year average diagnosis among persons 13 through 24 years of age remained steady with a ten year average of about 20 diagnoses annually.

Black, non-Hispanic males, black, non-Hispanic females, and Hispanic males are over-represented among persons with HIV/AIDS when their population sizes are taken into account. Black, non-Hispanic males had HIV diagnosis rates more than six times that of white, non-Hispanic males in 2015. Hispanic males had rates over two times that of white, non-Hispanic males in 2015. Black, non-Hispanic females had the highest diagnosis rate among females at more than 14 times that of white, non-Hispanic females in 2015.

Diagnoses of AIDS peaked in 1992 at 157 diagnosed cases. This period coincided with the expansion of the Centers for Disease Control and Prevention (CDC) definition of AIDS to include CD4+ cell counts less than 200 cells per microliter or less than 14% of total lymphocytes. However, the introduction of highly active antiretroviral therapy (HAART) sparked a dramatic decline in AIDS diagnoses from 1995 through 1998. After reaching a low of 60 diagnosed cases in 1998, the number of Iowa AIDS diagnoses gradually increased to an annual average of 73.2 diagnoses from 2006 through 2015.

Iowa continues to struggle to get people tested and diagnosed soon after infection. The percentage of persons that received an AIDS diagnosis within three months of initial HIV diagnosis (“late testers”) reached a low of 32% among people diagnosed in 2011. However, the proportion of late testers remains high in Iowa with a 10-year (2006-2015) average of 39%. In 2015, it was 38%.

The number of deaths among people living with HIV diagnosed in Iowa continues to decrease after peaking at 103 deaths in 1995. From 2005 through 2014, death numbers have fluctuated from a low of 24 in 2008 to a high of 44 in 2014. Of the 44 deaths among Iowans with HIV disease in 2014, the last year for which death ascertainment is partially complete, 17 (39%) were caused in some part by the underlying HIV disease, 18 (41%) were determined to not be caused by underlying HIV disease, and the cause of 9 (20%) is unknown. The 44 deaths reported in 2014 are in line with the average of 31 for the 10 years, 2004 through 2013. Twenty deaths have been reported so far for 2015. Death ascertainment for 2015 is incomplete pending linkage to state and national death registries.

The most significant feature of HIV in Iowa 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 decreased the number of deaths among persons with HIV disease, have increased the number of persons living with HIV to unprecedented levels and have taxed limited resources for care and treatment. In previous prevalence calculations, IDPH included only persons who were residents of Iowa at first diagnosis of HIV or AIDS regardless of where they currently lived. Although consistent with CDC methodology, this did not take into account the fact some of the cohort had moved from the state or the fact some persons diagnosed in other states had moved to Iowa. Based on outcomes of two special projects and full implementation of the re-engagement project, IDPH decided to use “current address” rather than “Iowa residence at diagnosis” to calculate HIV prevalence for 2015.

Using current address, there were 2,496 persons diagnosed and living with HIV disease (PLWH) in Iowa as of December 31, 2015, a prevalence of 80 per 100,000 persons. Iowa’s prevalence is lower than the Midwest prevalence of 162 per 100,000 and the U.S. prevalence of 291.5 per 100,000. While the ten most populous counties (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury) account for 51% of the total population of Iowa, 73% of persons living with HIV infection in 2015 were living in these counties and 69% of persons newly diagnosed with HIV disease in 2015 were diagnosed as residents of those counties. Among counties with at least 15 persons living with HIV disease, Polk, Scott, Johnson, Linn, Pottawattamie, and Buena Vista counties have prevalence rates greater than 100 per 100,000 or 0.1%. Woodbury and Black Hawk counties have prevalence rates above the state average but less than 100 per 100,000 persons.

Iowa’s HIV Continuum of Care shows that there were 2,922 people living with HIV disease and residing in Iowa on December 31, 2015. Of these, 81% had been diagnosed, leaving 529 Iowans who have yet to be diagnosed with HIV. Of the 124 diagnosed cases in 2015, 88% of people diagnosed with HIV were linked to care within one month; and 97% were linked within three months. Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa. Of the PLWH in Iowa at the end of 2015, 83% were retained in care according to Iowa’s definition of retention in care. Among Iowans diagnosed and living with HIV, 76% were virally suppressed, but among those who were retained in care, 91% had achieved viral suppression. The same groups that take longer to link are less likely to be retained in care or to achieve viral suppression.

Other points of interest include:

- Iowa has an unusually disperse distribution of PLWH compared to other states. Polk County, which is the most populous county in Iowa and includes the Des Moines metropolitan area, contains only approximately 29% of all Iowans living with HIV. Despite this, there has been a gradual trend toward a more urban distribution of HIV infection and other STDs in Iowa. Over 74% of persons diagnosed with HIV between 2006 and 2015 were residents of one of Iowa’s ten most populous counties at time of initial diagnosis. These counties house 51% of Iowa’s general population, but account for two-thirds of new chlamydia infections and nearly 80% of new gonorrhea infections.
- The median age of adolescents and adults (13 years of age and older) diagnosed with HIV in 2015 was 35.0 years, slightly lower than the five-year (2010-2014) median of 37.2 years. In

2015, the median age at diagnosis for adult/adolescent males was 35.0 years, the same as for adult/adolescent females. In 2015, 42% of females and 45% of males were 25 to 44 years of age at time of diagnosis. This was lower than the five-year (2010-2014) averages of 50% for females and 49% for males.

- The general population of Iowa is 87.1% white, non-Hispanic; 3.3% black, non-Hispanic; 5.6% Hispanic, all races; and 4.1% other races and ethnicities. However, only 60% of HIV diagnoses in 2015 were among white, non-Hispanic persons, highlighting a substantial disparity in diagnoses among some racial and ethnic minorities. Nineteen percent of HIV diagnoses were among black, non-Hispanic persons, 13% were Hispanic, and 8% were other races. The HIV diagnosis rate in 2015 was 22.9 diagnoses per 100,000 persons for black, non-Hispanic persons, 9.0 for Hispanics, and 2.7 for white, non-Hispanic persons in Iowa.
- Fifty-four percent of persons living with HIV or AIDS as of December 31, 2015, reported male-to-male sexual contact (MSM) as their primary risk. Heterosexual contact was the primary risk for 18% of persons living with HIV or AIDS, while 8% were injection drug users (IDU), 7% reported both IDU and MSM and 11% had no risk identified.
- Chlamydia is the most frequently reported STD in Iowa, with 12,133 cases, the highest number ever, reported in 2015. Other than a slight decrease in 2013, the incidence of chlamydia has climbed steadily with a 64% increase in the number of diagnoses in the last ten years. Similarly, the incidence of gonorrhea has increased by 38% since 2005. In contrast, the incidence of syphilis has changed dramatically in recent years. There was a 450% increase in the number of infectious syphilis cases (primary, secondary, and early latent) between 2011 and 2013. Although incidence has decreased by 18% since 2013, numbers continue to remain relatively high. Men who have sex with men are disproportionately impacted by syphilis, and account for approximately 70% of the cases among men.
- The male-to-female ratios for chlamydia and gonorrhea differ between minority populations and the white, non-Hispanic population. White, non-Hispanic *females* with gonorrhea diagnoses outnumber white, non-Hispanic males by 1.2 to 1 (male-to-female ratio of 0.83), while black, non-Hispanic *males* outnumber black, non-Hispanic females 1.4 to 1 (male-to-female ratio of 1.4). This may indicate that minority females are not being screened for asymptomatic infection at the same rate as other women in the state.
- As of March 31, 2016, the Iowa Department of Public Health had received 21,334 reports of hepatitis C infection among Iowans. Based upon this number of reports, there are likely to be 35,216 to 129,127 Iowans with hepatitis C infection, with 15,061 to 109,758 of these cases undiagnosed. Since 2000, approximately 9,000 hepatitis C tests were conducted at IDPH-supported counseling, testing, and referral sites, with an average annual positivity of 10%. HIV-HCV co-infection rates have not been determined.

## INTRODUCTION

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This profile describes the epidemiology of HIV infection, hepatitis C, and other reportable sexually transmitted diseases (STDs) in Iowa through 2015. The report characterizes the distribution of these diseases in terms of geography, race, gender, age, and associated causal factors. This epidemiological profile also serves as guidance for Iowa's comprehensive HIV prevention and care plan. The description of HIV disease 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. Six key questions will be addressed:

1. What are the sociodemographic characteristics of the general population of Iowa?
2. What is the epidemiology, including the geographical distribution, of HIV disease 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 is the overall description of the continuum of HIV care in Iowa and among selected subpopulations?



## DATA SOURCES

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Data were compiled from a number of sources to present the most complete picture of the epidemiologic profile of HIV and other sexually transmitted diseases. 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

#### *HIV Surveillance*

AIDS has been a reportable disease in Iowa since February 1983. 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 people living with HIV 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 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 living with HIV 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. 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 disease diagnosis data include persons reported to have tested positive for HIV while a resident of Iowa. Also included are persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown. Only cases reported in Iowa and for whom last name, date of birth, race and ethnicity, gender, date of first HIV disease diagnosis, and vital status (living or deceased at time of report) are known are included in this report. Cumulative HIV disease includes all reported cases (HIV or AIDS), living or deceased.

### Diagnosis Date and Completeness of Surveillance Data

Data will be presented by the year either HIV or AIDS was diagnosed (regardless of when it was reported). Many diagnoses reported in a given year will have been made in some previous year but not reported immediately. In 2015, all of HIV disease diagnoses were received within 6 months of diagnosis date.

Evaluations of the surveillance system indicate that 99% of diagnosed HIV cases have been reported and that reporting delay is not an issue in Iowa. 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 persons well. They do not, however, include persons who have been infected but who have not been diagnosed. These reports include those diagnoses made through December 31, 2015.

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

### Surveillance Exposure Categories

For surveillance purposes, HIV 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. STD Surveillance

### *STD Case Reporting*

IDPH’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 higher risk 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.

## 3. Hepatitis C Surveillance

### *Hepatitis C Case Reporting*

IDPH’s HIV and Hepatitis Prevention Program conducts surveillance on hepatitis C virus (HCV) infection to monitor the number of reported cases. Acute and chronic cases are reportable, as are positive antibody tests and viral tests, such as viral loads. Positive antibody tests without additional testing do not indicate whether a person is actively infected or had prior exposure and cleared the virus. Approximately 15 to 25% of people with positive antibody tests spontaneously clear the virus without treatment, and may no longer be infected with HCV despite the positive antibody test. Injection drug use and sharing of needles are common routes of acquisition of HIV and HCV. In the United States, it is estimated that 25% of people living with HIV are co-infected with hepatitis C (Centers for Disease Control and Prevention, 2015). Co-infection with HIV and HCV is particularly common (50 to 90%) among people living with HIV who inject drugs. HCV infection progresses more rapidly to liver damage in persons living with HIV. Additionally, HCV infection may impact the management of HIV infection (CDC, 2015).

#### 4. HIV Counseling and Testing Data

##### *Counseling and Testing System (CTS)*

The Iowa Department of Public Health funds 10 free, confidential HIV testing and counseling sites in Iowa. Participants complete risk assessments as part of a testing visit or during outreach. In 2015, 4,174 HIV tests were conducted. Twenty-four persons tested positive (0.57% positivity rate). 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.

#### 5. Vital Statistics Data

##### *Iowa 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. The surveillance program matches data with death and birth databases annually to ascertain deaths of persons with HIV disease and births to women living with HIV.

##### *National Death Index (NDI) Data*

The surveillance submits data to the NDI office annually for linkage with NDI data. The linked data from NDI office is processed to update death information of all true matches.

#### 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 Part B 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 Part B Program. To be eligible for Part B services, a person must have HIV, be a resident of Iowa, and have an income that is equal to or less than 400% of the current year's federal poverty level. Part B services include medical case management, non-medical case management, emergency financial assistance, transportation services, outpatient medical care, oral health care, mental health services, and

substance abuse services. Throughout Iowa, Part B services may vary by location depending on the size of the agency and the number of individuals that are served.

The Ryan White Part B Program implemented the statewide deployment of CAREWare in September 2008. A central server is used to house data from all Part B providers, including the ADAP and one Part C provider. Two other Part C clinics in Iowa utilize CAREWare to maintain their client-level data. Utilization of the current version of CAREWare will ensure that all required client-level data elements will be collected by providers and reported to HRSA.

Furthermore, the “real time” nature of the networked system allows the Ryan White Part B Program to monitor specific indicators more closely (e.g., number of clients without medical insurance), instead of waiting several months until the provider is required to submit a report. Iowa is one of the first states to use the ADAP module in CAREWare, and there is great potential for measuring and improving quality through this mechanism. CAREWare allows the sharing of information between agencies, thereby improving referral times, the tracking of clients, and the tracking of quality indicators.

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 serostatuses, (2) are currently seeking care and treatment services from Ryan White Part B-funded providers, and (3) are financially eligible to receive services. For Part B services reporting purposes, individuals that switched from one Part B service provider to another Part B service provider may be counted twice during the service year.

#### *AIDS Drug Assistance Program (ADAP)*

The AIDS Drug Assistance Program provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured persons living with HIV/AIDS and who qualify. Iowa’s ADAP also provides insurance assistance to qualifying insured persons living with HIV/AIDS who are unable to pay for their premiums, medication copayments, and deductibles. For this report, when “ADAP” data are presented, they represent unduplicated client-level data. However, data presented in the “medication assistance” and “insurance assistance” sections may contain information or counts on the same person if that person utilized both medication assistance and insurance assistance within the same year. An example of this would be a person previously receiving medication assistance and then later gaining employment and qualifying for insurance coverage. Information collected in the database is limited to basic demographic information on each client, eligibility verification data in regards to income and insurance coverage, and laboratory information at the time of application.

*Ryan White Part C Data*

Ryan White Part C funding provides for ongoing medical care, medical case management, 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 Part C providers in Iowa. Each has a different method of collecting and storing data. Ryan White Service Data Reports (RSR) are submitted to the Health Resources and Services Administration (HRSA) annually, and IDPH receives a copy of these summary reports. The RSR data are in aggregate form only. Clients who used more than one provider in a year may be counted more than once. In addition, Ryan White Part C data cannot be generalized to all people with HIV living in the state because they are collected only for persons who (1) know their HIV statuses and (2) are currently seeking care and treatment services from Part C-funded providers.

## **GUIDELINES TO FACILITATE INTERPRETATION OF THE DATA**

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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.** The first AIDS case reported in Iowa was diagnosed in 1983. At that time, only AIDS diagnoses were reportable. Reporting of HIV diagnoses (including the name of the person diagnosed) began July 1, 1998. Reporting of viral loads and CD4+ cell counts began in 2005. HIV surveillance reports may not be representative of all persons with HIV disease because as many as 20% of Iowans living with HIV may be undiagnosed, according to estimates from CDC. The tables and figures in this profile do not account for reporting delays, although electronic laboratory reporting has greatly decreased potential delays in reporting. HIV disease diagnosis data are from the entire state of Iowa, but represent those individuals living in Iowa at the time of diagnosis. State and county of initial diagnosis do not change even if a person later changes counties or moves out of state. HIV prevalence data represent all persons living with HIV disease (PLWH) in Iowa at the end of 2015 regardless of where they were originally diagnosed with HIV disease. Individuals who are diagnosed and reported while residing in another state and who subsequently move to or receive care in Iowa are included in this 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. **Diagnosis rates** have been calculated for 12-month periods per 100,000 population. The denominator, unless otherwise noted, for calculating rates is based on 2015 population estimates from the U.S. Bureau of Census. The numerator is the number of diagnoses 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 diagnoses 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.

## ORGANIZATION OF THE PROFILE

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The epidemiological profile is organized into three main sections, within which eight 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 disease in Iowa?**

Examines the magnitude and distribution of the disease in the state by sex, 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, viral hepatitis 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 disease who receive HIV services in Iowa?**

Describes Ryan White Part B and Part C 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 disease in Iowa?**

Characterizes the patterns of use of HIV primary medical care and support services by persons with HIV/AIDS.



### **Section 3: HIV Care Continuum Key Question and Concepts**

This section focuses on Iowa's HIV Continuum of Care. It analyzes diagnoses, linkage to care, retention in care, and viral suppression. It is organized around one key question:

**Question 1: What does Iowa's HIV Continuum of Care look like and how does it vary by population?**

Describes Iowa's overall continuum of care and issues related to diagnoses, linkage, engagement in care, and viral suppression, and describes how specific populations vary in their progress through the continuum of care.

*Section*

**1**

**CORE EPIDEMIOLOGICAL  
QUESTIONS**

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

**Question 2:** What is the epidemiology, including 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***

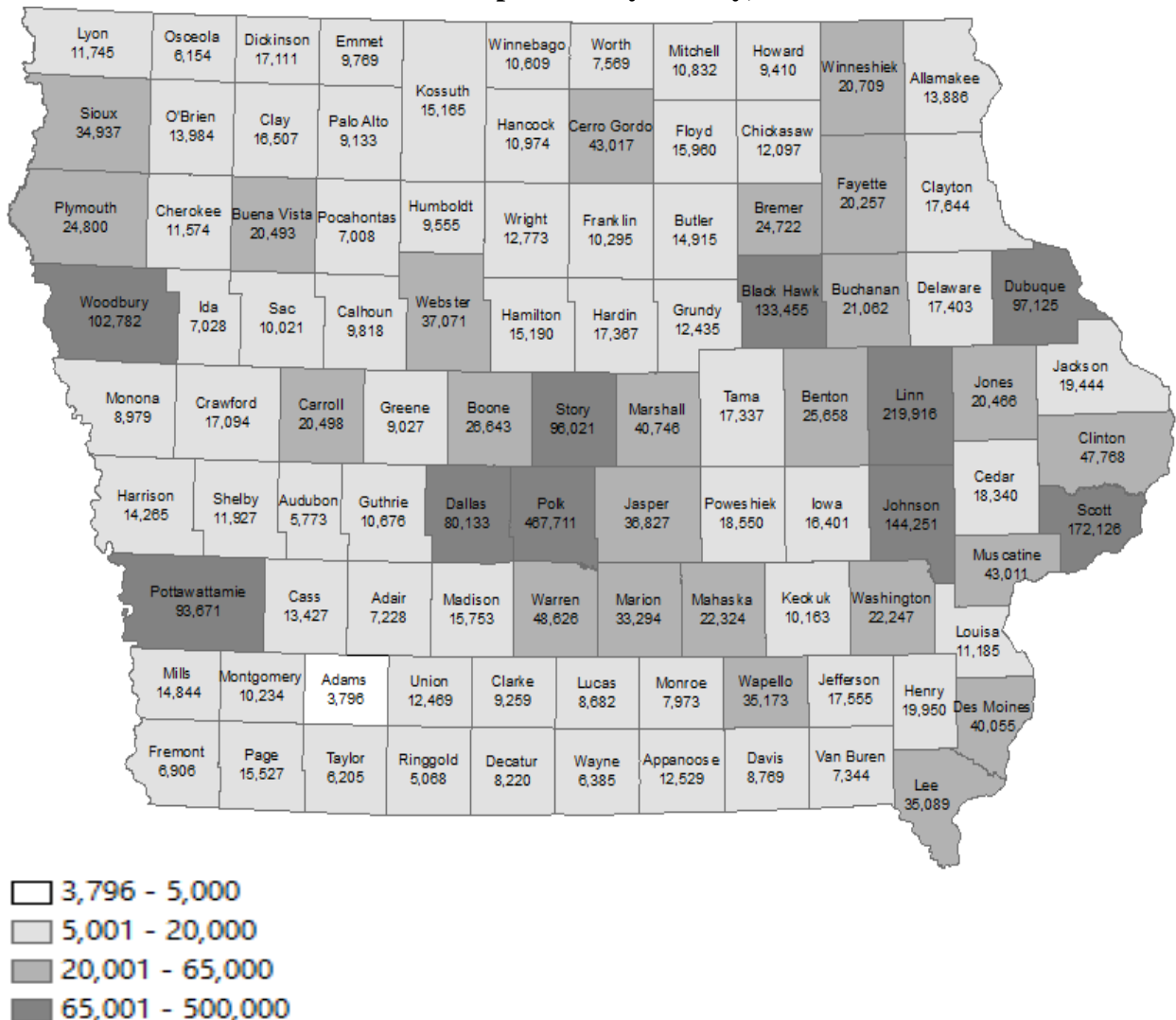
- The 2015 population estimates from the U.S. Census Bureau indicate that there are 3,123,899 persons residing in Iowa, ranking it thirtieth in the nation in population. Just over 87% of the general population is white, non-Hispanic persons and approximately 13% are members of racial or ethnic minority groups. The Hispanic population is growing the fastest and accounts for 5.7% of the general population. Hispanics comprise the largest minority population in the state.
- The ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story and Woodbury account for 51% of the total population of Iowa. These counties also report higher rates of poverty, unemployment, uninsured persons, and crime than other counties.
- Approximately 7.9% of Iowa's population lives below the poverty level, over 14% of youth 16 years or younger live in poverty. Those 25 to 34 years of age were least likely to have health insurance.
- Iowa's population is aging. The median age of the population is 38 years, up from 34 years in 1990. By 2030, the median age is expected to climb to 40 years. With 15.5% of its population 65 years or older, Iowa ranks fourth 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 to 22% by 2030 (U.S. Census Bureau). The percentage of persons under the age of 18 is expected to decrease from 25% in 2000 to 22% by 2030.

## DESCRIPTION OF IOWA’S POPULATION

Iowa is primarily an agricultural state, with a land area of 55,857.1 square miles. Iowa comprises 99 counties (Figure 1) with an estimated 2015 population of 3,123,899 persons. The state ranks thirtieth in the nation in population. Five counties (Dallas, Dubuque, Pottawattamie, Story and Woodbury) have between 50,000 and 120,000 people, and five counties (Black Hawk, Linn, Johnson, Polk and Scott) have more than 120,000 people. In 2000, Clinton County was the tenth most populous county, with just over 50,000 persons. Since then, the population is estimated to have declined to fewer than 50,000. In 2005, Dallas County surpassed Clinton County to become the tenth 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. In 2008, the state population estimate exceeded 3 million for the first time.

**Figure 1**  
**Iowa’s Population by County, 2015**

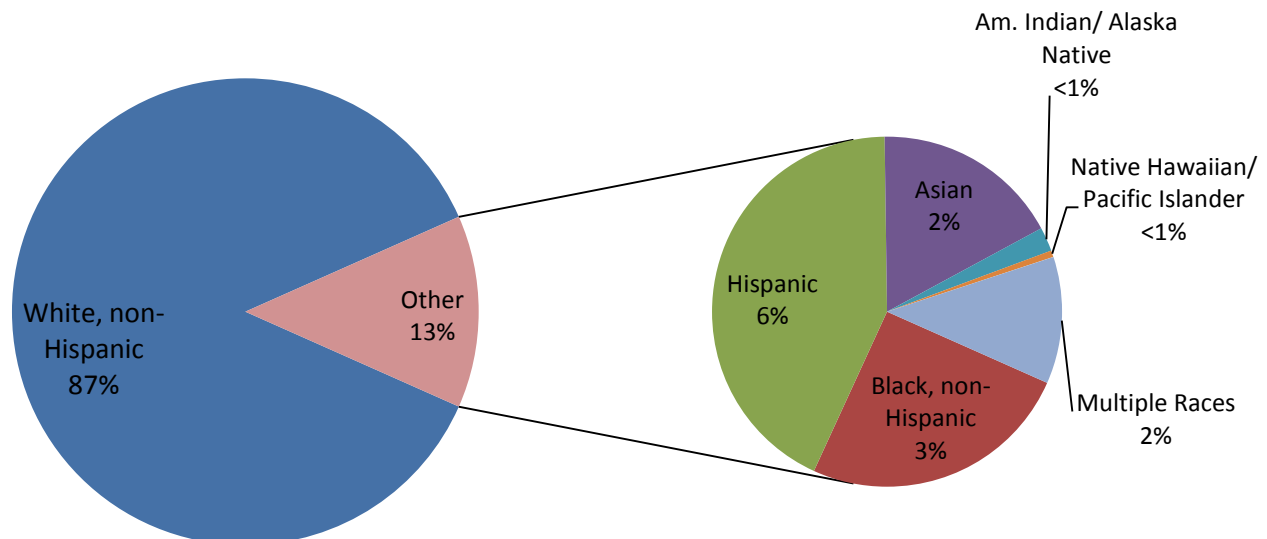


## Racial and Ethnic Distribution

About 87% of Iowa's population is white and non-Hispanic (Figure 2, Table 1). Hispanic residents have become the largest minority population in Iowa and are now estimated to account for 5.7% of the population. The 2015 population estimate shows that more than one-half (53.9%) of the state's Hispanic residents lived in Pottawattamie, Johnson, Marshall, Muscatine, Polk, Scott, and Woodbury counties.

The next largest minority group is black, non-Hispanic residents, accounting for an estimated 3.4% of the population and reflecting a slight increase from 2.1% in the 2000 census. Black Hawk, Johnson, Linn, Polk, and Scott counties account for over 70% of the state's black, non-Hispanic residents. The number of black residents is projected to double by the year 2040.

**Figure 2**  
**Iowa's Population by Race and Ethnicity**  
**2015**



Iowa's Asian population increased from 1.7% in 2010 to 2.3% in 2015. Approximately 50% of the state's Asian population lived in Johnson, Polk, or Story counties in 2015. Native Hawaiian/Pacific Islanders constitute the smallest ethnic population in Iowa, making up 0.1% of the total population. In 2015, the largest numbers of this ethnic group lived in Dubuque, Black Hawk, and Polk counties.

Net domestic *migration* (i.e., net movement of people living in the U.S. into or out of Iowa) was a negative 0.2% of the population base from 2010 to 2014. In other words, more people moved out of Iowa than moved into the state from elsewhere in the U.S. Migration into Iowa was largely the result of migration from other countries. From 2010 to 2014, 21,447 foreign migrants entered the state while 4,575 persons left the state to immigrate domestically producing a net

migration amount of 16,872. 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. (US Census Bureau, 2014).

**Table 1**  
**Iowa's Population by Race, Ethnicity, and Gender**  
**2015**

Race and Ethnicity	Females		Males		Total	
	#	(%)	#	(%)	#	(%)
White, non-Hispanic	1,371,067	(87)	1,336,570	(86)	2,707,637	(87)
Black, non-Hispanic	49,405	(3)	55,487	(4)	104,892	(3)
Hispanic	85,463	(5)	93,157	(6)	178,620	(6)
Asian	35,892	(2)	36,291	(2)	72,183	(2)
Am. Indian/ Alaska Native	4,672	--	4,550	--	9,222	--
Native Hawaiian/ Pacific Islander	1,194	--	1,340	--	2,534	--
Multiple Races	24,180	(2)	24,631	(2)	48,811	(2)
<b>Total</b>	<b>1,571,873</b>		<b>1,552,026</b>		<b>3,123,899</b>	

*Source: U.S. Census Bureau*

### Age Distribution

Iowa's population is aging. The median age of the population is 38 years, up from 34 years in 1990. By 2030, the median age is expected to climb to about 40 years. With 16.1% of its population 65 years or older, Iowa ranks fourth 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 to 22.4% by 2030 (U.S. Census Bureau). The percentage of youths (under the age of 18) is 23.3%, and is expected to decrease to 22% by 2030. The 2015 population by gender and selected age groupings are displayed in Table 2.

**Table 2**  
**Iowa's Population by Age and Gender**  
**2015**

Age Group (years)	Females	Males	Total	
	#	#	#	(%)
Less than 5	96,029	100,752	196,781	(6)
5-14	199,863	208,880	408,743	(13)
15-24	216,585	228,866	445,451	(14)
25-44	371,799	386,106	757,905	(24)
45-64	406,851	405,291	812,142	(26)
65 and older	280,746	222,131	502,877	(16)
<b>Total</b>	<b>1,571,873</b>	<b>1,552,026</b>	<b>3,123,899</b>	

*Source: U.S. Census Bureau*

## Poverty, Health Insurance, and Employment

According to 2010-2014 American Community Survey 5-year estimates, 12.6% of Iowans were living below the poverty level, compared to the national average of 15.6%. However, 16.1% of Iowa's youth under the age of 18 live in poverty, up from 13.1% in 2005.

The passage and implementation of the Affordable Care Act (ACA) has significantly reduced the number of adult Iowans without health insurance from 14.1% in 2011 to 6.3% in 2015. Those within the age group of 25 to 34 years were least likely of all age groups in Iowa to have health insurance. Males have benefited most from changes in the availability of health insurance. In 2005, 30% of males and 19% of females 18 to 24 years of age were without health insurance. In 2015, less than 7% of those between the ages of 18 and 24 were without insurance, and only 2.5% of males in this age group (Table 3).

**Table 3**  
**Percent Uninsured by Age**  
**2015**

Age group (years)	% Uninsured		
	Females	Males	Total
18-24	11.1	2.5	6.9
25-34	11.3	8.9	10.1
35-44	11.6	7.0	9.3
45-54	8.6	7.0	7.8
55-64	5.8	4.2	5.0
65-74	2.4	0.5	1.4
75 and over	0.2	0.8	0.6
<b>Total adults</b>	<b>8.0</b>	<b>4.7</b>	<b>6.3</b>

Source: 2015 BRFSS, Iowa Department of Public Health, Division of Behavioral 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, 16.6% reported having no health insurance coverage in 2015. Among those who earned between \$15,000 and \$24,999, even more (17.3%) were without health insurance. Only 1.1% of people who reported an annual income of \$75,000 or more did not have health insurance coverage (IDPH Behavioral Risk Factor Surveillance System, 2015).

Iowa's unemployment rate was reported at 3.9% for 2015, compared to 5.4% nationally (2015 Factbook, Legislative Fiscal Bureau, State of Iowa). 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 also experience a higher unemployment rate. In 2014, the total minority unemployment rate for Iowa was 7.5%, which is higher than the rate of 4.4% for the total labor force.

## Corrections

Iowa has nine state correctional facilities and a community-based correctional system. The prison inmate population at the nine correctional facilities increased by 202% from 1988 through 2007, and then peaked at 9,009 in April 2011. As of July 1, 2015, there were 8,221 state inmates, a decrease of 778 inmates from that peak. There were 5,266 admissions and 5,166 releases in FY2015. The Criminal and Juvenile Justice Planning Division predicted that if criminal/incarceration practices remain the same, the prison population will reach 11,317 inmates by FY 2024. The population of prisoners was 113% of design capacity at the end of FY2015 (Department of Corrections; Iowa Legislative Factbook 2015). Nearly half (47%) of offenders in the prison system were serving time related to violent crimes. The remaining offenders were serving for offenses related to drugs (20%), property (17%), public order (7%), or other crimes (9%).

The Community-based Correctional (CBC) system includes both field-based services and residential facilities. In FY2015, 30,860 offenders were served in this system. Most offenses in the CBC were related to drug use (27%), public order (27%), and property crimes (24%).

A 2007 report by the Sentencing Project called [\*Uneven Justice: State Rates of Incarceration by Race and Ethnicity\*](#) reviewed rates of incarceration by race in all 50 states. Iowa was reported to have the most disproportionate rates of incarceration (per 100,000 population) between white and black persons of any state. The rate of incarceration per 100,000 population was nearly 14 times higher among blacks in Iowa than among whites. Only the District of Columbia had more disproportionate rates (19.0). Iowa ranked 11th among states for disproportionate rates of incarceration among Hispanic persons. A 2016 update of the report entitled [\*The Color of Justice: Racial and Ethnic Disparity in State Prisons\*](#), found that Iowa had reduced the differential to 11.1, and its rank had fallen to number 3 – eclipsed by New Jersey (12.2) and Wisconsin (11.5).

The Iowa Department of Corrections tests all incoming offenders for HIV. On December 31, 2015, there were 31 offenders in who were living with HIV in state prisons. Data on the number of HIV-positive offenders released from prison in a given year are not available.

## Substance Abuse

Drug-related prison admissions are one indicator of drug abuse levels in the state. From 2005 through 2009, drug-related admission fell, driven largely by a decrease in admissions related to methamphetamine (meth) use. This decrease occurred in response to the passage of Iowa's Pseudoephedrine Control Act in May 2005. After 2009, admissions began to increase again, as importation of meth increased. From 2009 to 2012, admissions for drug-related offenses (excluding alcohol-related offenses) increased by 36%, from 693 in 2004 to 981 in 2012. Drug-related admissions have fallen slowly since then, although admissions related to meth have remained level. In 2015, there were 827 drug-related admissions; 427 (58%) related to meth, 216 (26%) to marijuana, and 71 (9%) to cocaine/crack<sup>1</sup>.

<sup>1</sup> [Iowa Drug Control Strategy 2016](#), Governor's Office of Drug Control Strategy, 2016



Data from substance abuse treatment facilities in Iowa show that the proportion of persons in treatment for methamphetamine abuse increased steadily from 10% in fiscal year (FY) 2011 to 16% in FY 2015 (Table 4).

In FY2015, 972 (2%) of the 48,098 persons receiving treatment at a substance abuse treatment facility in Iowa reported injecting drugs at least once in the previous month. The majority of the injectors, 95.9%, were white, 0.8% were Hispanic, 1.9% were black, and 1.4% were American Indian or Alaskan Native. In FY2014, Polk County was the residence reported for 26% of the injection drug users admitted, followed by Linn County at 8%, Scott County at 7%, Black Hawk County at 6%, and Dubuque County at 5%.

**Table 4**  
**Primary Substance of Abuse for Adult and Juvenile Clients in Treatment Programs**  
**Iowa, FY 2005 – FY2015**

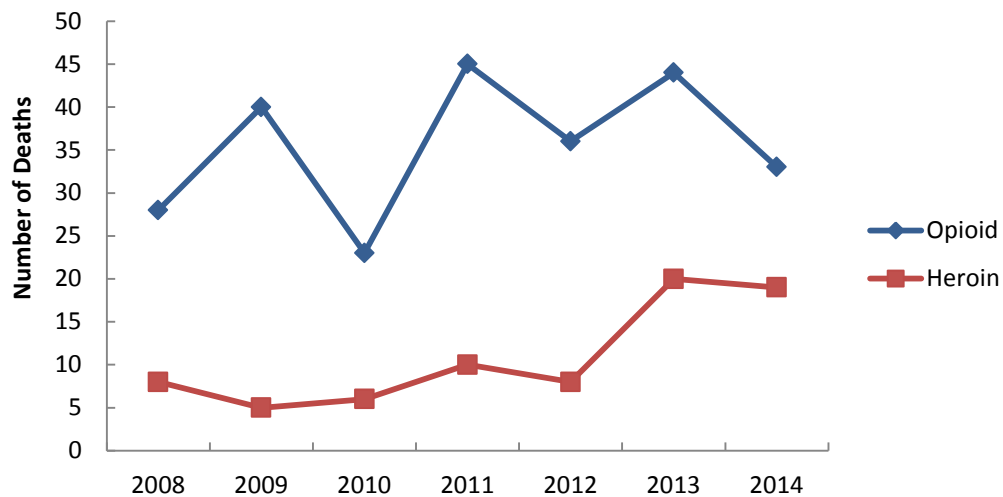
Fiscal Year	Primary Problem – Type of Drug						Total Clients*
	Alcohol	Marijuana	Methamphetamine	Crack	Heroin	Other	
2005	56%	22%	14%	5%	0.6%	2%	43,692
2006	56%	23%	14%	5%	0.5%	2%	44,863
2007	58%	23%	11%	5%	0.4%	3%	47,252
2008	62%	23%	8%	5%	0.4%	3%	44,528
2009	61%	23%	8%	4%	0.5%	3%	44,849
2010	59%	25%	9%	3%	0.7%	4%	44,904
2011	55%	26%	10%	2%	0.9%	7%	47,974
2012	50%	26%	11%	2%	0.9%	10%	50,870
2013	51%	27%	13%	2%	1.2%	6%	51,045
2014	50%	26%	15%	2%	1.6%	6%	48,621
2015	49%	26%	16%	2%	2.0%	5%	48,098

\*Persons may be counted more than once if a client is later admitted for a different substance.

Source: SFY, Iowa Department of Public Health, Division of Behavioral Health

Injection of heroin and opioids is a public health crisis that is associated with increasing numbers of accidental overdose deaths, exposure to and transmission of HIV, viral hepatitis, and other infection diseases, and a range of other health and social problems. Similar to the national trend, Iowa has experienced an increase in heroin- and opioid-related hospitalizations, emergency department visits, and overdoses. From 2008 to 2014, the number of heroin overdose deaths increased from 8 to 19, and the number of deaths from other opioids increased from 28 to 44 in 2013, then decreased slightly to 36 in 2014 (Figure 3).

**Figure 3**  
**Number of Heroin and Opioid Deaths in Iowa, 2008-2014**



## Mental Health

Statistics on the number of Iowans with disabilities vary, depending on definitions and methods used to produce them. The 2014 U.S. Census Bureau's American Community Survey found that in Iowa, an estimated 353,430 individuals have functional limitations. Most never access the public service system, and data on the use of private pay services are lacking. Approximately 50,000 Iowans have intellectual or developmental disabilities. The same number is estimated to have brain injury. Data on the number of people with other types of disabilities are scant, for a variety of reasons. Access to services varies greatly, depending on the type of disability.<sup>2</sup>

It is estimated that 2.4 million adult Iowans have a several mental illness, including 26,000 with schizophrenia and 53,000 with severe bipolar disorder<sup>3</sup>. Additionally, slightly over 18% of adult Iowans are estimated to suffer from any mental illness. In 2012-2013, 4.2% of adults reported serious thoughts of suicide, slightly higher than the national average of 3.9%<sup>4</sup>.

During the 2015 Behavioral Risk Factor Surveillance System (BRFSS) survey, Iowans were assessed on mental health through the use of three measures: how many days during the past 30 days their mental health was not good; whether they had ever been told by a provider that they had a depressive disorder; and a single mental illness measure resulting from six questions, called the K-6 scale. Slightly under 10% of Iowans reported poor mental health for fourteen or more days during the past 30 days, which is referred to as frequent mental distress (FMD). Females (11.2%), people ages 18-24 (13.1%), people with less than high school education (16.2%), and people with incomes below \$15,000 (22.8%) were more likely to report FMD.

<sup>2</sup> A Life in the Community for Everyone - The Department of Human Services Olmstead Plan for Mental Health and Disability Services: 2011 – 2015.

<sup>3</sup> Estimated Prevalence of Several Mental Illness in Iowa, Treatment Advocacy Center, 2015

<sup>4</sup> National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Agency (SAMHSA), Center for Behavioral Health Statistics and Quality, 2012 - 2013

Additionally, 19% of Iowa adults in 2015 reported that they had ever been told by a provider that they had a depressive disorder. The prevalence of depression was greater among females, people with lower education levels, and people with lower incomes (Table 5).

**Table 5**  
**Prevalence of Reported Depression in Iowa, 2015**

Demographic Group	% Reporting Depressive Disorder
<b>TOTAL</b>	19
<b>SEX</b>	
Male	14
Female	24
<b>AGE</b>	
18-24	20
25-34	22
35-44	23
45-54	22
55-64	17
65-74	15
75+	10
<b>EDUCATION</b>	
Less than H.S.	26
H.S. or G.E.D.	16
Some post-H.S.	21
College graduate	18
<b>HOUSEHOLD INCOME</b>	
Less than \$15,000	31
\$15,000-24,999	28
\$25,000-34,999	18
\$35,000-49,999	18
\$50,000-74,999	19
\$75,000+	13

Source: 2015 BRFSS, Iowa Department of Public Health, Division of Behavioral Health

The questions in the K-6 scale on the BRFSS, which are summed to obtain a single score, ask how often the respondent felt a certain way. The value of the scores can indicate levels of mental illness. A score of greater than 12 indicates serious mental illness. In 2015, according to the K-6, 3.2% of adult Iowans reported experiencing serious mental illness. Serious mental illness was more frequent among females, younger people, and people with an income less than \$15,000.

**Table 6**  
**Serious Mental Illness in Iowans as Measured by the K-6 Scale, 2015**

Demographic Group	% Serious Mental Illness
<b>TOTAL</b>	3.2
<b>SEX</b>	
Male	2.4
Female	3.9
<b>RACE/ETHNICITY</b>	
White, non-Hispanic	3.3
Non-white or Hispanic	1.2
<b>AGE</b>	
18-24	8.7
25-34	3.1
35-44	1.7
45-54	4.1
55-64	2.2
65-74	0.8
75+	1.6
<b>EDUCATION</b>	
Less than H.S.	2.9
H.S. or G.E.D.	3.6
Some post-H.S.	3.9
College graduate	1.6
<b>HOUSEHOLD INCOME</b>	
Less than \$15,000	10.2
\$15,000-24,999	7.9
\$25,000-34,999	2.6
\$35,000-49,999	3.7
\$50,000-74,999	1.6
\$75,000+	0.4

Source: 2015 BRFSS, Iowa Department of Public Health, Division of Behavioral Health

Access to mental health treatment is a concern in Iowa. In 2012-2013, 43.3% of adults in Iowa with a mental illness did not receive treatment. Additionally, 42.5% of youth with major depression did not receive any mental health treatment.<sup>5</sup> A lack of providers is one potential barrier to treatment. In 2014, the ratio of individuals to mental health professionals in Iowa was 904:1. This is significantly worse than the national average of 566 individuals for every one mental health provider.<sup>6</sup> Also, there is a lack of facilities to treat patients with severe mental

<sup>5</sup> National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Agency (SAMHSA), Center for Behavioral Health Statistics and Quality, 2012 - 2013

<sup>6</sup> County Health Rankings, Robert Wood Johnson Foundation, 2014

health concerns. In 2015, Iowa closed two of the four state mental health facilities. This reduced the number of available state mental health hospital beds from 239 (2005) to 149 (2010) to 64 (2016). This reduction equates to 2 beds per 100,000 population. This is significantly lower than the national average of 11.7 beds per 100,000 population, and means that Iowa has the fewest beds per population of any state in the U.S.<sup>7</sup>

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<sup>7</sup> Going, Going, Gone: Trends and Consequences of Eliminating State Psychiatric Beds, Treatment Advocacy Center, 2016

## Question 2

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

This section will present data on persons living with HIV disease (PLWH), how they became infected, where HIV diagnoses 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 Surveillance under Data Sources at the beginning of this chapter). Unless otherwise noted, all data have been collected by the HIV Surveillance Program of the Iowa Department of Public Health. To allow for reporting delays, data were collected through February 24, 2016.

#### *Section Highlights*

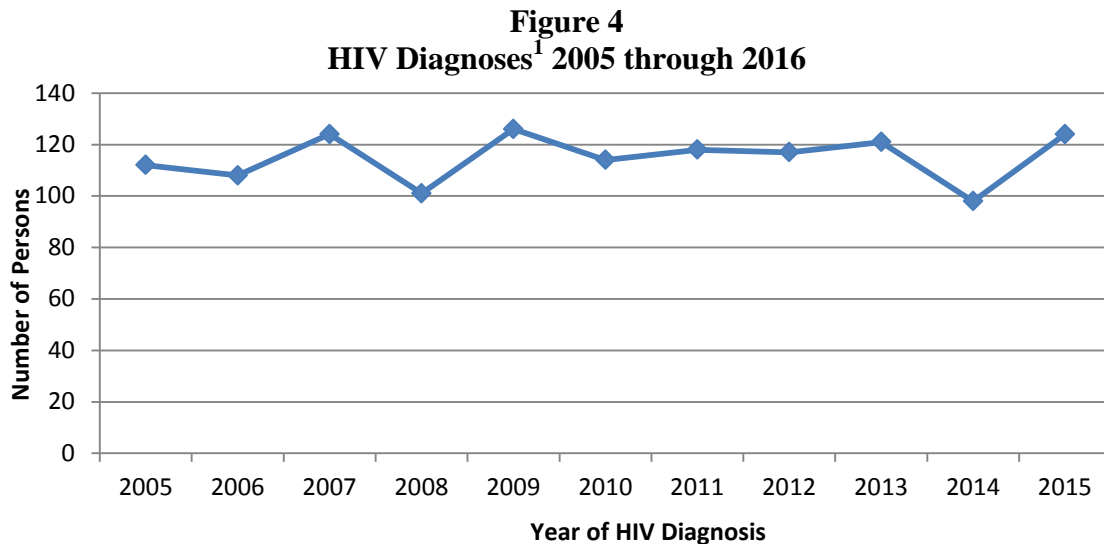
- There were 124 HIV diagnoses in 2015, the highest since 126 in 2009. This was up 26 (27%) from 98 diagnoses in 2014 and 10 (9%) above the 5-year (2010-2014) average of 114. U.S.-born, white, non-Hispanic males have accounted for the largest proportion of HIV diagnoses in Iowa despite population-based racial and ethnic disparities. HIV diagnoses among foreign born persons accounted for 23% of HIV diagnoses in 2015, higher than the 5-year (2010-2014) average of 19%. Hispanics accounted for 41% of the diagnoses among foreign-born persons in 2015.
- There were 80 persons living with HIV disease per 100,000 people in Iowa in 2015. The number of persons living with HIV disease in Iowa continues to grow due to a combination of new diagnoses, migration of people living with HIV into the state, and a decline in deaths among persons with HIV disease.
- Diagnoses of HIV disease are most frequent among men and among persons 25 to 44 years of age. Of note, diagnoses among persons 13 to 24 years of age have more than doubled in ten years, increasing from 13 in 2006 to 33 in 2015.
- Median age at diagnosis of HIV has not changed substantially in the last 10 years. In 2015, the median age for adults and adolescents was 35.0 years. Males (median = 35.0 years) is the same as that of females (median = 35.0 years).
- Black, non-Hispanic persons and Hispanic persons are over-represented among HIV diagnoses when their numbers in the general population are taken into account. In 2015, black, non-Hispanic persons had HIV diagnosis rates more than 8 times higher than those of white, non-Hispanic persons. Hispanic persons had HIV diagnosis rates more than 3 times those of white, non-Hispanic persons.
- Men who have sex with men (MSM) remains the predominant mode of exposure to HIV disease in Iowa. In 2015, 82% of all males diagnosed with HIV disease reported having sex with other males.

## DIAGNOSES OF HIV AND AIDS

### Diagnoses of HIV Disease

Figure 4 shows the number of HIV diagnoses in Iowa since 2005. Graphical presentations of HIV diagnoses over time show the year of the first positive HIV test reported for persons residing in Iowa at the time of diagnosis, regardless of stage of disease (HIV or AIDS).

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. Evaluations of the surveillance system indicate that case reporting is over 99% complete. Figure 4 indicates that diagnoses of HIV infection in Iowa have been fairly steady over the past 10 years, averaging approximately 114 persons each year. While the 124 HIV diagnoses in 2015 is within a 10-year variability, they were 9% greater than the 5-year (2010 through 2014) average of 114.



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Two years, 2008 and 2014, show marked decreases in diagnoses. These are followed by a marked increase in the subsequent year. In 2008, the Cedar Rapids/Iowa City metropolitan area experienced a flood. Diagnoses from this part of the state decreased substantially during the year and accounted for the overall decrease in diagnoses in the state. The changes in 2014 and 2015 seem to be more related to a substantial increase in diagnoses in 2015 in areas outside of the Des Moines and the Cedar Rapids/Iowa City metropolitan areas. It may indicate increased access to health care and/or HIV testing in less urban areas of the state, perhaps related to the implementation of the Affordable Care Act and/or Medicaid expansion.

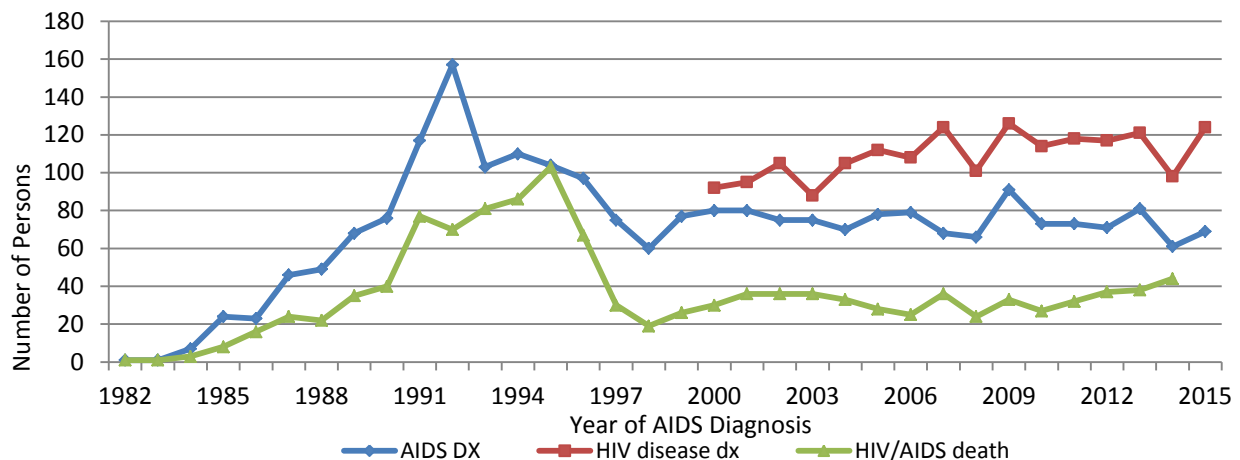
AIDS diagnoses (i.e., the late stages of HIV disease) peaked in 1992 (Figure 5) in Iowa. Changes in the definition of AIDS occurred in 1985, 1987, 1992, 2008, and 2014 (see Core HIV/AIDS Surveillance under Data Sources at the beginning of this chapter). Each change in

definition through 1992 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 blood (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, and a relatively stable trend thereafter.

The decrease through 1998 probably represents an actual decline in the number of AIDS diagnoses rather than an artifact of reporting. A factor contributing to the decline in diagnoses was the inception 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 disease diagnoses, and therefore is due almost entirely to treatment advances rather than to a decrease in new infections of HIV.

The number of Iowa's AIDS diagnoses featuring early years of the epidemic, based on residence in Iowa as of the date the person first met the CDC surveillance case definition for AIDS are presented in Figure 5 and Table 7.

**Figure 5**  
**Iowa HIV Disease Diagnoses<sup>1</sup>, AIDS Diagnoses<sup>2</sup>, and Deaths among Persons with HIV Disease<sup>3</sup> 1982 through 2015**



<sup>1</sup> Includes all persons newly diagnosed with an infection of HIV while residing in Iowa, regardless of stage.

<sup>2</sup> Includes all persons newly diagnosed with a condition of AIDS while residing in Iowa

<sup>3</sup> Reported deaths of persons with HIV/AIDS were not necessarily related to HIV infection. Deaths from 2015 are not included because the data were not yet available.

Since 1998, the number of AIDS diagnoses has been relatively stable. In 2015, there were 69 new diagnoses of AIDS, lower than the 5-year (2010-2014) and 10-year (2005-2014) averages of 72 and 74 cases respectively. When compared to the higher numbers of diagnoses in earlier years, the 10-year average may indicate that persons diagnosed with HIV were engaged in primary medical care and had received highly active antiretroviral therapy (HAART). While acknowledging the impact of HAART, another interpretation might be that the 10-year average could have been much lower were it not for a high percentage (more than 40%) of late testers, persons whose HIV disease was not diagnosed until their immune systems had been



compromised to the point where HIV and AIDS were either diagnosed concurrently or within a year of each other.

**Table 7**  
**Iowa AIDS Diagnoses and Deaths of Persons with AIDS<sup>1</sup> by Year of Diagnosis or Death**

<b>Year</b>	<b>AIDS Diagnoses</b>	<b>Deaths</b>
1982	1	1
1983	1	1
1984	7	3
1985	24	8
1986	23	16
1987	46	24
1988	49	22
1989	68	35
1990	76	40
1991	117	77
1992	157	70
1993	103	81
1994	110	86
1995	104	103
1996	97	67
1997	75	30
1998	60	19
1999	77	26
2000	80	30
2001	80	36
2002	75	36
2003	75	36
2004	70	33
2005	78	28
2006	79	25
2007	68	36
2008	66	24
2009	91	33
2010	73	27
2011	71	37
2012	73	32
2013	81	38
2014	61	44
2015*	69	20*
<b>Total</b>	<b>2,385</b>	<b>1,224</b>

<sup>1</sup> Reported deaths of persons with AIDS were not necessarily related to HIV infection. Deaths of persons with HIV (not AIDS) are included. Deaths may be reported on persons who may or may not have been diagnosed in Iowa.

\*Data for most recent year (2015) are incomplete until matching with NDI and State Death registry is completed

The sharp decline in deaths of persons with AIDS after 1995 (Figure 5) indicates the success of HAART. Deaths declined until 1999, when 19 deaths were reported. Deaths rebounded somewhat after 1998 reaching a new peak of 44 deaths in 2014. The rebound that occurred between 1999 and 2002 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.

### **Factors Affecting the Number of Diagnoses**

Although HIV diagnoses are one indication of HIV infection rates, they do not present the complete picture. Numerous factors can affect when or *if* a person gets tested for and diagnosed with HIV infection. Service providers note the following barriers to HIV testing:

- A general lack of knowledge about how HIV is transmitted;
- An individual's belief that he/she is not at risk for contracting HIV (perceived risk);
- Logistical barriers such as proximity to testing sites, transportation, and limited hours of operation;
- Language barriers; and
- Pervasive stigma associated with HIV.

The impact of testing barriers on the state's capacity to identify cases of HIV in Iowa may be significant. Individuals who are infected and do not know they are infected may not seek testing unless they have the means, the knowledge, or a significant catalyst (e.g., symptoms). Considering these possible limitations, studying a broad sample of directed testing efforts is, to some degree, an examination of the potential prevalence of the disease.

IDPH uses federal funds from the Centers for Disease Control and Prevention (CDC) to provide free, confidential HIV counseling, testing, and referral (CTR) at sites across the state. In 2012, there were 12 sites. After a competitive bid, two were eliminated in 2013, leaving 10 sites.

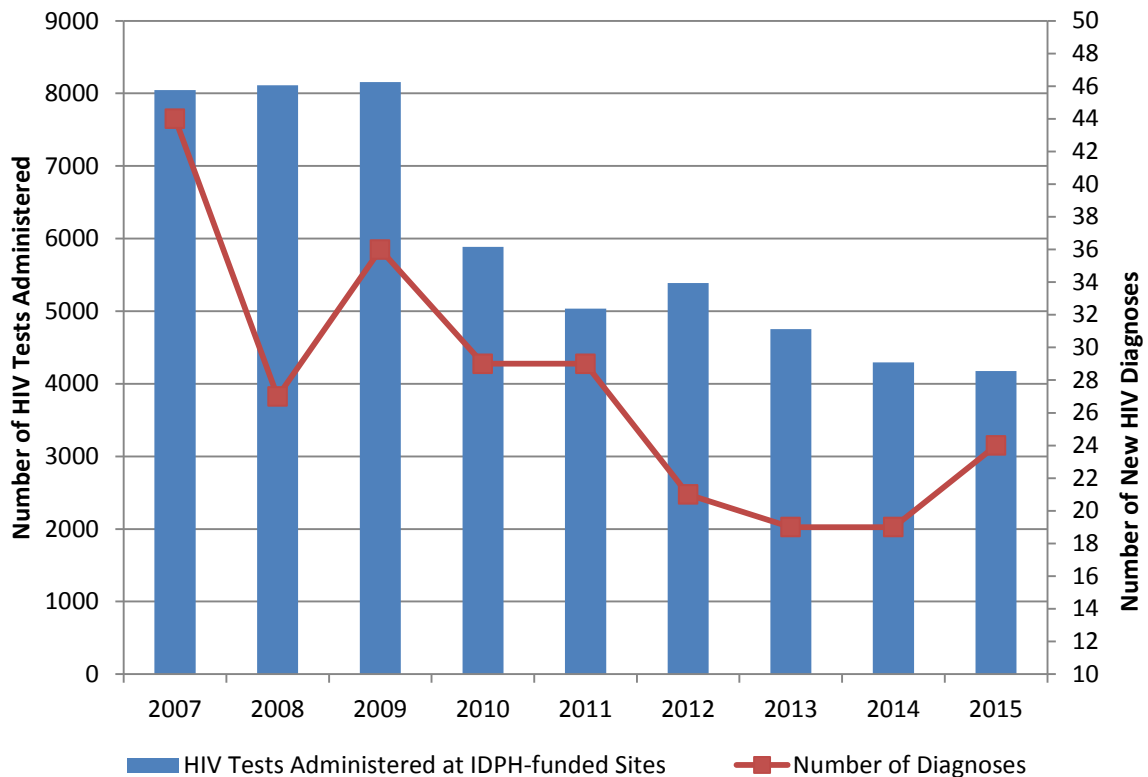
In 2011, the CDC began directly funding an agency in Iowa to focus on HIV testing for men who have sex with men (MSM). Under this project, two existing CTR sites received additional funding for the testing of MSM. These efforts improved overall HIV prevention services for MSM in Iowa; however, these testing data were subsequently directed out of the state's dataset and into the CDC directly funded dataset. Data from CTR sites presented in this profile include only testing under IDPH funding.

Participants at all CTR sites completed risk assessments during their visits to testing sites or during outreach events. These data, indicating general demographic characteristics of individuals being tested, as well as specific risk behaviors, were then entered into a web-based data reporting system, EvaluationWeb. Findings, according to data pulled from EvaluationWeb, are presented below.

Number of HIV Tests Performed by IDPH-Funded Agencies

The number of HIV tests administered by IDPH-funded agencies has decreased significantly since 2009. The most tests were administered in 2009 (8,047), while the fewest tests were administered in 2015 (4,174). In 2012, 5,389 HIV tests were administered at IDPH-funded agencies and clinics. Among those tested, 21 clients tested positive for HIV infection (0.39% positivity rate). In 2013, IDPH eliminated two testing sites and increased the performance expectation for the CTR contractors to test high-risk or disproportionately impacted populations from 80% of total tests administered to 90%. In response, there was a gradual decrease in testing (Figure 6). In 2013, 19 individuals tested positive for HIV, yielding a positivity rate of 0.40%. The percentage of tests administered to high-risk and disproportionately impacted populations was 94%. In 2014, contractors completed 4,296 HIV tests, with 19 individuals testing positive (.44%). In 2015, contractors administered 4,174 HIV tests, with 24 individuals testing positive (.57%).

**Figure 6**  
**Total HIV Tests Administered at IDPH-Funded Sites vs. Number of New HIV Diagnoses, 2007 through 2015**

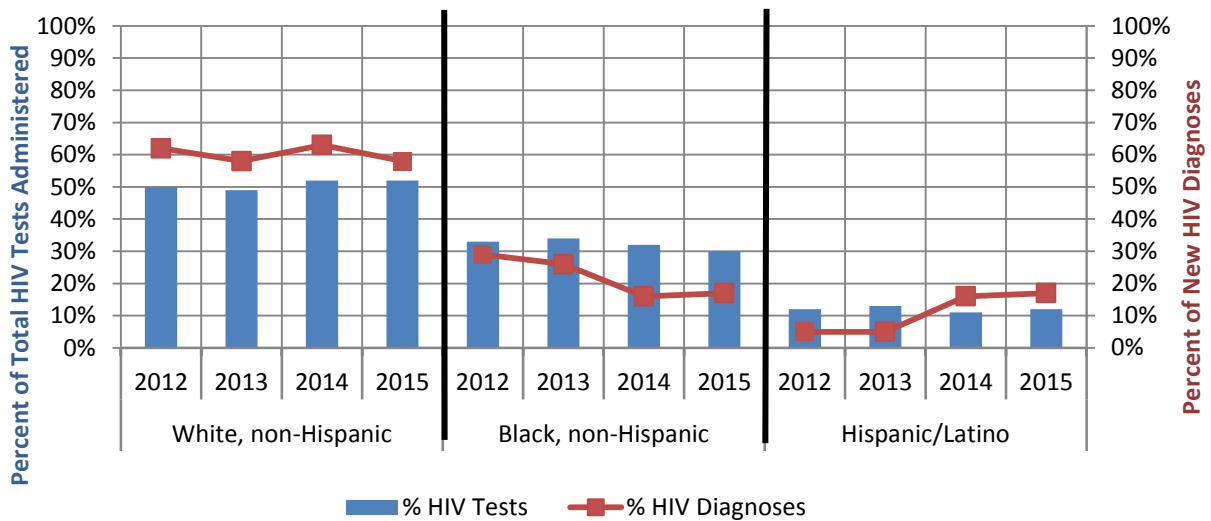


Race and Ethnicity of Individuals Receiving HIV tests from IDPH-Funded Agencies

In 2006, after studying statewide epidemiological data, Iowa’s Community Planning Group (CPG) prioritized disproportionately impacted populations — racial or ethnic groups that were over-represented among people with new diagnoses (Black/African-Americans and Hispanic/Latinos). The CPG continued to prioritize efforts to reach individuals participating in high-risk behaviors (e.g., men who have sex with men).

Although overall testing at CTR sites decreased from 2012 to 2015, testing among prioritized racial or ethnic populations has remained a large percentage of testing. In 2012, non-Hispanic, Black/African-Americans represented 33% of total HIV tests administered by contracted agencies (Figure 7). This number remained steady at 32% in 2014, and dropped slightly to 30% in 2015. Testing of Hispanic/Latino clients has also remained fairly consistent, ranging from 11% to 13%. The percent of diagnoses among Hispanic/Latino clients increased from 5% in 2012 to 17% in 2015. The percent of diagnoses among Black/African Americans decreased from 29% in 2012 to 17% in 2015.

**Figure 7**  
**Race and Ethnicity of Individuals Receiving HIV Tests from State-funded CTR Agencies**  
**2012 through 2015**



Staff at many CTR sites reported that language barriers contributed to low Hispanic/Latino testing numbers. Additionally, providers identified stigma — negative perceptions of homosexuality and the misconception that HIV is an exclusively “gay disease” — as a significant reason many individuals from Black/African-American and Hispanic/Latino communities did not access prevention services. Building trust and rapport with disproportionately impacted populations has been cited as vital to prevention and testing efforts. Several agencies have initiated specific strategies for engaging these populations in CTR

services, including the identification of community “gatekeepers,” outreach testing, employing staff and volunteers who match the demographics of the community, and marketing in businesses who predominantly serve the disproportionately impacted populations.

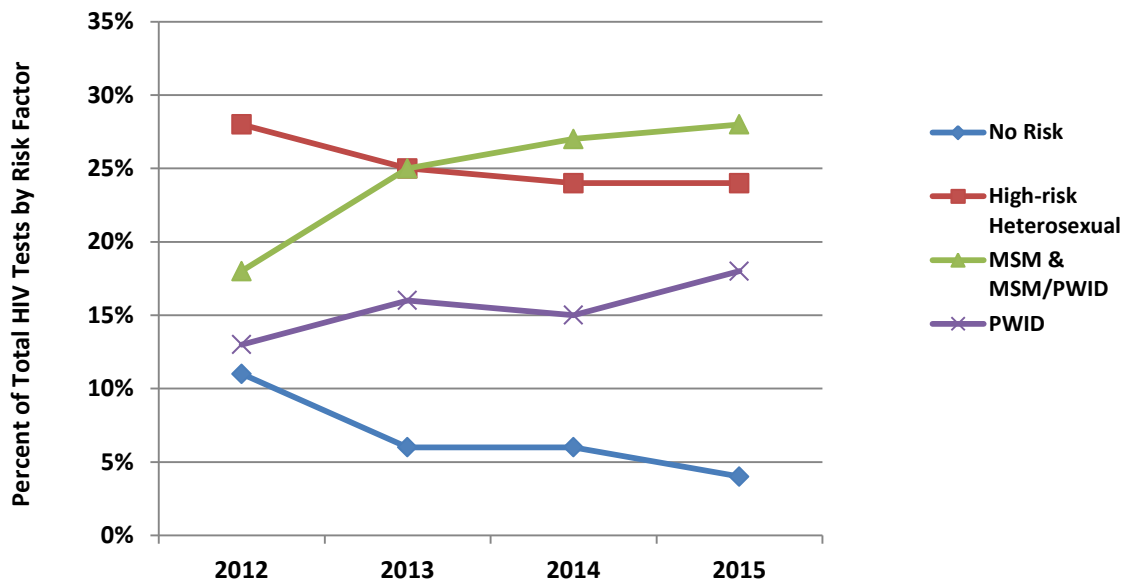
Each year, low numbers of American Indian/Native Alaskans, Asians, and Native Hawaiian/Pacific Islanders have been served at CTR sites. No group has exceeded 2% of total clients served during any year. This may be indicative of the low number of individuals from these particular groups in Iowa; and/or it may reflect one or more barriers listed earlier.

Risk Behaviors of Individuals Receiving HIV tests at IDPH-Funded Clinics

Behavioral trends of individuals receiving HIV tests at IDPH-contracted sites are discussed in this section. As indicated earlier, the CPG prioritized certain high-risk groups, including: men who have sex with men (MSM), people who use injection drugs (PWID/IDU), men who have sex with men and use injection drugs (MSM/IDU), and high risk heterosexuals (HRH; for example, heterosexuals who have been diagnosed with a sexually transmitted disease within the past year or who have had sex with someone who is HIV-positive). Any client who did not qualify through one of these risk categories was identified as *General Population*. It is important to note that, for many reasons, some clients did not disclose all risk behaviors.

IDPH-funded CTR sites saw a significant increase in the percentage of MSM tested from 2012 through 2015, from 18% of all HIV tests at the lowest in 2012 to 28% of all HIV tests in 2015 (Figure 8). However, to what degree MSM contributed to new HIV diagnoses varied somewhat. In 2012, MSM constituted 67% of all HIV-positive diagnoses at IDPH-funded sites. In 2013 and 2014, the percentage of new HIV diagnoses at IDPH-funded test sites among MSM increased to 79%, but then dropped to 58% in 2015.

**Figure 8**  
**Percentage of Total HIV Tests at CTR Sites by Primary Risk Behavior Categories**  
**2012 through 2015**



Staff at CTR sites reported barriers to reaching higher numbers of MSM. The most frequently cited barriers included client boredom with the HIV message, the perception that HIV is no longer a “life-sentence” disease, and an increase in the number of men who do not openly disclose MSM behavior and/or do not identify as MSM.

Staff also reported barriers to reaching higher numbers of people who use injection drugs. The predominant barrier reported for this group is stigma associated with reporting injection drug use.

The number of high-risk heterosexuals receiving HIV tests has remained somewhat steady. High-risk heterosexuals accounted for approximately 28% of all testing at IDPH-funded sites in 2012. This decreased slightly to 25% in 2013 and to 24% in 2014 and 2015. Testing of clients with no identified risk has decreased significantly as IDPH-funded testing sites have focused testing efforts on high-risk and disproportionately impacted populations.

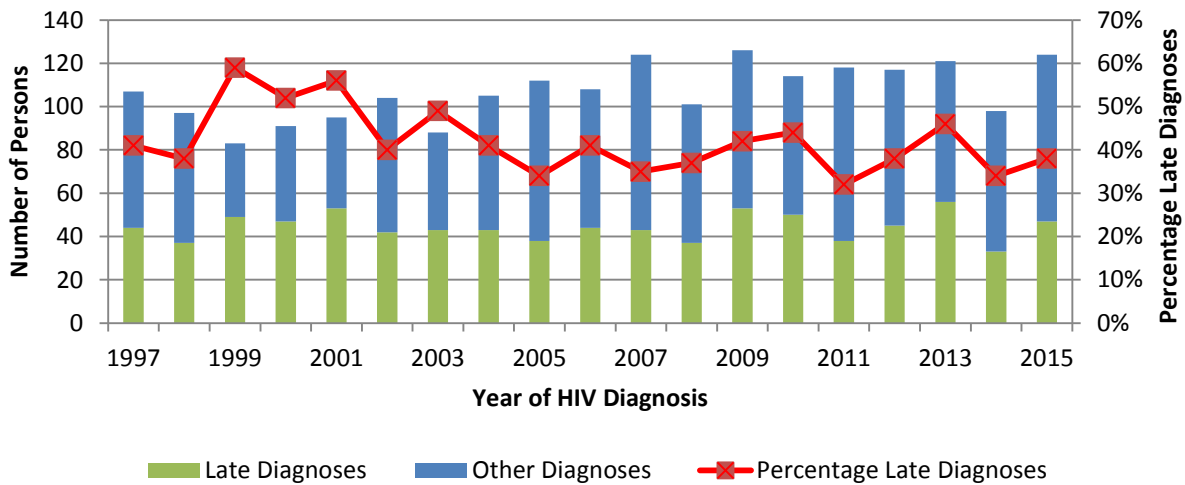
### **Late Diagnoses**

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 at the time of initial HIV diagnosis. A short period of time between HIV diagnosis and AIDS diagnosis suggests that a person may have been infected for quite some time. People with early HIV diagnoses (i.e., soon after infection) generally have longer time spans between HIV diagnosis and AIDS diagnosis. In general, if an individual is diagnosed with HIV disease early in the course of the disease, gets into treatment quickly, responds well to therapy, and adheres to treatment regimens, they may never be diagnosed with AIDS, or would at least have a longer time from HIV diagnosis to AIDS diagnosis.

Figure 9 shows the number and proportion of late diagnoses among persons diagnosed with HIV from 2005 through 2014. “Late diagnosis” is defined as a diagnosis of AIDS within 3 months of initial HIV diagnosis. Such persons are often referred to as “late testers.” The proportion of late testers has remained below 50% since 2001, when it was 56% of total diagnoses. Nonetheless, the proportion of late testers has remained high in Iowa with a 10-year (2006-2015) average of 39%.

In the *State HIV Prevention Progress Report, 2014*, CDC looked across states at the proportion of late testers, and compared them to the *Healthy People 2020* goal that by 2015, only 19% of diagnoses should be “late” diagnoses. Using 2011 data in the report, only 2 states had met that goal. Overall, the national average in 2011 was 25%. The comparatively high proportions of late diagnoses in Iowa may be due to a failure of prevention (e.g., not reaching the right people at the testing sites and/or lack of routine screening by primary care providers in the state).

**Figure 9**  
**Total HIV Diagnoses<sup>1</sup>, Late HIV Diagnoses<sup>2</sup>, and Percentage Late Diagnoses**  
**2005 through 2015**



- <sup>1</sup> Includes all persons reported to have tested positive for HIV for the first time while a resident of Iowa, regardless of current diagnosis (HIV or AIDS).
- <sup>2</sup> Includes all persons reported to have tested positive for HIV for the first time while a resident in Iowa who were also diagnosed with AIDS with 3 months of their initial HIV diagnosis.

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. According to a CDC study, late testers are more likely to be heterosexual, have lower education levels, be older than age 55, and be members of racial and ethnic minorities.<sup>1,2</sup> Late testing is associated with poorer health outcomes and earlier deaths. Late testers benefit less from antiretroviral therapy, and have more opportunities to transmit HIV to others.

Iowa sees very different trends in late diagnoses than what is seen nationally. Although we see few statistically significant differences among groups (most likely due to the small numbers), males tend to be more likely to have a late diagnosis in Iowa, as are white, non-Hispanic people, and MSM (Table 8). In addition, U.S.-born people are more likely to have a late diagnosis than are foreign-born people in Iowa. Finally, people from rural areas are more likely to have late diagnoses than are people from urban areas, perhaps the only group where we might have expected the trend to be in this direction.

<sup>1</sup> Late Versus Early Testing of HIV – 16 Sites, United States, 2000-2003. CDC. MMWR 2003;52(25):581-586.

<sup>2</sup> Time from Infection with the Human Immunodeficiency Virus to Diagnosis, United States, Hall, I., et al. J Acquir Immune Defic Syndr. 2015 Jun 1;69(2):248-51.

**Table 8**  
**Characteristics of Persons Diagnosed with HIV Disease in Iowa and**  
**Classified as Late Testers, 2011 through 2015**

Characteristic	All Diagnoses Total = 578 (100%)		Late Total = 219 (37.9%)		Not Late Total = 338 (56.5%)		Odds Ratio	p-value	95% Confidence Interval
	No.	(Row %)	No.	(Row %)	No.	(Row %)			
<b>Sex at Birth</b>									
Male	458	(100)	176	(38.4)	282	(61.6)			
Female	120	(100)	43	(35.8)	77	(64.2)	1.12	0.6023	0.73, 1.70
<b>Race/Ethnicity</b>								0.2592*	
White, Non-Hispanic	360	(100)	147	(40.8)	213	(59.2)			
Black, Non-Hispanic	110	(100)	32	(29.1)	78	(70.9)	1.65	0.0266	1.06, 2.67
Hispanic	59	(100)	23	(39.0)	36	(61.0)	1.08	0.7887	0.61, 1.90
Asian	25	(100)	8	(32.0)	17	(68.0)	1.47	0.3845	0.62, 3.49
other	24	(100)	9	(37.5)	15	(62.5)	1.15	0.7478	0.49, 2.70
<b>Mode of Exposure</b>								0.3681*	
MSM	345	(100)	135	(39.1)	210	(60.9)			
IDU	39	(100)	15	(38.5)	24	(61.5)	1.03	0.9354	0.52, 2.03
MSM/IDU	28	(100)	5	(17.9)	23	(82.1)	2.96	0.0256	1.10, 7.97
Heterosexual	129	(100)	48	(37.2)	81	(62.8)	1.09	0.7025	0.71, 1.65
NIR/Other	37	(100)	16	(43.2)	21	(56.8)	0.84	0.6272	0.43, 1.67
<b>Birth Country</b>									
U.S.	460	(100)	177	(38.5)	283	(61.5)			
Foreign Born	118	(100)	42	(35.6)	76	(64.4)	1.13	0.5647	0.74, 1.72
<b>County of Residence</b>									
Urban	451	(100)	165	(36.6)	286	(63.4)			
Rural	127	(100)	54	(42.5)	73	(57.5)	0.78	0.2242	0.52, 1.64

### Diagnoses of HIV Infection among Foreign-Born People in Iowa

Immigration of HIV-positive persons to the United States may have a substantial impact on data trends and interpretation of those trends. According to CDC guidelines, diagnoses of HIV infection that occur outside of the United States or its territories are not recognized by CDC's national HIV surveillance system (NHSS). Thus, immigrants with previously documented diagnoses are counted by the place of residence at time of first HIV test or treatment *within the United States*. Therefore, such persons when first tested or treated as residents of Iowa are counted among Iowa's new HIV diagnoses. Since immigration status is not collected on case report forms or in interviews, undocumented immigrants may also be diagnosed as residents of Iowa.

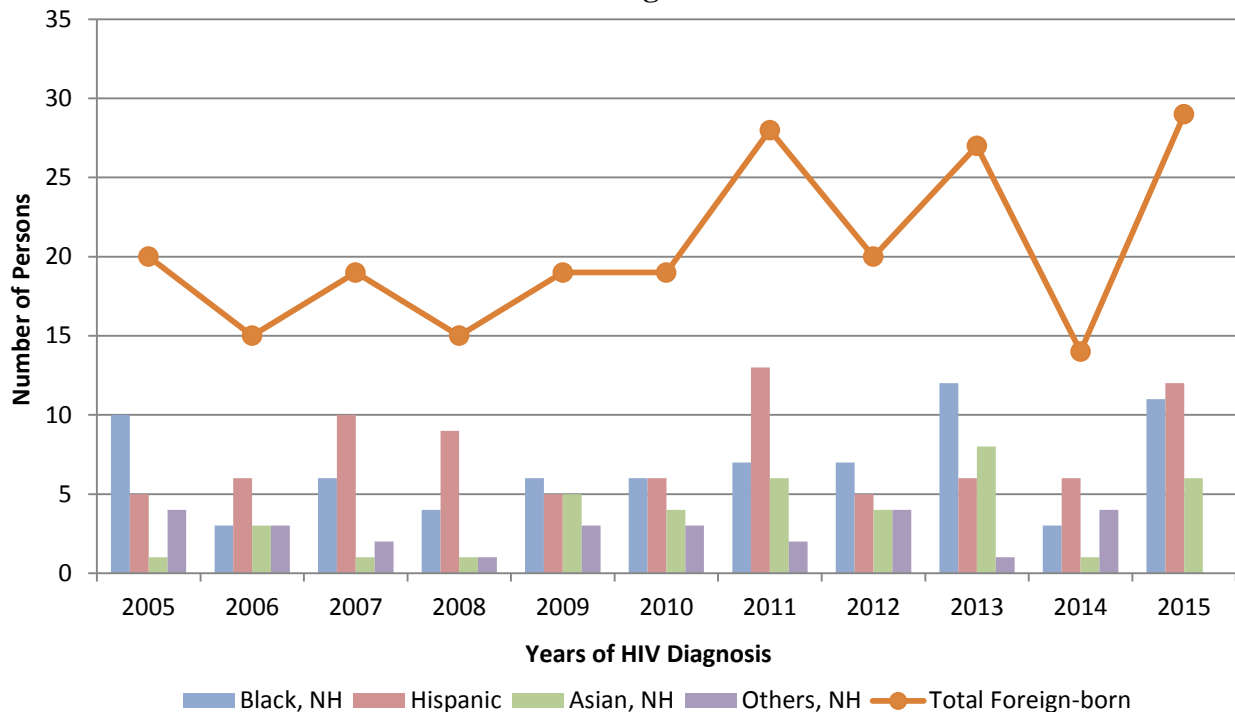
Section 212(a)(1)(A)(i) of the Immigration and Nationality Act (the Act), bars the admission to the United States of any foreign national who has been diagnosed with certain specific illnesses. The Department of Health and Human Services (HHS), on November 2, 2009, published a final rule in the Federal Register, removing HIV infection from the list of illnesses that make a foreign national inadmissible. This rule took effect on January 4, 2010.



Prior to January 4, 2010, the Act rendered inadmissible any applicant for a visa or admission to the United States who had HIV. However, a number of waivers of inadmissibility were available for humanitarian and family unit concerns. Persons with HIV disease admitted on such waivers were counted as new Iowa diagnoses if, after entering the U.S., they resettled in Iowa and first received testing or treatment here.

Figure 10 shows the number of diagnoses of HIV disease 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. After peaking at 32 in 2002, the number of diagnoses among foreign-born persons in Iowa stabilized below 20 diagnoses annually. However, the number of diagnoses among the foreign born jumped from 19 in 2010 to 29 in 2015 (23% of all diagnoses). On average over the last 10 years, 18% of diagnoses are among foreign-born Iowans. In 2015, there were increases in diagnoses among blacks, Hispanics, and Asian foreign-born persons.

**Figure 10**  
**Diagnoses of HIV Disease in Foreign-born Persons in Iowa<sup>1</sup> by Race and Ethnicity**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all foreign-born persons whose first diagnosis of HIV (regardless of AIDS status) in the U.S. came as a resident of Iowa.

Other than 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. If one assumes

that foreign-born persons would be more likely to interact with persons from their country of origin than would a U.S.-born person, immigrant populations from areas in the world where HIV is more prevalent may also have higher rates of infection within the United States. Under that assumption, prevalence of HIV in immigrant populations may reflect that of their home countries.

The region of origin for foreign-born persons diagnosed with HIV between 2006 and 2015 is shown in Table 9. Thirty-eight percent were of Hispanic origin, 32% were African, and 23% were Asian. Over 48% of foreign-born males were of Hispanic origin compared to 18% of foreign-born females, and 52% of foreign-born females were of African descent compared to 20% of foreign-born males.

**Table 9**  
**Region of Origin for Foreign-born Persons Diagnosed in Iowa<sup>1</sup>**  
**2006 through 2015**

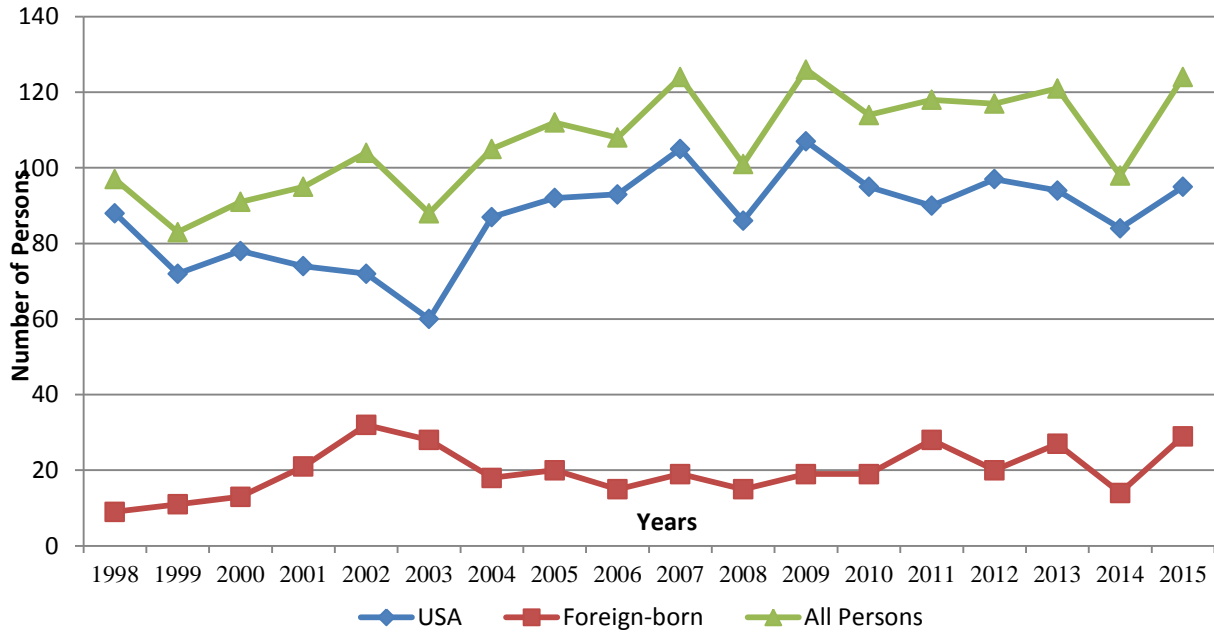
Region	Regional Totals		
	Males	Females	All
Central/South America/ Caribbean	58	13	71
Africa	27	38	65
Asia	32	16	48
Europe	6	3	9
Other	9	3	12
<b>All regions</b>	<b>132</b>	<b>73</b>	<b>205</b>

<sup>1</sup> HIV diagnoses reflect all foreign-born persons whose first diagnosis of HIV (regardless of AIDS status) in the U.S. came as a resident of Iowa.

Past increases in diagnoses among foreign-born persons have had some significant impacts on the interpretation of epidemiological data in Iowa. Failure to give separate consideration to diagnoses among the foreign born may lead to overstatement of diagnoses among U.S. born. Most obviously, the numbers of diagnoses among U.S.-born persons may be misinterpreted, particularly those of African Americans and U.S.-born Hispanics. Overlooking such a distinction may lead to missed opportunities for prevention and intervention in all impacted communities.

Figure 11 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 1998 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 seen from 2004 to 2009 were driven by diagnoses among U.S.-born persons, however.

**Figure 11**  
**Diagnoses of HIV Disease<sup>1</sup> in Iowa by Country of Origin**  
**1998 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV disease for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

If foreign-born persons diagnosed in Iowa differ substantially from U.S.-born persons in terms of sex, 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*

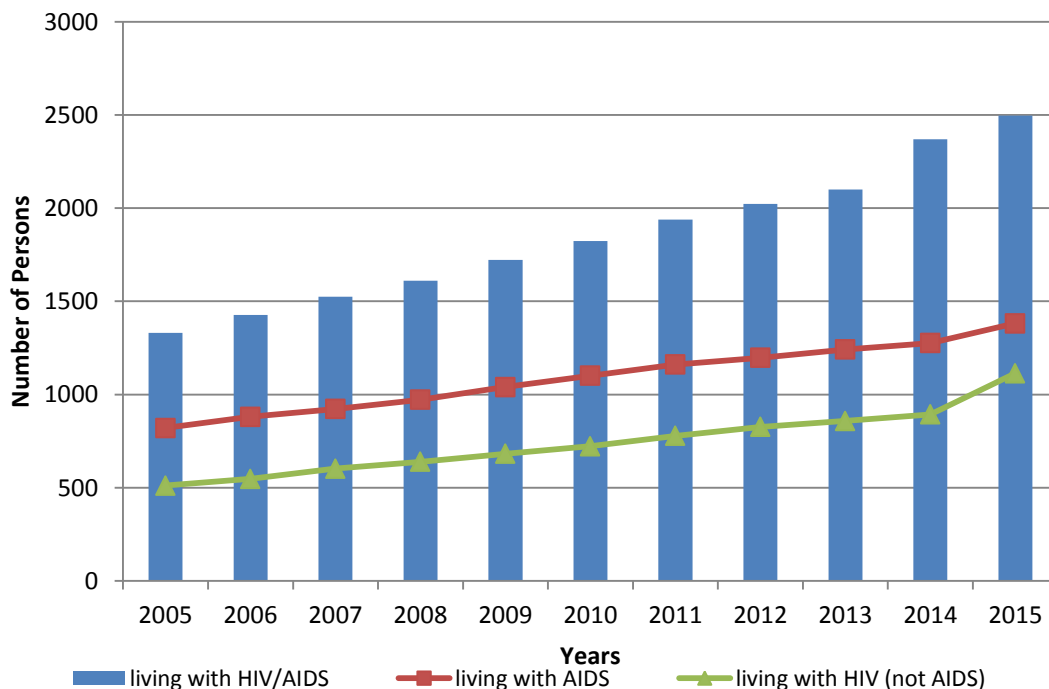
- The number of newly diagnosed HIV infections increased from 108 diagnoses in 2006 to 124 diagnoses in 2015. This increase is observed among both U.S.-born and foreign-born persons.
- Diagnoses of AIDS peaked in 1992, coinciding with the change in definition of AIDS to include CD4+ cell counts less than 200 cells per microliter or less than 14% of total lymphocytes. The advent of highly active antiretroviral therapy (HAART) sparked a dramatic decline in diagnoses of AIDS from 1994 through 1998. The number of foreign-born persons diagnosed with AIDS in Iowa increased substantially between 1998 and 2003. Most of these persons were male.
- Between 1998 and 2002, the number of diagnoses among foreign-born persons in Iowa increased 129%. Since then, decreases in the number of diagnoses among the foreign-born have been observed. Since 2005, 66% of foreign-born persons with HIV emigrated from Africa or Central and South America. However, increasing numbers of Asians living with HIV have been reported since 2008.
- Thirty-eight percent of all persons diagnosed with HIV in 2015 were subsequently diagnosed with AIDS within 3 months of their HIV diagnosis, a decrease from 46% in 2013. However, this high percentage of early AIDS diagnoses among newly diagnosed HIV cases may indicate that initial diagnosis is increasingly occurring many years after infection. Males; white, non-Hispanic persons; MSM; and U.S.-born persons are more likely to have a late diagnosis in Iowa.
- The number of deaths among Iowans living with HIV has been slowly increasing since 2010.
- The number of HIV tests conducted at IDPH-funded test sites has decreased consistently since 2009. In 2015, contractors administered 4,174 HIV tests, with 24 individuals testing positive (.57%), a considerable increase in positivity over the previous years.

## PREVALENCE OF HIV DISEASE

The decrease in deaths of persons with HIV disease after 1996 combined with a relatively steady increase in the number of new HIV diagnoses have contributed to an increase in the number (prevalence) of persons living with HIV disease (Figure 12). In the past ten years, the number of persons living with HIV disease (persons diagnosed in Iowa) has increased significantly from 1,340 persons in 2005 to 2,254 persons in 2015. Of the 2,254 persons living with HIV disease as of December 31, 2015, 946 had not yet been diagnosed with AIDS.

*It is important to note that the above statistics were calculated for Iowans who were diagnosed with HIV or AIDS while residing in Iowa, but some of them may have moved to another state and were not residing in Iowa at the end of 2015.* In contrast, when we look at people currently living in Iowa, the number of persons with HIV disease at the end of 2015 was 2,496. This number includes persons diagnosed while residing in Iowa and living in Iowa at the end of 2015 plus people who were initially diagnosed while living in another state, but who now reside in Iowa. Although this implies that more people with HIV have moved into the state than have left the state, it should be kept in mind that it is more difficult to know when someone has left the state and might be living elsewhere. Therefore, there is likely a bias in the direction of having it seem like more people have moved into the state.

**Figure 12**  
**Number of Persons Living with a Diagnosis of HIV or AIDS<sup>1</sup>**  
**in Iowa as of December 31 of Each Year, 2005 through 2015**

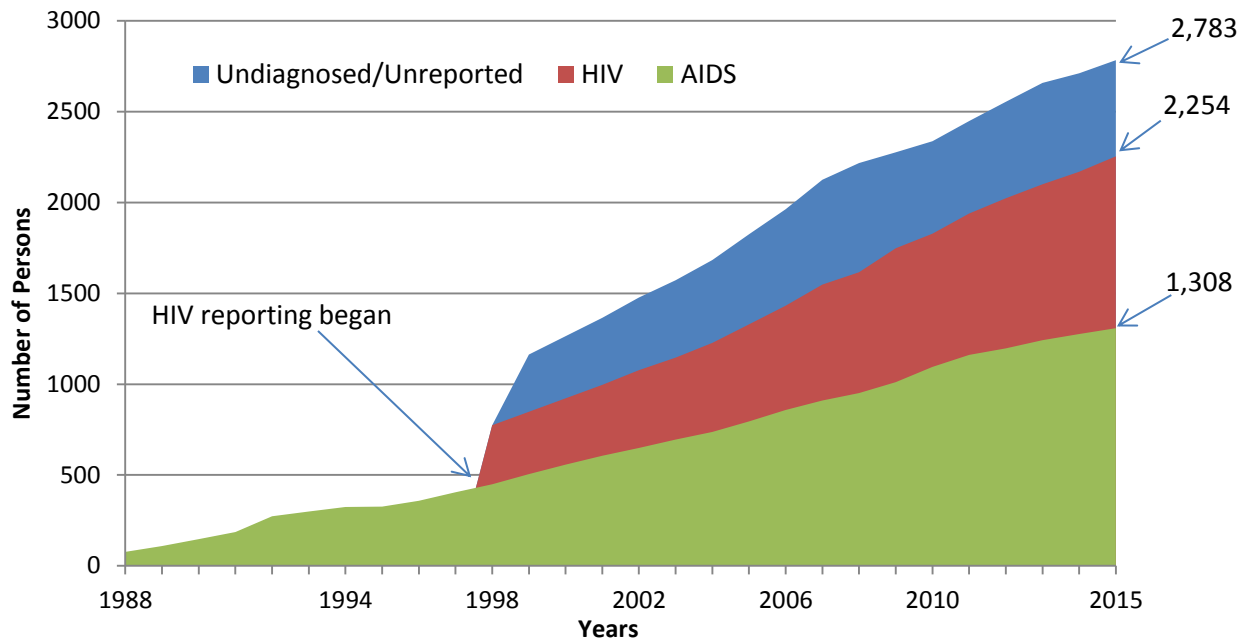


<sup>1</sup> Persons reported through December 31, 2015, as having HIV or AIDS and living in Iowa at the time of first diagnosis. A person may be counted only once (as either HIV or AIDS) in a given year. All deaths may not have been reported.

### Estimated Prevalence

Not shown in Figure 12 are people who are diagnosed but have not yet been reported, and people who are infected with HIV but have not yet been diagnosed. Evaluations of the surveillance system show 99% completeness of reporting of HIV diagnoses among persons living in Iowa at initial diagnosis. Using back-calculations methodology developed by the Centers for Disease Control and Prevention, we estimate that approximately 19% of people living with HIV in Iowa are undiagnosed. This means that there may be 529 people who have not been diagnosed. Applying this to the number of diagnosed Iowans gives a total prevalence estimate of 2,783 Iowans with HIV (Figure 13).

**Figure 13**  
**Estimated Number of Iowans Living with HIV or AIDS<sup>1</sup>**  
**as of December 31 of Each Year, 1988 through 2015**



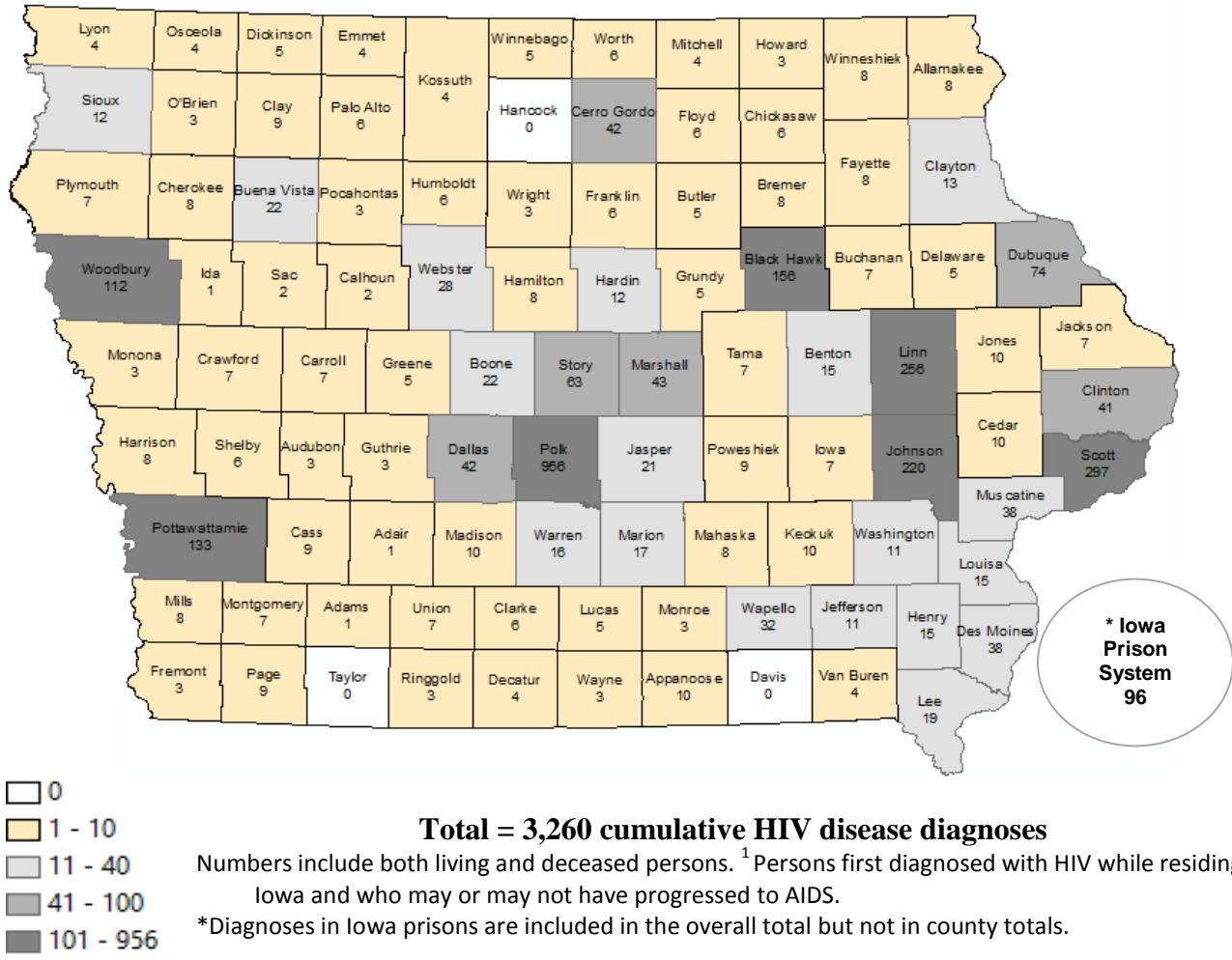
<sup>1</sup> Persons reported through December 31, 2015, as having HIV or AIDS and living in Iowa at time of first diagnosis. Reporting of HIV began July 1, 1998. A person may be counted only once (as either HIV or AIDS) in a given year. All deaths may not have been reported.

### Geographical Distribution of HIV and AIDS

Since reporting began in 1983, 96 of the 99 counties in Iowa have reported at least one HIV disease diagnosis. While the ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story and Woodbury account for 51% of the total population of Iowa in 2015, 74% of the 2,465 persons living with HIV disease were living in these counties (not including 31 persons held in state correctional facilities) at the end of 2015.

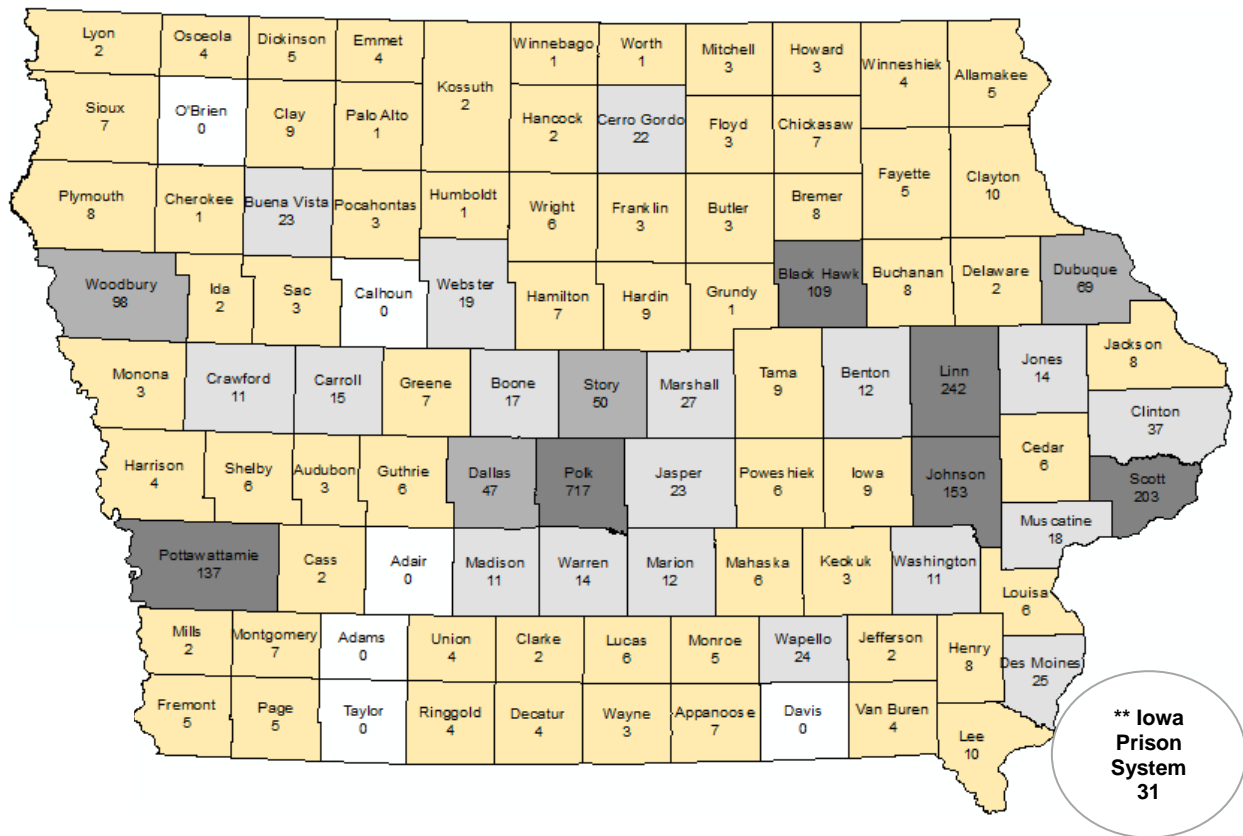
Figure 14 shows the cumulative distribution of persons first diagnosed with HIV disease (regardless of AIDS status) while residing in the state of Iowa. Persons diagnosed while in Iowa prisons are included in the overall total but not in county totals.

**Figure 14**  
**Cumulative Diagnoses of HIV Disease in Iowa by County of Residence at the time of Diagnosis as of December 31, 2015**



A similar picture of the distribution of HIV disease across counties emerges when deaths among people with HIV are excluded from the tally. Figure 15 shows the distribution of all persons living with HIV disease who were residing in Iowa as of December 31, 2015.

**Figure 15**  
**Persons Living with HIV Disease by Current County of Residence**  
**as of December 31, 2015**



- 0
- 1 - 10
- 11 - 40
- 41 - 100
- 101 - 717

**Total Prevalence = 2,496 persons**

\*\*Persons currently living in the Iowa prison system are included in the overall total but not in county totals.  
 The darkest shading identifies the ten most populous counties in terms of their general population.

Figure 15 shows a higher concentration of persons living with HIV disease among residents of Iowa’s ten most populous counties of Polk, Linn, Johnson, Scott, Black Hawk, Pottawattamie, Dallas, Woodbury, Story, and Dubuque. Note, however, that there is no one strong “epicenter” of disease. Polk County, which is the most populous county in Iowa and includes the Des Moines metropolitan area, contains approximately 29% of all Iowans living with HIV. The ten most populous counties contain 73% of all Iowans living with HIV.

The concentration of people living with HIV in these counties is further shown by calculating the number of HIV-infected persons per 100,000 persons in the general population of each county. Table 10 and Figure 16 show the prevalence by county of persons living with HIV disease as of December 31, 2015, for selected counties. The statewide prevalence of persons living with HIV disease is 80 persons per 100,000 population. The ten most populous counties have an average prevalence of 114 persons per 100,000 population, almost three times the average prevalence (44 per 100,000) of the other 89 counties.



Polk County, which includes Des Moines, Iowa's capital city, has the highest prevalence, 153 persons per 100,000 population. Pottawattamie County, with the county seat of Council Bluffs, ranks second at 146 persons per 100,000 population. Scott County, with the cities of Davenport and Bettendorf in eastern Iowa, ranks third at 118 persons per 100,000 population. Johnson County, the location of the University of Iowa and the Iowa City/Coralville metropolitan area, has the fifth highest prevalence, 106 per 100,000 population behind Linn County, 110 per 100,000 population. Polk, Scott, Johnson, Pottawattamie, Linn, Black Hawk, and Woodbury counties have the highest prevalence among the ten most populous counties. Story, Dallas, and Dubuque counties differ from the other seven most populous counties in that their prevalence is lower than the state average of 80 persons per 100,000 population.

**Table 10**  
**Prevalence<sup>1</sup> of HIV Disease by County<sup>2</sup> of Residence as of December 31, 2015**

County	Number of Persons	2015 Population Est.	Prevalence (Per 100,000 pop.)
*Polk	717	467,711	153
*Linn	242	219,916	110
*Scott	203	172,126	118
*Johnson	153	144,251	106
*Pottawattamie	137	93,671	146
*Black Hawk	109	133,455	82
*Woodbury	98	102,782	95
*Dubuque	69	97,125	71
*Story	50	96,021	52
*Dallas	47	80,133	59
Clinton	37	47,768	77
Marshall	27	40,746	66
Des Moines	25	40,055	62
Wapello	24	35,173	68
Jasper	23	36,827	62
Buena Vista	23	20,493	112
Cerro Gordo	22	43,017	51
Webster	19	37,071	51
Muscatine	18	43,011	42
Boone	17	26,643	64
Carroll	15	20,498	73
Jones	14	20,466	68
Warren	14	48,626	29
Marion	12	33,294	36
Benton	12	25,658	47
Washington	11	22,247	49
Madison	11	15,753	70
Crawford	11	17,094	64
Lee	10	35,089	28
Clayton	10	17,644	57
Counties with < 10 persons	285	879,717	33
Prison System	31	....	....
<b>Total ten most populous</b>	<b>1,834</b>	<b>1,607,191</b>	<b>114</b>
<b>Total all other counties</b>	<b>662</b>	<b>1,516,708</b>	<b>44</b>
<b>State total</b>	<b>2,496</b>	<b>3,123,899</b>	<b>80</b>

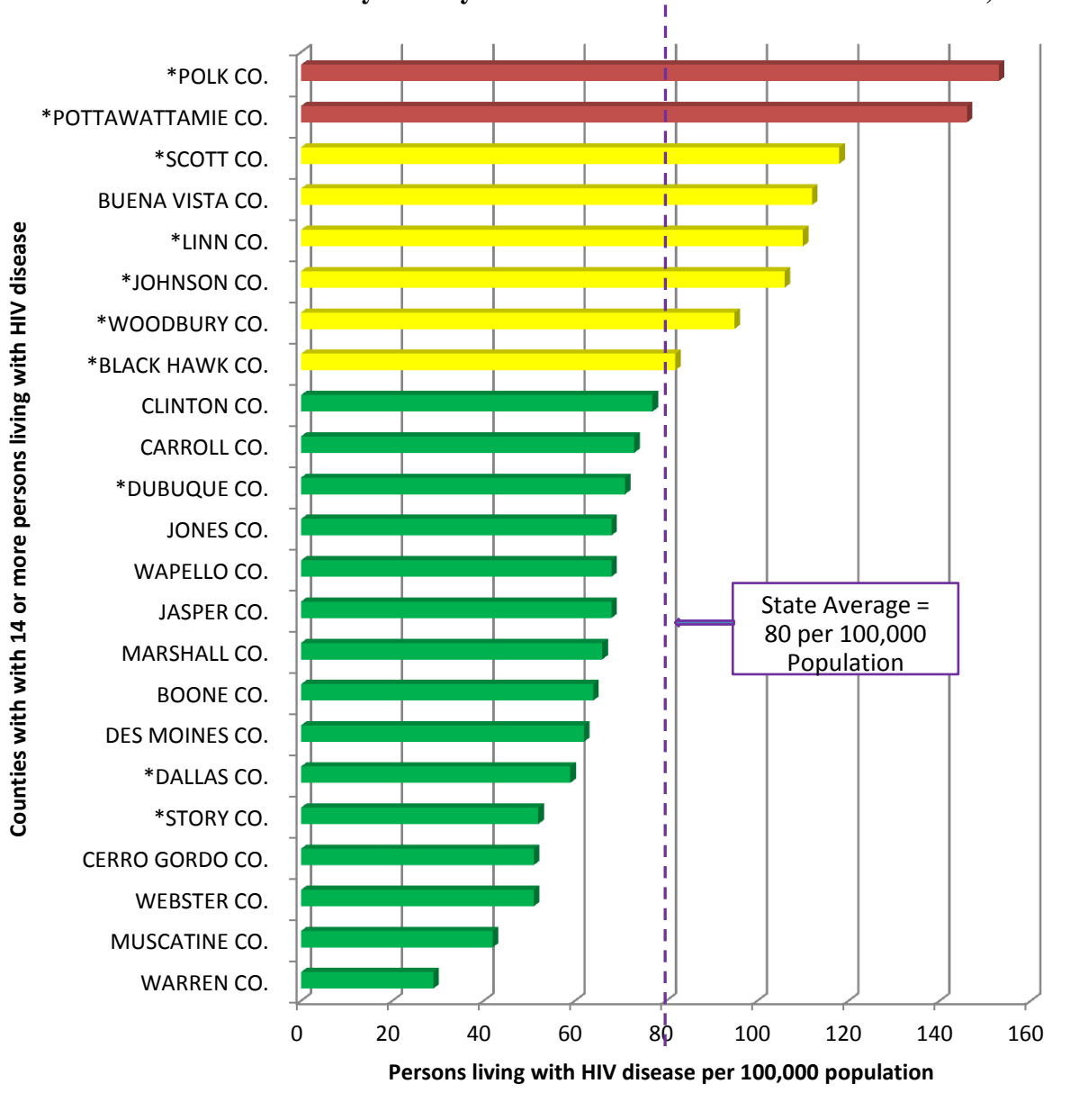
<sup>1</sup>Persons living with a diagnosis of HIV disease (HIV or AIDS). All deaths may not have been reported.

<sup>2</sup>Only counties with 10 or more PLWH are included. \*The most populous counties are indicated with asterisks.

<sup>3</sup>Forty-seven persons were living in correctional facilities. These persons are listed under the prison system and are included in the state total, but are not included in the county data or the county totals.

In all, eight counties have prevalence rates higher than the state average. Seven of these are the counties with highest prevalence among the ten most populous counties, each reporting over 95 persons living with HIV disease. The other one is Buena Vista, reporting 23 persons living with HIV disease. Counties with fewer than 10 persons living with HIV disease are not shown in Table 10. Rate calculations in counties with fewer than 12 persons living with HIV disease cases should be interpreted with great caution as the rates are considered to be very unstable.

**Figure 16**  
**Prevalence<sup>1</sup> of HIV Disease by County of Current Residence<sup>2</sup> as of December 31, 2015**



<sup>1</sup> Persons living HIV Disease (PLWH) per 100,000 population. All deaths may not have been reported.

<sup>2</sup> Only counties with 10 or more PLWH are included. \*The 10 most populous counties are indicated with asterisks.

This lack of one or two strong population centers of people living with HIV has implications for the distribution of prevention and care services in Iowa. Rather than concentrate prevention and care efforts in a limited geographical area, Iowa needs to provide resources to at least 10 smaller geographical areas. This greatly increases the costs associated with providing these services, and stretches the limited funding that is available in the state.

### ***Summary of HIV Prevalence Data***

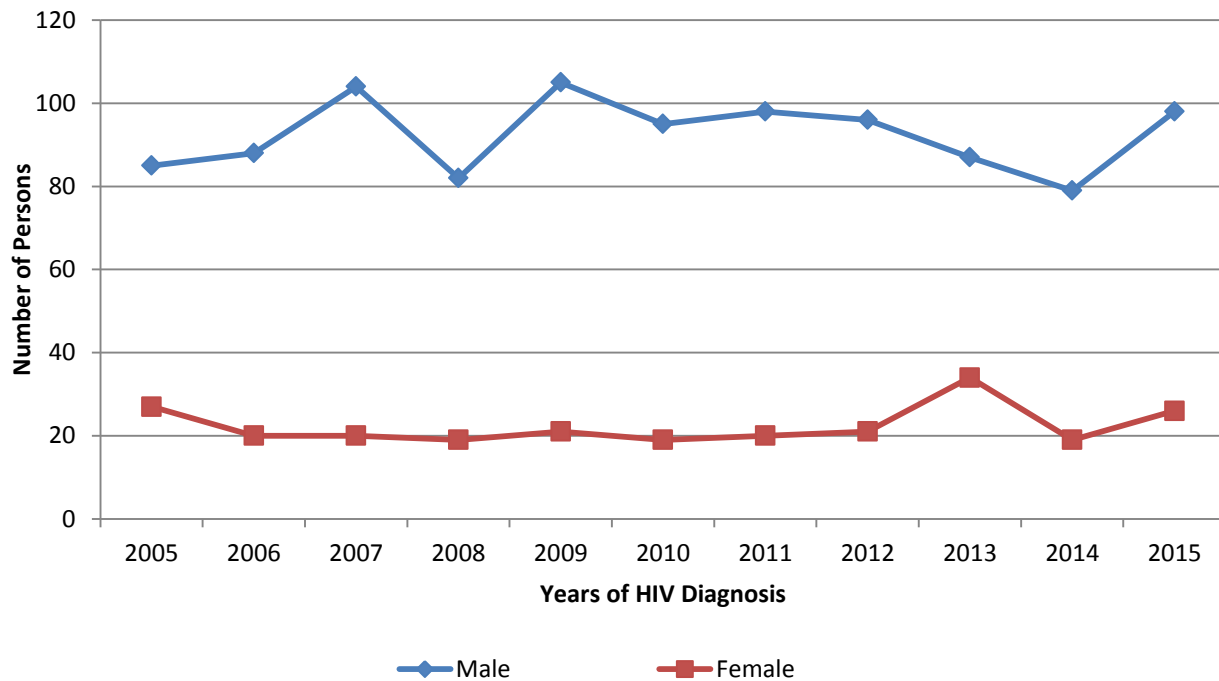
- The number of Iowans living with HIV disease continues to increase. There were 2,496 Iowans living with HIV disease as of December 31, 2015.
- As of December 31, 2015, there were 80 persons living with HIV disease per 100,000 population in Iowa.
- While the ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury account for 51% of the total population of Iowa, 73% of the persons living with HIV disease were living in those counties at the end of 2015.
- Among the ten most populous counties, seven – Polk, Pottawattamie, Black Hawk, Scott, Johnson, Linn, and Woodbury – have the highest prevalence of persons living with HIV disease. Dallas, Story, and Dubuque counties have prevalence below the average for the state.
- The distribution of Iowans living with HIV requires that prevention and care services be distributed among those 10 population centers to be most effective at reaching people living with HIV.

## SEX AND AGE

### Sex – HIV Diagnoses

Figure 17 shows the number of HIV diagnoses by sex. Males have historically accounted for the largest proportion of new diagnoses and they continue to do so. Trends among males and females differ with the exception of 2015, when both saw increases in diagnoses. After peaking in 2009, the number of new HIV diagnoses in males decreased steadily from 2011 through 2014 before rebounding in 2015. Diagnoses among females have remained largely unchanged from 2006 through 2012, with increases in 2013 and 2015. The increase among women in 2013 was due to increases among foreign-born and U.S.-born females (see Figure 21).

**Figure 17**  
**Iowa HIV Diagnoses<sup>1</sup> by Sex**  
**2005 through 2015**

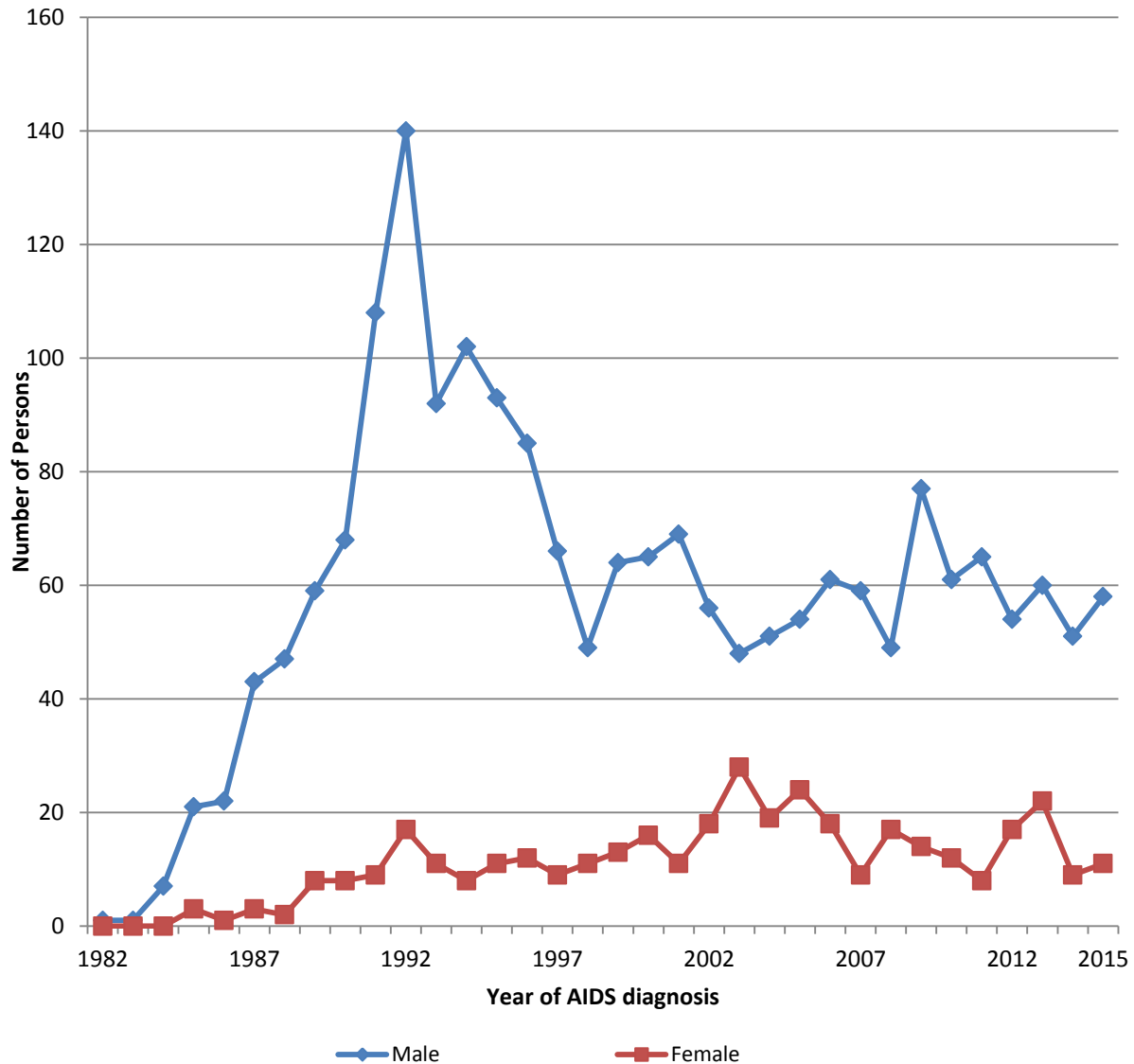


<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Historically, females have accounted for only a small proportion (16%) of Iowa's cumulative total of 2,385 AIDS diagnoses from 1982 through 2015. During the last decade (2006 through 2015), AIDS diagnoses among females have basically remained below 20 annually except in 2013 (22 diagnoses). Diagnoses of AIDS among males peaked in 1992 at 140 and then, largely due to the effectiveness of antiretroviral therapies, decreased to a low of 48 diagnoses in 2003. Since then, the numbers of diagnoses among males have begun a barely perceptible upward creep. The increase suggests the possibility that antiretroviral therapies were less effective for some persons, perhaps those whose HIV disease had gone undiagnosed and untreated long enough to permit substantial immune system impairment. Some of the increase in AIDS

diagnoses from 1998 to 2003 may also be explained by an increase in diagnoses among foreign-born persons.

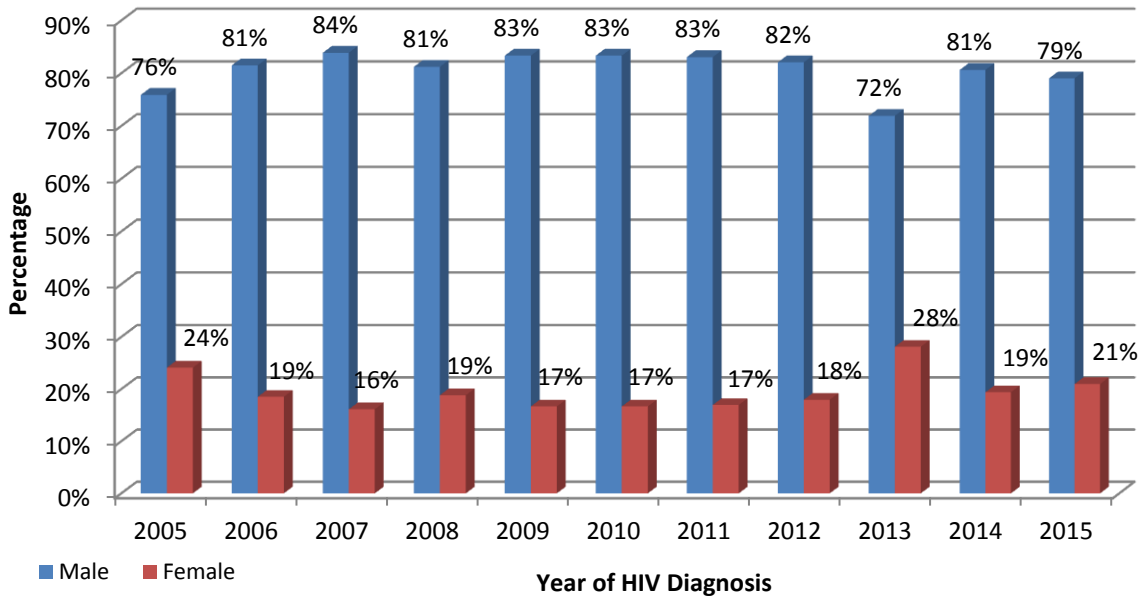
**Figure 18**  
**Iowa Diagnoses of AIDS<sup>1</sup> by Sex**  
**1982 through 2015**



<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

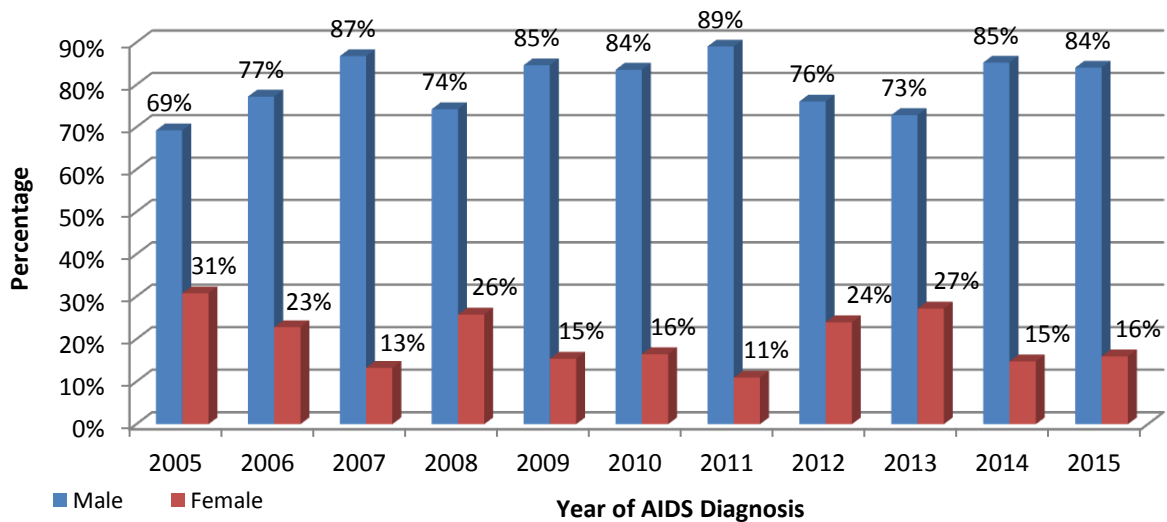
Figures 19 and 20 display HIV disease diagnoses and AIDS diagnoses, respectively, by sex. Figure 18 indicates that the proportion of HIV diagnoses among males has been near or above 80% since 2006, except in 2013 when it dropped to 72%. The proportion of males diagnosed with AIDS exceeded the proportion of males diagnosed with HIV in 7 of the last 10 years.

**Figure 19**  
**Percentage of Iowa HIV Diagnoses<sup>1</sup> by Sex**  
**2005 through 2015**



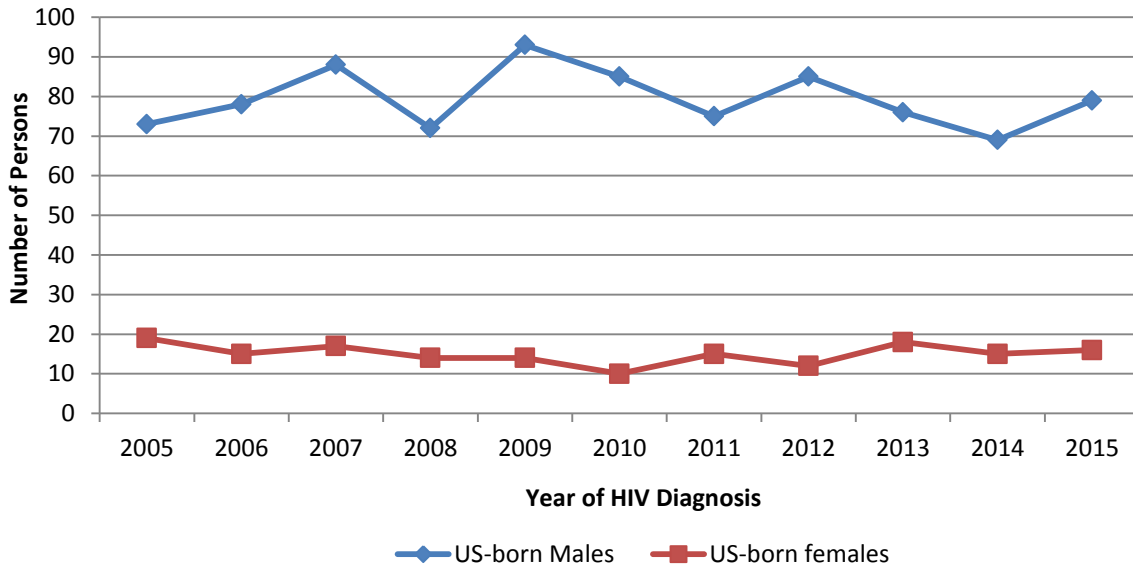
<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

**Figure 20**  
**Percentage of Iowa AIDS Diagnoses<sup>1</sup> by Sex**  
**2005 through 2015**



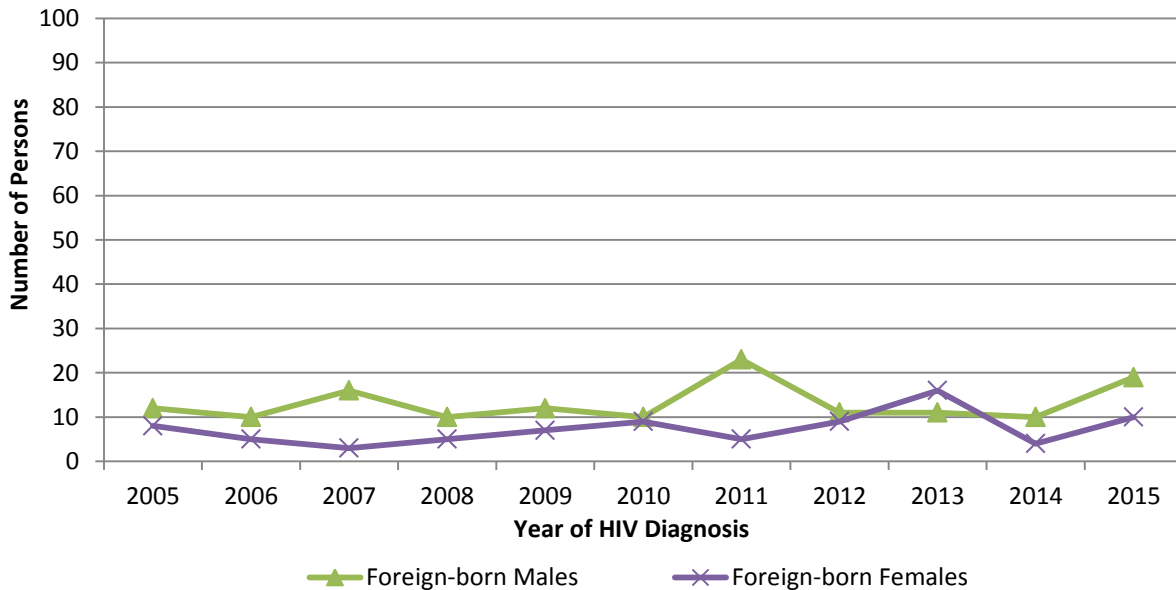
Trends in the numbers of foreign-born persons being diagnosed with HIV in Iowa have had an impact on the diagnoses by sex. Diagnoses of HIV among U.S.-born and foreign-born persons by sex are shown in Figures 21 and 22.

**Figure 21**  
**Iowa HIV Diagnoses<sup>1</sup> among U.S.-born Persons by Sex**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

**Figure 22**  
**Iowa HIV Diagnoses<sup>1</sup> among Foreign-born Persons by Sex**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

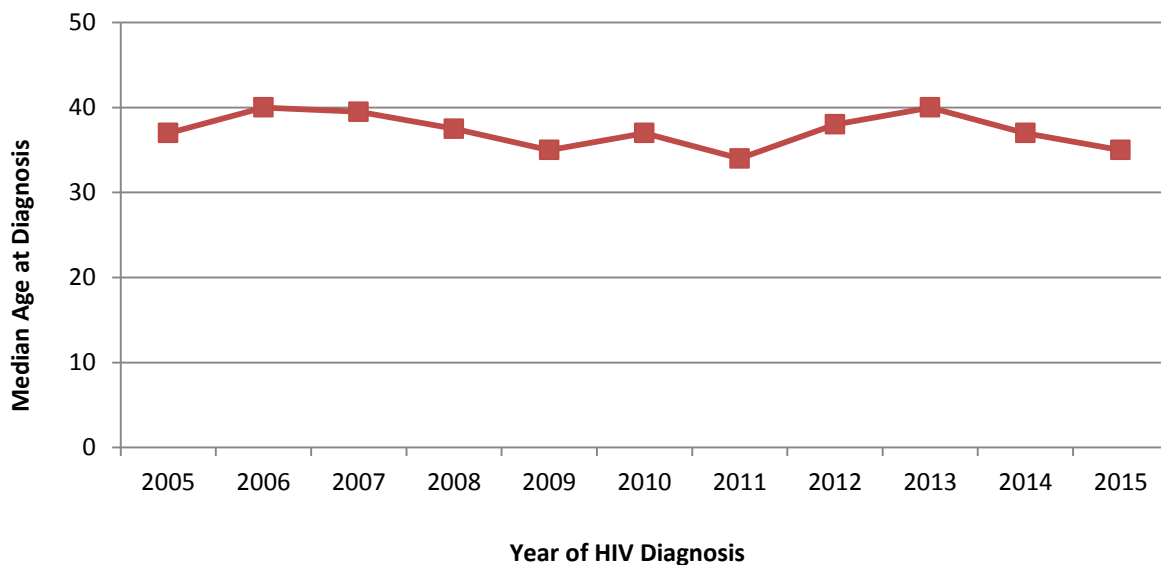
Separating U.S.-born diagnoses from foreign-born diagnoses makes the interpretation of trends a bit easier. Diagnoses among U.S.-born males have been slowly decreasing since 2009. Diagnoses among foreign-born males have remained fairly steady below 20 since 2005, except in 2011 when 23 foreign-born males were diagnosed, surpassing diagnoses among U.S.-born females. Diagnoses among foreign-born males also surpassed diagnoses among U.S.-born females in 2015.

Among females, changes in the number of overall diagnoses are largely due to fluctuations in the diagnoses among foreign-born females. Diagnoses among foreign-born females generally increased since 2007 to reach a peak of 16 diagnoses in 2013. Diagnoses among foreign-born females increased again in 2015 after dropping sharply in 2014. Diagnoses among U.S.-born females have changed little over the past 10 years.

### Age – HIV Diagnoses

The median age at HIV disease diagnosis in Iowa for the past ten years has remained relatively steady, ranging from 34 to 40 years of age (Figure 23). The peak of 40 was reached in 2006 and 2013. However, the median age fell to 35 in 2015. The decrease in the median age recently is consistent with an increase in HIV diagnoses among younger people (Figure 24).

**Figure 23**  
**Median Age in Years at Time of HIV Diagnosis<sup>1</sup>**  
**2005 through 2015**



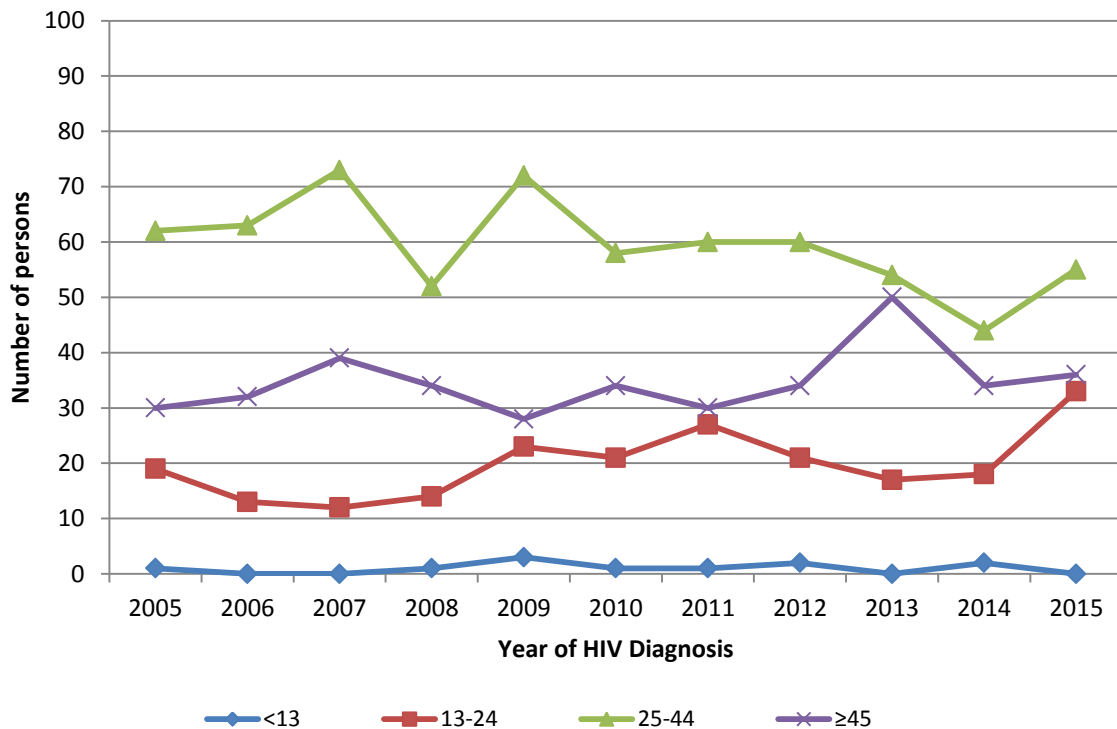
<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.



The number of persons diagnosed with HIV infection by age group is shown in Figure 24. Persons 25 to 44 years of age have consistently accounted for the largest number of new diagnoses but the gap has been shrinking since 2010. Diagnoses among persons in this age group generally decreased steadily after peaking in 2009, but saw a marked increase in 2015. Diagnoses among persons 13 to 24 years of age also increased markedly in 2015. Eleven children below the age of 13 years were diagnosed between 2005 and 2015 with number ranging from zero (in three of the years reported) to three in 2009. All diagnoses were infants born to mothers living with HIV.

HIV diagnoses among persons 45 years of age and above have fluctuated over time but trended upward from 2005 through 2015, with a significant jump upward in 2013. The number of persons diagnosed at age 45 years and above first peaked in 2007 with 39 diagnoses, and has generally increased since then before reaching a new peak of 50 diagnosed cases in 2013 (Figure 24). Diagnoses decreased sharply in 2014 and slightly increased in 2015 as in many other age groups.

**Figure 24**  
**Age in Years at Time of HIV Diagnosis<sup>1</sup> for Iowa HIV Diagnoses**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

HIV diagnoses by age and sex are shown in Table 11 for persons diagnosed in 2015. Females diagnosed with HIV were similar age (median age = 35 years) as males (median age = 35 years) at time of diagnosis.

**Table 11**  
**Iowa HIV Diagnoses<sup>1</sup> by Sex and Age in Years at Diagnosis**  
**2015**

median age <sup>2</sup>	Males		Females		Total	
	m= 35 years		m= 35 years		m= 35 years	
Age at diagnosis	#	%	#	%	#	%
0-1	0	--	0	--	0	--
2-12	0	--	0	--	0	--
13-24	26	(27)	7	(27)	33	(27)
25-44	44	(45)	11	(42)	55	(44)
45-64	27	(28)	8	(31)	35	(28)
65 and over	1	(1)	0	--	1	(1)
<b>Total</b>	<b>98</b>		<b>26</b>		<b>124</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

<sup>2</sup> m= median age of cases for that time period.

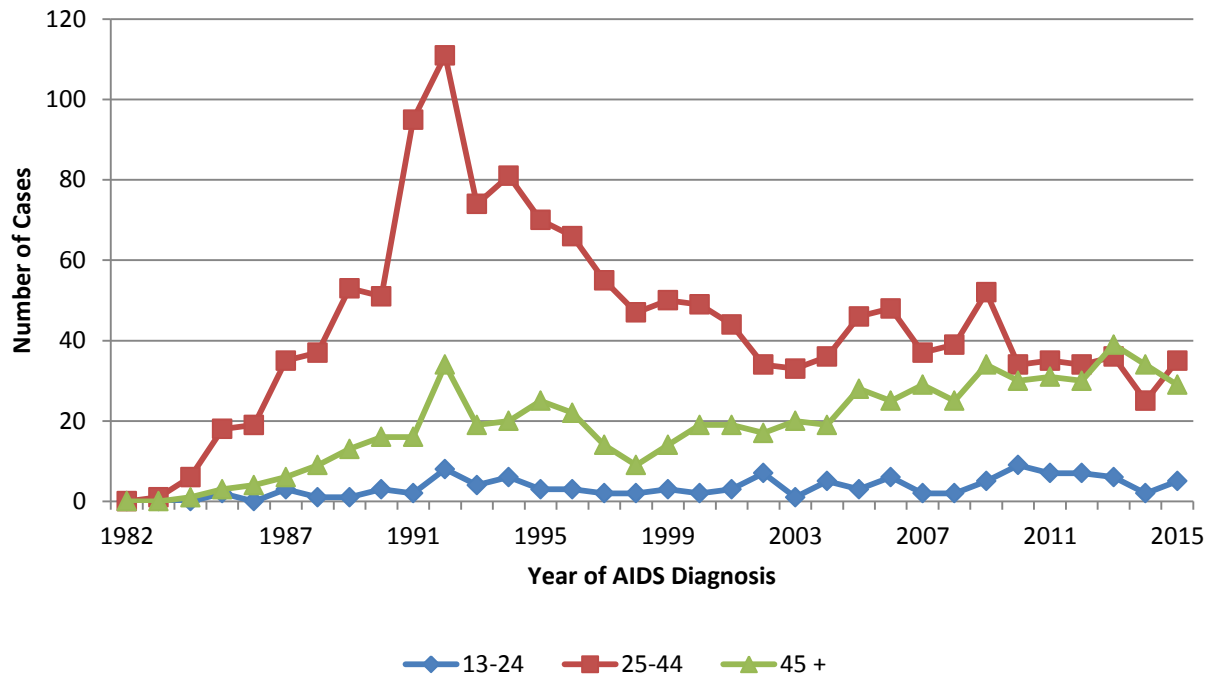
Percentage totals may not equal 100 due to rounding of numbers.

### Age – AIDS Diagnoses

Historically, most persons diagnosed with AIDS have been 25 to 44 years of age. Nonetheless, this age group has also seen the largest decreases in diagnoses since 1992. Their numbers in 2013 and 2014 are exceeded by those in the 45 years of age and over group (Figure 25).

A spike in AIDS diagnoses in all age groups in 1992 was likely the result of a change in the surveillance case definition and was followed by substantial decreases. However, two age groups have seen more recent increases in AIDS diagnoses. Diagnoses have increased after 1998 among persons 45 years of age and older. Because successful antiretroviral therapy should delay the progression to AIDS and the age at diagnosis of AIDS, increased diagnoses among this group are to be expected. AIDS diagnoses among persons 13 to 24 years of age have remained relatively steady, despite peaks in 1992 and 2002. The median age at diagnosis of AIDS has been relatively steady since 2005 at 41 years.

**Figure 25**  
**Age<sup>1</sup> in Years at Time of AIDS Diagnosis<sup>2</sup>**  
**1982 through 2015**



<sup>1</sup> There were too few cases among age group “0-12” to plot.

<sup>2</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

### Summary of Age and Sex Data

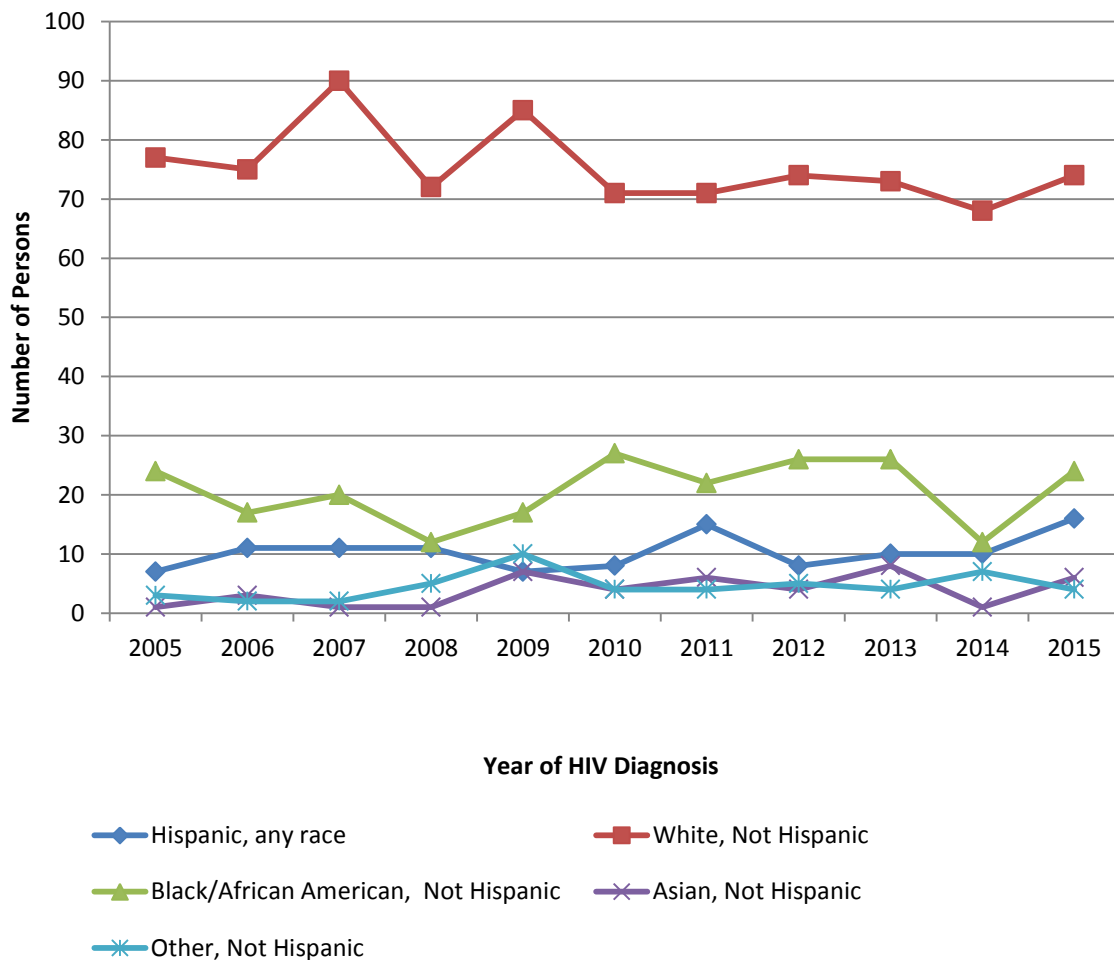
- Diagnoses of HIV among U.S.-born males accounted for the largest proportion of HIV disease diagnoses. Diagnoses in this group have been trending downwards since 2012.
- The preponderance of HIV disease diagnoses occur among men and among persons 25 to 44 years of age. However, it is notable that since 2011 HIV diagnoses have slowly increased among persons age 45 years and older and among those 13-24 years of age.
- Median age at diagnosis of HIV has generally decreased from 40 in 2006 to 35 in 2015, but there was significant variation from year to year. Median age at diagnosis of AIDS has remained relatively steady during this period at 41 years.
- About four males are diagnosed with HIV for every one female diagnosis.

## RACE AND ETHNICITY

### Race and Ethnicity – HIV Diagnoses

Figure 26 displays diagnoses among the major racial and ethnic groups in Iowa. HIV diagnoses among white, non-Hispanic persons declined from 90 in 2007 to 74 in 2015. After decreasing from 2005 to 2008, HIV diagnoses among black, non-Hispanic persons showed an upward trend through 2013 before dropping sharply in 2014 then recovering somewhat in 2015. Diagnoses among Hispanic persons have averaged about 10 per year for the 10 years 2005 through 2014. However, diagnoses among Hispanic persons reached a peak of 16 in 2015.

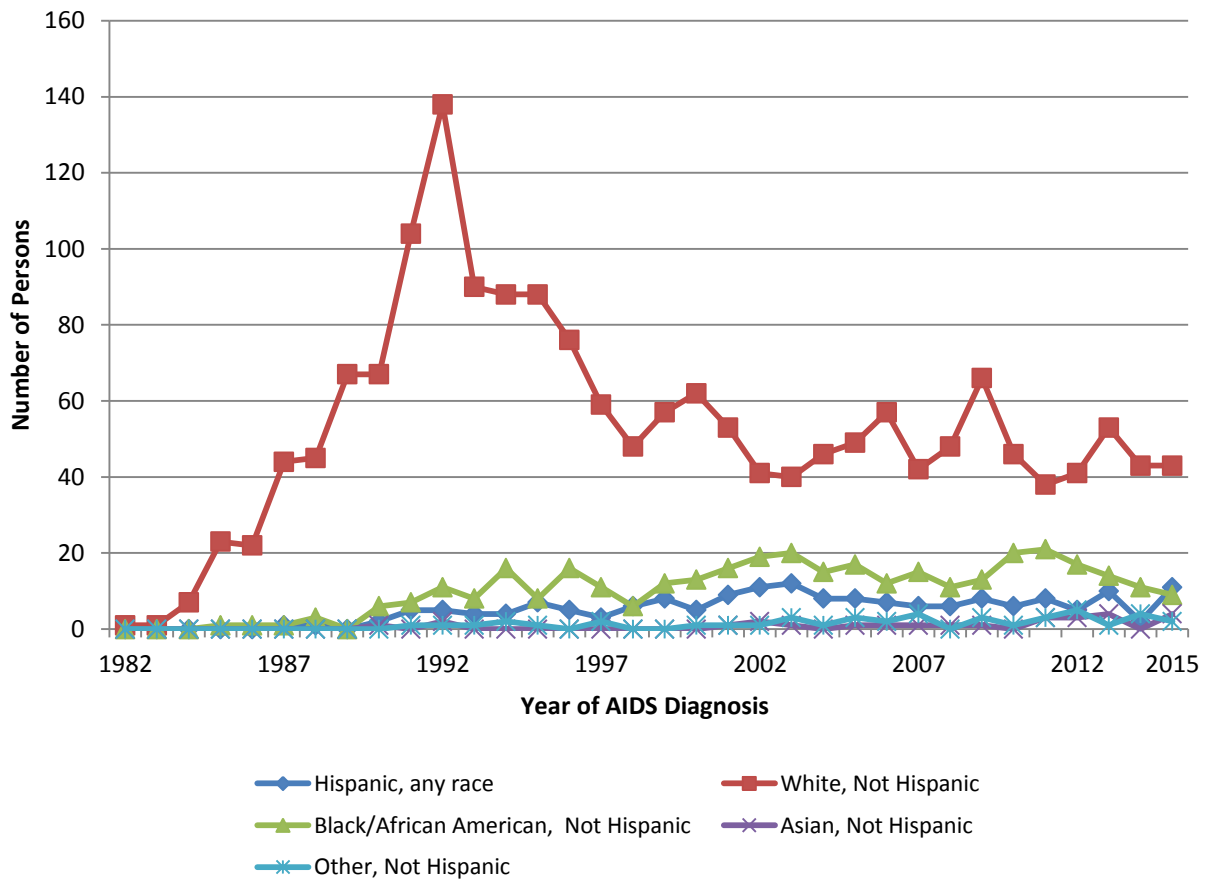
**Figure 26**  
**Iowa HIV Diagnoses<sup>1</sup> by Race and Ethnicity**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Figure 27 shows the number of AIDS diagnoses by race and ethnicity from 1982 through 2015. The benefits of antiretroviral therapies that became available after 1995 are most evident among white, non-Hispanic persons. While they have shown some fluctuation across time, diagnoses of AIDS among this group have decreased steadily after peaking in 1992. Diagnoses of AIDS among minority populations have remained fairly level since 1995, although there have been some variation recently among Hispanic persons. Notably, however, black, non-Hispanic persons have seen a continuous decrease in the number of AIDS diagnoses since 2011.

**Figure 27**  
**Iowa AIDS Diagnoses<sup>1</sup> by Race/Ethnicity**  
**1982 through 2015**



<sup>1</sup> AIDS diagnoses reflect all persons diagnosed with AIDS for the first time who were residents of Iowa at time of diagnosis.

Of the 2,385 cumulative AIDS diagnoses through December 31, 2015, (Table 12), 75% are among white, non-Hispanic persons, 15% are among black, non-Hispanic persons, 7% are among Hispanic persons, and 3% are among other groups. In comparing diagnoses in 2015 to cumulative AIDS diagnoses, a higher proportion of 2015 diagnoses are among minorities (38% versus 25% respectively). This was due to increases in diagnoses among Hispanic persons and Asians in 2015. Black, non-Hispanic persons experienced fewer AIDS diagnoses than would have been expected from historical (i.e., cumulative) data.

**Table 12**  
**Iowa AIDS Diagnoses<sup>1</sup> by Race and Ethnicity**  
**2015 Diagnoses and Cumulative Diagnoses 1982 through 2015**

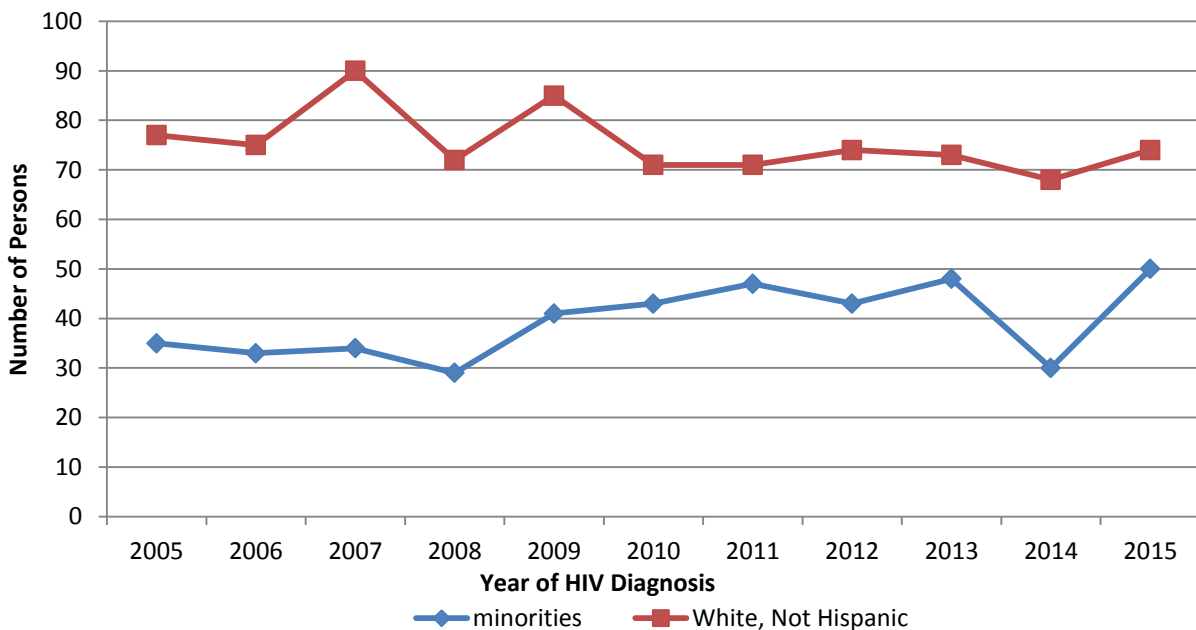
Race	2015			Cumulative	
	#	(%)	(#/100,000)	#	(%)
White, non- Hispanic	43	(62)	1.6	1,793	(75)
Black, non-Hispanic	9	(13)	8.6	350	(15)
Hispanic	11	(16)	6.2	173	(7)
Asian	4	(6)	--	26	(1)
Native Hawaiian/ Pacific Islander	--	--	--	1	--
Am. Indian/ Alaska Native	--	--	--	5	--
Multiple Races	2	(3)	4.1	37	(2)
<b>Total</b>	<b>69</b>		<b>2.2</b>	<b>2,385</b>	

<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa. Cumulative data include persons diagnosed from 1982 through 2015.

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

Figure 28 shows diagnoses of HIV disease among white, not-Hispanic persons compared to all minorities combined. HIV diagnoses among minorities in Iowa had declined steadily until 2008 when they began to increase steadily reaching a peak of 50. Diagnoses among white persons, which peaked in 2007 at 90, have remained fairly steady since 2010, ranging between 68 and 74. Non-Hispanic white persons have accounted for more than 60% of new diagnoses annually from 2005 to 2015. Diagnoses among minorities have remained above 30% since 2009, reaching 40% in 2015.

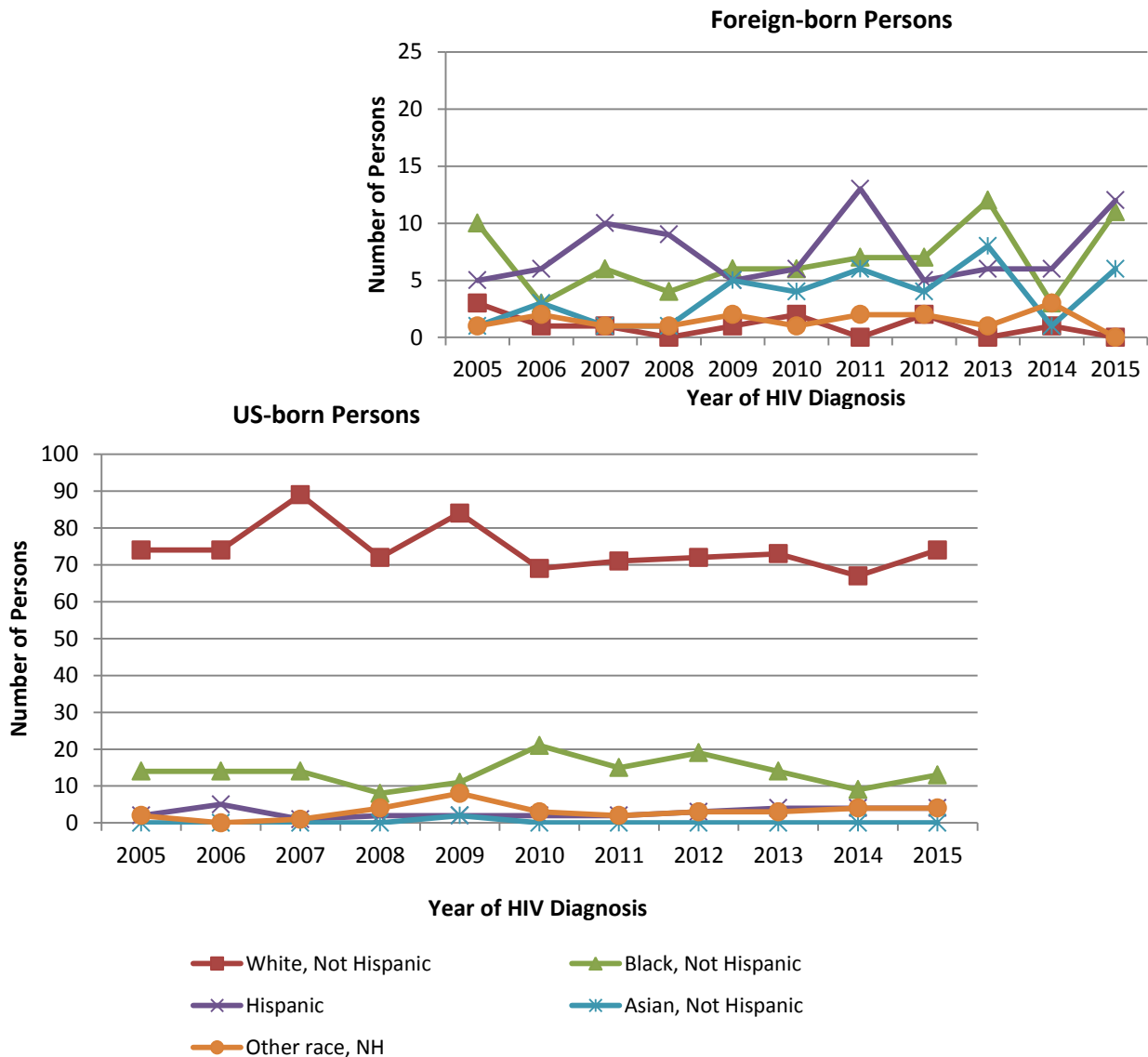
**Figure 28**  
**Iowa HIV Diagnoses<sup>1</sup> by Race and Ethnicity, Whites Compared to All Minorities**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

As Figure 29 shows, the slight decreases in diagnoses among minorities between 2005 and 2008 can mainly be attributed to decreased diagnoses among foreign-born persons (see inset). Similarly, increases in diagnoses among minorities between 2008 and 2013 are due to increases in diagnoses among foreign-born individuals. Diagnoses among U.S.-born black, non-Hispanic persons and U.S.-born Hispanic persons have been fairly stable. After peaking at 21 in 2010, diagnoses among U.S.-born black persons declined to 13 in 2015. Virtually all the diagnoses among Hispanic persons have occurred among the foreign born, while nearly all of the white, non-Hispanic diagnoses have been among U.S.-born persons.

**Figure 29**  
**Iowa HIV Diagnoses<sup>1</sup> by Race, Ethnicity, and Country of Origin**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Table 13 shows the number of persons diagnosed with HIV in 2015 by race, ethnicity, and country 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 allow direct comparison across groups.

In 2015, 60% of the persons diagnosed with HIV were white, non-Hispanic, 19% were black, non-Hispanic, and 13% were Hispanic. Of the 16 diagnoses among Hispanic persons, 12 were foreign-born while all the 74 white, non-Hispanic persons diagnosed were US-born.

In 2015, HIV diagnoses among black, non-Hispanic persons numbered 22.9 per 100,000 population compared to 2.7 diagnoses per 100,000 among white, non-Hispanic persons. Thus, black, non-Hispanic persons were over 8 times more likely to be diagnosed with HIV infection than were white, non-Hispanic persons. This clearly demonstrates the disproportionate representation of black, non-Hispanic persons among Iowans living with HIV. However, 46% of the diagnoses among blacks were among foreign-born people. Hispanic persons were also disproportionately diagnosed with HIV. At 10.0 diagnoses per 100,000 persons, they were over 3 times more likely to be diagnosed than white, non-Hispanic persons. Seventy-five percent of Hispanic diagnoses were among foreign-born persons.

**Table 13**  
**Iowa HIV Diagnoses<sup>1</sup> by Race, Ethnicity, and Country of Origin**  
**2015**

Race and Ethnicity	All Persons			U.S.-Born Persons		Foreign-Born Persons	
	#	(%)	(#/100,000) <sup>2</sup>	#	(%)	#	(%)
White, non-Hispanic	74	(60)	2.7	74	(78)	0	--
Black, non-Hispanic	24	(19)	22.9	13	(14)	11	(38)
Hispanic, all races	16	(13)	10.0	4	(4)	12	(41)
Asian	6	(5)	8.3	0	--	6	(21)
Multiple races	4	(3)	8.2	4	(4)	0	--
<b>Total</b>	<b>124</b>		<b>4.0</b>	<b>95</b>		<b>29</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

<sup>2</sup> Based on 2015 population estimate data from the U.S. Census Bureau, prevalence per 100,000 population. Percentage totals may not equal 100 due to rounding of numbers.

### Race and Ethnicity – Persons Living with HIV Disease

Table 14 shows the prevalence, i.e., the number of persons living with HIV disease (PLWH) whose first diagnosis of HIV or AIDS was as a resident of Iowa, as of December 31, 2015, by race and ethnicity. Races and ethnicities with the largest prevalence rates (PLWH per 100,000 population) are most impacted by the disease. *It is important to note that these persons were diagnosed with HIV or AIDS while residing in Iowa, but some of them may have moved to another state and were not residing in Iowa at the end of 2015.* Changes in prevalence since



2011 demonstrate which populations have seen the most dramatic changes in prevalence compared to 2011.

**Table 14**  
**Persons Diagnosed with HIV Disease<sup>1</sup> in Iowa and Living as of December 31, 2015**  
**by Race and Ethnicity**

Race and Ethnicity	#	%	2015	2011	Change <sup>4</sup>
			(#/100,000) <sup>2</sup>	(#/100,000) <sup>3</sup>	
White, non-Hispanic	1,467	(65)	54.2	48.2	+4.0
Black, non-Hispanic	444	(20)	423.3	442.0	-18.7
Hispanic	215	(10)	120.4	111.5	+8.9
Asian	55	(2)	76.2	69.7	+6.5
Native Hawaiian/ Pacific Islander	0	--	--	--	--
American Indian/Alaska Native	3	--	--	--	--
Multiple Races	70	(3)	143.4	--	--
<b>Total</b>	<b>2,254</b>		<b>72.2</b>	<b>63.6</b>	<b>+8.6</b>

<sup>1</sup> Persons whose first diagnosis of HIV or AIDS was as a resident of Iowa and who were reported to be living as of December 31, 2015. Persons are counted only once. All deaths may not have been reported

<sup>2</sup> Persons per 100,000 population living with HIV as of December 31, 2015 based on 2015 population estimates

<sup>3</sup> Persons per 100,000 population living with HIV as of December 31, 2011 based on 2011 population estimates

<sup>4</sup> Change from 2011 number of PLWHA per 100,000 population.

Overall, the state saw an increase of over 8.6 PLWH per 100,000 population from 2011 to 2015, indicating that more persons were newly diagnosed with HIV disease than died during that time. The largest increases in prevalence were among Hispanics and among Asians. There was a significant decrease in prevalence among black, non-Hispanic persons. This most likely is a reflection of increases in Iowa's population of black, non-Hispanic residents as a result of migration into Iowa. In other words, the population of blacks in Iowa grew faster than did the number of black, non-Hispanic people living with HIV. It does not reflect a disproportionate number of deaths of black, non-Hispanic people living with HIV (data not shown).

However, a better measure of prevalence uses "current address" to account for the actual number of people living with HIV residing in Iowa at the end of 2015 regardless of residence at initial diagnosis of HIV or AIDS. Based on outcomes of two special data quality projects since the end of 2013 and implementation of the re-engagement program, IDPH has been able to generate a reasonably accurate estimate of people living with HIV in Iowa at a given point in time. Table 15 shows the number of persons living with HIV disease in Iowa as of December 31, 2015, by race and ethnicity. Changes in prevalence from 2013 reflect new diagnoses, migration into and out of Iowa, deaths that may have occurred since 2013, and changes in overall population numbers (i.e., the denominator).

**Table 15**  
**Persons Living with HIV Disease<sup>1</sup> (PLWH) in Iowa as of December 31, 2015**  
**by Race and Ethnicity**

Race and Ethnicity	#	(% )	2015	2013	Change <sup>4</sup>
			(#/100,000) <sup>2</sup>	(#/100,000) <sup>3</sup>	
White, non-Hispanic	1,611	(65)	59.5	56.8	+2.7
Black, non-Hispanic	498	(20)	474.8	506.4	-31.6
Hispanic	216	(9)	120.9	117.9	+3.0
Asian	61	(2)	84.5	91.6	-7.1
Native Hawaiian/ Pacific Islander	1	--	--	--	--
American Indian/Alaska Native	5	--	--	--	--
Multiple Races	104	(4)	213.1	127.8	+85.3
<b>Total</b>	<b>2,496</b>		<b>79.9</b>	<b>76.2</b>	<b>+3.7</b>

<sup>1</sup> Persons living with HIV or AIDS in Iowa irrespective of where they were initially diagnosed as December 31, 2015.

Persons are counted only once. All deaths may not have been reported

<sup>2</sup> Persons per 100,000 population living with HIV as of December 31, 2015 based on 2015 population estimates

<sup>3</sup> Persons per 100,000 population living with HIV as of December 31, 2013 based on 2013 population estimates

<sup>4</sup> Change from 2013 number of PLWH per 100,000 population.

On December 31, 2015, the prevalence of HIV disease for white, non-Hispanic persons was 59.5 PLWH per 100,000 population compared to 474.8 per 100,000 for black non-Hispanic persons and 120.9 for Hispanic persons. Black, non-Hispanic persons had over 7 times higher prevalence per 100,000 than white, non-Hispanic persons. Hispanic persons had over 2 times the prevalence of white, non-Hispanic persons.

Although the absolute numbers of minority diagnoses are comparatively small, prevalence data show that HIV disease disproportionately impacts minority groups. Figure 30 further illustrates this. Comparing the percentage of diagnoses in a racial or ethnic group to the proportion of the total population that belongs to that group will demonstrate disparities. Black, non-Hispanic persons account for 3% of Iowa's population, and Hispanics account for 6%. These two populations each account for more than those percentages of HIV diagnoses and people living with HIV.

**Figure 30**  
**Race and Ethnicity as Proportions of HIV Disease Diagnoses, HIV Disease Prevalence, and the General Population of Iowa**

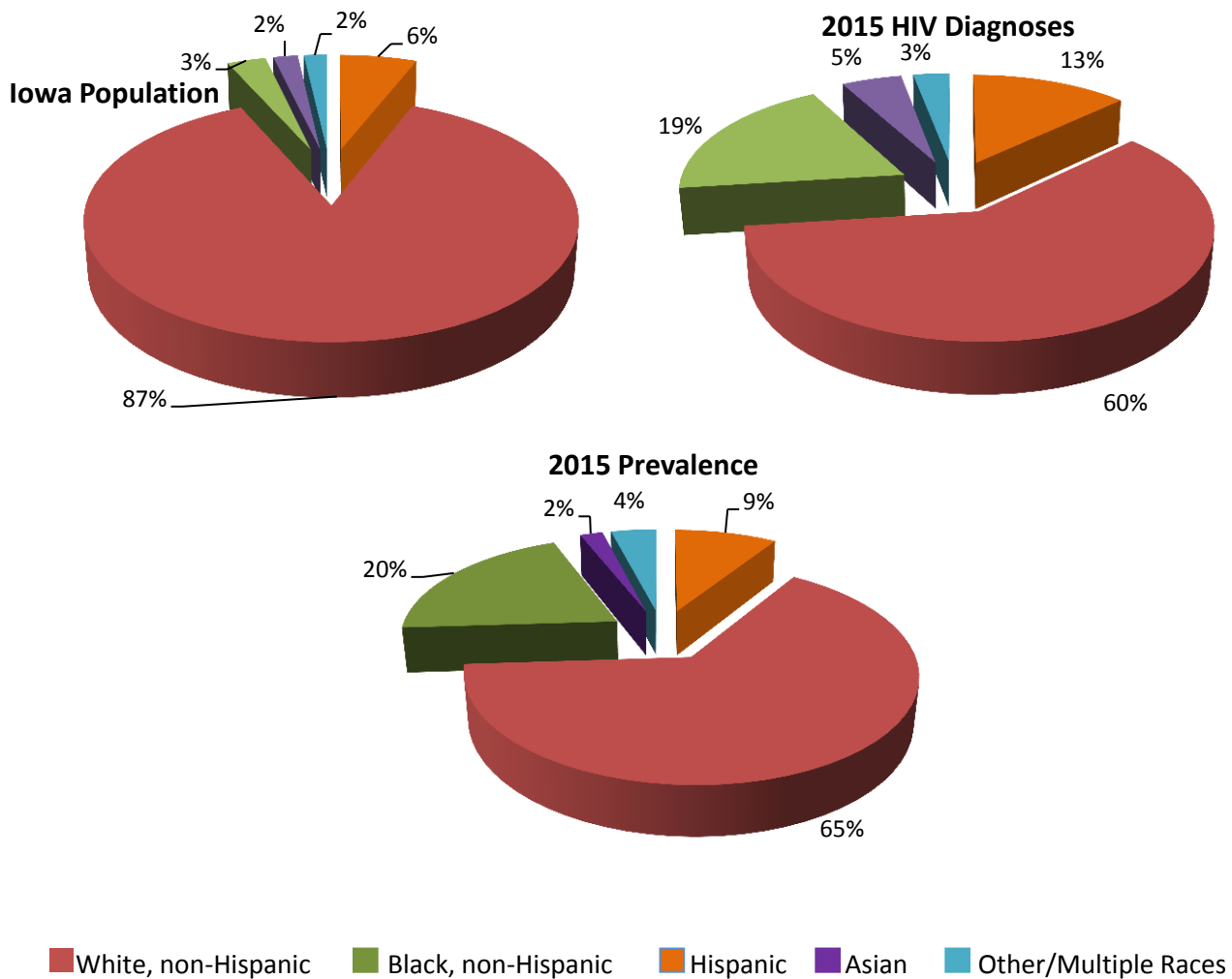


Figure 30 shows that the over-representation of minority populations is quite evident among 2015 HIV diagnoses and among prevalence of persons living with HIV disease. Black, non-Hispanic persons accounted for 19% of HIV diagnosis in 2015, more than six times what would be expected from the size of the black, non-Hispanic population in Iowa. Hispanics accounted for 13% of HIV diagnoses in 2015 and 9% of persons living with HIV disease, yet make up about 6% of Iowa’s population.

**Race, Ethnicity, and Sex – HIV Diagnoses**

The breakdown of HIV diagnoses in 2015 by race, ethnicity, and sex shows that the overrepresentation of minorities mainly extends to five specific groups: black, non-Hispanic males; black, non-Hispanic females; Hispanic males; multiple-race males and multiple-race females. All five groups have HIV diagnosis rates substantially higher than the general

population. Table 16 also shows that all of the white, non-Hispanic diagnosed persons are U.S.-born whereas all of the Asian, non-Hispanic diagnosed persons are foreign-born. The majority of black, non-Hispanic and Hispanic diagnosed persons is also foreign-born.

**Table 16**  
**Iowa HIV Diagnoses<sup>1</sup> in 2015**  
**by Race, Ethnicity, Sex and Country of Origin**

	All 2015 Diagnoses			U.S.-born Only	
	#	(%)	(#/100,000) <sup>2</sup>	#	(%)
<b>Males</b>					
White, non-Hispanic	61	(62)	4.6	61	(77)
Black, non-Hispanic	17	(17)	30.6	11	(14)
Hispanic	13	(13)	14.0	4	(5)
Asian	4	(4)	11.0	--	--
Multiple Races	3	(3)	12.2	3	(4)
<b>Total Males</b>	<b>98</b>		<b>6.3</b>	<b>79</b>	
	All 2015 Diagnoses			U.S.-born Only	
<b>Females</b>	#	(%)	(#/100,000) <sup>2</sup>	#	(%)
White, non-Hispanic	13	(50)	0.9	13	(81)
Black, non-Hispanic	7	(27)	14.1	2	(13)
Hispanic	3	(12)	3.5	--	--
Asian	2	(8)	5.6	--	--
Multiple Races	1	(4)	4.1	1	(6)
<b>Total Females</b>	<b>26</b>		<b>1.7</b>	<b>16</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

<sup>2</sup> Based on 2014 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 HIV diagnosis rate of 30.6 diagnoses per 100,000 population, over 7 times higher than the rate of 4.6 per 100,000 for white, non-Hispanic males in 2015. Black, non-Hispanic females had a diagnosis rate of 14.1 per 100,000 population, over 14 times the rate of 0.9 per 100,000 for white, non-Hispanic females, but it is important to note that over 70% of the black females were foreign born, whereas 65% of black male diagnoses were among U.S.-born persons. The rate is also disproportionately higher among Hispanic persons than white, non-Hispanic persons – over 3 times higher for both males and females. All the Hispanic females diagnosed in 2015 were foreign born, compared to 70% of the males.

Despite the great disparity in diagnosis rates, white, non-Hispanic males still account for the largest group of persons being diagnosed with HIV in Iowa. In 2015, they numbered 74, 60% of all persons newly diagnosed with HIV disease.

## Race, Ethnicity, and Sex – Persons Living with HIV and AIDS

The higher rates of diagnosis of HIV disease among minority groups correspond to higher prevalence of persons living with HIV disease per 100,000 population. Although the largest *numbers* of persons living with HIV infection are white, non-Hispanic persons, black, non-Hispanic males have the highest *prevalence* of persons living with HIV disease per 100,000 population of any ethnic or racial group (Table 17 and Figure 31). There were over 546 persons with HIV for every 100,000 black, non-Hispanic males as December 31, 2015. If all populations experienced this prevalence, there would be more than 17,000 persons living with HIV disease in Iowa.

With a prevalence of 395 persons per 100,000 population, black, non-Hispanic females have the second highest prevalence of persons living with HIV disease per 100,000 population, more than 22 times that of white, non-Hispanic females. Increases in prevalence from 2013 to 2015 were most pronounced among Hispanic males, black females, and white males.

**Table 17**  
**Persons Living with HIV Disease (PLWH) as of December 31, 2015<sup>1</sup>**  
**by Race, Ethnicity, and Sex**

<b>Males</b>	<b>#</b>	<b>%</b>	<b>2015</b> <b>(#/100,000)<sup>2</sup></b>	<b>2013</b> <b>(#/100,000)<sup>3</sup></b>	<b>Change<sup>4</sup></b>
White, non-Hispanic	1,366	(69)	102.2	97.3	+4.9
Black, non-Hispanic	303	(15)	546.1	582.9	-36.8
Hispanic	187	(9)	200.7	194.4	+6.3
Asian	43	(2)	118.5	126.4	-7.9
Native Hawaiian/ Pacific Islander	1	--	--	--	--
Am. Indian/ Alaska Native	3	--	--	--	--
Multiple Races	74	(4)	300.4	197.6	+102.8
<b>Total Males</b>	<b>1,977</b>		<b>127.4</b>	<b>121.5</b>	<b>+5.9</b>

<b>Females</b>	<b>#</b>	<b>%</b>	<b>2015</b> <b>(#/100,000)<sup>2</sup></b>	<b>2013</b> <b>(#/100,000)<sup>3</sup></b>	<b>Change<sup>4</sup></b>
White, non-Hispanic	245	(47)	17.9	17.4	+0.5
Black, non-Hispanic	195	(38)	394.7	420.4	-25.7
Hispanic	29	(6)	33.9	33.6	+0.3
Asian	18	(3)	50.2	56.3	-6.1
Native Hawaiian/ Pacific Islander	0	--	--	--	--
Am. Indian/ Alaska Native	2	--	--	--	--
Multiple Races	30	(6)	124.1	57.4	+66.7
<b>Total Females</b>	<b>519</b>		<b>33.0</b>	<b>31.6</b>	<b>+1.4</b>

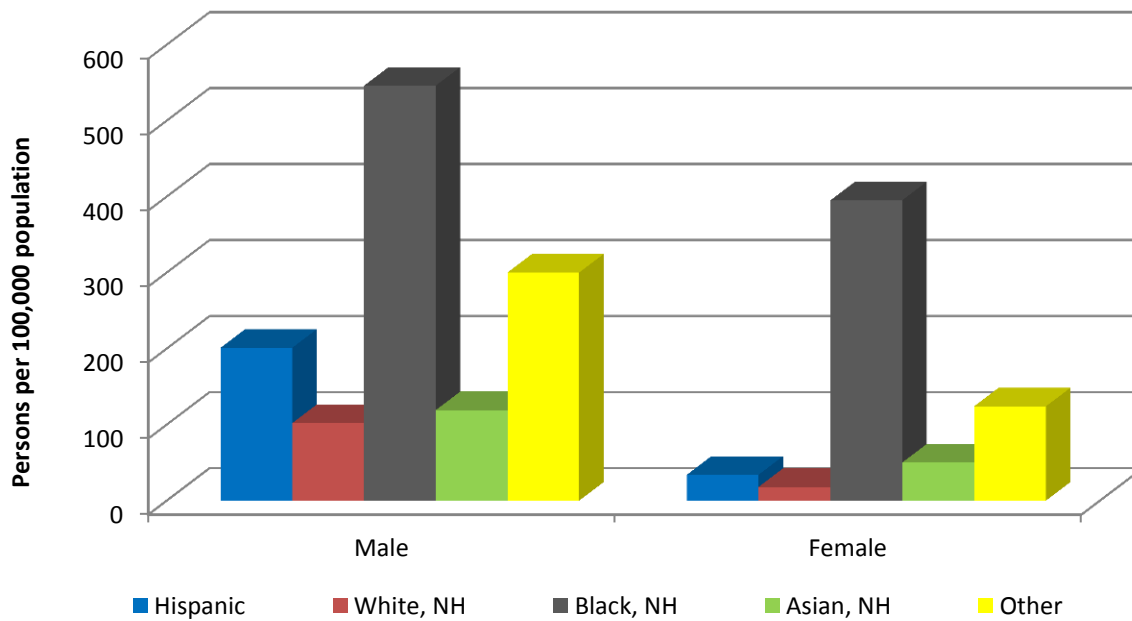
<sup>1</sup> Persons living with HIV or AIDS in Iowa irrespective of where they were initially diagnosed as of December 31, 2015. Persons are counted only once. All deaths may not have been reported

<sup>2</sup> Persons per 100,000 population living with HIV as of December 31, 2015 based on 2015 population estimates

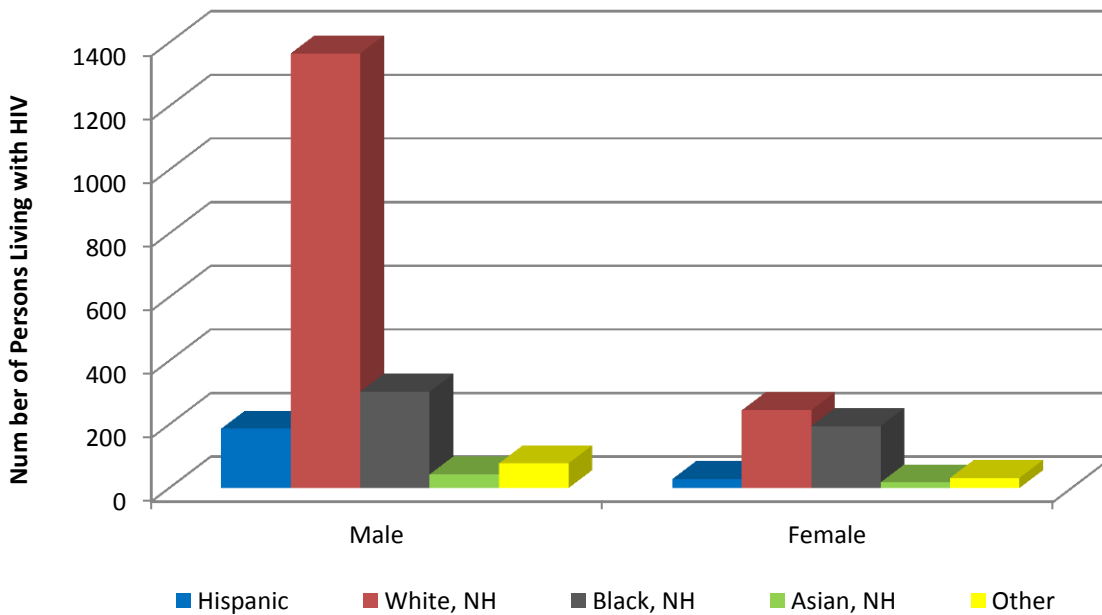
<sup>3</sup> Persons per 100,000 population living with HIV as of December 31, 2013 based on 2013 population estimates

<sup>4</sup> Change from 2013 number of PLWH per 100,000 population.

**Figure 31**  
**Prevalence of Persons Living with HIV Disease on December 31, 2015<sup>1</sup>**  
**by Race, Ethnicity, and Sex**



**Figure 32**  
**Number of Persons Living with HIV Disease on December 31, 2015<sup>1</sup>**  
**by Race, Ethnicity and Sex**



<sup>1</sup> Persons whose first diagnosis of HIV or AIDS was as a resident of Iowa and who were reported to be living as of December 31, 2015. Persons are counted only once. All deaths may not have been reported.

As these two figures above show, Iowa must address both large numbers of diagnoses among one population and very significant impacts among other smaller populations. There are significant disparities among populations when prevalence per population is considered, even though this disparity results in relatively fewer cases overall. Even with the disproportionate numbers of persons living with HIV or AIDS per 100,000 population among black, non-Hispanic persons and among Hispanics (Figure 31), white, non-Hispanic males still account for the largest *numbers* of persons living with HIV disease in the state (Figure 32). However, other sections of this profile will show that HIV is not distributed evenly among white, non-Hispanic persons, and this population definition can be narrowed substantially.

The comparatively small numbers of minorities in the state explain the seeming paradox of small *numbers* of diagnoses but high *rates* of diagnosis and prevalence. Relatively small minority populations in the state result in low numbers of diagnoses when compared to the much larger white, non-Hispanic population. Despite the low numbers of diagnoses, the impact of high infection rates within a small population can be devastating to that population. For that reason, diagnoses 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 diagnoses when their numbers in the general population are taken into account.
- Black, non-Hispanic males have HIV diagnosis rates more than seven times that of white, non-Hispanic males and Hispanic males have HIV diagnosis rates more than three times that of white, non-Hispanic males.
- Black, non-Hispanic females had the highest rate of diagnosis of any racial and ethnic group among females in 2015. Their rate was over 14 times that of white, non-Hispanic females. However, significant numbers of cases are among foreign-born black women.
- Absolute numbers, rates (per 100,000 population), and changes in prevalence from previous years all need to be considered when prioritizing populations for prevention and care. Despite seemingly low numbers of diagnoses, HIV disease is having a very substantial impact on certain minority populations in the state.
- The effects of high diagnosis rates in small populations can be especially profound. Black, non-Hispanic persons, both males and females, and Hispanic males are experiencing HIV rates unparalleled among white, non-Hispanic persons. If the prevalence of HIV seen among black, non-Hispanic males were experienced by all racial and ethnic groups in Iowa, over 17,000 Iowans would now be living with HIV disease in the state.
- Despite the impact of HIV disease on black, non-Hispanic persons and Hispanic males, the overwhelming majority of diagnoses are among white, non-Hispanic persons. This is explained by the very large white, non-Hispanic population compared to other groups in the state. A comprehensive picture of the epidemic can be presented only by examining both numbers and rates.



## HIV AND AIDS BY EXPOSURE CATEGORY

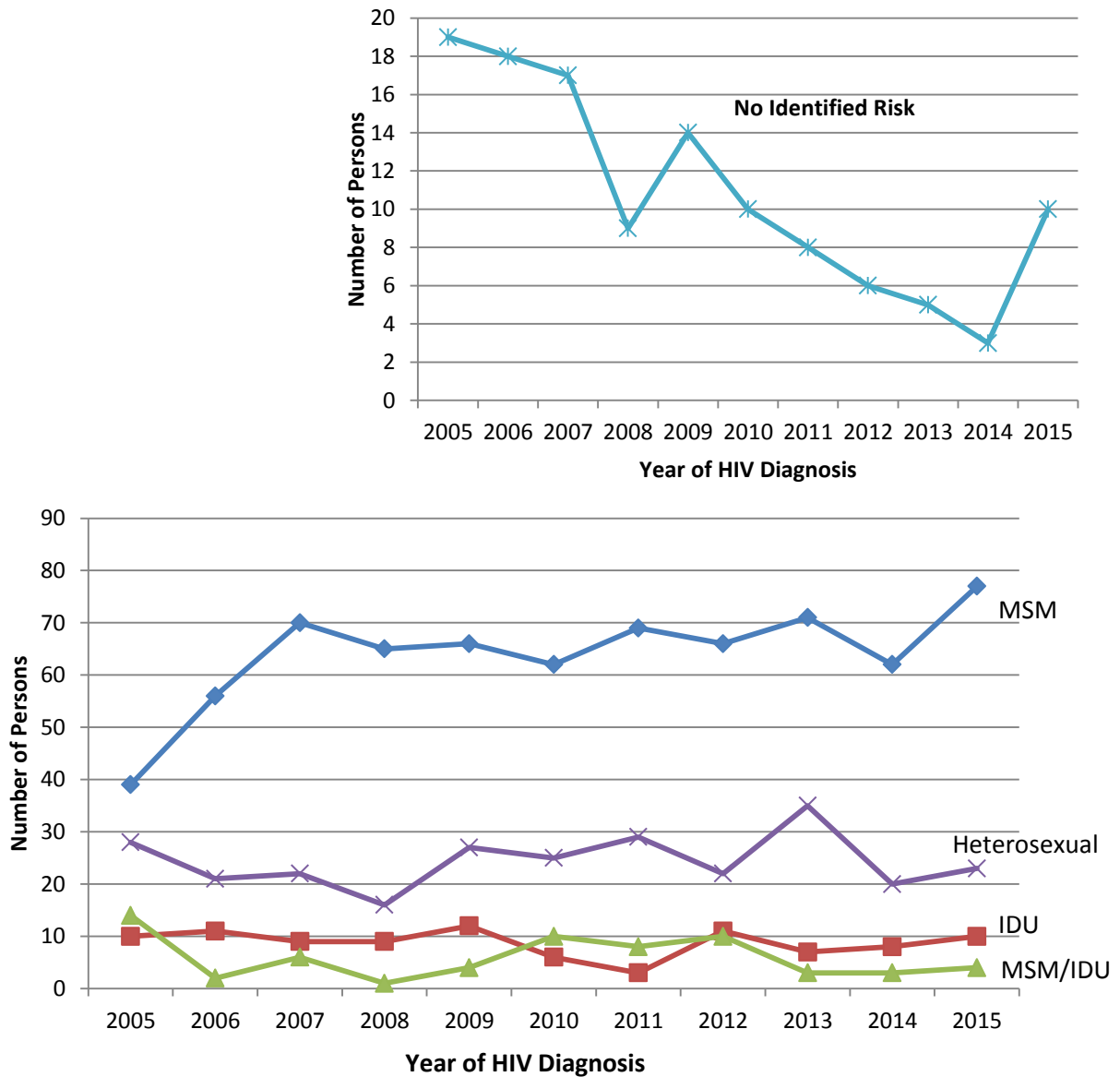
Behavioral and health histories of people diagnosed with HIV are reported by health care providers and are also collected through interviews with recently diagnosed people. Behaviors and risk histories are ranked according to probability of HIV transmission, and a new case is categorized according to that probability. Exposure categories include men who have sex with men (MSM), men who have sex with men and inject drugs (MSM/IDU), people who inject drugs (IDU), heterosexual contact with a person with a documented HIV infection, hemophilia, transplant/transfusion recipient, no identified risk (NIR), and other risk (e.g., occupational exposures such as needle sticks or exposures to blood). For surveillance purposes, HIV cases are counted only once in a hierarchy of exposure categories. People 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 people. “Heterosexual contact” includes people 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 a person who injects drugs, 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 people 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).

### Exposure Category – HIV and AIDS Diagnoses

Figure 33 shows HIV diagnoses from 2005 to 2015 by mode of exposure. Male-to-male sex remains the predominant mode of exposure in Iowa. The annual number of diagnoses among men who have sex with men (MSM) increased considerably from 39 diagnoses in 2005 to a high of 77 in 2015, the highest since 2005. Diagnoses among men who have sex with men and also inject drugs (MSM/IDU) have decreased from a high of 14 in 2005 to 4 in 2015. MSM/IDU diagnoses have fallen below diagnosis among those who inject drugs since 2012. Diagnoses among IDU have remained relatively steady in Iowa from 2005 through 2015, ranging from 3 to 12 with a median of 9 and a mean of 8.7.

**Figure 33**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category**  
**2005 through 2015**



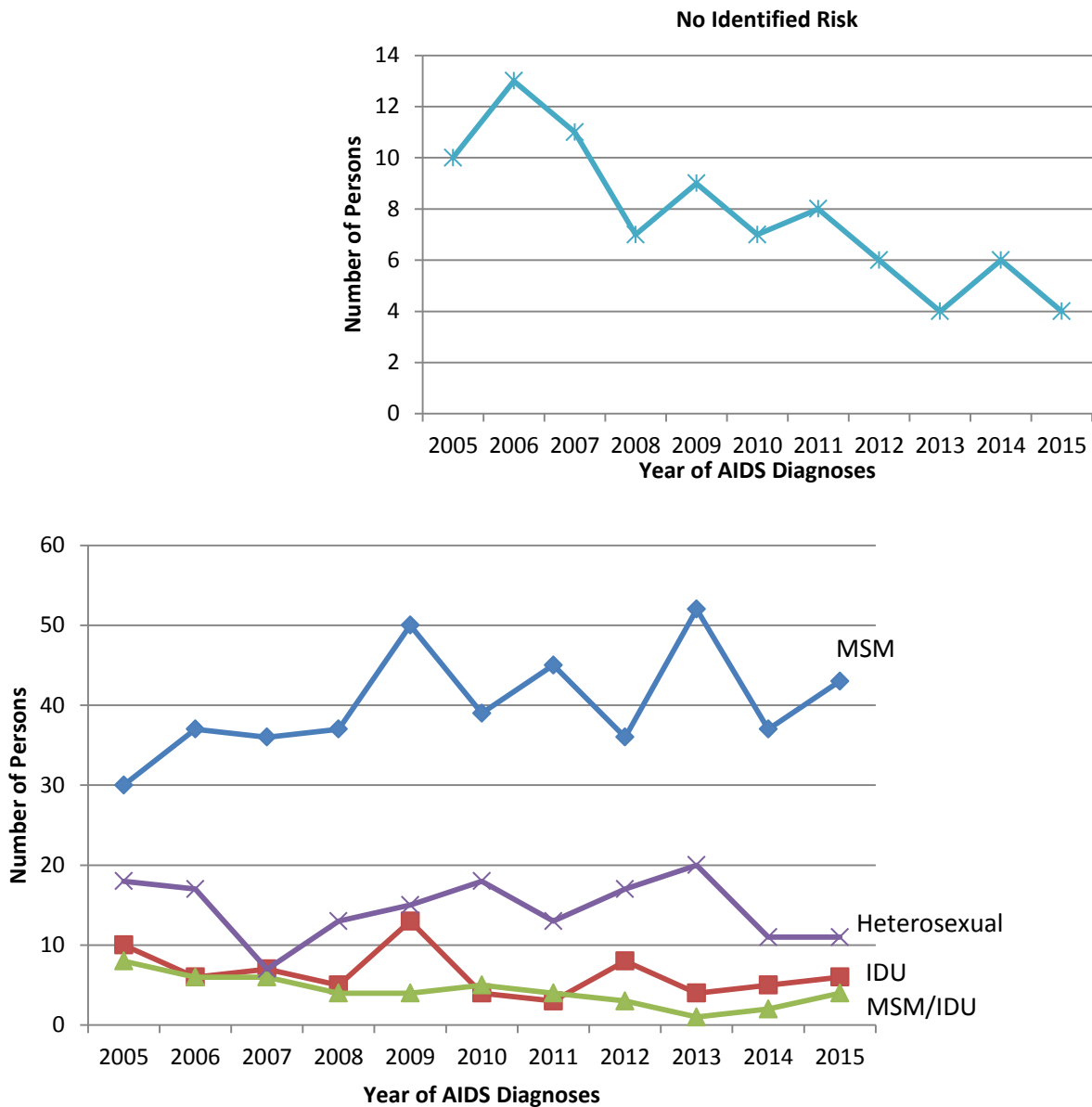
<sup>1</sup> HIV diagnoses reflect all people diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were ≥ 13 years of age at the time of diagnosis. However, exposure to HIV may have been at a younger age.

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

People reported with no identified risk had shown a general decline from 2005 through 2014, only to increase again in 2015 (Figure 32 inset). Many people initially reported without an identified risk are reclassified over time as more information becomes available. Reclassification can alter interpretations of trends among exposure categories.

Diagnoses of AIDS among MSM increased from 30 in 2005 to a peak of 52 in 2013, and decreased to a low of 43 in 2015 (Figure 34). Diagnoses of AIDS among IDU peaked at 13 in 2009 and then dropped to 6 in 2015. Diagnoses of AIDS among people with heterosexual contact have gradually increased since 2007 reaching a peak of 20 in 2013 before dropping to 11 in 2015. Since 2005, 85 AIDS diagnoses have occurred among people with no known risk. Reclassification of risk for a large number of these diagnoses seems unlikely.

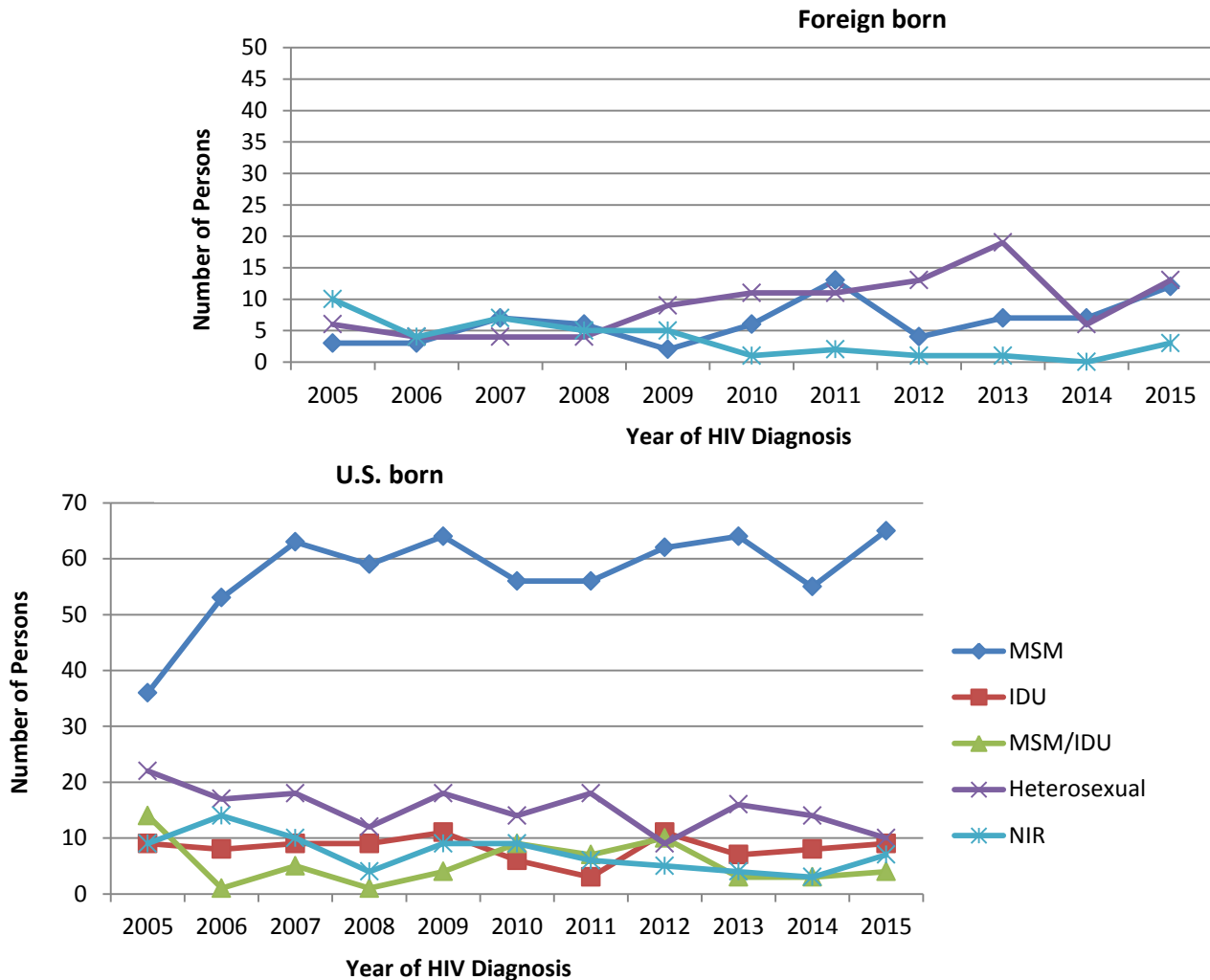
**Figure 34**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> by Exposure Category**  
**2005 through 2015**



<sup>1</sup> AIDS diagnoses reflect all people ≥ 13 years of age diagnosed with AIDS while residing in Iowa at the time of diagnosis. However, exposure to HIV may have been at a younger age.

Because foreign-born people with HIV are more likely to be females and minorities, exposure categories may vary from those for U.S.-born people with HIV. Figure 35 shows diagnoses of HIV by country of origin and exposure category.

**Figure 35**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category and Country of Origin**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all people diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis, and were ≥ 13 years of age at the time. However, exposure to HIV may have been at a younger age.

The three major exposure categories for foreign-born people are heterosexual contact, male-to-male sex, and no identified risk. In 2005, foreign-born people accounted for 53% of all people without an identified risk. In 2015, this was 30%. Approximately 50% of the foreign-born people diagnosed in 2005 did not have a risk identified compared to about 10% in 2015.

Historically, 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. Importantly, in 2015 male-to-male sex became the major route of exposure among foreign-born people.

Plotting U.S.-born and foreign-born people separately shows that male-to-male sex has remained the predominant mode of exposure among U.S.-born people (Figure 35). It also demonstrates that much of the fluctuation in diagnoses from 2013 to 2015 was due to diagnoses among U.S.-born MSM, although there were also increases in diagnoses in 2015 among foreign-born MSM and heterosexuals. Diagnoses of HIV in U.S.-born people with heterosexual contact decreased from a high of 22 in 2005 to 10 in 2015.

**Table 18**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> in 2015,**  
**by Exposure Category and Country of Origin**

Exposure Category	All People		U.S.-born		Foreign-born	
	#	(%)	#	(%)	#	(%)
MSM	77	(62)	65	(68)	12	(41)
IDU	10	(8)	9	(9)	1	(3)
MSM/IDU	4	(3)	4	(4)	0	--
Heterosexual	23	(19)	10	(11)	13	(45)
Transfusion/transplant	0	--	0	--	0	--
NIR/other	10	(8)	7	(7)	3	(10)
<b>Total</b>	<b>124</b>		<b>95</b>		<b>29</b>	

<sup>1</sup> HIV diagnoses reflect all people diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were  $\geq 13$  years of age at the time. However, exposure to HIV may have been at a younger age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 18 characterizes adult and adolescent HIV diagnoses in 2015 by exposure category and country of origin. Sixty-two percent of all adult and adolescent HIV diagnoses in 2015 were among men who reported male-to-male sexual contact. Of the 77 males reporting male-to-male sex, 65 (84%) were U.S. born. Although MSM and heterosexual contact are the two main risks for both U.S.-born and foreign-born people, heterosexual risk tends to be more common among foreign-born people. As noted above, male-to-male sexual contact is the second highest mode of exposure among foreign-born people diagnosed in 2015 at 41%.

In 2015, 6% of people diagnosed with AIDS had no risk identified (Table 19). This is less than 9% of cumulatively reported AIDS cases with no identified risk. It is possible that risk could be obtained over time on additional individuals diagnosed in 2015.

Table 19 shows some differences in proportions between cumulative AIDS diagnoses and AIDS diagnoses in 2015. In general, there was an increase in the proportion of diagnoses among MSM and among heterosexuals in 2015 when compared to all AIDS diagnoses to date.

**Table 19**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> in 2015**  
**and Cumulatively through 2015, by Exposure Category**

Exposure Category	2015		Cumulative	
	#	(%)	#	(%)
MSM	43	(62)	1,358	(57)
IDU	6	(9)	248	(10)
MSM/IDU	4	(6)	166	(7)
Hemophilia	0	--	40	(2)
Heterosexual	11	(16)	335	(14)
Transfusion/transplant	1	(1)	24	(1)
NIR/other	4	(6)	192	(8)
<b>Total</b>	<b>69</b>		<b>2,363</b>	

<sup>1</sup> Adult and adolescent AIDS diagnoses reflect all people diagnosed with AIDS for the first time who were residents of Iowa at diagnosis and who were 13 or more years of age at the time. However, exposure to HIV could have been at any age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

### Exposure Category – People Living with HIV Disease

Numbers of people living with HIV disease (PLWH) by exposure category are shown in Table 20. True prevalence, or PLWH per 100,000 population, cannot be calculated because the population sizes are unknown. That is, there is no census of people who inject drugs or men who have sex with men in Iowa. However, there have been efforts to provide accurate estimates of the number of MSM by state recently. CDC estimated the U.S. population of men who have sex with men to be 3.9% of all adult males. Researchers at Emory University and CDC then used data from the American Community Survey to apply that to states<sup>1</sup>. Iowa's estimate is that 1.8% of adult males in Iowa are gay or bisexual. Using the 2015 population estimate of 1,179,279 adult males would mean that there are 21,227 men who have sex with men in Iowa. Table 20 indicates that there are 1,525 MSM living with HIV in Iowa. This gives prevalence of 7,184 per 100,000 MSM (or 7.1 per 100 MSM). By comparison, black males in Iowa have a 2015 prevalence of 546 per 100,000.

Just over half of all people living with HIV disease in Iowa are men who have sex with men. Heterosexual exposure is the second most common exposure, with 18% of people living with HIV reporting this risk. People who inject drugs account for 8% of all people living with HIV disease. Eleven percent of PLWH had no risk identified.

<sup>1</sup> Estimating the Population Sizes of Men Who Have Sex with Men in US States and Counties Using Data From the American Community Survey; Gray, JA, et al.; JMIR Public Health Surveill. 2016;2(1):e14.

**Table 20**  
**People Living with HIV Disease<sup>1</sup> as of December 31, 2015**  
**by Exposure and Country of Origin**

Exposure Category	All People		U.S. Born		Foreign Born	
	#	(%)	#	(%)	#	(%)
MSM	1,339	(54)	1,208	(59)	131	(30)
IDU	201	(8)	187	(9)	14	(3)
MSM/IDU	186	(7)	179	(9)	7	(2)
Hemophilia	6	--	6	--	0	--
Heterosexual	458	(18)	309	(15)	149	(34)
Transfusion/transplant	3	--	3	--	0	--
NIR/other	303	(12)	172	(8)	131	(30)
<b>Total</b>	<b>2,496</b>		<b>2,064</b>		<b>432</b>	

<sup>1</sup> Reflects people residing in Iowa who were living with HIV disease as of December 31, 2015. All deaths may not have been reported.

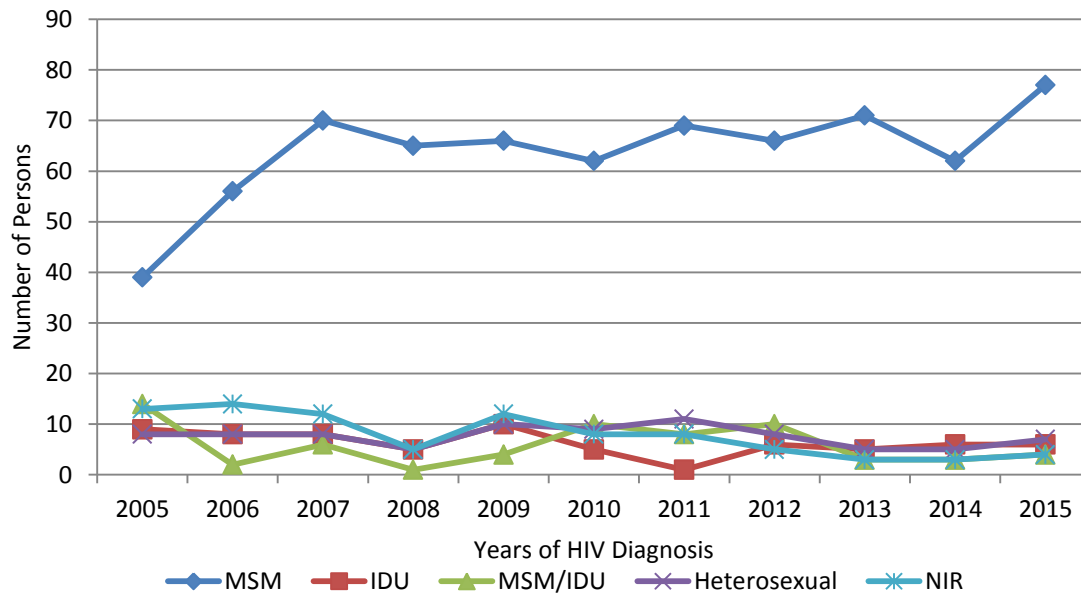
The most common mode of exposure among U.S. born is MSM at 59% compared to 30% among the foreign born. In contrast, heterosexual exposure is the most common exposure among the foreign born at 34%, compared to 15% among U.S.-born people. Risk could not be ascertained for approximately a third (30%) of foreign-born PLWH compared to 8% of U.S.-born PLWH.

### Exposure Category and Sex – HIV Diagnoses

Because such a large proportion of all HIV disease diagnoses are attributed to one sex (male) and one exposure category (MSM), it is helpful to examine exposure data separately by sex to give 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 36. Clearly, the trends among adult and adolescent males are dominated by MSM. Diagnoses among MSM increased from 2005 to 2007, but then remained level between 60 and 70 diagnoses until 2015. Diagnoses among males with other modes of exposure have decreased since 2005 and continue to remain low. A total of 87 diagnoses among males from 2005 through 2015 have no other mode of transmission identified.

**Figure 36**  
**Iowa HIV Diagnoses<sup>1</sup> by Exposure Category**  
**Adult and Adolescent Males, 2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all people diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and who were  $\geq 13$  years of age at diagnosis. However, exposure to HIV may have been at a younger age.

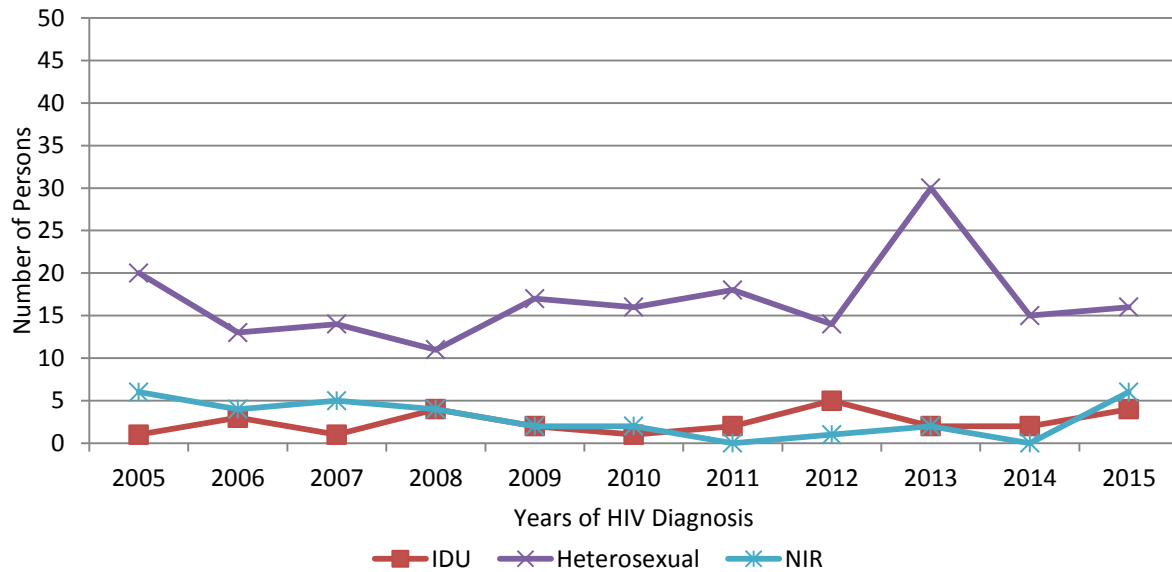
NIR = no identified risk.

Diagnoses of HIV infection by exposure category among females are shown in Figure 37. Heterosexual contact was the most common mode of exposure between 2005 and 2015. During that interval, heterosexual diagnoses ranged from 11 to 30, with an average of 17. The most notable event was the marked increase in diagnoses among heterosexual women in 2013. This can be attributed to an increase in diagnoses among foreign-born women. In general, diagnoses among each exposure group of adult and adolescent females was fairly level from 2005 to 2015.

A total of 32 diagnoses among females from 2005 through 2015 have no other mode of transmission identified. Diagnoses of females in the no identified risk group have decreased steadily from a peak of 6 diagnoses in 2005 to 0 in 2014, but increased to 6 in 2015 (Figure 37).



**Figure 37**  
**Iowa HIV Diagnoses by Exposure Category for**  
**Adult and Adolescent<sup>1</sup> Females, 2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all people diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV may have occurred at a younger age.

NIR = no identified risk.

Exposure category by sex and country of origin for adult and adolescent HIV diagnoses in 2015 is shown in Table 21. More than two-thirds of diagnoses among adult and adolescent males were among men who have sex with men, but this was even higher among U.S.-born males. There was a significantly higher proportion of heterosexual exposures (26%) among foreign-born males than among U.S.-born males (3%) in 2015. Of the males diagnosed in 2015, only 6 (6%) reported injection drug use as a mode of exposure, and this did not vary by country of origin. Another 4 (4%) were men who have sex with men and inject drugs. No risk was identified for 4% of all adult and adolescent males. In terms of country of origin, no risk was identified for 4% of U.S.-born males and 5% of foreign-born males.

Among adult and adolescent females diagnosed in 2015, the largest proportion, 62%, indicated heterosexual contact as their likely mode of exposure, but this was significantly higher among foreign-born women. No risk was identified for 23% of all adult and adolescent females. Injection drug use was an exposure found only among U.S.-born women.

**Table 21**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> in 2015**  
**by Exposure Category, Sex, and Country of Origin**

Exposure Category- Males	All People		U.S. Born		Foreign Born	
	#	(%)	#	(%)	#	(%)
MSM	77	(79)	65	(82)	12	(63)
IDU	6	(6)	5	(6)	1	(5)
MSM/IDU	4	(4)	4	(5)	0	--
Heterosexual contact	7	(7)	2	(3)	5	(26)
NIR/other	4	(4)	3	(4)	1	(5)
<b>Total Males</b>	<b>98</b>		<b>79</b>		<b>19</b>	

Exposure Category-Females						
IDU	4	(15)	4	(25)	0	--
Heterosexual contact	16	(62)	8	(50)	8	(80)
NIR/ other	6	(23)	4	(25)	2	(20)
<b>Total Females</b>	<b>26</b>		<b>16</b>		<b>10</b>	

<sup>1</sup> HIV diagnoses reflect all people diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were  $\geq 13$  years of age at the time. However, exposure to HIV may have occurred at a younger age.

Ascertaining modes of exposure for people recently diagnosed with HIV is a priority for the Iowa Department of Public Health. Clearly, trends can be misinterpreted when 8% of the recent cases have no risk associated with them. As partners are tested and new information becomes available, some of the people, particularly the U.S. born, diagnosed in 2015 without a known risk, will have modes of exposure determined in the coming year.

Identifying risks for foreign-born people is difficult. Many people do not remember exposures that may have occurred before they entered the U.S. Specific medical interventions, immunizations or other injections with needles that may have been contaminated, or sexual partners who are unavailable for testing are some examples of risks more common to immigrants from foreign countries.

Table 22 compares AIDS diagnoses in 2015 to cumulative AIDS diagnoses by exposure category and sex. There was a higher proportion of MSM diagnosed with AIDS in 2015 than expected from historical data (i.e., cumulative cases). Among adult and adolescent females, there were fewer cases related to injection drug use and more related to heterosexual or unidentified modes of exposure than expected from cumulative cases.

**Table 22**  
**Iowa AIDS Diagnoses by Exposure Category and Sex**  
**Adults and Adolescents<sup>1</sup>, 2015 and Cumulatively<sup>2</sup> through 2015**

<b>Exposure Category: Males</b>	<b>2015</b>		<b>Cumulative<sup>2</sup></b>	
	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
MSM	43	(74)	1,358	(68)
IDU	5	(9)	176	(9)
MSM/IDU	4	(7)	166	(8)
Hemophilia	0	--	39	(2)
Heterosexual contact	4	(7)	110	(6)
Transfusion/transplant	1	(2)	14	(1)
NIR/other	1	(2)	126	(6)
<b>Total Males</b>	<b>58</b>		<b>1,989</b>	

<b>Exposure Category: Females</b>				
IDU	1	(9)	72	(19)
Hemophilia	0	--	1	--
Heterosexual contact	7	(64)	225	(60)
Transfusion/transplant	0	--	10	(3)
NIR/other	3	(27)	67	(18)
<b>Total Females</b>	<b>11</b>		<b>375</b>	

<sup>1</sup> Includes all people who were first diagnosed with AIDS while residents of Iowa and who were  $\geq$  13 years of age at time of diagnosis. However, exposure to HIV may have occurred at less than 13 years of age.

<sup>2</sup> Cumulative data include people diagnosed from 1982 through 2015.

### **Exposure Category and Sex – People Living with HIV Disease**

Exposure categories by sex are shown in Table 23 for adults and adolescents (people who were diagnosed at age 13 years or older) living with HIV disease in Iowa (i.e., with current residence in Iowa).

Among adult and adolescent males living with HIV disease in Iowa at the end of 2015, 68% were infected through male-to-male sex, 10% were MSM/IDU, and 6% were infected through injection drug use. More than 80% of all people who inject drugs (MSM/IDU and IDU) living with HIV disease are male.

Nearly two-thirds of all living adult and adolescent females with HIV disease were infected through heterosexual contact. Another 15% were infected through injection drug use. No risk has been identified for nearly of quarter of adult and adolescent females living with HIV disease. This compares to only 8% 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 where the risk of the partner must be identified for proper risk classification.

**Table 23**  
**People Diagnosed as Adults or Adolescents<sup>1</sup> and**  
**Living with HIV Disease as of December 31, 2015**  
**by Exposure Category and Sex**

Exposure Category	Prevalence	
	#	(%)
<b>Category-Males</b>		
MSM	1339	(68)
IDU	126	(6)
MSM/IDU	186	(10)
Hemophilia	6	--
Heterosexual Contact	139	(7)
Transfusion/transplant	1	--
NIR/other	159	(8)
<b>Total Males</b>	<b>1,956</b>	
<b>Category-Females</b>		
IDU	75	(15)
Hemophilia	0	--
Heterosexual Contact	319	(63)
Transfusion/ transplant	2	--
NIR/other	111	(22)
<b>Total Females</b>	<b>507</b>	

<sup>1</sup> Includes all people residing in Iowa, who were  $\geq 13$  years of age at diagnosis, and were living with HIV or AIDS as of December 31, 2015. Exposure to HIV may have occurred at less than 13 years of age. All deaths may not have been reported. Percentage totals may not equal 100 due to rounding. Percentages are not shown for small numbers.

### Exposure Category, Race, Ethnicity, and Sex – People Living with HIV Disease

Exposure categories by race, ethnicity, and sex are shown in Figure 38 for adults and adolescents living with HIV disease.

The greatest proportion of adults and adolescents living with HIV disease in Iowa at the end of 2015 were white, non-Hispanic MSM (40%) followed by white, non-Hispanic heterosexual females (7%). More than 75% of all MSM (MSM and MSM/IDU) living with HIV disease are white, non-Hispanic.

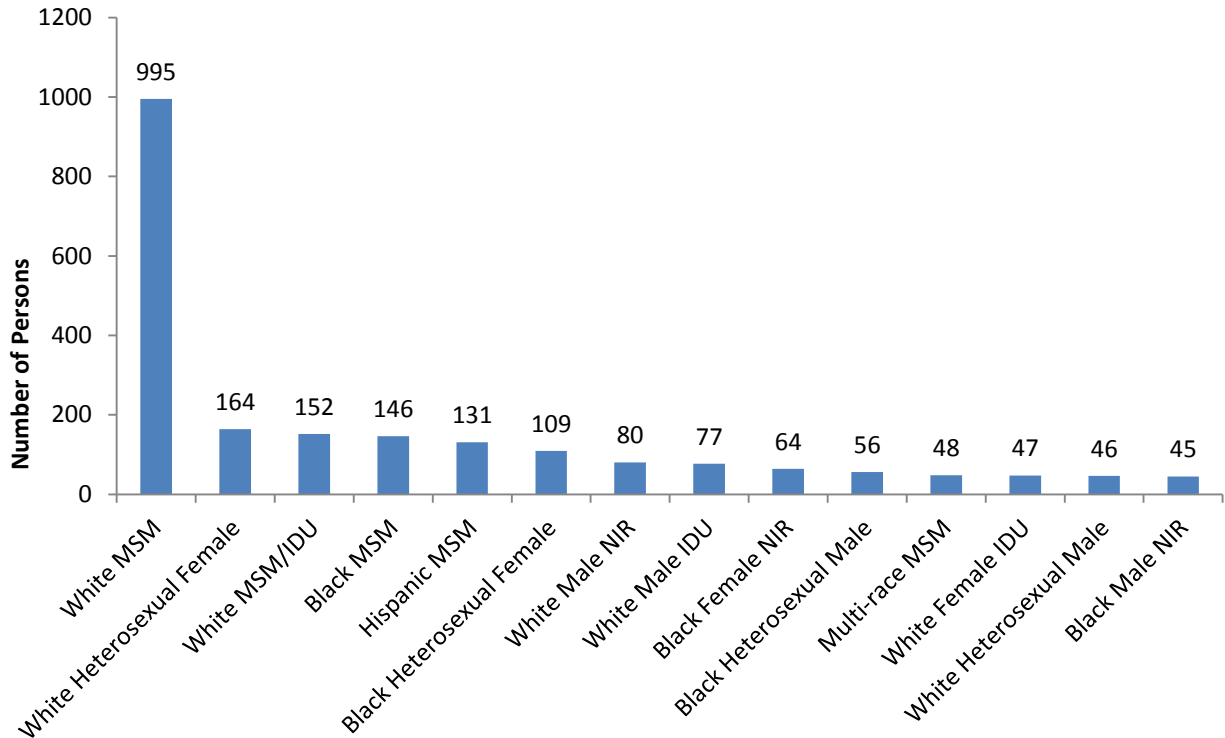
Black, non-Hispanic people accounted for 20% of PLWH in Iowa at the end of 2015. Of all black, non-Hispanic adults and adolescents living with HIV disease, 34% are MSM (MSM and MSM/IDU) compared to 64% of Hispanic adults and adolescents living with HIV disease.

Heterosexual risk accounted for 19% of people living with HIV disease in Iowa at the end of 2015. Of all black, non-Hispanic adults and adolescents, 34% were exposed via heterosexual sex

compared to 14% of white non-Hispanic adults and adolescents, and 17% of Hispanic adults and adolescents.

No risk has been identified for 8% of adult and adolescent people living with HIV disease. Of all black, non-Hispanic adults and adolescents, 22% have no identified risk compared to 7% of white non-Hispanic adults and adolescents, and 12% of Hispanic adults and adolescents.

**Figure 38**  
**People Living with HIV Disease by Race, Ethnicity and Exposure Category for Adults and Adolescents<sup>1</sup> as of December 31, 2015**



<sup>1</sup> Includes all people residing in Iowa, who were ≥ 13 years of age at diagnosis, and were living with HIV disease as of December 31, 2015. Exposure to HIV may have occurred at less than 13 years of age. All deaths may not have been reported.

**Exposure Category and Race – Five Years of HIV Diagnoses, 2011 through 2015**

To explore links between mode of exposure and race and ethnicity for more recent cases, we analyzed HIV diagnoses for the five year period from January 1, 2011, through December 31, 2015. Adult and adolescent HIV diagnoses by exposure category, race, and ethnicity are presented in Table 24.

Differences in modes of exposure are evident between racial and ethnic groups. MSM accounted for the highest proportions of cases among white, non-Hispanic people (69%), and Hispanic people (59%). Heterosexual contact is the most common mode of exposure among black, non-Hispanic people (47%). The proportion of no identified risks is highest among black, non-Hispanic people (9%) and people who do not identify as black, white, or Hispanic. Injection drug use was a relatively uncommon mode of exposure among all populations.

**Table 24**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category, Race and Ethnicity**  
**January 1, 2011 through December 31, 2015**

Exposure Category	White		Black		Hispanic		Other		All Groups	
	Non-Hispanic		Non-Hispanic							
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	247	(69)	38	(35)	41	(59)	19	(40)	345	(60)
IDU	28	(8)	8	(7)	2	(3)	1	(2)	39	(7)
MSM/IDU	24	(7)	2	(2)	1	(2)	1	(2)	28	(5)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	40	(11)	51	(47)	13	(22)	22	(52)	129	(23)
Transfusion/transplant	0	--	0	--	0	--	0	--	0	--
NIR/Other	18	(5)	10	(9)	2	(3)	2	(4)	32	(6)
<b>Totals</b>	<b>357</b>		<b>109</b>		<b>59</b>		<b>48</b>		<b>573</b>	

<sup>1</sup> Includes all people who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were ≥ 13 years of age at diagnosis. Exposure to HIV may have occurred at a younger age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

The data in Table 24 suggest the need for more than one approach to prevention. The proportions of people without identified risk, while relatively small, still leave room for speculation or misinterpretation. While CDC has developed multiple imputation computer programs designed to assign people without known risk to standard exposure categories, the programs have limited application to states with low HIV prevalence.

Modes of exposure within a racial or ethnic group may vary by country of origin as well. Thirty-six percent of black, non-Hispanic people and 71% of Hispanic people diagnosed from January 1, 2011, through December 31, 2015, were foreign born. Table 25 presents HIV diagnoses separately for foreign- and U.S.-born black, non-Hispanic and Hispanic people.

**Table 25**  
**Minority Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category, Race, Ethnicity**  
**and Country of Origin**  
**January 1, 2011 through December 31, 2015**

Exposure Category	Black, non-Hispanic				Hispanic			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
	#	(%)	#	(%)	#	(%)	#	(%)
MSM	34	(49)	4	(10)	12	(71)	29	(69)
IDU	8	(11)	0	--	1	(6)	1	(2)
MSM/IDU	2	(3)	0	--	0	--	1	(2)
Hemophilia	0	--	0	--	0	--	0	--
Heterosexual	19	(27)	32	(80)	4	(24)	9	(21)
Transfusion/transplant	0	--	0	--	0	--	0	--
NIR/other	7	(10)	3	(8)	0	--	2	(5)
<b>Total</b>	<b>70</b>		<b>35</b>		<b>17</b>		<b>42</b>	

<sup>1</sup> Includes all people who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were  $\geq$  13 years of age at diagnosis. Exposure to HIV may have occurred at a younger age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 53 indicates that among U.S.-born black, non-Hispanic people (African Americans), men who have sex with men, at 49%, is the most common mode of exposure. Among black, non-Hispanic foreign-born people, heterosexual contact, at 80%, is the most common mode of exposure. The proportion of unidentified risk was higher for U.S.-born black, non-Hispanic people (10%) than for foreign-born, black, non-Hispanic people (8%). However, there is little difference in modes of exposure between U.S.-born Hispanics and foreign-born Hispanics.

### Exposure Category and Race – Cumulative AIDS Diagnoses

Differences between racial and ethnic groups are also evident among cumulative AIDS diagnoses (Table 26). A lower proportion of AIDS diagnoses among black, non-Hispanic people has been attributed to MSM and a higher proportion attributed to injection drug use and heterosexual contact than among white, non-Hispanic people and Hispanic people. The proportion of diagnoses among Hispanic people attributed to MSM is less than among white, non-Hispanic people. However, exposure category is unknown for 15% of Hispanics, more than twice that for white, non-Hispanic people. There was a higher proportion of heterosexual exposure among Hispanics than among the white, non-Hispanics. However, MSM is the most common route of exposure among all racial and ethnic groups.

**Table 26**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> by Exposure Category, Race, and Ethnicity**  
**Cumulative through December 31, 2015**

Exposure Category	White		Black		Hispanic		Other		All Groups	
	non-Hispanic		non-Hispanic							
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	1,133	(64)	102	(30)	90	(52)	33	(46)	1,358	(57)
IDU	167	(9)	62	(18)	15	(9)	4	(6)	248	(10)
MSM/IDU	135	(8)	19	(6)	7	(4)	5	(7)	166	(7)
Hemophilia	39	(2)	1	--	0	--	0	--	40	(2)
Heterosexual	183	(10)	98	(29)	35	(20)	19	(26)	335	(14)
Transfusion/transplant	22	(1)	2	(1)	0	--	0	--	24	(1)
NIR/other	101	(6)	57	(17)	25	(15)	10	(14)	193	(8)
<b>Total</b>	<b>1,780</b>		<b>341</b>		<b>172</b>		<b>71</b>		<b>2,364</b>	

<sup>1</sup> Includes all people who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at diagnosis. However, exposure to HIV may have occurred at less than 13 years of age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Comparison of HIV diagnoses from 2011 through 2015 (Table 25) with cumulative AIDS diagnoses (Table 26) reveals a somewhat higher proportion of MSM among recent HIV diagnoses than among cumulative AIDS diagnoses for white, non-Hispanic people; black, non-Hispanic people; and Hispanic people. However, people with more recent diagnoses are more likely to have a risk identified, and this makes comparisons of exposure modes more difficult over time.

### Exposure Category by Race, Ethnicity, and Sex – HIV Diagnoses 2011 through 2015

To examine differences in modes of exposure between racial and ethnic groups for each sex, five years of data were examined. Among males diagnosed with HIV since January 1, 2011, MSM is the primary exposure for all reported races and ethnic groups (Table 27). However, MSM is the route of exposure at least 80% of white males and of Hispanic males. Higher proportions of males from other racial and ethnic groups reported heterosexual contact or were unable to identify risk than was the case for white, non-Hispanic or Hispanic males. Eleven percent of black, non-Hispanic males had no risk identified.



**Table 27**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> among Males**  
**by Exposure Category, Race and Ethnicity, January 1, 2011 through December 31, 2015**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
	MSM	247	(80)	38	(58)	41	(85)	19	(58)	345
IDU	16	(5)	5	(8)	2	(4)	1	(3)	24	(5)
MSM/IDU	24	(8)	2	(3)	1	(2)	1	(3)	28	(6)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	10	(3)	13	(20)	3	(6)	10	(30)	36	(8)
Transfusion/transplant	0	--	0	--	0	--	0	--	0	--
NIR/other	13	(4)	7	(11)	1	(2)	2	(6)	23	(5)
<b>Total Males</b>	<b>310</b>		<b>65</b>		<b>48</b>		<b>33</b>		<b>456</b>	

<sup>1</sup> Includes all people who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were  $\geq 13$  years of age at time of diagnosis. Exposure to HIV may have occurred at less than 13 years of age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

When injection drug use is considered as a separate category, no racial or ethnic group had more than 8% of diagnoses among people who report injecting drugs. Black, non-Hispanic males were only slightly more likely than males of other races and ethnicities to report IDU as a mode of exposure.

Data from the most recent five years of HIV diagnoses for adult and adolescent females are shown in Table 28. Heterosexual contact was the most common risk for all races and ethnic groups, but more than one-quarter of white women were exposed through IDU.

**Table 28**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> among Females**  
**by Exposure Category, Race and Ethnicity, January 1, 2011 through December 31, 2015**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
	IDU	12	(26)	3	(7)	0	--	0	--	15
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	30	(64)	38	(86)	10	(91)	15	(100)	93	(79)
Transfusion/transplant	0	--	0	--	0	--	0	--	0	--
NIR/other	5	(11)	3	(7)	1	(9)	--	--	9	(10)
<b>Total Females</b>	<b>47</b>		<b>44</b>		<b>11</b>		<b>15</b>		<b>117</b>	

<sup>1</sup> Includes all people who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were  $\geq 13$  years of age at diagnosis. Exposure to HIV could have occurred at less than 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 Sex – Cumulative AIDS Diagnoses

Cumulative adult and adolescent AIDS diagnoses by exposure, race/ethnicity, and sex are shown in Tables 29 and 30. Because of larger numbers, comparisons between racial and ethnic groups are more valid using cumulative AIDS diagnoses, rather than HIV diagnoses. In addition, there are considerably fewer AIDS diagnoses with no identified risk, only 9% overall. However, many of these people were diagnosed a considerable time ago. Therefore, conclusions drawn from the comparisons may not be valid for more recently diagnosed people.

Table 29 indicates that nearly three-fourths of all AIDS diagnoses among white, non-Hispanic males were MSM. In contrast, among black, non-Hispanic males diagnosed with AIDS, only 46% were MSM. Seventeen percent of black, non-Hispanic men reported injection drug exposure, more than twice the proportion reported in white, non-Hispanic males. Historically speaking, injection drug use has contributed to a larger proportion of AIDS diagnoses among black, non-Hispanic males than among other racial and ethnic groups. This is not the case for people more recently diagnosed with HIV disease (Table 24). For diagnoses from 2011 through 2015, the proportions of IDU are relatively equal for white, non-Hispanic males and black, non-Hispanic males.

**Table 29**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> among Males**  
**by Exposure Category, Race and Ethnicity: Cumulative through December 31, 2015**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
	MSM	1,133	(72)	102	(46)	90	(63)	33	(59)	1,358
IDU	123	(8)	37	(17)	13	(9)	3	(5)	176	(9)
MSM/IDU	135	(9)	19	(9)	7	(5)	5	(9)	166	(8)
Hemophilia	38	(2)	1	--	0	--	0	--	39	(2)
Heterosexual	51	(3)	34	(15)	16	(11)	9	(16)	110	(6)
Transfusion/transplant	14	(1)	0	--	0	--	0	--	14	(1)
NIR/other	72	(5)	30	(13)	18	(13)	6	(11)	126	(6)
<b>Total Males</b>	<b>1,566</b>		<b>223</b>		<b>144</b>		<b>56</b>		<b>1,989</b>	

<sup>1</sup> Includes all people who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV could have occurred at less than 13 years of age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 30 shows cumulative adult and adolescent AIDS diagnoses among females by race and ethnicity. Heterosexual risk is the primary risk among females for all races and ethnicities. Twenty-five percent of Hispanic females and 23% of black, non-Hispanic females diagnosed with AIDS did not have a risk identified. Injection drug use may have played a slightly larger role among black, non-Hispanic females than other groups, but the number of females without a reported risk complicates comparisons between racial and ethnic groups.

**Table 30**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> among Females**  
**by Exposure Category, Race and Ethnicity: Cumulative through December 31, 2015**

Exposure Category	White		Black		Hispanic		Other		All Groups	
	non-		non-							
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
IDU	44	(20)	25	(21)	2	(7)	1	(7)	71	(19)
Hemophilia	1	--	0	--	0	--	0	--	1	--
Heterosexual	132	(61)	64	(54)	19	(68)	10	(67)	218	(59)
Transfusion/transplant	8	(4)	2	(2)	0	--	0	--	10	(3)
NIR/other	29	(13)	27	(23)	7	(25)	4	(27)	68	(18)
<b>Total Females</b>	<b>215</b>		<b>118</b>		<b>28</b>		<b>15</b>		<b>368</b>	

<sup>1</sup> Includes all people who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at diagnosis. Exposures to HIV may have occurred at less than 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 (less than 13 years of age at time of diagnosis) AIDS diagnoses have been reportable since February 1983. Diagnoses of HIV (not AIDS) became reportable as of July 1, 1998. Because most HIV disease in children is perinatally acquired (i.e., mother to infant transmission), births to women living with HIV disease also 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. The 2014 revised surveillance case definition combined the adult and pediatric criteria for a confirmed case of HIV infection and specified different criteria for staging HIV infection among three age groups (less than 1 year; 1 to 5 years; 6 years and older). Furthermore, the revision eliminated the distinction between definitive and presumptive diagnoses of HIV infection in children aged less than 18 months. It also eliminated the requirement that evidence of HIV infection in a child’s biologic mother was needed to define a case of HIV infection in a child aged less than 18 months when laboratory testing of the infant independently confirms HIV infection.

To ensure completeness of data, the surveillance database is matched annually to the birth registry. Any female who was living with HIV and who gave birth should be included in these data, even if the birth occurred outside of Iowa.

To date, there have been reports of 145 births to women living with HIV in Iowa from January 1, 2005 through December 31, 2015 (Table 31, Figure 39). Data for 2015 are provisional pending follow-up investigation of births to women known to be living with HIV disease in Iowa who gave birth in 2015. Of the 145 births between 2005 and 2015, 74 infants (51%) were uninfected, 4 (3%) were infected, and 67 (46%) remain undetermined (i.e. perinatally exposed). Those who remain undetermined may have been lost to follow up (usually because they have moved from the state with their parent[s] or guardian) or because laboratories or providers failed to report the negative test results required to establish HIV seronegativity. It is highly likely that most of those for whom a final HIV status has not been determined do not have HIV disease. This assumption is based on the absence of detectable viral load results for this cohort.

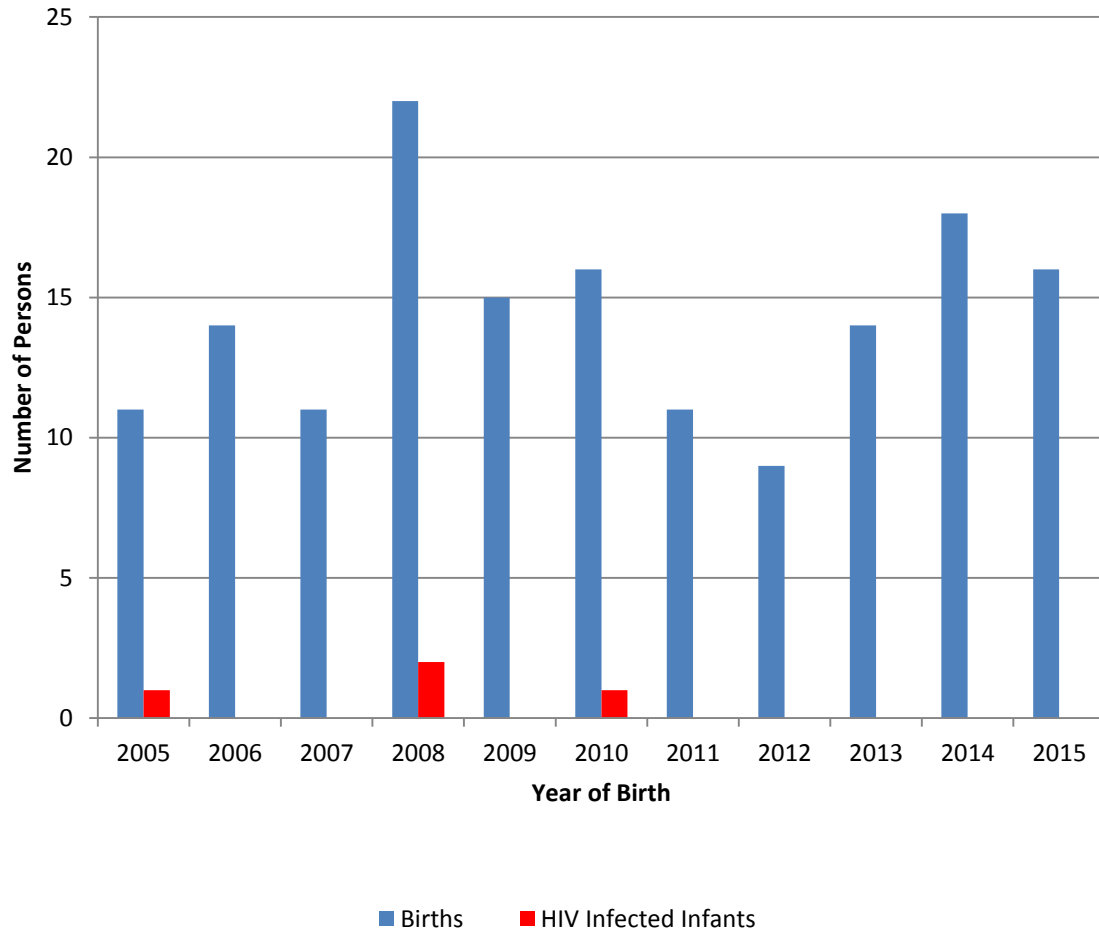
**Table 31**  
**HIV Status of Child for Births to Iowan Females Living with HIV**  
**2005 through 2015<sup>1</sup>**

<b>Year of Birth</b>	<b># Living with HIV</b>	<b># HIV Negative</b>	<b># HIV Undetermined</b>	<b>Total HIV Exposures</b>
2005	1	9	1	11
2006	0	7	7	14
2007	0	7	4	11
2008	2	17	3	22
2009	0	13	2	15
2010	1	1	14	16
2011	0	4	7	11
2012	0	4	5	9
2013	0	5	9	14
2014	0	14	1	15
2015	0	2	14	16
<b>Totals</b>	<b>4</b>	<b>74</b>	<b>67</b>	<b>145</b>

<sup>1</sup> Data for 2015 are incomplete pending matching of the state birth registry with the surveillance database to identify all women in the surveillance database who gave birth in Iowa during 2015.

Studies indicate that appropriate prenatal treatment for the mother and prophylaxis for the infant result in less than one percent of infants becoming infected. Although only four (3% of those exposed) Iowa infants have been diagnosed with perinatal transmission of HIV, this is just slightly above the 1% that would be expected when appropriate and timely interventions for the mother are accessed.

**Figure 39**  
**Births to Women Living with HIV Disease in Iowa**  
**and the Number Resulting in an Infant with HIV Disease, 2005 through 2015**



***Summary of Exposure Data:***

- Male-to-male sex remains the predominant risk category among people diagnosed with HIV and the number of diagnoses among the MSM population has increased in recent years. In 2015, 74% of all males diagnosed with HIV reported having sex with other males.
- Diagnoses of HIV infection among people who reported heterosexual contact have generally remained steady since 2011. In 2015, heterosexual contact was the second most common mode of exposure.
- In 2015, 8% of all people diagnosed did not have a risk identified. Reclassification of these cases over time may alter interpretations of the data.
- As a group, MSM account for 54% of all people living with HIV in Iowa as of December 31, 2015, with a prevalence of 7,184 per 100,000 MSM. Heterosexual contact was the mode of exposure for 18% of PLWH, injection drug use was reported by 8%, and a combination of injection drug use and male-to-male sex was reported by 7%. Exposure category was not known for 12% of the PLWH.
- For people diagnosed with HIV infection between January 1, 2011, and December 31, 2015, MSM is the most common mode of exposure among white, non-Hispanic people and Hispanic people, while heterosexual contact is the most common mode of exposure among black, non-Hispanic people. The proportion of people reporting heterosexual contact or with no identified risk is highest among black, non-Hispanic people followed by Hispanic people. Over two-thirds of all diagnoses in white, non-Hispanic people were attributed to male-to-male exposure, and another 8% were MSM/IDU. Fifty-nine percent of HIV diagnoses among Hispanics were among MSM. Injection drug use alone accounted for only 7% of all diagnoses in the five-year period. Nearly all people who report injecting drugs were white or black (non-Hispanic).
- Among women diagnosed with HIV between January 1, 2011, and December 31, 2015, heterosexual contact was the most common risk, accounting for 79% of all diagnoses. Injection drug use accounted for 10% of all diagnoses among females. Comparatively low numbers of diagnoses among females and substantial proportions of cases without an identified risk make interpretation of trends difficult.
- To date, there have been reports of 145 births to females living with HIV who were residents of Iowa from January 1, 2005, to December 31, 2015. Of the 145 births, 4 (3%) have been diagnosed with HIV disease. This is above the expected rate (1%) when appropriate and timely interventions for the mother and newborn are accessed.

**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, viral hepatitis data, and other survey data will be used to examine this question.

*Section Highlights*

- Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with 12,133 cases reported in 2015. This represents the greatest number of cases ever reported for a reportable condition in Iowa.
- The incidence of gonorrhea has increased by 38% since 2005. In 2015, 2,223 cases were reported in Iowa. This is the greatest number of gonorrhea cases reported in the last ten years. 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 22 times that of white, non-Hispanic males. Black, non-Hispanic females have a rate 15 times that of white, non-Hispanic females. Rates among Hispanic persons are 1.7 times greater than double those of white, non-Hispanic persons.
- The incidence of syphilis remains high, with a total of 228 cases reported in 2015. This is more than triple the number of cases reported in 2011. Men who have sex with men (MSM) are disproportionately impacted by syphilis in Iowa. Additionally, black, non-Hispanic persons are disproportionately impacted by this infection also, with rates that were 11 times higher than white, non-Hispanic persons in 2015.
- The male-to-female ratios for chlamydia and gonorrhea differ between minority populations and the white, non-Hispanic population. White, non-Hispanic females with gonorrhea diagnoses outnumber white, non-Hispanic males by 1.2 to 1; while black, non-Hispanic males outnumber black, non-Hispanic females 1.4 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, the prevalence of gonorrhea is higher among black, non-Hispanic males than their white counterparts, or it may reflect other as yet undetermined differences.
- As of March 31, 2016, the Iowa Department of Public Health had received 21,334 reports of hepatitis C infection among Iowans. Based upon this number of reports, there are likely to be 35,216 to 129,127 Iowans with hepatitis C infection, with 15,061 to 109,758 of these cases undiagnosed. Since 2000, approximately 9,000 hepatitis C tests were conducted at IDPH-supported counseling, testing, and referral sites, with an average annual positivity of 10%. HIV-HCV co-infection rates have not been determined.

## **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 may be reported by the medical provider. However, this information is rarely included. Enrollment in the Ryan White Part B Program is a better measure of economic status among PLWH in Iowa. In 2015, 1,218 people received Ryan White Part B services (see *Section 2 – Ryan White Care Act Special Questions and Considerations* for more details). Eligibility for the program requires an income of 400% of Federal Poverty Level (FPL) - (\$46,680 for a single person). Among the 2,496 PLWH in Iowa in 2015, 49% were enrolled in Part B services with incomes below 400% FPL.

### **Diagnoses of HIV in the Iowa Department of Corrections**

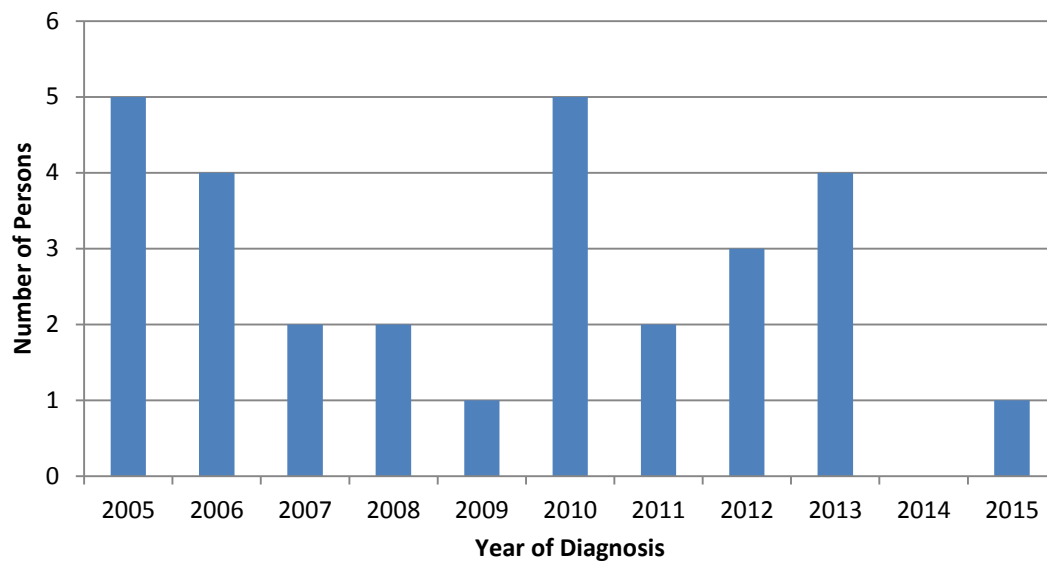
People incarcerated in prisons and jails suffer disproportionately from infectious diseases, substance abuse, and socioeconomic problems. According to CDC, risk factors associated with HIV transmission such as injection drug use, commercial sex work, and lower socioeconomic status are higher among prison populations than non-prison populations. It is estimated that one in seven persons living with HIV passes through a correctional facility in the U.S. where they may or may not have been initially diagnosed. HIV testing procedures differ by state.

The Iowa Department of Corrections oversees nine state prisons in Iowa. As of July 1, 2015, there were 8,221 state inmates. There were 5,266 admissions and 5,166 releases in FY2015. Upon admission to the Iowa Department of Corrections, every inmate is screened for tuberculosis, HIV, and other sexually transmitted diseases. There was one new HIV diagnosis made in the Iowa Department of Corrections in 2015. From January 1, 2005, to December 31, 2015, 29 persons were first diagnosed with HIV in the state correctional system (Figure 40).

Overall, a total of 110 persons were first diagnosed with HIV disease in the state correctional system since the beginning of the epidemic. As of December 31, 2015, 31 PLWH, representing 1.2% of all PLWH in Iowa, were held in a Department of Corrections facility.



**Figure 40**  
**HIV Diagnoses in the Iowa Department of Corrections<sup>1</sup>**  
**2005 through 2015**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, upon intake into the Iowa Department of Corrections.

### HIV Risk Assessment and Behavioral Data

In 2012, the Iowa Department of Public Health funded 12 free, confidential HIV testing and counseling sites in Iowa, and held Memoranda of Agreement (MOA) with two sites which were provided with rapid test kits. Starting in 2013, the administration of a new funding cycle led to the elimination of two testing sites and both MOA sites. This contributed to a significant decrease in HIV testing numbers. Additionally, testing sites faced an increased requirement to reach high-risk and/or disproportionately impacted populations. This requirement decreased their number of tests to people who were considered to be at low risk for HIV. Although fewer new diagnoses were found, the positivity rate has increased (0.39% in 2012 to 0.57% in 2015). This may indicate improved efficiency in testing, in that there is a better understanding of how to reach populations at higher risk for HIV.

Participants at IDPH-funded sites complete risk assessments as part of a testing visit or during outreach. Because the counseling and testing system collects information only from persons who seek counseling and testing services at IDPH-funded test sites, data are not representative of all persons who are living with HIV in Iowa.

Table 31 presents the sex, race, and ethnicity of the persons tested at IDPH-funded sites in 2015. More males than females were tested. Black, non-Hispanic persons represented 30% of the persons tested; white, non-Hispanic persons made up 52% of the group, and Hispanics accounted for 12%. The proportion of Black and Hispanic individuals tested for HIV increased from 2009 to 2012, and has remained fairly steady from 2012 through 2015.

**Table 32**  
**HIV Counseling and Testing Participants by Sex, Race, and Ethnicity**  
**2015**

<b>Sex</b>	<b>#</b>	<b>%</b>	<b>Race and Ethnicity</b>	<b>#</b>	<b>%</b>
Male	2,824	68	White, non-Hispanic	2,182	52
Female	1,344	32	Black, non-Hispanic	1,265	30
Transgender	8	0.2	Hispanic	497	12
<b>Total</b>	<b>4,174</b>		Am Indian/Alaskan	50	1
			Asian/Pacific Islander	59	1
			Other	123	3
			<b>Total</b>	<b>4,174</b>	

The ages of those tested are shown in Table 33. Forty-five percent of the persons testing for HIV at IDPH-funded sites were 20 to 29 years of age. Twenty-six percent of tests were performed on people between 30 and 39 years of age.

A risk group was assigned to participants according to the behaviors that were identified on risk assessments. Table 31 shows that in 2015, 31% of the participants were did not indicate a specific risk, 26% identified as men who have sex with men (MSM), 24% were identified as high-risk heterosexual contact (HRH), and 18% indicated injection drug use (IDU). Since 2008, the proportion of persons being tested who are considered high-risk (HRH, MSM, IDU, and MSM/IDU) has increased as IDPH-funded test sites have focused testing outreach efforts on these populations. The percentage of testing among MSM, in particular, has increased significantly.

**Table 33**  
**HIV Counseling and Testing Participants by Age Group and Risk**  
**2015**

<b>Age Range</b>	<b>#</b>	<b>%</b>	<b>Risk Group</b>	<b>#</b>	<b>%</b>
13-19	278	7	MSM/IDU	51	1
20-29	1,877	45	MSM	1,101	26
30-39	1,088	26	IDU	747	18
40-59	560	13	HRH	985	24
60 and over	82	2	None	1,290	31
<b>Total</b>	<b>4,174</b>		<b>Total</b>	<b>4,174</b>	

The risk behaviors of the participants and of their partners are shown in Table 34. In 2012, 62% of the persons testing for HIV at IDPH-funded test sites had been tested previously, which increased to 69% in 2015. Twenty-one percent of clients tested in 2012 indicated that they had been infected with a sexually transmitted disease in the past year, which decreased slightly to

19% during the following three years. The percentage of clients indicating they had ever had sex with someone who has injected drugs increased from 16% in 2012 to 22% in 2015.

**Table 34**  
**Reported Behaviors of HIV Counseling and Testing Participants**  
**2012 through 2015**

Participant Responses	2012		2013		2014		2015	
	#	%	#	%	#	%	#	%
Indicated they had been tested before	3,346	62	2,746	58	2,987	70	2,883	69
Had a STD diagnosis within the last year	1,121	21	898	19	836	19	808	19
Had ever had sex with someone who exchanges sex for drugs, money, or something they needed.	467	9	485	10	392	9	428	10
Had ever had sex with someone who was HIV+	314	6	329	7	371	9	349	8
Had ever had sex with someone who injected drugs	874	16	860	18	802	19	909	22
<b>TOTAL TESTS</b>	<b>5,389</b>		<b>4,755</b>		<b>4,296</b>		<b>4,174</b>	

### Demographics of Clients Testing Positive at IDPH-Funded sites

Table 35 presents demographic trends of clients testing positive for HIV in IDPH-funded sites from 2012 through 2015. The largest proportion of clients testing positive for HIV among IDPH-funded counseling, testing, and referral sites (CTR) are white and non-Hispanic. This may be, in part, a reflection of who is tested at the sites and the predominant population in Iowa, as a whole. However, the number of Hispanic clients testing positive increased from 5% in 2012 to almost 17% in 2015. This may be due to an increased effort of IDPH-funded sites to reach Hispanic and black clients, who are among the disproportionately impacted populations in Iowa. It should be noted that the small numbers of clients testing positive at IDPH-funded testing sites necessitates that caution be taken when analyzing trends in data.

The epidemic, as it appears in those seeking and receiving HIV tests at IDPH-funded CTR sites, remains largely among males (86% in 2012; 79% in 2013; 95% in 2014; 83% in 2015) ages 20 through 39. In 2015, 67% of clients testing positive were between 20 and 39 years of age. The average age of persons testing positive for HIV in 2015 was 37 years, with a range from 22 years to 75 years. The median age was 35 years old.

**Table 35**  
**Demographic Characteristics of Clients Testing HIV-Positive at IDPH-Funded Sites**  
**2012 through 2015**

		<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
		<b>21 new diagnoses</b>	<b>19 new diagnoses</b>	<b>19 new diagnoses</b>	<b>24 new diagnoses</b>
		<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>
<b>Race</b>	<b>White, non-Hispanic</b>	13 (62%)	11 (58%)	12 (63%)	14 (58%)
	<b>Black, non-Hispanic</b>	6 (29%)	5 (26%)	3 (16%)	4 (17%)
	<b>Hispanic</b>	1 (5%)	1 (5%)	3 (16%)	4 (17%)
	<b>Asian</b>	0	0	0	1 (4%)
	<b>Native Hawaiian/Pacific Islander</b>	0	0	0	0
	<b>Multiple Races</b>	1 (5%)	2 (11%)	1 (5%)	1 (4%)
<b>Age</b>	<b>13-19</b>	3 (14%)	2 (11%)	0	0
	<b>20-29</b>	8 (38%)	5 (26%)	12 (63%)	10 (42%)
	<b>30-39</b>	5 (24%)	4 (21%)	5 (26%)	6 (25%)
	<b>40-49</b>	2 (10%)	3 (16%)	0	2 (8%)
	<b>50-59</b>	2 (10%)	4 (21%)	2 (11%)	4 (17%)
	<b>60+</b>	1 (5%)	1 (5%)	0	2 (8%)
<b>Sex</b>	<b>Male</b>	18 (86%)	15 (79%)	18 (95%)	20 (83%)
	<b>Female</b>	3 (14%)	4 (21%)	1 (5%)	4 (17%)

### **Risk Behaviors of Clients Testing Positive for HIV in IDPH-Funded Clinics**

Table 36 illustrates trends in reported risk behaviors of clients testing positive for HIV in IDPH-funded sites from 2012 through 2015. The epidemic, as it appears in clients seeking and receiving HIV tests at IDPH clinics and agencies, remains largely in the MSM community (men who have sex with men). Of the 21 clients who tested positive for HIV in 2012, 14 identified as MSM (67%). In both 2013 and 2014, of 19 HIV-positive clients, 79% identified as MSM (n=15). The percentage of diagnoses among MSM at IDPH-funded sites decreased to 58% (n=14) in 2015. The number of diagnoses from partners of those already sero-positive fluctuated between 2012 and 2014, and then increased significantly in 2015 (33% in 2012; 47% in 2013; 37% in 2014; 67% in 2015). The percentage of newly diagnosed HIV-positive clients reporting being diagnosed with an STD during the preceding year has increased, from 5% in 2013 to 21% in 2015.

**Table 36**  
**Reported Risk Behaviors of Individuals Testing HIV Positive at IDPH-Funded CTR Sites**  
**2012 through 2015**

	<b>Total Number of Positive Clients</b>	<b>MSM and MSM/IDU  n (%)</b>	<b>IDU  n (%)</b>	<b>HRH  n (%)</b>	<b>HIV+ Partners (ever)  n (%)</b>	<b>Diagnosed w/ STD in last year  n (%)</b>
<b>2012</b>	<b>21</b>	14 (67%)	0	3 (14%)	7 (33%)	2 (10%)
<b>2013</b>	<b>19</b>	15 (79%)	0	3 (16%)	9 (47%)	1 (5%)
<b>2014</b>	<b>19</b>	15 (79%)	0	3 (16%)	7 (37%)	3 (16%)
<b>2015</b>	<b>24</b>	14 (58%)	2 (8%)	7 (29%)	16 (67%)	5 (21%)

### **SEXUALLY TRANSMITTED DISEASES (STDs)**

STDs are among the most frequently reported infectious diseases and constitute a significant health problem in Iowa. While STD rates may indicate riskier sexual behavior, they do not necessarily correlate with HIV infection. However, the presence of STDs increase the likelihood of HIV transmission.

The three bacterial STDs reportable to the Iowa Department of Public Health are chlamydia, gonorrhea, and syphilis. 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 Program in 2015 are presented here, including cases for which some demographic variables are unknown. Race was not reported for approximately five percent 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., many STDs are often asymptomatic so providers who routinely screen higher risk populations will identify a greater number of infections). Reports are not necessarily representative of the characteristics of all individuals with STDs.

Females are generally reported with STDs more frequently than males. Females tend to seek routine medical care more often than males, which presents greater opportunities for them to be tested for these infections. It is more common for males to be tested only if they present with signs or symptoms. Because many STDs often present asymptotically, this commonly results in a higher number of cases diagnosed and reported among females.

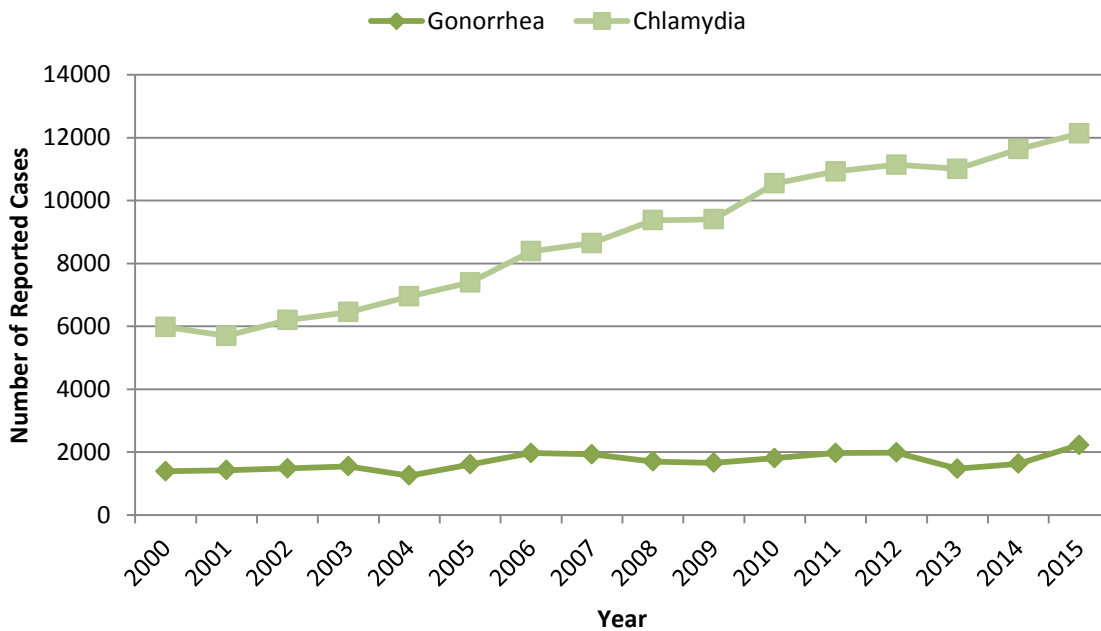
Iowa maintains a chlamydia and gonorrhea testing program for individuals at increased risk. It is referred to as the Community-Based Screening Services (CBSS) program. The purpose of the program is to provide chlamydia and gonorrhea testing to target populations (i.e., those who are uninsured, underinsured, or seeking confidential services) at low or no cost to the patients. The program's previous incarnation, the Infertility Prevention Project (IPP) primarily focused on

testing females to prevent costly, long-term complications such as pelvic inflammatory disease (PID) and infertility. CBSS expanded to include males in certain populations. Persons 24 years of age and younger are tested regardless of the presence of signs or symptoms. Persons 25 and older must present with one or more risk factors to qualify (e.g., new or multiple sexual partners in the last 90 days, exposure to someone who has been recently diagnosed, or signs/symptoms suggestive of chlamydia or gonorrhea).

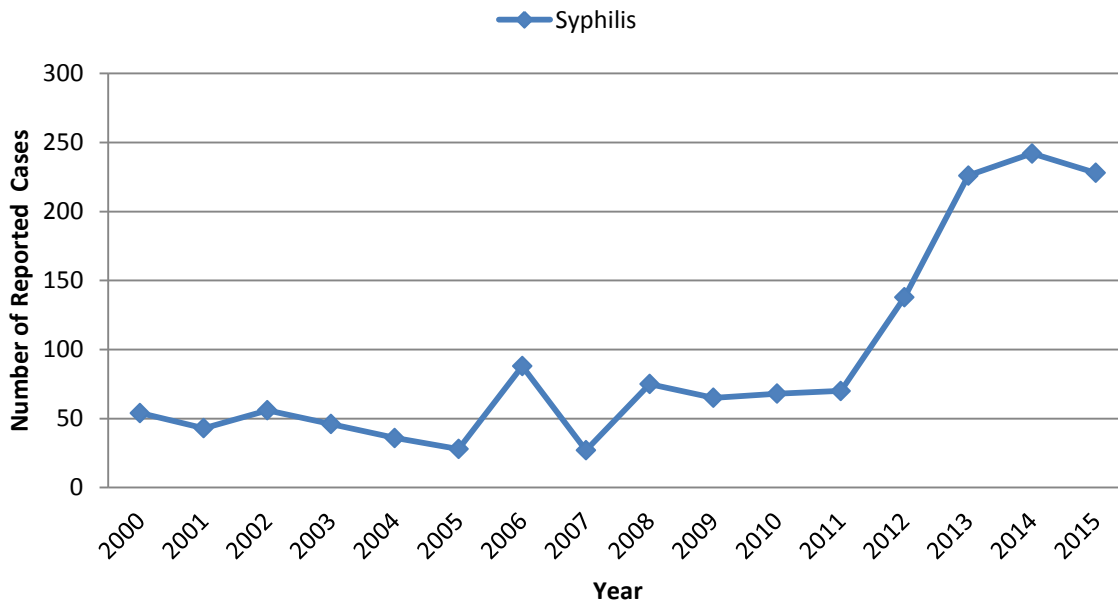
There are approximately 60 clinics enrolled in CBSS. Many are family planning clinics but STD clinics, student health centers, correctional facilities, community health centers, a tribal clinic, and non-Title X women’s health centers are also included. CBSS reported 1,887 chlamydia diagnoses in 2015, which is 16% of all reported cases of chlamydia in Iowa.

Newly diagnosed and reported cases of chlamydia and gonorrhea are shown in Figure 41. Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with 12,133 cases reported in 2015. This is the highest number of cases ever reported and comes after 15 years of steady increases, with the exception of a slight decrease in 2013. Incidence of gonorrhea has increased since 2013. Gonorrhea is becoming more widespread throughout the state’s urban centers. Increases were once primarily seen in the state’s eastern urban centers but larger cities in the west, such as Sioux City and Council Bluffs, are seeing significant increases. Reported cases of syphilis are displayed in Figure 42. The incidence of syphilis began to rapidly increase in 2012. Despite a decrease in the number of syphilis cases, numbers remain high.

**Figure 41**  
**Reported Cases of Chlamydia and Gonorrhea in Iowa**  
**2000 through 2015**



**Figure 42**  
**Reported Cases of Syphilis in Iowa**  
**2000 through 2015**



In 2012, the State Hygienic Laboratory at the University of Iowa completed its validation of chlamydia and gonorrhea testing using oropharyngeal and rectal specimens. Some other larger laboratories have also developed this capacity. Increased screening at oropharyngeal and rectal sites has contributed to increases of gonorrhea. However, this factor alone does not account for the entire increase seen since 2013.

## Chlamydia

In the United States, urogenital infections of *Chlamydia trachomatis* occur very frequently among sexually active adolescents and young adults. CDC estimates that 3 million people are newly infected annually in the U.S. Asymptomatic infection is common among both males and females. Sexually active adolescents and young adults should be routinely screened for chlamydia during annual examinations, even if symptoms are not present. In females, untreated chlamydia can result in pelvic inflammatory disease, which can cause infertility, ectopic pregnancy, and chronic pelvic pain. Though rarer, males with untreated chlamydia may develop complications including epididymitis and decreased fertility.

Chlamydia remains the most reported bacterial sexually transmitted disease in the United States and in Iowa. In 2015, there were 12,133 cases (390 cases per 100,000 population) reported to the STD Program. Figure 43 displays the reported cases by sex. Females account for the majority of chlamydia cases, accounting for approximately 70% of all cases.

**Figure 43**  
**Reported Cases of Chlamydia by Sex**  
**2000 through 2015**

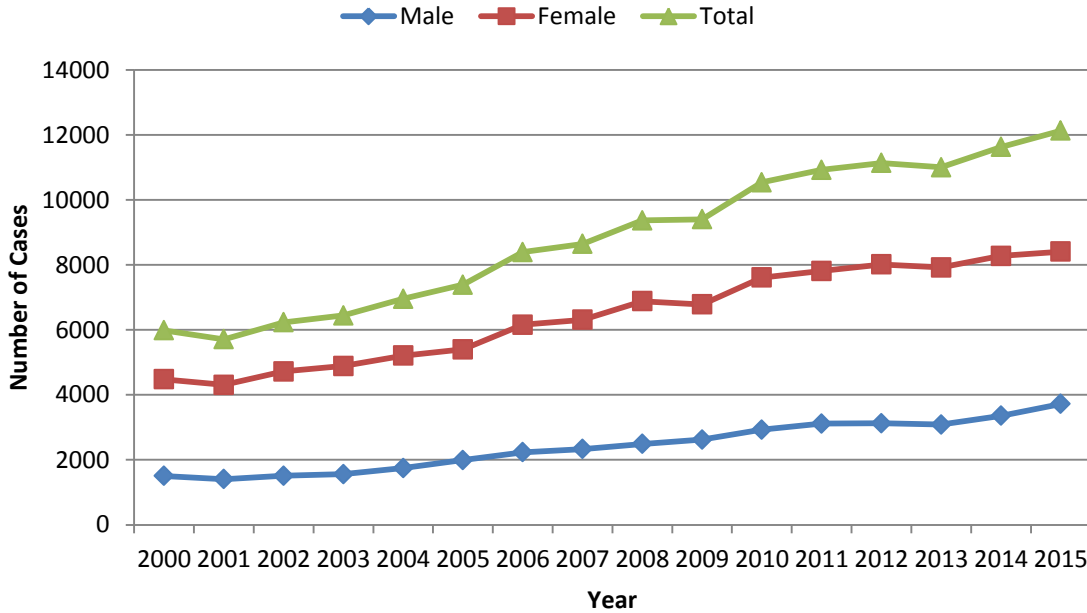
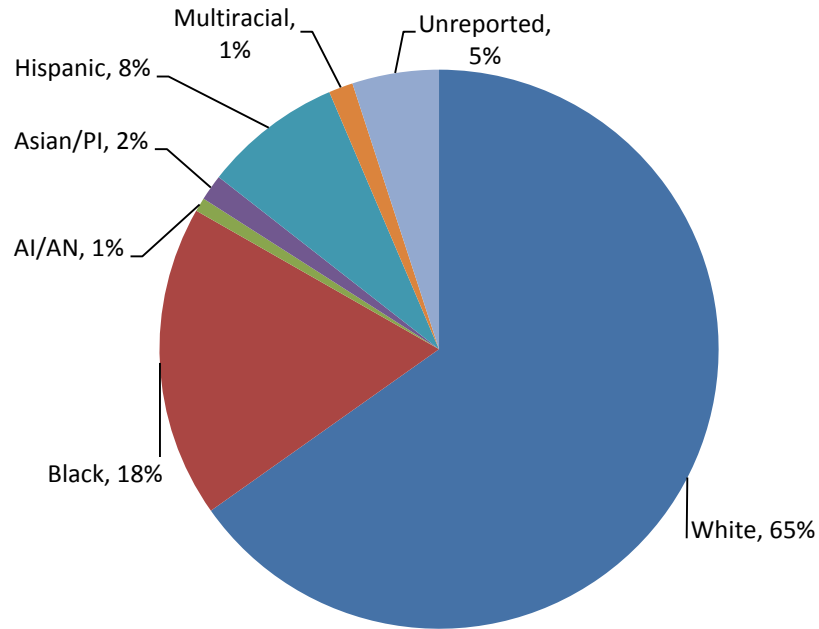


Figure 44 shows the number of reported cases of chlamydia by race/ethnicity for 2015. The largest proportion of cases is among white, non-Hispanic persons, and the trends seen in the overall incidence of reported chlamydia cases are due, in large part, to females within this group.

Females of all three racial and ethnic groups have higher reported morbidity than males. Despite the relatively low population of black, non-Hispanic persons in Iowa (approximately 3% of the state’s population), this group makes up a large proportion of chlamydia. According to 2014 data from CDC, Iowa’s black, non-Hispanic population has the highest rate of chlamydia in the U.S.



**Figure 44**  
**Proportion of Chlamydia Cases by Race/Ethnicity, 2015**



Incidence of chlamydia by county, for those counties that reported at least 40 cases, is shown in Table 37. Counties are ranked according to the highest rate per 100,000 population. Seven of the ten counties with the greatest incidence rate per 100,000 population are among the ten most populous counties.

The increase in reported cases of chlamydia in 2015 was not experienced by all counties. Polk, Story, Marshall, and Johnson counties accounted for the largest increases in absolute numbers of cases.

**Table 37**  
**Incidence of Chlamydia by County**

County	# of Cases	Rate per 100,000
Black Hawk	838	631
Webster	217	587
Johnson	783	550
Wapello	192	545
Woodbury	555	543
Scott	920	537
Marshall	216	529
Polk	2382	518
Story	484	514
Linn	1045	480
Clinton	219	456
Pottawattamie	413	443
Des Moines	177	440
Dubuque	396	411
Mahaska	92	411
Winnebago	42	398
Crawford	68	395
Union	46	368
Muscatine	145	338
Poweshiek	56	300
Page	46	297
Hardin	51	295
Warren	141	294
Delaware	51	293
Tama	51	292
Jasper	105	285
Buena Vista	58	282
Floyd	45	280
Hamilton	42	278
Marion	92	276
Lee	95	269
Cerro Gordo	115	266
Jackson	51	262
Carroll	53	258
Boone	66	250
Iowa	41	250
Dallas	191	247
Cedar	44	239
Fayette	45	221
Benton	56	218
Bremer	54	218
Henry	40	198
Buchanan	40	190
Plymouth	45	181
Washington	40	181
Sioux	54	156
All counties	12,133	390

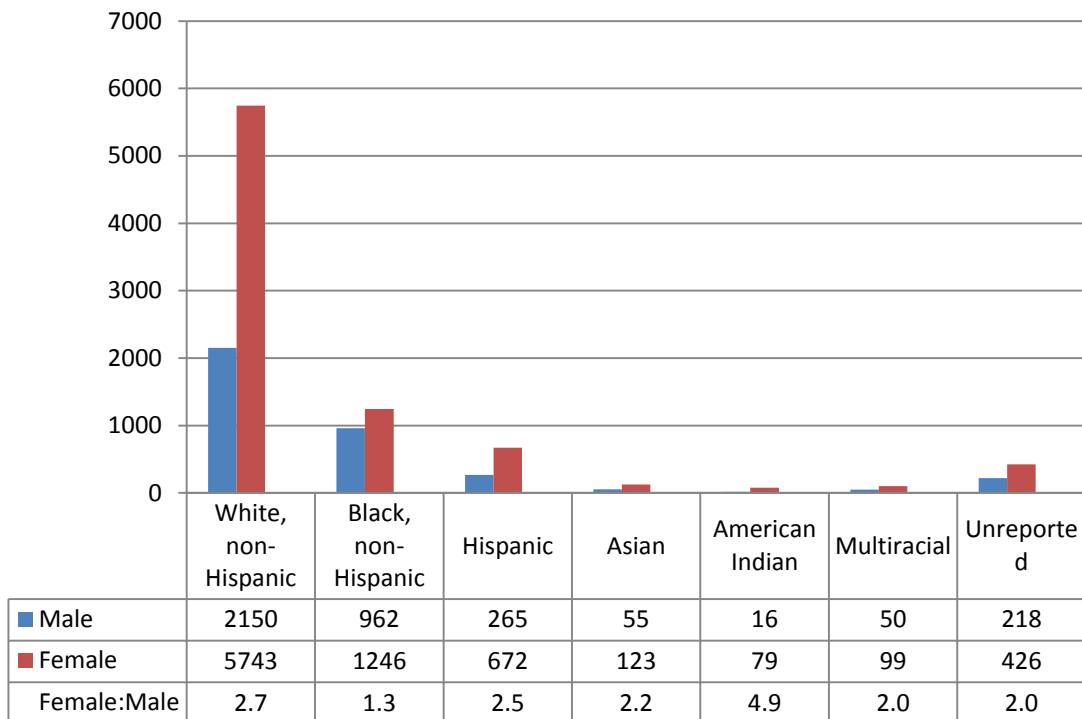
Table 38 shows the number of reported cases of chlamydia by age, race, ethnicity, and sex. Seventy-one percent of all cases were female. Older adolescents and young adults (age groups 15 to 19 years and 20 to 24 years) had the burden of disease, with 66% of all cases occurring in these two age groups. The majority of cases (65%) occurred among white, non-Hispanic persons. Black, non-Hispanic persons accounted for 18% of the cases even though they make up 3% of Iowa's population. Hispanic persons accounted for 8% of the cases. Five percent of cases did not have a race or ethnicity reported.

**Table 38**  
**2015 Reported Cases of Chlamydia by Age, Race, Ethnicity, and Sex**

Age Group	Asian		Black		Hispanic		American Indian/Alaskan Native		White		Hawaiian Native/Pacific Islander		Multiracial		Unreported Race		Total Male	Total Female
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
0 - 4	0	0	0	0	0	1	0	0	2	2	0	0	0	0	0	0	2	3
5 - 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 - 14	0	1	3	14	1	4	0	1	0	32	0	0	0	1	0	1	4	54
15 - 19	4	28	194	410	37	193	3	21	269	1365	0	7	12	31	32	112	551	2167
20 - 24	24	51	379	504	103	269	6	23	922	2637	4	9	20	45	88	177	1546	3715
25 - 29	13	27	212	198	67	103	5	18	525	1002	0	2	13	15	54	70	889	1435
30 - 34	4	9	88	74	34	49	2	14	239	396	1	3	3	5	18	43	389	593
35 - 39	7	4	44	31	12	31	0	2	95	169	1	0	1	1	14	17	174	255
40 - 44	3	2	26	8	8	15	0	0	48	81	0	1	1	0	8	3	94	110
45 - 54	0	1	13	7	3	7	0	0	36	48	0	1	0	1	3	2	55	67
55 - 64	0	0	3	0	0	0	0	0	12	11	0	0	0	0	1	1	16	12
65+	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
<b>Total</b>	<b>55</b>	<b>123</b>	<b>962</b>	<b>1246</b>	<b>265</b>	<b>672</b>	<b>16</b>	<b>79</b>	<b>2150</b>	<b>5743</b>	<b>6</b>	<b>23</b>	<b>50</b>	<b>99</b>	<b>218</b>	<b>426</b>	<b>3722</b>	<b>8411</b>

Figure 45 illustrates the ratio of female-to-male cases. Females outnumbered males for all races and ethnicities, but the ratio of males to females varied for the different racial and ethnic groups. The overall ratio of female to male cases is 2.3 to 1.

**Figure 45**  
**Diagnoses of Chlamydia by Race, Ethnicity, and Sex, 2015**



The disproportionate distribution of chlamydia among minority groups is illustrated in Table 39. 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 12 times that of white, non-Hispanic males. Black, non-Hispanic females have a rate that is nearly four times that for white, non-Hispanic females. The rate among American Indian, non-Hispanic persons is nearly four times that of white, non-Hispanic persons and the rate among Hispanics is more than two times that of white, non-Hispanic persons.

**Table 39**  
**Incidence Rates<sup>1</sup> for Chlamydia by Race, Ethnicity, and Sex**  
**Iowa, 2015**

Race and Ethnicity	Males	Females	Total
	(# / 100,000 males)	(# / 100,000 females)	(# / 100,000 pop.)
White, non-Hispanic	161	419	292
Black, non-Hispanic	1,794	2,616	2,181
American Indian, non-Hispanic	354	1,731	1,045
Asian/PI, non-Hispanic	161	366	263
Hispanic	292	813	540
<b>All Cases</b>	<b>241</b>	<b>538</b>	<b>390</b>

<sup>1</sup>Based upon 2014 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 males 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 females do not produce recognizable symptoms until complications (e.g., pelvic inflammatory disease) 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 females often are asymptomatic, an important component of gonorrhea control in the United States and Iowa continues to be the screening of females at high risk for STDs.

The number of reported cases of gonorrhea in Iowa increased sharply from 2004 to 2006, and decreased between 2006 and 2009 in both males and females (Figure 46). Between 2009 and 2012, the number of gonorrhea cases increased steadily until a decline in 2013. From 2013 to 2015, reported diagnoses increased quickly. The increase was among both males and females but was more substantial in males. For the first time, the number of cases among males slightly outnumbered those among females. Some of the increase among males is attributable to increased testing at oropharyngeal and rectal sites.

In 2015, there were 2,223 reported cases of gonorrhea (72 cases per 100,000 population).

**Figure 46**  
**Diagnoses of Gonorrhea by Sex, 2000 through 2015**

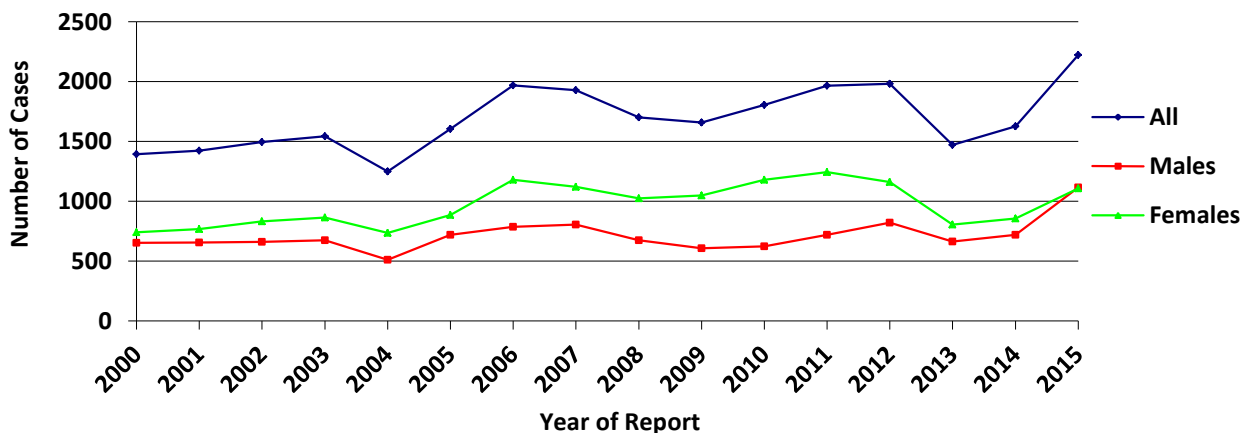
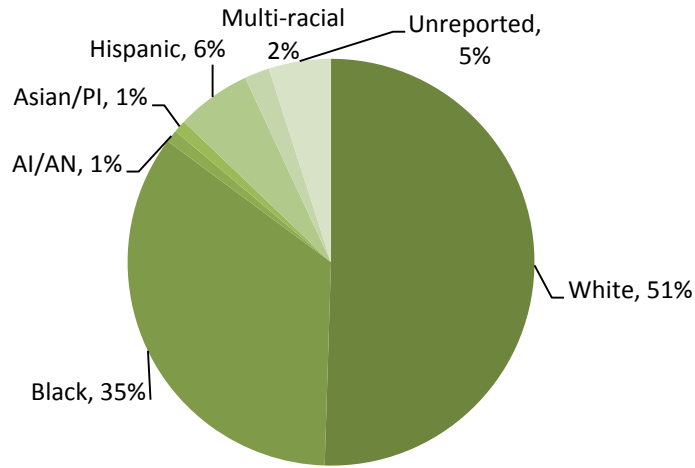


Figure 47 shows the incidence of gonorrhea by race/ethnicity for 2015. Black, non-Hispanic persons account for the largest proportions of reported cases. Black males have consistently outnumbered black females. This is the reverse of what is seen with chlamydia.

**Figure 47**  
**Diagnoses of Gonorrhea by Race/Ethnicity**  
**2015**



As is the case for HIV and chlamydia, the eight most populous counties contributed a disproportionate number of cases. Approximately 77% of gonorrhea cases were reported from these eight counties. These counties contain just 45 percent of Iowa’s total population.

Incidence rates by county, for those counties with at least five reported cases, are shown in Table 40. Counties are ranked according to the highest rate per 100,000 population. Incidence in the eight most populous counties is almost two times higher than in the other counties. The largest increases in absolute numbers of cases were seen in Black Hawk, Dubuque, Linn, Johnson, and Pottawattamie.

**Table 40**  
**Incidence of Gonorrhea by County**  
**2015**

County	# of cases	Rate per 100,000
Black Hawk	271	204
Woodbury	164	160
Pottawattamie	135	145
Polk	628	137
Scott	191	111
Clinton	44	92
Webster	31	84
Linn	170	78
Shelby	9	75
Buena Vista	15	73
Mahaska	16	72
Johnson	99	70
Cass	9	67
Des Moines	26	65
Marshall	26	64
Story	58	62
Wapello	21	60
Lee	18	51
Carroll	10	49
Page	7	45
Poweshiek	8	43
Dubuque	41	43
Mills	6	40
Boone	10	38
Marion	12	36
Jasper	13	35
Muscatine	15	35
Henry	7	35
Fayette	7	34
Warren	15	31
Jones	6	29
Bremer	7	28
Dallas	17	22
Cerro Gordo	6	14
All counties	2,223	72

Table 41 shows the incidence of gonorrhea by age, race, ethnicity, and sex. Fifty-three percent of all cases were female. Older adolescents and young adults (ages 15 to 29 years) shared the burden of disease, with over 71% of all cases occurring among persons of these ages. Males, on average, tended to be older than females. Black, non-Hispanic persons, though only 3% of the population, had the largest burden of disease among all racial groups, with 35 percent of the cases. White, non-Hispanic persons accounted for 51% of cases and Hispanic persons accounted for six percent. Race and ethnicity were not identified for 5% of the cases.

**Table 41**  
**2015 Reported Cases of Gonorrhea by Age, Race, Ethnicity, and Sex**

Age Group	Asian		Black		Hispanic		American Indian/Alaskan Native		White		Hawaiian Native/Pacific Islander		Multiracial		Unreported Race		Total Male	Total Female
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
0 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
10 - 14	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	4
15 - 19	2	1	56	79	6	12	2	2	36	111	0	0	3	7	3	12	108	224
20 - 24	7	4	150	129	18	25	1	4	136	218	0	0	2	6	16	18	330	404
25 - 29	5	1	120	66	24	12	1	4	119	126	1	0	3	7	15	11	288	227
30 - 34	0	1	64	23	8	5	2	9	70	86	0	0	1	2	11	8	156	134
35 - 39	2	2	30	16	5	2	1	1	56	47	0	0	2	0	3	3	99	71
40 - 44	1	0	14	2	3	1	0	1	31	10	0	0	1	0	2	2	52	16
45 - 54	0	0	11	2	1	0	0	0	42	19	0	0	0	0	3	2	57	23
55 - 64	0	0	1	0	1	0	0	0	19	3	0	0	0	0	1	0	22	3
65+	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	4	0
<b>Total</b>	<b>17</b>	<b>9</b>	<b>447</b>	<b>320</b>	<b>66</b>	<b>57</b>	<b>7</b>	<b>21</b>	<b>511</b>	<b>622</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>22</b>	<b>55</b>	<b>56</b>	<b>1116</b>	<b>1107</b>

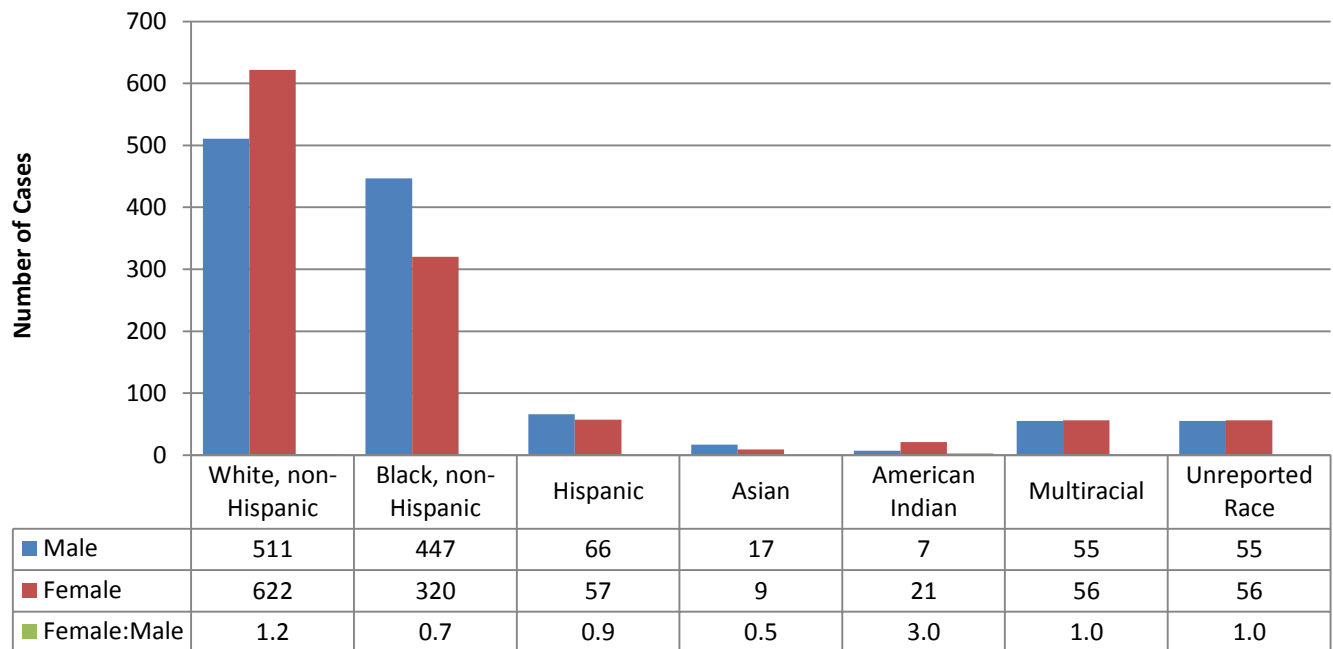
Figure 48 illustrates the ratio of female-to-male cases by race and ethnicity. There is a difference in the relative numbers of males and females between the white, non-Hispanic group and the black, non-Hispanic group. Among white, non-Hispanic persons, females outnumbered males 1.2 to 1. Black, non-Hispanic and Hispanic males outnumbered females 1.4 to 1. Female-to-male ratios are not only different between racial and ethnic groups, but the ratios are very different from the female-to-male ratios seen for chlamydia.

A number of different factors may contribute to differences in female-to-male ratios between racial groups and diseases. For example, minority females may have less access to routine screening than do white, non-Hispanic females. In that case, asymptomatic infections may not be diagnosed among minority females. Because gonorrhea is symptomatic more often than 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 MSM. This could potentially cause differences in female-to-male ratios as well. If the diseases differ in how prevalent they are among MSM, or if the diseases affect MSM of one racial or ethnic group more than other groups, the female-to-male ratio may increase for that disease or group.



**Figure 48**  
**Diagnoses of Gonorrhea by Race, Ethnicity, and Sex, 2015**



The disproportionate distribution of gonorrhea among minority groups is illustrated in Table 42. When standardized for the population size, black, non-Hispanic males have an incidence rate of reported cases of gonorrhea that is more than 22 times that of white, non-Hispanic males. Black, non-Hispanic females are also disproportionately represented, with a rate 15 times that of white, non-Hispanic females. The rate among American Indian females is 10 times that of white, non-Hispanic females. Hispanic persons are more than 1.7 times more likely to be diagnosed with gonorrhea than white, non-Hispanic persons.

**Table 42**  
**Incidence Rates<sup>1</sup> for Gonorrhea by Race, Ethnicity, and Sex, 2015**

Race and Ethnicity	Males	Females	Total
	(# / 100,000 males)	(# / 100,000 females)	(# / 100,000 pop.)
White, non-Hispanic	38	45	42
Black, non-Hispanic	834	672	758
American Indian, non-Hispanic	155	460	308
Asian, non-Hispanic	19	26	22
Hispanic	73	69	71
<b>All Cases</b>	<b>72</b>	<b>71</b>	<b>72</b>

<sup>1</sup>Based upon 2014 Population Projections by Race and Ethnicity from the U.S. Census Bureau

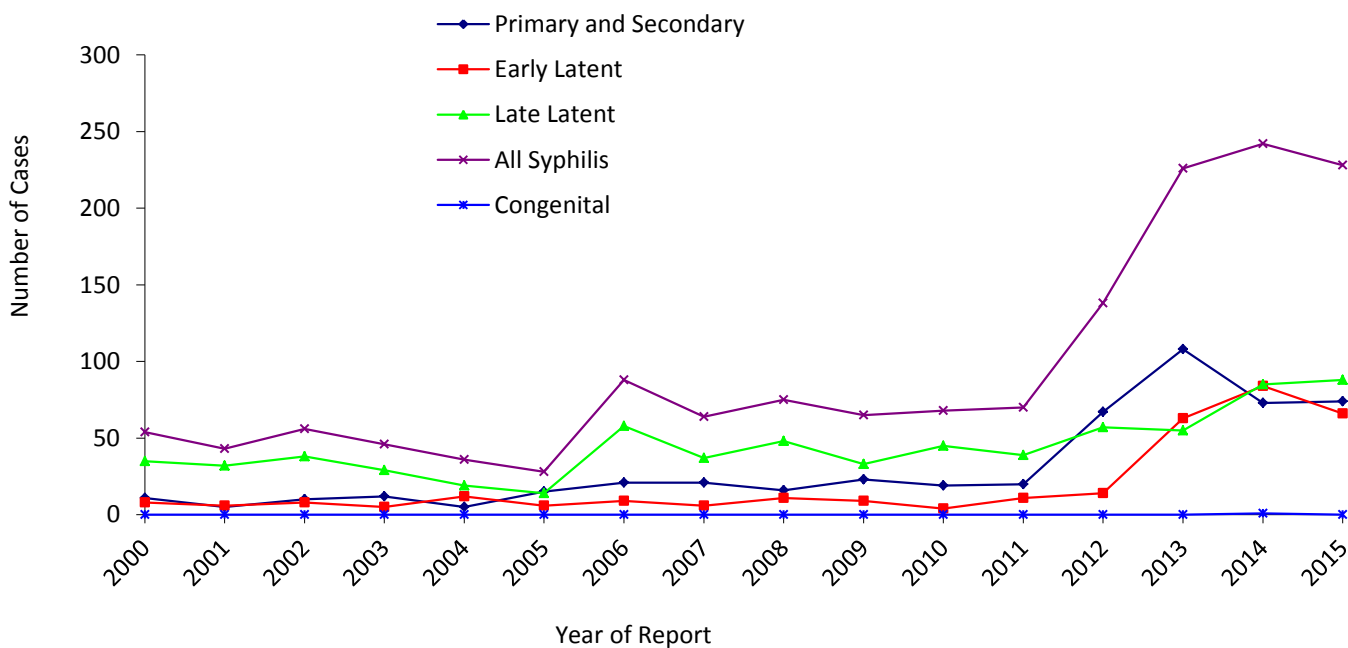
## Syphilis

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 living with HIV. Infections also may be detected by serological testing. 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 *early syphilis* refers to the sum of primary, secondary, and early latent syphilis. These first three stages of syphilis are infectious, whereas late latent syphilis is not.

Cases of syphilis reported to the Iowa Department of Public Health are prioritized for follow up by a Disease Intervention 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, the prevention of spread to others, and lowering the chance of HIV acquisition.

In 2015, there were 140 primary, secondary, and early latent cases, 88 cases of late latent syphilis, and zero cases of congenital syphilis reported to the STD Program. Syphilis in Iowa has increased substantially since 2011. Much of the increase is attributable to a surge of early syphilis in Iowa's MSM populations.

**Figure 49**  
**Diagnoses of Syphilis, 2000 through 2015**



Among the 140 early syphilis cases (i.e., recent infections) reported in 2015, 61% were 20-39 years of age. Unlike chlamydia and gonorrhea, a large majority of syphilis cases are among males rather than females. Of the early syphilis cases among males, approximately 70% were among MSM. Approximately 30 percent of those diagnosed with early syphilis were comorbid for HIV.

Syphilis, like other sexually transmitted diseases, reflects an over-representation of minority populations. In 2015, 19 early syphilis cases (14%) were reported among black, non-Hispanic persons, 99 (71%) were among white, non-Hispanic persons, and 14 (10%) were among Hispanic persons.

## **VIRAL HEPATITIS**

Viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation. Hepatitis C virus (HCV) infection is the most common chronic blood-borne infection in the United States. HCV causes hepatitis (inflammation of the liver), and is transmitted from person to person via blood or, to a much lesser extent, bodily fluids like semen. Today, most people contract HCV through sharing needles or equipment to inject drugs with someone who is already living with HCV. Another established risk factor is receipt of a blood transfusion before 1992, prior to implementation of screening programs for donated blood. Although less frequent, HCV can also be transmitted through other types of blood exposures, like tattooing, during sexual contact, or perinatally from mother to child<sup>1</sup>.

The Centers for Disease Control and Prevention (CDC) estimate that 4.25 to 8.2 million people in the United States are living with chronic hepatitis B (HBV) or chronic hepatitis C (HCV) infection. About 850,000 to 2.2 million people have HBV, and an additional 3.4 to 6 million people have chronic HCV. It is estimated that 45 to 85% of persons with HCV are unaware of their infection<sup>2</sup>.

As of March 31, 2016, the Iowa Department of Public Health had received 21,334 reports of hepatitis C infection among Iowans (Table 43). Based upon this number of reports, there are likely to be 35,216 to 129,127 Iowans with hepatitis C infection, with 15,061 to 109,758 of these cases undiagnosed. HCV diagnoses have increased sharply in Iowa since 2000. Over 2,000 Iowans were diagnosed in 2015, an increase of 182% since 2000. HCV diagnoses among those between the ages of 18 and 30 have increased 300% since 2009, with 299 diagnoses in 2015.

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<sup>1</sup> Viral Hepatitis- Hepatitis C Information; Centers for Disease Control and Prevention, 2016.

<http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm>

<sup>2</sup> Toward a More Accurate Estimate of the Prevalence of Hepatitis C in the United States; Edlin, B.R., et al.; *Hepatology* 2016; 62(5), 1353-1363.

**Table 43**  
**Characteristics of People Reported with HCV**

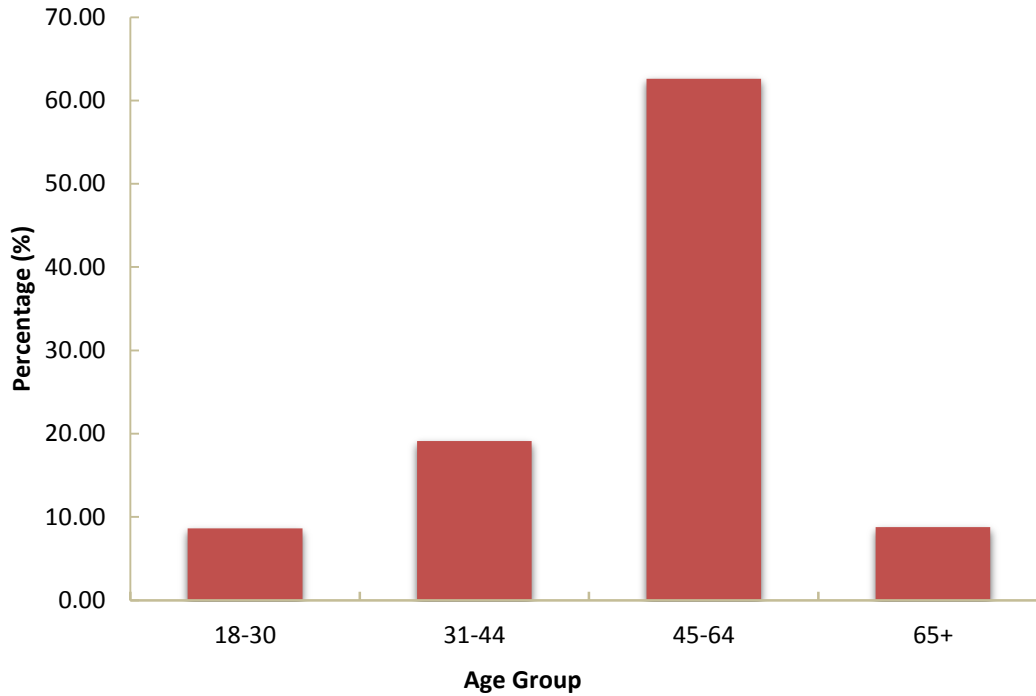
	No.	%
<b>Sex</b>		
Male	13,115	61.6
Female	7,806	36.7
Other	363	1.7
<b>Race and Ethnicity*</b>		
White, non-Hispanic	5,476	82.4
Black, non-Hispanic	700	10.5
Latino/Hispanic	216	3.3
American Indian or Alaska Native	114	0.5
Asian, Native Hawaiian or Other Pacific Islander	120	0.6
Multiple Races	24	0.4
<b>Age At Time Of Test</b>		
Median	52.0	
<b>Age Group</b>		
Under 18	188	0.9
18-30	1,844	8.7
31-44	4,077	19.3
45-64	13,354	63.2
65+	1,871	8.9

\* Among cases for which it was reported. Race and ethnicity were missing for 14,684 cases.

There are disparities among persons living with HCV for sex and age. Over 61% of persons reported with HCV were males. The majority (63%) of persons reported with HCV were diagnosed between the ages of 45 and 64. Although race and ethnicity were not reported on nearly 70% of cases, there appear to be pronounced disparities by race and ethnicity. Of people for whom race and ethnicity was reported, over 10% were black and non-Hispanic. This group only makes up 3% of Iowa's total population (Table 43).

The median age at diagnosis of those reported as HCV positive was 52. Of the 21,334 people reported, 188 (< 1%) were less than 18 years of at onset of the disease. Data indicate that 8.9% of people diagnosed with HCV were 65 or older, 63.2% were 45 to 64 years of age, 19.3% were 31 to 44 years of age, and 8.7% were 18 to 30 years of age at diagnosis (Figure 50).

**Figure 50**  
**Age Distribution of People Living with HCV in Iowa**



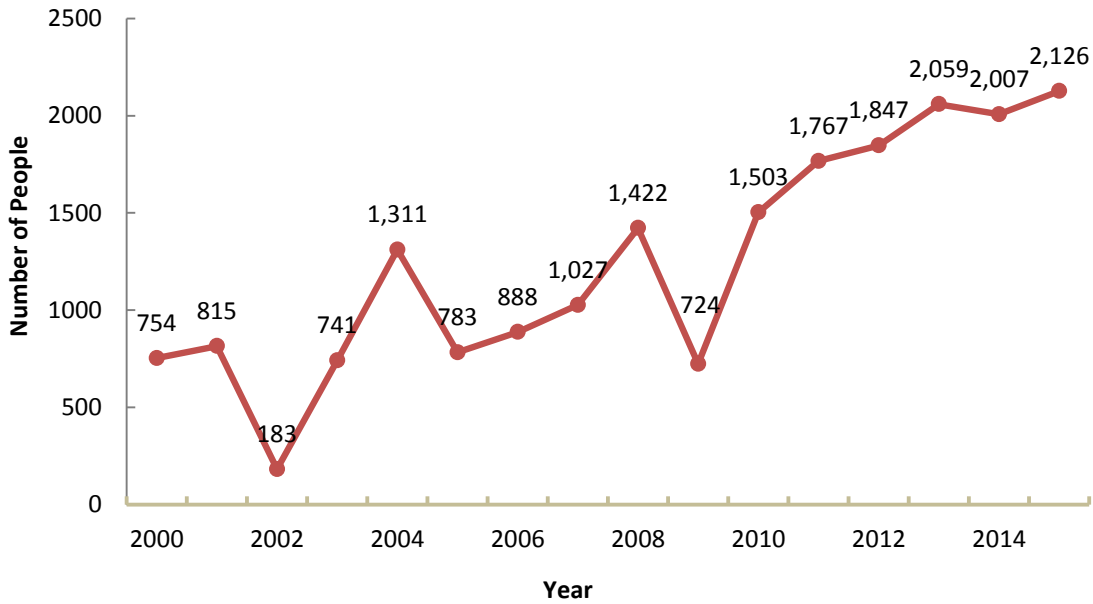
Over 56% of the people reported as HCV positive (defined in this analysis as either antibody positive or confirmed positive) had their first test from 2010 to 2015. In 2015, 10.65% of those reported as HCV positive received their first positive HCV antibody or confirmatory test, which was the highest percentage in this analysis. The number of Iowans reported as having HCV positive antibody or confirmatory tests per year has increased between 2000 and 2015. Table 44 shows these trends over time.

In general, diagnoses have increased each year since 2000. The number of diagnoses in 2015 represents an increase of 182% over that seen in 2000 (Table 44, Figure 51). Diagnoses of people 18 to 30 years of age have increased similarly, the most dramatic increase has occurred since 2009 (Table 44, Figure 52). This represents a 300% increase in diagnoses among those between the ages of 18 and 30.

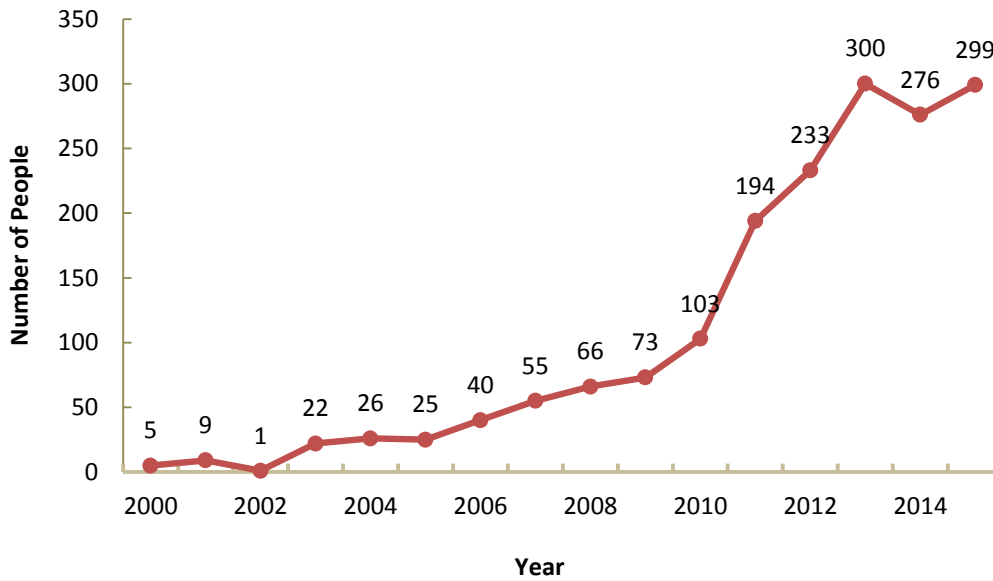
**Table 44**  
**Number of Iowans Reported with Positive HCV Antibody or Confirmatory Test per Year**

Year	All ages	18 – 30 yrs.
2000	754	5
2001	815	9
2002	183	1
2003	741	22
2004	1,311	26
2005	783	25
2006	888	40
2007	1,027	55
2008	1,422	66
2009	724	73
2010	1,503	103
2011	1,767	194
2012	1,847	233
2013	2,059	300
2014	2,007	276
2015	2,126	299

**Figure 51**  
**Year of First Positive HCV Antibody or Confirmatory Test: Total Population**



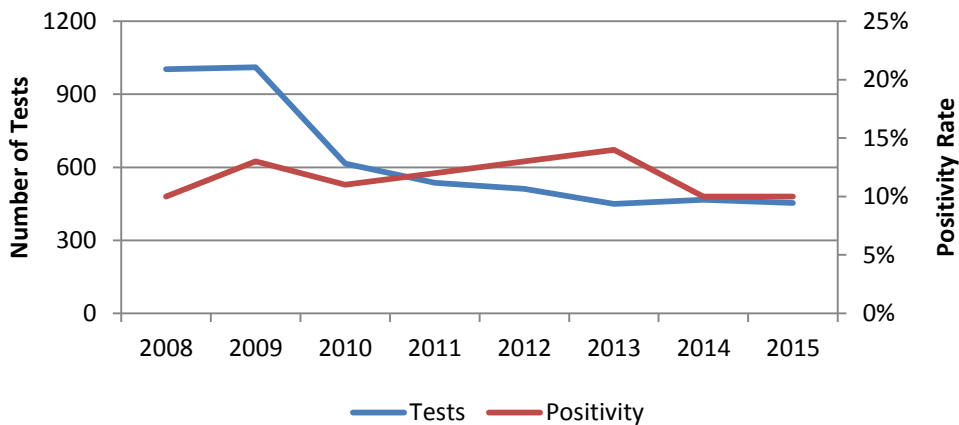
**Figure 52**  
**Year of First Positive HCV Antibody or Confirmatory Test: 18 to 30 Years of Age**



**HCV Testing and Hepatitis A/B Vaccination Program**

In 2015, the eight IDPH-funded Counseling, Testing, and Referral (CTR) sites tested 453 high-risk individuals for antibodies to the hepatitis C virus. Forty-seven people (10%) were identified as antibody positive (Figure 53). Of the 453 high-risk individuals tested for HCV, 435 (96%) reported injection drug use (IDU). Forty-seven (11%) persons who reported ever having injected drugs were identified as HCV antibody positive.

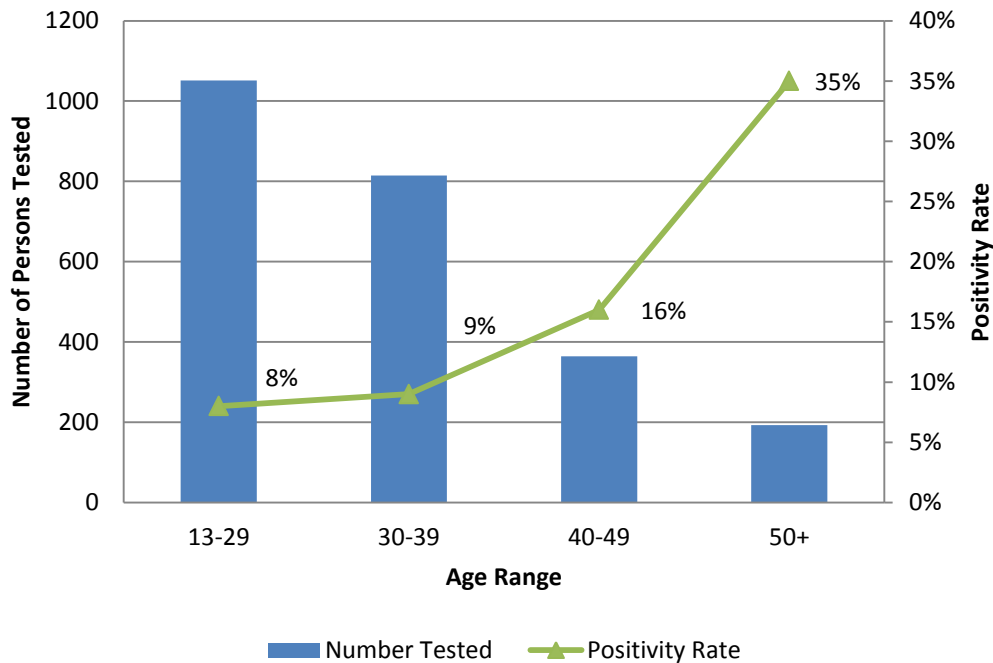
**Figure 53**  
**Hepatitis C Testing and Positivity by Year at IDPH-Funded Sites**



The positivity rate among males tested for HCV in 2015 was higher than the positivity rate for females. Almost 12% (n=29) of 248 males were identified as HCV antibody positive, compared to almost 9% (n=18) of 205 females.

The age range experiencing the highest positivity rate at IDPH-funded sites between 2011 and 2015 was the 50 and older population, with a positivity rate of 35% (Figure 54).

**Figure 54**  
**HCV Testing and Positivity Rate by Age Range at IDPH-Funded Sites, 2011-2015**



### Hepatitis A/B Immunization Activity

Combination hepatitis A/B immunization is indicated for active immunity against disease caused by hepatitis A virus and infection by all known subtypes of hepatitis B virus. The combination hepatitis A/B vaccine is approved for use in persons 18 years of age or older. This vaccine is administered by intramuscular injection. Standard dosing is through a series of three doses given on a 0, 1, and 6-month schedule. Combination hepatitis A/B vaccine can follow an accelerated dosing schedule by administering vaccine on days 0, 7, and 21 to 30 followed by a booster dose at month 12.

Nine IDPH-funded CTR sites offer hepatitis A/B vaccinations to the following high-risk populations:

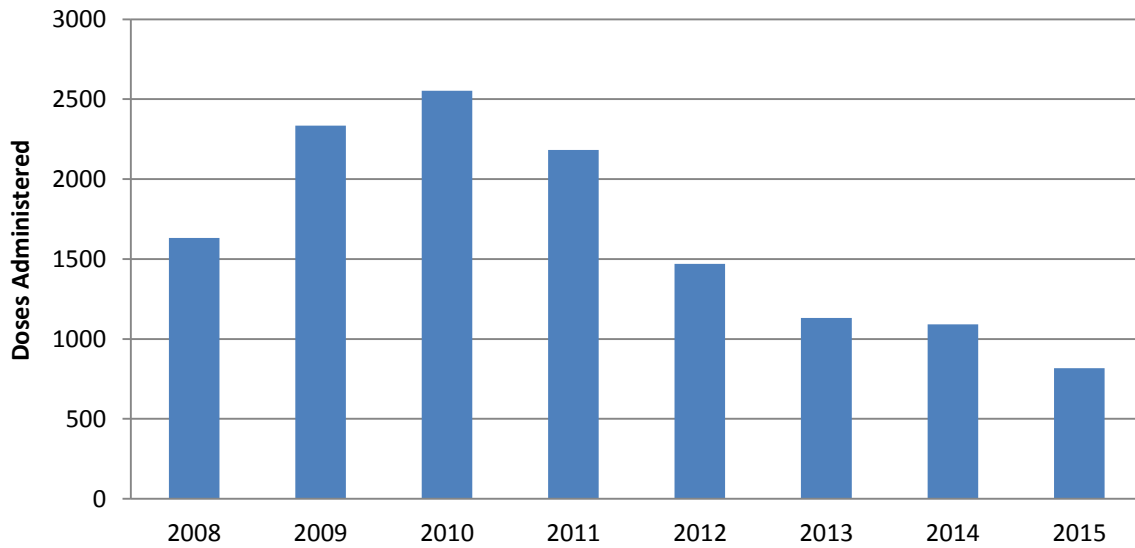
- People who use injection and non-injection drugs;
- Men who have sex with men;
- Persons with an STD diagnosis within the past 12 months;
- People living with HIV and/or HCV; and



- Sexual partners of persons living with HIV, hepatitis A (HAV), and/or hepatitis B (HBV).

In 2015, the nine CTR sites administered 817 combination hepatitis A/B vaccinations to high-risk individuals. Doses administered are broken down into first doses, second doses, and third doses received by clients. In 2015, 477 individuals received a first dose, 194 received a second dose, and 146 individuals received a third dose of combination hepatitis A/B vaccine. The number of immunizations has decreased steadily since 2010 (Figure 55). This is likely due to an increasing number of people being immunized against hepatitis B as part of the school vaccination requirements that went into effect November 4, 1998.

**Figure 55**  
**IDPH-Funded Administration of Hepatitis A/B Vaccinations by Year**



*Section*

**2**

**RYAN WHITE CARE ACT  
SPECIAL QUESTIONS AND  
CONSIDERATIONS**

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

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

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 and ethnicity, income, housing status, and medical insurance provider; and a summary of the utilization of Ryan White Part B and Part C services. The information may be used by prevention and care planning groups to identify gaps in services or to help target services to specific populations of HIV-positive persons.

### **Section Highlights**

- In 2014, the Affordable Care Act was implemented, including Medicaid expansion, resulting in major changes to the Ryan White program.
- Iowa receives Ryan White Part B and Part C funds for the delivery of essential services to individuals and families with HIV disease. In 2015, 10 Ryan White Part B sub-recipients served 1,218 people with case management, core, and other support services.
- The AIDS Drug Assistance Program (ADAP) enrolled 489 persons living with HIV/AIDS in 2015. Of those enrolled, 459 utilized the program, with 179 utilizing the medication assistance and 374 utilizing the insurance assistance.
- Three Ryan White Part C clinics located in Sioux City, Des Moines, and Iowa City served 1,294 clients in 2015. Outpatient ambulatory medical care was the most utilized service in 2015, followed by medical case management.

## **RYAN WHITE HIV/AIDS TREATMENT EXTENSION ACT OF 2009**

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 people living with HIV (PLWH) and their families. 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 legislation in 1996, 2000, 2006, and 2009 to support funding for Part A through D, Special Projects of National Significance (SPNS), HIV/AIDS Education Training Centers, and the Dental Reimbursement Program. In 2009, the legislation was renamed the Ryan White HIV/AIDS Treatment Extension Act to emphasize that the HIV epidemic should no longer be considered an emergency, but instead approached as a chronic disease epidemic.

Iowa receives funding for Part B, Part C, and an AIDS Education Training Center. The Iowa Department of Public Health is the grantee for Part B, and there are four Iowa Part C grantees located in Davenport, Iowa City, Des Moines and Sioux City, and another Part C grantee in Omaha, Nebraska that serves many Iowans living with HIV in southwest Iowa.

### **Ryan White Part B Program**

Part B 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 the AIDS Drug Assistance Programs (ADAP).

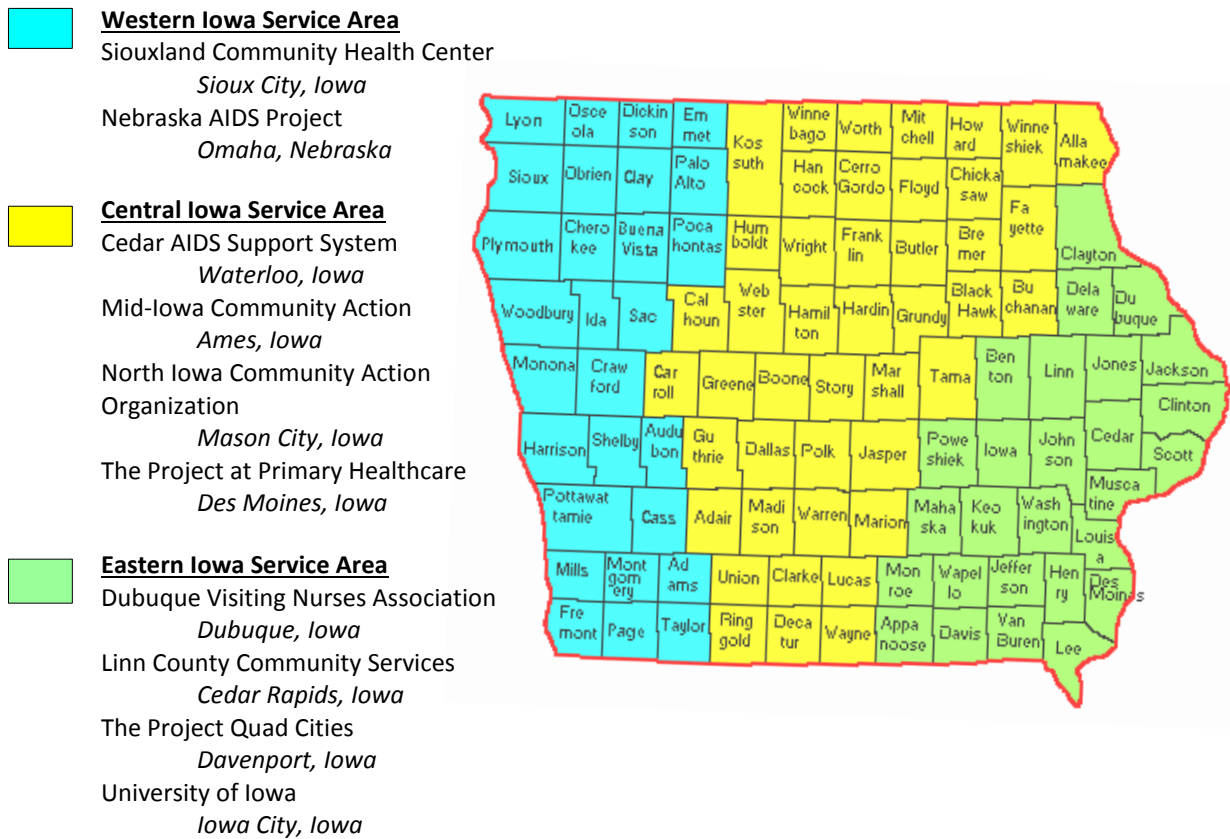
The Part B program, which includes ADAP, serves as the payer of last resort for PLWH who are uninsured or underinsured and cannot cover the costs of care on their own. In other words, clients must be ineligible for all other resources, including Medicaid, before being enrolled. The ADAP also assists individuals who are low income and have adequate insurance coverage, but cannot cover the costs of their premiums, copayments, coinsurance, and/or deductibles. In 2015, 1,218 Iowans received services through the Ryan White Part B program (unduplicated), and 489 persons were enrolled in the ADAP. Approximately 179 clients utilized medication assistance and 374 utilized insurance assistance.

Iowa has 10 Ryan White Part B sub-recipients that serve all counties of the state. For the purposes of this report, the state has been divided into three regions: Western, Central, and Eastern (Figure 56). The providers in each region deliver essential core and support services, such as case management, mental health services, emergency financial assistance, transportation services, housing services and referrals to eligible clients living with HIV.

The Ryan White Part B program experienced an intensely transitional year in 2014, and the effects were still apparent in 2015. The implementation of the Affordable Care Act (ACA), including the expansion of Iowa Medicaid, proved to be a significant challenge. Compounding factors included difficulty using and interacting with the healthcare.gov website, new Iowa Medicaid program requirements, educating clients on their new health insurance benefits, and the transition to calculating Modified Adjusted Gross Income (MAGI) within ADAP.

Outside of the ACA implementation, in 2014, the Ryan White Part B program also transitioned to a tier system of case management. New program requirements, including a new set of case management services in CAREWare (Iowa’s client-level data system), were implemented. This significant change led to an adjustment period for contracted sub-recipients.

**Figure 56**  
**2015 Ryan White Part B Service Areas**



**Client Services Program**

Ryan White Part B Services, which includes a multi-level, or tiered, case management system, as well as other support services, are provided in a variety of settings in Iowa. Case management

and support services can help improve client quality of life, satisfaction with care, and use of community-based services.

HIV case management exists in part to connect an often-fragmented system. It can serve as a catalyst for quality, cost-effective care by linking the patient, the physician, and other members of the care coordination team, the payer, and the community. Without the coordination provided by case managers, some clients can become confused about how the system works and frustrated by the time and effort involved. Consequently, many clients can become detached and ultimately disengage from care services.

In 2014, the Part B case management program was redesigned to better meet the needs of Iowans living with HIV. A tiered model was implemented in response to unique local, organizational, and client factors. Four tiers of case management are provided: Medical Case Management, Non-Medical Case Management, Brief Contact Management, and Maintenance Outreach Support Services. The principles of self-determination and self-direction have been deeply integrated into the program structure.

### **AIDS Drug Assistance Program (ADAP)**

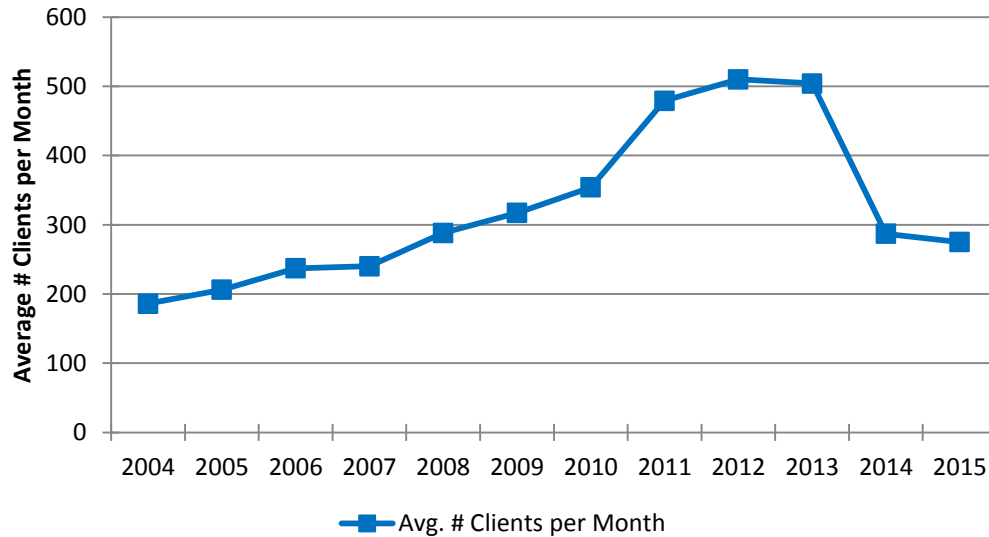
Iowa's ADAP provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured persons living with HIV/AIDS. In addition, the ADAP provides insurance assistance to insured persons living with HIV/AIDS who are unable to pay for their premiums, medication copayments, and deductibles. To qualify for medication assistance, individuals must make less than 200% of the Federal Poverty Level (FPL). To qualify for insurance assistance, individuals must make less than 400% of the FPL.

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. Eighty-two medications are available 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, antidepressant/anxiety medications, antipsychotic/hypnotic medications, antifungals, anti-mycobacterials, general antivirals, an anti-neoplastic medication, and Hepatitis C medications.

In 2015, 489 individuals were enrolled in the ADAP, with an average of 275 individuals receiving either medication assistance or insurance assistance per month. Figure 57 presents the average number of clients utilizing ADAP each year from 2004 to 2015. Monthly ADAP utilization peaked in 2012 at an average of 510 individuals per month. The significant impact of the ACA can be seen in the sharp decrease from 2013 to 2014. In 2014, Iowa expanded Medicaid through two 1115 waivers. Consequently, approximately 400 clients were dis-enrolled from the ADAP and enrolled into other benefit homes, such as Medicaid. Additionally in 2014, a targeted effort was made to enroll eligible ADAP clients into a health insurance Marketplace plan or their employer-sponsored insurance plan. The ADAP then provided "wraparound" services for the Marketplace and employer-sponsored insurance plans, paying for premiums, deductibles, and

copays/coinsurance. In 2015, the ADAP discontinued its participation in the Marketplace, and instead purchased private health insurance for clients through BlueCross, Blue Shield.

**Figure 57**  
**Average Number of ADAP Client Utilization<sup>1</sup> per Month**  
**2004-2015**



<sup>1</sup>ADAP client utilization includes both medication and insurance assistance clients. Additionally, clients could not be unduplicated, and therefore may have received both medication and insurance assistance.

To aid in the ACA transition, field benefits specialists were hired and placed at Part B agencies across the state. They were responsible for assisting clients enrolling into the Marketplace (2014), BlueCross BlueShield (2015), and employer-sponsored insurance plans, as well as educating clients on their new insurance coverage. Additionally, the field benefits specialists helped identify clients who were eligible for the newly expanded Medicaid and assisted with their enrollment.

### Ryan White Part C Program

Ryan White Part C funds are provided directly to clinics to support primary medical care and other services for low-income people living with HIV disease. There are five Part C clinics that are accessible to low-income Iowans living with HIV. Three of these are federally qualified health centers (FQHCs) located in Davenport, Des Moines, and Sioux City. The other two clinics are the University of Iowa Hospitals and Clinics in Iowa City, Iowa, and the University of Nebraska Medical Center (UNMC) in Omaha, Nebraska.

Part C 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 clients living with HIV;

- Medical case management to ensure access to services and continuity of care for clients living with HIV; and
- Attention to other health problems that occur frequently with HIV infection, including tuberculosis and substance abuse.

Data from 2015 were only available from the Part C clinics located in Des Moines, Sioux City and Iowa City. These clinics reported all Part C-eligible clients who utilized services, not just those clients whose services were paid with Part C funds. There may be duplication of clients among the clinics, as clients occasionally change clinics or move within the state. Additionally, data may include non-residents. In particular, the Part C clinic in Davenport serves many Illinois residents and the Part C clinic in Sioux City serves Nebraska and South Dakota residents.

As mentioned earlier, part of the challenge in 2014 was the integration of the Ryan White Part B program (especially the new tiered case management system) and Part C clinics. There are three agencies in Iowa that are funded for both Ryan White Part B and C, and they experienced some significant programmatic complications during this transitional time. To help address any problems, IDPH facilitated planning meetings with the three agencies. The first meeting was held in September 2014, and meetings have continued quarterly thereafter.



## Question

1

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

## CHARACTERISTICS OF PART B CLIENTS

### Primary Demographic Characteristics

Table 45 shows the primary demographic characteristics of Part B support service clients by region in 2015. There were 1,218 total clients served. The Central region served 51% of all clients (n=619), while the Eastern region served 33% of clients (n=405) and the Western region served the remaining 16% (n=194). This is consistent with the geographic distribution of the HIV epidemic in Iowa. The Western region of Iowa is more rural, and therefore has a lower population compared to the rest of the state.

**Table 45**  
**Primary Demographic Characteristics of Part B Clients<sup>1</sup> by Region**  
**2015**

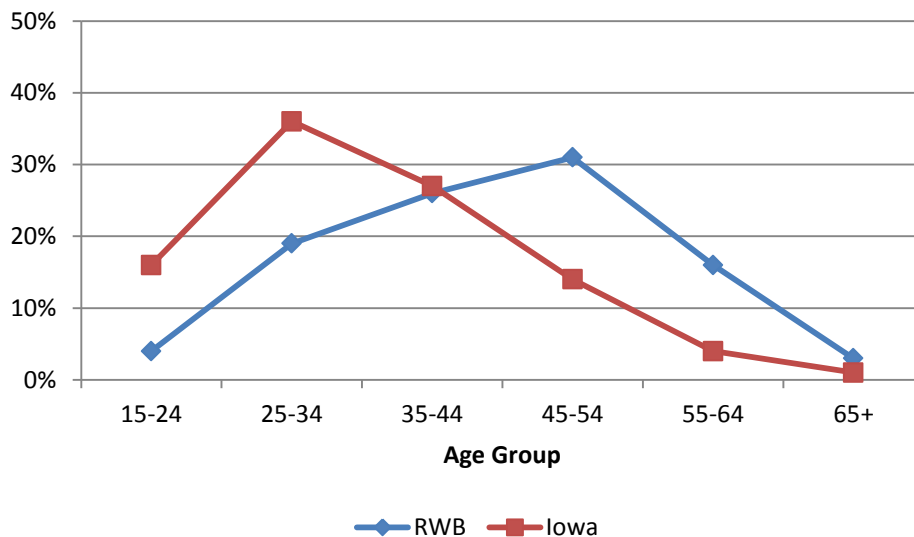
REGION	WESTERN		CENTRAL		EASTERN		TOTAL	
	#	%	#	%	#	%	#	%
<b>Race/Ethnicity</b>								
White	114	59	368	59	267	66	<b>749</b>	<b>61</b>
Black/African American	37	19	160	26	99	24	<b>296</b>	<b>24</b>
Hispanic	33	17	54	9	24	6	<b>111</b>	<b>9</b>
Asian	3	2	26	4	5	1	<b>34</b>	<b>3</b>
Native Hawaiian/Pacific Islander	--	--	--	--	--	--	--	--
American Indian/Alaska Native	4	2	--	--	2	0.5	<b>6</b>	<b>0.5</b>
More than one race	3	2	10	2	8	2	<b>21</b>	<b>2</b>
Unknown	--	--	1	0.2	--	--	<b>1</b>	<b>0.1</b>
<b>Sex</b>								
Male	142	73	464	75	308	76	<b>914</b>	<b>75</b>
Female	51	26	151	24	94	23	<b>296</b>	<b>24</b>
Transgender (M to F)	1	1	4	1	3	1	<b>8</b>	<b>1</b>
Transgender (F to M)	--	--	--	--	--	--	--	--
<b>Age (in 2015)</b>								
<13	2	1	--	--	1	0.2	<b>3</b>	<b>0.2</b>
13-14	--	--	--	--	--	--	--	--
15-24	9	5	21	3	19	5	<b>49</b>	<b>4</b>
25-34	29	15	113	18	88	22	<b>230</b>	<b>19</b>
35-44	58	30	170	27	94	23	<b>322</b>	<b>26</b>
45-54	61	31	184	30	132	33	<b>377</b>	<b>31</b>
55-64	29	15	109	18	61	15	<b>199</b>	<b>16</b>
≥65	5	3	22	4	10	2	<b>38</b>	<b>3</b>
<b>➤ TOTALS</b>	<b>194</b>		<b>619</b>		<b>405</b>		<b>1,218</b>	

<sup>1</sup>All clients who utilized a service eligible for Part B funding are included.

Within the Ryan White Part B service regions, the distribution of clients by race/ethnicity, sex, and age were similar, with the exception of Hispanic clients. The Western region had a higher proportion of clients who identified as Hispanic (17%), compared to 9% of Ryan White Part B clients, and 8% of all Iowans living with HIV. This higher proportion of Hispanics in western Iowa may be due to the meat packing plants that are located there where many of the Hispanic Ryan White Part B clients are employed.

The Ryan White Part B program had approximately the same distribution of clients by race/ethnicity and sex compared to all Iowans living with HIV. However, there was a significant difference between the distribution of Ryan White Part B clients by age compared to all Iowans living with HIV in 2015 (Figure 58). Over one-third (36%) of persons living with HIV in Iowa were between the ages of 25 and 34. Among Ryan White Part B clients, only 19% were between the ages of 25 and 34, while 31% were between the ages of 45 and 54. It is unclear what accounts for the age distribution differences between the Ryan White Part B program clients and Iowans living with HIV.

**Figure 58**  
**Age Distribution of Iowans Living with HIV and Ryan White Part B Clients**  
**2015**



**Economic Indicators for Part B Support Service Clients**

Table 46 shows the indicators for living arrangement, income, and health insurance for clients who were served by the Ryan White Part B program in 2015. In the Central region, 83% of clients reported living in stable/permanent housing, which was the lowest percentage of all regions.

In total, approximately 55% of clients had an income less than or equal to 138% of the Federal Poverty Level (FPL). These clients would have been eligible for Medicaid due to expansion from

the ACA. In 2015, an additional 11% of clients were qualified to receive Medicaid through the expansion (those with an FPL between 101% and 138%).

The majority (40%) of Ryan White Part B clients received health care coverage through Medicaid and approximately 9% of clients had no access to insurance. Clients who were uninsured in 2015 were most likely undocumented individuals, and therefore not eligible for any health insurance benefit programs.

In terms of clients who were covered by private health insurance, a greater proportion of Ryan White Part B clients were enrolled in employer-sponsored insurance (18%) compared to those enrolled in private health insurance plans (12%). Furthermore, this fluctuated between regions. The Western region had the greatest difference between clients enrolled in employer-sponsored insurance and private health insurance, at 21% and 8%, respectively.

**Table 46**  
**Economic Indicators for Part B Clients<sup>1</sup> by Region**  
**2015**

REGION	WESTERN		CENTRAL		EASTERN		TOTAL	
	#	%	#	%	#	%	#	%
<b>Living Arrangement</b>								
Stable/Permanent Housing	176	91	515	83	359	89	<b>1050</b>	<b>86</b>
Unstable	8	4	51	8	26	6	<b>85</b>	<b>7</b>
Temporary	9	5	7	1	19	5	<b>35</b>	<b>3</b>
Unknown	1	1	46	7	1	0.2	<b>48</b>	<b>4</b>
<b>Income</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>
0%-100% FPL <sup>2</sup>	94	48	277	45	163	40	<b>534</b>	<b>44</b>
101%-138% FPL	25	13	60	10	52	13	<b>137</b>	<b>11</b>
139%-200% FPL	25	13	90	15	78	19	<b>193</b>	<b>16</b>
201%-300% FPL	32	16	94	15	75	19	<b>201</b>	<b>17</b>
301%-400% FPL	10	5	33	5	29	7	<b>72</b>	<b>6</b>
Greater than 400% FPL	7	4	8	1	8	2	<b>23</b>	<b>2</b>
Unknown	1	1	57	9	--	--	<b>58</b>	<b>5</b>
<b>Primary Medical Insurance</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>
Private – Employer	40	21	105	17	72	18	<b>217</b>	<b>18</b>
Private - Individual	16	8	63	10	64	16	<b>143</b>	<b>12</b>
Medicare	35	18	95	15	81	20	<b>211</b>	<b>17</b>
Medicaid	77	40	585	42	155	38	<b>490</b>	<b>40</b>
No Insurance	24	12	52	8	28	7	<b>104</b>	<b>9</b>
VA, Tricare, other military health care	--	--	1	0.2	3	1	<b>4</b>	<b>0.3</b>
Other	1	1	2	0.3	2	0.5	<b>5</b>	<b>0.4</b>
Unknown	1	1	43	7	--	--	<b>44</b>	<b>4</b>
<b>TOTALS</b>	<b>194</b>		<b>619</b>		<b>405</b>		<b>1218</b>	

<sup>1</sup>All clients that utilized a service eligible for Part B funding are included.

<sup>2</sup>FPL = Federal Poverty Level

There was a significant decrease in uninsured Ryan White Part B clients from 2011 (30%) to 2015 (9%). In addition, enrollment in private insurance (both employer-sponsored and individual) increased from 21% in 2011 to 30% in 2015, and Medicaid enrollment increased from 29% in 2011 to 40% in 2015. These changes can be attributed to the implementation of the ACA and expansion of Iowa Medicaid.

## CHARACTERISTICS OF THE AIDS DRUG ASSISTANCE PROGRAM (ADAP) CLIENTS

### Primary Demographic Characteristics

Table 47 presents the demographic characteristics of clients who utilized ADAP services in 2015, both medication and insurance assistance. Utilization data was chosen instead of enrollment in order to more accurately represent the ADAP.

**Table 47**  
**Primary Demographic Characteristics of AIDS Drug Assistance Program Clients<sup>1</sup>**  
**2015**

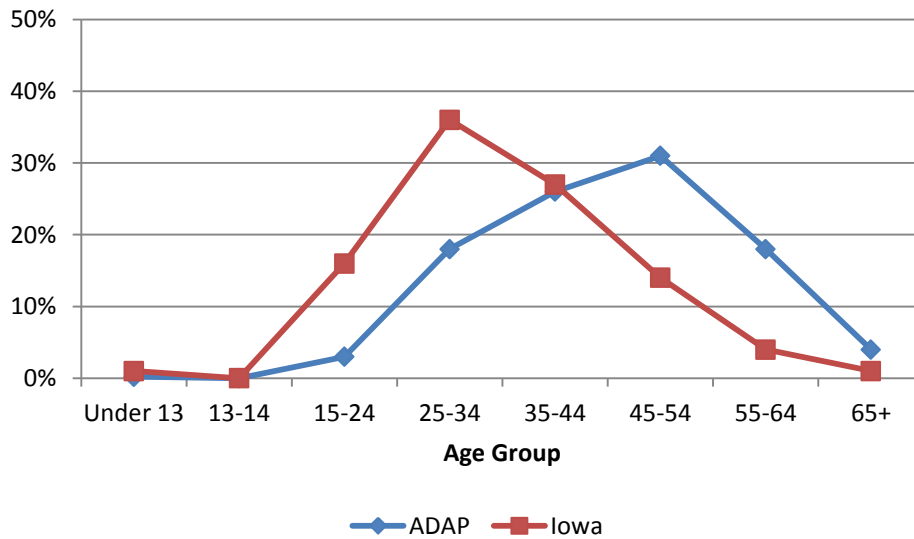
	MEDICATION ASSISTANCE		INSURANCE ASSISTANCE		ANY ADAP PROGRAM <sup>2</sup>	
	#	%	#	%	#	%
<b>Race/Ethnicity</b>						
White, non-Hispanic	83	46	260	70	289	63
Black, non-Hispanic	35	20	66	18	81	18
Hispanic	55	31	32	9	70	15
Asian	4	2	13	3	15	3
Native Haw./Pacific Islander	--	--	--	--	--	--
Amer. Indian/Alaska Native	2	1	1	0.3	2	0.4
More than one race	--	--	2	1	2	0.4
<b>Sex</b>						
Male	143	80	299	80	367	80
Female	36	20	75	20	92	20
Transgender (M to F)	--	--	--	--	--	--
Transgender (F to M)	--	--	--	--	--	--
<b>Age (in 2015)</b>						
<13	--	--	1	0.3	1	0.2
13-14	--	--	--	--	--	--
15-24	10	6	13	3	14	2
25-34	42	23	61	16	84	18
35-44	61	34	86	23	118	26
45-54	49	27	120	32	142	31
55-64	16	9	75	20	81	18
≥65	1	1	18	5	19	4
<b>TOTALS</b>	<b>179</b>		<b>374</b>		<b>459</b>	

<sup>1</sup>Client data are based on ADAP utilization, not enrollment.

<sup>2</sup>Clients could not be unduplicated between Medication Assistance and Insurance Assistance. Therefore, ANY ADAP includes clients who may have accessed both Medication and Insurance Assistance.

The distribution of ADAP clients (whole program) by race/ethnicity and sex were roughly the same as Iowans living with HIV. However, there were significant difference between the ADAP and Iowans living with HIV with regards to age (Figure 59). The majority of ADAP clients were between the ages of 45-54, while the majority of Iowans living with HIV in 2015 were age 25-34. At this time, it is unclear as to what is responsible for the difference in age distribution between the ADAP and Iowans living with HIV.

**Figure 59**  
**Age Distribution of Iowans Living with HIV and ADAP Clients**  
**2015**



As previously stated, the ADAP is separated into two programs: medication and insurance assistance. Clients without access to insurance and an FPL below 200% may utilize the medication assistance program. Clients who utilize the insurance assistance program have access to creditable insurance, but need help paying for their prescription copays, deductibles, and/or premiums. The distribution of both medication and insurance assistance clients by sex were identical. The distribution by race/ethnicity and age between the two programs did, however, vary. The insurance assistance program served a higher proportion of white clients at 70% compared to the medication assistance program at 46%. Additionally, the medication assistance program served a higher proportion of Hispanic clients compared to the insurance assistance program at 31% and 9% respectively.

In regards to the distribution of ADAP clients by age, the insurance assistance program served a higher proportion of clients between the ages of 55 to 64 at 20% compared to the medication assistance program at 9%.

## CHARACTERISTICS OF PART C PROGRAM CLIENTS

### Primary Demographic Characteristics

Table 48 shows the primary demographic characteristics of Part C clients by provider. In 2015, Iowa City served the most clients at 47%, followed by Des Moines (41%), and Sioux City (13%).

**Table 48**  
**Primary Demographic Characteristics of Part C Clients<sup>1</sup> by Provider**  
**2015**

PART C PROVIDER	SIOUX CITY		DES MOINES		IOWA CITY		TOTAL	
	#	%	#	%	#	%	#	%
<b>Race/Ethnicity</b>								
White, non-Hispanic	74	45	297	57	428	71	799	62
Black, non-Hispanic	41	23	139	26	112	18	292	23
Hispanic	32	20	52	10	38	6	122	9
Asian	5	3	31	6	13	2	49	4
Native Haw./Pacific Islander	--	--	1	0.2	--	--	1	0.1
Amer. Indian/Alaska Native	6	4	--	--	3	0.5	9	1
More than one race	5	3	5	1	12	2	22	2
<b>Sex</b>								
Male	124	76	388	74	472	78	984	76
Female	37	23	132	25	132	22	301	23
Transgender (M to F)	2	1	5	1	2	0.2	9	1
Transgender (F to M)	--	--	--	--	--	--	--	--
Unknown	--	--	--	--	--	--	--	--
<b>Age (in 2015)</b>								
<13	3	2	--	--	--	--	3	0.2
13-14	--	--	--	--	--	--	--	--
15-24	5	4	21	4	21	3	48	4
25-34	29	18	99	19	103	17	231	18
35-44	45	28	168	32	119	20	332	26
45-54	48	29	143	27	194	32	385	30
55-64	25	15	74	14	147	24	246	19
≥65	7	4	20	4	22	4	49	4
<b>TOTALS</b>	<b>163</b>		<b>525</b>		<b>606</b>		<b>1,294</b>	

<sup>1</sup>All clients that utilized a service eligible for Part C funding are included.

Client distribution by race varied for white, black, and Hispanic. Iowa City had a significantly higher proportion of white clients (71%), while Sioux City had a much lower proportion (45%). For black and Hispanic clients, Iowa City had a lower proportion compared to Sioux City and Des Moines.

Part C client distribution by sex was relatively consistent. However, there were some variations when looking at the distribution by age. Sioux City served a higher proportion of clients aged 35-44 compared to the other provider sites.

### Economic Indicators

Table 49 shows the living arrangement, income, and health insurance for clients who were served by the Ryan White Part C program in 2015.

**Table 49**  
**Economic Indicators for Part C Clients<sup>1</sup> by Provider**  
**2015**

PART C PROVIDER	SIOUX CITY		DES MOINES		IOWA CITY		TOTAL	
	#	%	#	%	#	%	#	%
<b>Living Arrangement</b>								
Stable/Permanent Housing	146	90	429	82	562	93	<b>1,137</b>	<b>88</b>
Unstable	9	6	55	10	18	3	<b>82</b>	<b>6</b>
Temporary	7	4	5	1	25	4	<b>37</b>	<b>3</b>
Unknown	1	1	36	7	1	0.2	<b>38</b>	<b>3</b>
<b>Income</b>								
0%-100% FPL	75	46	240	46	247	41	<b>562</b>	<b>43</b>
101%-138% FPL	22	13	48	9	89	15	<b>159</b>	<b>12</b>
139%-200% FPL	22	13	76	14	63	10	<b>161</b>	<b>12</b>
201%-300% FPL	31	19	63	12	175	29	<b>269</b>	<b>12</b>
301%-400% FPL	7	4	28	5	25	4	<b>60</b>	<b>5</b>
Greater than 400% FPL	5	3	9	2	6	1	<b>20</b>	<b>2</b>
Unknown	1	1	61	12	1	0.2	<b>63</b>	<b>5</b>
<b>Primary Medical Insurance</b>								
Private – Employer	39	24	87	17	120	20	<b>346</b>	<b>19</b>
Private - Individual	13	8	60	11	143	24	<b>216</b>	<b>17</b>
Medicare	26	16	80	15	106	17	<b>212</b>	<b>16</b>
Medicaid	63	39	227	43	198	33	<b>488</b>	<b>38</b>
No Insurance	20	12	47	9	27	4	<b>94</b>	<b>7</b>
VA, Tricare, other military health care	--	--	--	--	--	--	--	--
Other	1	1	1	0.2	9	1	<b>11</b>	<b>1</b>
Unknown	1	1	23	4	3	0.5	<b>27</b>	<b>2</b>
<b>TOTALS</b>	<b>163</b>		<b>525</b>		<b>606</b>		<b>1,294</b>	

<sup>1</sup> All clients that utilized a service eligible for Part C funding are included.

Part C client distribution by living arrangement was relatively consistent, with the exception of Des Moines, which had a lower percentage of clients who were in stable/permanent housing and a higher percentage of clients with an unknown housing status, and Iowa City which had a lower

proportion of clients who were in unstable housing. Overall, the majority of Part C clients were stably housed in 2015 at 88%.

In 2015, the majority of Part C clients were below 100% FPL (43%). The distribution of Part C clients by income was relatively consistent. However, Iowa City had a higher proportion of clients with an FPL between 201% and 300% (29%) compared to the other two sites.

Client distribution by primary medical insurance widely varied between Part C providers. Overall, the majority of clients were enrolled in Medicaid (38%), followed closely by private health insurance (36% for both employer-sponsored and individual coverage). Only 7% of clients were uninsured.

Des Moines and Sioux City had a greater proportion of clients enrolled in employer-sponsored insurance compared to individual plans. Conversely, Iowa City had a higher proportion of clients enrolled in individual health insurance.

Similar to the Ryan White Part B program, Part C providers experienced an increase in clients enrolled in private insurance (both employer-sponsored and individual) and Medicaid between 2011 and 2015 from 22% to 36%, and 22% to 38%, respectively. Furthermore, uninsured Part C clients decreased from 27% in 2011 to 7% in 2015. These changes can be attributed to the implementation of the ACA and expansion of Iowa Medicaid.



## Question 2

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

### UTILIZATION OF RYAN WHITE PART B SERVICES

Utilization of Ryan White Part B services by region can be seen in Table 50. Medical case management, non-medical case management, psychosocial support and service outreach each correspond with different levels of case management in the new tiered model (which was fully implemented on April 1, 2014). Psychosocial support was the most utilized service, as 49% of clients received this service. On average, clients accessed this service 11 times. Non-medical case management was the second most-utilized service, closely followed by medical case management. Clients accessed non-medical case management services an average of 12 times in 2015, and medical case management an average of 14 times.

**Table 50**  
**Utilization of Ryan White Part B Services by Region**  
**2015**

REGION	WESTERN		CENTRAL		EASTERN		TOTAL	
	# Clients	Services per client <sup>1</sup>	# Clients	Services per client	# Clients	Services per client	# Clients	Services per client
Medical case management	116	16.08	90	16.37	176	11.44	382	14.01
Non-medical case management	48	15.21	213	13.14	132	10.19	393	12.40
Psychosocial support	68	10.81	288	10.63	238	11.04	594	10.82
Service outreach	22	4.36	65	3.45	27	2.59	114	3.42
Food bank/home-delivered meals	1	1	50	2.78	68	3.49	119	3.17
Health insurance premium and cost sharing assistance	3	1.67	19	2.42	6	2.5	28	2.36
Mental health services	40	4.80	55	3.18	1	1	96	3.83
Transportation services	72	4.31	194	3.63	113	2.37	379	3.38
Emergency financial assistance	31	2.48	8	1.13	4	1.25	43	2.12
Oral health care	1	1	10	1.30	3	3	14	1.64
Housing services	21	1.48	66	2.68	116	2.78	203	2.61
Linguistic services	0	0	24	3.75	0	0	24	3.75
Substance Abuse: Outpatient	0	0	18	1.06	0	0	18	1.06
Referral: Health care/supportive	0	0	188	1.83	0	0	188	1.83
Support Group/non-mental health	0	0	10	4.20	0	0	10	4.20

<sup>1</sup>The average number of services per client

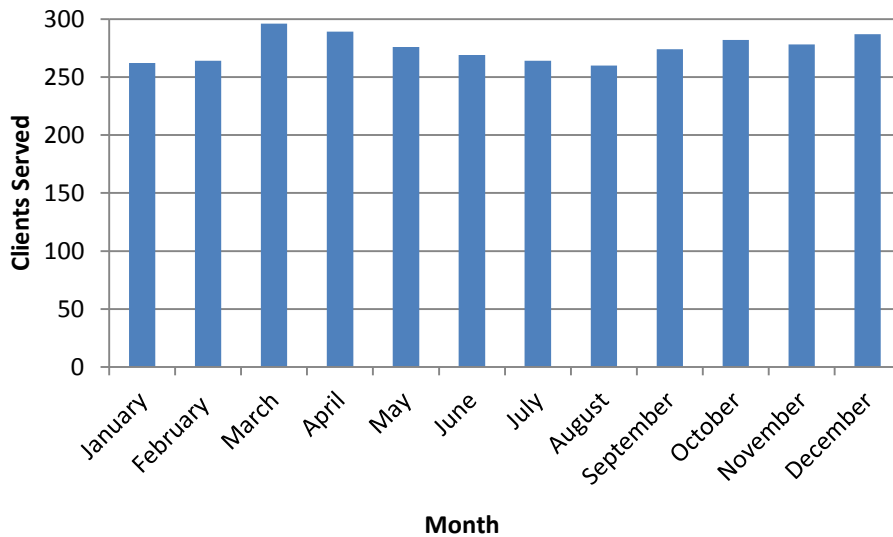
This distribution of services per clients between the four tiers of case management corresponds with the clients’ levels of need in each tier. Medical case management clients require the most intensive case management, which is why the average services per client is 14. Service outreach was the least utilized case management service, and had an average of 3 services per client. This corresponds with the acuity of clients in this tier (the lowest of case management), as these clients have fewer needs and require less support.

Outside of case management services, clients utilized transportation assistance the most, followed by housing services. Clients utilized support group/non-mental health the most, with an average of 4.2 services per client, followed by mental health services (3.8 services per client), and linguistic services (3.7 services per client).

**UTILIZATION OF THE AIDS DRUG ASSISTANCE PROGRAM**

In 2015, there were 489 clients enrolled in the ADAP, including medication and/or insurance assistance. An average of 275 clients utilized the ADAP per month. March had the highest utilization at 296 clients (Figure 60).

**Figure 60  
ADAP Utilization for Whole Program, 2015**



**UTILIZATION OF PART C EARLY INTERVENTION SERVICES**

Services provided in 2015 by Part C clinics are displayed in Table 51.

**Table 51**  
**Utilization of Ryan White Part C Services<sup>1</sup> by Provider, 2015**

PART C PROVIDER	DES MOINES		IOWA CITY		SIOUX CITY		TOTAL	
	# Clients	Services per client <sup>2</sup>	# Clients	Services per client	# Clients	Services per client	# Clients	Services per client
<b>Medical case management (Part C Funding)</b>	<b>511</b>	<b>6.46</b>	<b>183</b>	<b>3.01</b>	<b>141</b>	<b>7.70</b>	<b>835</b>	<b>5.91</b>
Non-medical case management (Part C Funding)	5	1.00	0	--	1	2.00	6	1.17
<b>Outpatient/ambulatory medical care (Part C Funding)</b>	<b>54</b>	<b>1.91</b>	<b>436</b>	<b>2.87</b>	<b>98</b>	<b>3.80</b>	<b>588</b>	<b>2.93</b>
Outpatient/ambulatory medical care (All Funding)	448	2.49	595	3.02	149	4.34	1192	2.98
<b>Transportation services (Part C Funding)</b>	<b>97</b>	<b>2.18</b>	<b>16</b>	<b>1.06</b>	<b>27</b>	<b>2.81</b>	<b>140</b>	<b>2.17</b>
Transportation services (All Funding)	111	2.13	17	1.06	27*	2.81*	155	2.13
<b>Oral health care (Part C Funding)</b>	<b>11</b>	<b>2.64</b>	<b>71</b>	<b>2.21</b>	<b>45</b>	<b>2.51</b>	<b>127</b>	<b>2.35</b>
Oral health care (All Funding)	34	2.06	89	2.20	45*	2.51*	168	2.26
<b>Insurance cost sharing (Part C Funding)</b>	<b>6</b>	<b>4.83</b>	<b>0</b>	<b>--</b>	<b>1</b>	<b>1.00</b>	<b>7</b>	<b>4.29</b>
<b>Interpreter/linguistic services (Part C Funding)</b>	<b>10</b>	<b>1.70</b>	<b>0</b>	<b>--</b>	<b>22</b>	<b>6.91</b>	<b>32</b>	<b>5.28</b>
Interpreter/linguistic services (All Funding)	10	1.70	0	--	25	7.56	35	5.89
<b>Emergency financial assistance (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>12</b>	<b>1.33</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1.33</b>
<b>Mental health services (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>27</b>	<b>1.67</b>	<b>25</b>	<b>2.84</b>	<b>52</b>	<b>2.23</b>
Mental health services (All Funding)	0	--	55	2.15	25*	2.84	80	2.36
<b>Nutritional therapy (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>1</b>	<b>1.00</b>	<b>0</b>	<b>--</b>	<b>1</b>	<b>1</b>
Nutritional therapy (All Funding)	0	--	9	1.44	0	--	9	1.44
<b>Substance abuse treatment (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>3</b>	<b>3.33</b>	<b>12</b>	<b>1.92</b>	<b>15</b>	<b>2.20</b>
Substance abuse treatment (All Funding)	0	--	5	3.00	14	1.86	19	2.16
<b>Health education/risk reduction/prevention (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>0</b>	<b>--</b>	<b>11</b>	<b>1.09</b>	<b>11</b>	<b>1.09</b>
Health education/risk reduction/prevention (All Funding)	0	--	0	--	14	1.21	14	1.21
<b>Treatment adherence counseling (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>0</b>	<b>--</b>	<b>25</b>	<b>1.40</b>	<b>25</b>	<b>1.40</b>
Treatment adherence counseling (All Funding)	0	--	0	--	28	1.36	28	1.36
<b>Medications (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>0</b>	<b>--</b>	<b>30</b>	<b>1.83</b>	<b>30</b>	<b>1.83</b>
<b>Referral: health care/support services (Part C Funding)</b>	<b>0</b>	<b>--</b>	<b>0</b>	<b>--</b>	<b>3</b>	<b>1.00</b>	<b>3</b>	<b>1</b>

<sup>1</sup> Counts could not be unduplicated. Clients who received services at more than one Part C clinic will be counted more than once. All clients that utilized a service eligible for Part C funding are included.

<sup>2</sup>The average number of services per client.

\*Indicates that this service was only funded by RW Part C.

Outpatient ambulatory medical care (OAMC) was the most utilized service in 2015. Of the 1,294 clients served, 92% received an OAMC service. The majority of these services (approximately 50%) were not funded by Part C, but other sources instead, such as Medicaid or private health insurance. This is as a result of the ACA and Iowans having more access to medical coverage.

The second most utilized service was Medical Case Management (MCM). Sixty-five percent of clients received this service, which was the highest average number of services per client. Other frequently utilized services included oral health care, transportation, and mental health services. There was a wide variety of services provided by each Part C clinic. The only services that were provided by all 3 clinics were OAMC, MCM, oral health care and transportation services.

There was a significant increase in the number of clients served by Part C clinics from 2011 to 2015. In total, there was a 19% increase in Part C clients served between the three clinics. Individually, Des Moines experienced the greatest increase (28%), compared to Sioux City (17%) and Iowa City (11%).

*Section*

**3**

## **HIV CARE CONTINUUM OUTCOMES AND CONSIDERATIONS**

**Question: What does Iowa's HIV Continuum of Care look like and how does it vary by population?**

***Section Highlights***

- There were 2,922 people living with HIV disease and residing in Iowa on December 31, 2015. Of these, 2,367 (81%) had been diagnosed, leaving 529 Iowans who have yet to be diagnosed with HIV.
- In 2015, 88% of people diagnosed with HIV were linked to care within one month; and 97% were linked within three months.
- Of the 124 diagnosed cases in 2015, 89% were linked to care within a month of diagnosis and 97% were linked to care within 3 months of diagnosis. Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa.
- Of the 2,367 PLWH in Iowa at the end of 2015, 83% were retained in care according to Iowa's definition of retention in care. Among Iowans diagnosed and living with HIV, 76% were virally suppressed, but among those who were retained in care, 91% had achieved viral suppression. The same groups that take longer to link are less likely to be retained in care or to achieve viral suppression.
- Iowa's Continuum of Care demonstrates the testing, retention, and re-engagement in care should be focused on to improve health outcomes for Iowans living with HIV and to reduce transmission of HIV to others.

This section focuses on the HIV care continuum in Iowa, also referred to as the HIV treatment cascade. The bars in the HIV care continuum represent the number of Iowans living with HIV who have achieved each progressive stage in the care continuum – from diagnosis, to linkage to care, to retention in care, and finally, to viral suppression.

Now incorporated in the National HIV/AIDS Strategy for the United States, the HIV care continuum provides a framework for understanding where there are major barriers or obstacles to being engaged in care, and it helps to illuminate population-level disparities in accessing care and treatment services and in achieving optimal health outcomes. Understanding the characteristics of specific populations of Iowans living with HIV that do not achieve viral suppression can help target services or interventions to populations or geographical areas of the state that are most in need.

Laboratory data (diagnostic tests, CD4+ cell counts, and viral loads) are used as proxies for estimating people living with HIV who are engaged in HIV-related care.

The stages along HIV care continuum are described as:

### **Diagnosis of HIV infection**

People have to be tested and diagnosed with HIV to be able to access HIV care and treatment services. CDC recommends testing for adults and adolescents at least once in their lifetimes and at least annually for certain populations at risk. According to CDC, an estimated 12.8% of people living with HIV in the US were unaware of their infections in 2012<sup>1</sup>.

### **Linkage to HIV care**

Newly diagnosed people living with HIV should be promptly connected to HIV care and treatment services to help them stay healthy and prevent transmission to others. Linkage should occur within one month of diagnosis.

### **Retention in HIV care**

People living with HIV infection should regularly receive care through a qualified HIV care provider to remain healthy and potentially prevent HIV transmission to others. Ideally, regular care should involve at least two visits a year to an HIV specialist, or to a primary care provider in conjunction with an HIV specialist.

### **Receipt of antiretroviral therapy**

Treatment with antiretroviral therapy (ART) helps to control HIV virus in the body. ART treatment is recommended for every person living with HIV. Treatment should begin as soon as a person is diagnosed.

### **Viral suppression**

ART can help achieve viral suppression (a very low level of HIV in the body) and also greatly reduce HIV transmission in the population. Studies have shown viral suppression

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<sup>1</sup> Prevalence of Diagnosed and Undiagnosed HIV Infection- United States, 2008-2012; Hall, I.H., et al. (2015); *MMWR*, 64(24), 657-662

optimizes individual health outcomes and may reduce the likelihood of transmitting HIV by up to 96%.

Late diagnosis of HIV, delays in linkage to HIV care, and poor adherence to ART treatment could be barriers to achieving the goal of the HIV care continuum. In a 2015 CDC study, 91.5 percent of new HIV infections in 2009 were attributable to people with HIV who were either not in medical care or who didn't know they were infected, compared to less than 6 percent of new infections attributed to people with HIV who were in care and receiving antiretroviral therapy. This means that 9 in 10 new HIV infections in the United States could be prevented through early diagnosis and prompt, ongoing care and treatment<sup>2</sup>.

## DEFINITION OF MEASURES IN IOWA

**PLWH** - number of people diagnosed with HIV on or before December 31, 2014, and living in Iowa at the end of 2015 plus an estimated 19% who are undiagnosed. Iowa has almost 100% reporting of diagnosed cases.

**HIV Diagnosed** - number of people diagnosed with HIV on or before December 31, 2014, and living in Iowa at the end of 2015. People may have been initially diagnosed with HIV while living in Iowa or diagnosed in another state before moving to Iowa. This estimate serves as the underlying population for retention in care and viral suppression measures (described below).

**Linked to Care** - number of people ( $\geq 13$  years of age) newly diagnosed with HIV while residing in Iowa in 2015 that are linked to HIV care services. The denominator here is different from the one used to calculate other stages of the continuum. Linkage to care can also be defined based on a timeline, for example: linkage within 3 months or 12 months.

**Retained in Care** - number of HIV Diagnosed cohort who have two CD4+ cell counts or viral load test results in 2015 at least three months apart or who have one viral load test result in 2015 with the result  $\leq 200$  copies/ml of blood. This definition is different than that of the national or other jurisdictions' definitions.

**Viral Suppression** - number of HIV Diagnosed cohort with a viral load test result of  $\leq 200$  copies/ml at the most recent test during 2015.

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<sup>2</sup> Human Immunodeficiency Virus Transmission at Each Step of the Care Continuum in the United States; Skarbinski, et al. (2015); *Journal of the American Medical Association*, 175(4), 588-596

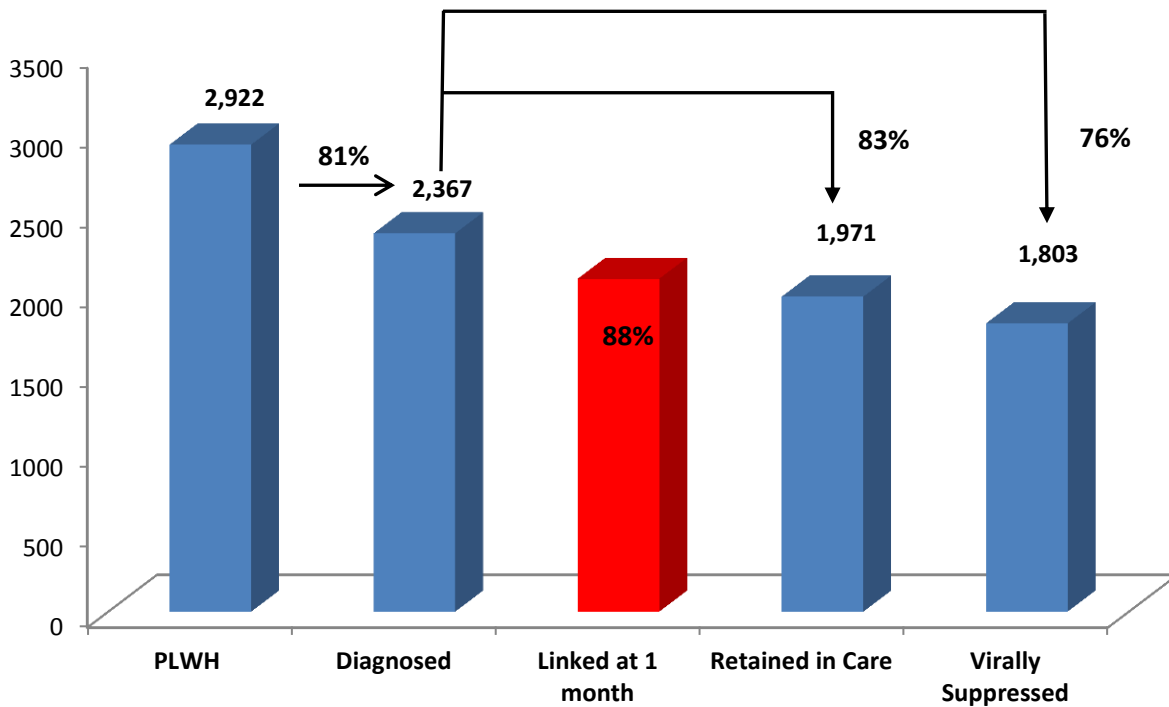


**Question 1**

**What does Iowa’s Continuum of Care look like and how does it vary by population?**

**HIV CONTINUUM OF CARE**

**Figure 61  
Iowa’s HIV Continuum of Care  
2015**



Using back-calculation methods established by CDC to estimate the number of PLWH who are undiagnosed (based upon previous diagnoses in Iowa), Iowa estimates that there are 529 people who have yet to be diagnosed. Using the state’s diagnosed prevalence of 2,367 people living with HIV, we estimate that there are a total of 2,896 persons living with HIV (Figure 61). Approximately 19% of PLWH in Iowa are undiagnosed, which considerably above national average of 12.8%.

As of December 31, 2015, there were 2,367 persons diagnosed and living with HIV disease in Iowa. Some of these persons may have been first diagnosed with HIV infection from other states before moving to Iowa. Of the 2,367, 1,971 (83%) were retained in HIV care in 2015, and 1,803 (76%) were virally suppressed at the end of 2015.

Viral suppression can also be calculated as a proportion of all people who are in care. Of the 1,971 persons retained in HIV care, 91% were virally suppressed at the end of 2015. This indicates the importance of linkage to and retention in care. People who are retained in care are very likely to reach viral suppression, an important predictor of positive health outcomes.

In the continuum, linkage to care is measured among those who were diagnosed in 2015. Therefore, this is not a subset of all people diagnosed, but only of the 124 diagnosed in 2015. The linkage to care bar in Figure 60 is in red to indicate that the definition is different from the rest of the continuum. Eighty-eight percent of persons diagnosed in 2015 who were linked to HIV care within a month of their diagnosis.

### **Linkage to Care**

To get linked to care, individuals have to be tested and diagnosed with HIV infection. Iowa has a relatively high proportion of “late diagnoses,” which increased from 41% of diagnosed cases in 2004 to 46% in 2013, but dropped to 38% in 2015. This high proportion of late diagnoses means that delays in testing is one of the barriers to achieving the goals of the HIV care continuum in Iowa. Early diagnosis and prompt linkage to care and treatment services ensures timely partner services and case management. Linkage to HIV care is measured by documentation of a CD4+ cell counts or viral load test within a given time interval after diagnosis.

Table 52 shows linkage to HIV care of newly diagnosed HIV cases in Iowa in 2015. Of the 124 diagnosed cases, 109 (88%) were linked to care within a month of diagnosis and 120 (97%) were linked within 3 months of diagnosis.

There was little difference in rates of linkage to HIV care by sex at one or three months. People ages 45 years and over were more likely to be linked to HIV care within a month of diagnosis (92%) compared to ages 14 to 24 years (85%) and 25 to 44 years (87%), although those differences disappeared by three months. Linkage among black, non-Hispanic and multi-racial people was much lower at one month than among other racial and ethnic groups, although linkage among both of these groups improved substantially by three months.

Persons with infection attributed to injection drug use (IDU) were all linked to HIV care within a month of diagnosis, compared to 88% of persons with infection attributed to MSM and 78% of persons with infection attributed to heterosexual contact. Interestingly, people diagnosed in a region classified as rural areas had higher linkage rates at one month compared to those in urban areas, but these differences had disappeared by three months. Urban areas are defined as any of the ten most populous counties in Iowa (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, or Woodbury). Finally, more U.S.-born people were linked within a month of diagnosis than foreign-born people. Again, both groups achieved high linkage rates by three months.

**Table 52**  
**Numbers and Percentage of People Diagnosed and Linked to Care**  
**by Demographic Characteristics**  
**2015**

Characteristics	# HIV Diagnosis (>13yrs)	% Linked ≤1 month	% Linked ≤3 months
<b>Sex at Birth</b>			
Male	98	88	96
Female	26	88	100
<b>Age at Diagnosis</b>			
14-24	33	85	97
25-44	35	87	96
45 or older	36	92	97
<b>Ethnicity/Race</b>			
Not Hispanic, White	74	93	97
Not Hispanic, Black/African American	24	71	92
Hispanic	16	88	100
Not Hispanic, Asian	6	100	100
Not Hispanic, Multi-race	4	75	100
<b>Mode of Exposure – Adult/Adolescent<sup>5</sup></b>			
Men who have sex with men (MSM)	77	88	96
Injection Drug Use (IDU)	10	100	100
MSM and Injection Drug Use (MSM/IDU)	4	100	100
Heterosexual Contact	23	78	96
Risk not reported (NIR)	10	90	100
<b>Region<sup>1</sup></b>			
Urban	85	87	96
Rural	39	90	97
<b>Country</b>			
US born	95	89	97
Foreign born	29	83	97
<b>TOTALS</b>	<b>124</b>	<b>88</b>	<b>97</b>

<sup>1</sup> Urban counties are Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury.

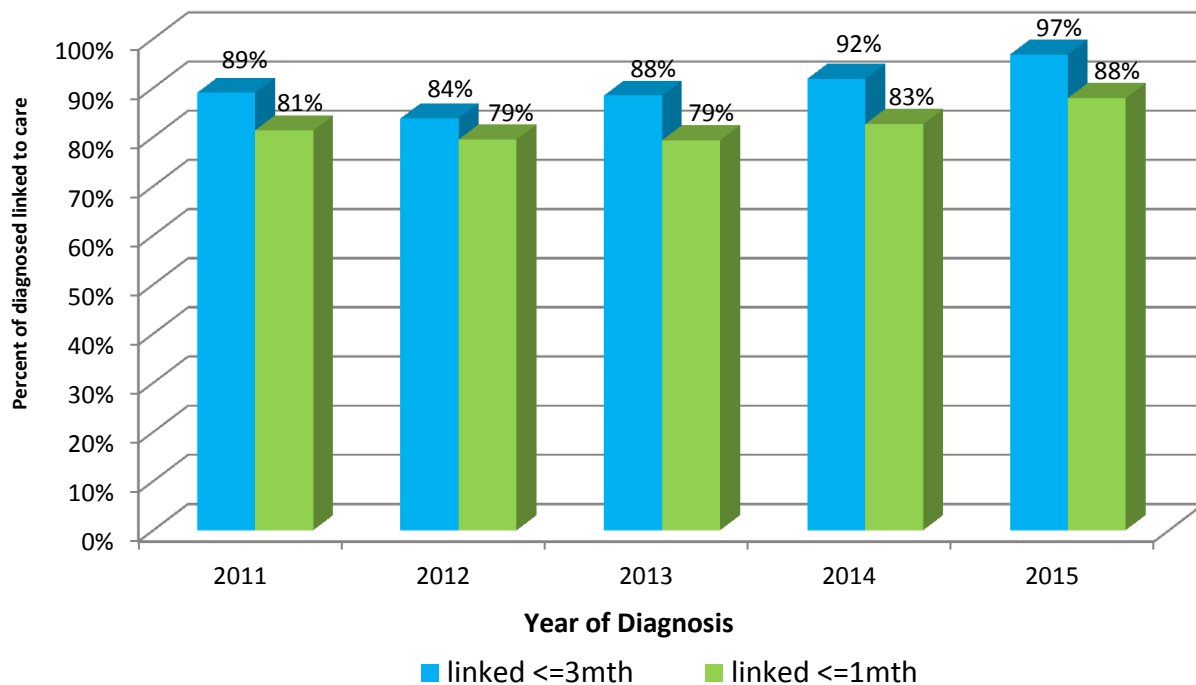
Table 53 shows linkage to HIV care of newly diagnosed HIV cases in Iowa in 2015 by sex and mode of exposure. Linkage lagged for males with heterosexual or unknown risk and females with heterosexual modes of contact.

**Table 53**  
**Numbers and Percentage of People Diagnosed and Linked to Care**  
**by Sex and Mode of Exposure**  
**2015**

Mode of Exposure by sex – Adult/Adolescent <sup>5</sup>	HIV Diagnosis (>13yrs)	% Linked ≤1 month	% Linked ≤3 months
<b>Male</b>	#	%	%
Men who have sex with men (MSM)	77	88	96
Injection Drug Use (IDU)	6	100	100
MSM and Injection Drug Use (MSM/IDU)	4	100	100
Heterosexual Contact	7	71	86
Risk not reported (NIR)	4	75	100
<b>Female</b>			
Injection Drug Use (IDU)	4	100	100
Heterosexual Contact	16	81	100
Risk not reported (NIR)	6	100	100
	<b>126</b>	<b>88</b>	<b>97</b>

Examination of linkage to HIV care data of people ≥ 13 years over the last 5-years (2011-2015) is shown in Figure 62. Linkage of people within a month of diagnosis increased steadily from 81% of diagnosed cases in 2011 to 88% in 2015.

**Figure 62**  
**Linkage to Care Rates**  
**2011 to 2015**



## **Retention in Care and Viral Suppression**

After consulting with HIV specialists in Iowa, the definition of retention in care was modified from that recommended by the Health Resources and Services Administration and CDC. Because Iowa is a rural state with a diffuse distribution of PLWH, medical providers in Iowa may recommend that only one visit per year is necessary for people who are stable and doing well on the HIV medications they receive. For that reason, for the purposes of retention in care, we have chosen to include people who have had only one viral load in a given year, if that viral load was below the level of detection (i.e., the person was virally suppressed). Therefore, retention in care is measured by documentation of two CD4 or viral load test results performed in 2015 at least three months apart **or** at least viral load test result in 2015 if the result was  $\leq 200$  copies/ml of blood. Viral suppression is measured by a documentation of at least one viral load test result in 2015 with the most recent result  $\leq 200$  copies/ml of blood. These lab results must be received at the health department.

As shown in Table 54, of the 2,367 PLWH in Iowa at the end of 2015, 83% were retained in care according to Iowa's definition of retention in care. Among Iowans living with HIV, 76% were virally suppressed, but among those who were retained in care, 91% had achieved viral suppression.

Males and females did not vary in their retention in care, although a slightly higher percentage of males achieved viral suppression.

Among adults and adolescents (i.e., those over 12 years of age), younger people are less likely to be retained in care (75%) or to achieve viral suppression (64%) than people who are older. People 45 years of age are most likely to be retained in care (90%) and to achieve viral suppression (85%).

Minority PLWH were the least likely to be retained in care or to achieve viral suppression. Among Hispanic PLWH, 70% were retained in care, and only 64% achieved viral suppression. Among Black, non-Hispanic people, 78% were retained and 67% achieved viral suppression. Asian PLWH did slightly better with 81% retained and 77% achieving viral suppression. White, non-Hispanic people had retention and viral suppression rates of 87% and 80%, respectively.

There was less variation in retention and viral suppression by mode of exposure, except among those without an identified risk. Their retention was 75% and their viral suppression was 69%. There was also little difference in retention between people who lived in rural areas of the state and people who lived in more urban areas. However, foreign-born people were less likely to be retained or to achieve viral suppression than U.S.-born people. Among people who were foreign born, 72% were retained in care and 65% achieved viral suppression. This compared to 86% and 78%, respectively, for those born in the U.S.

**Table 54**  
**Retention in Care and Viral Suppression among People Diagnosed with HIV**  
**and Living on December 31, 2015**

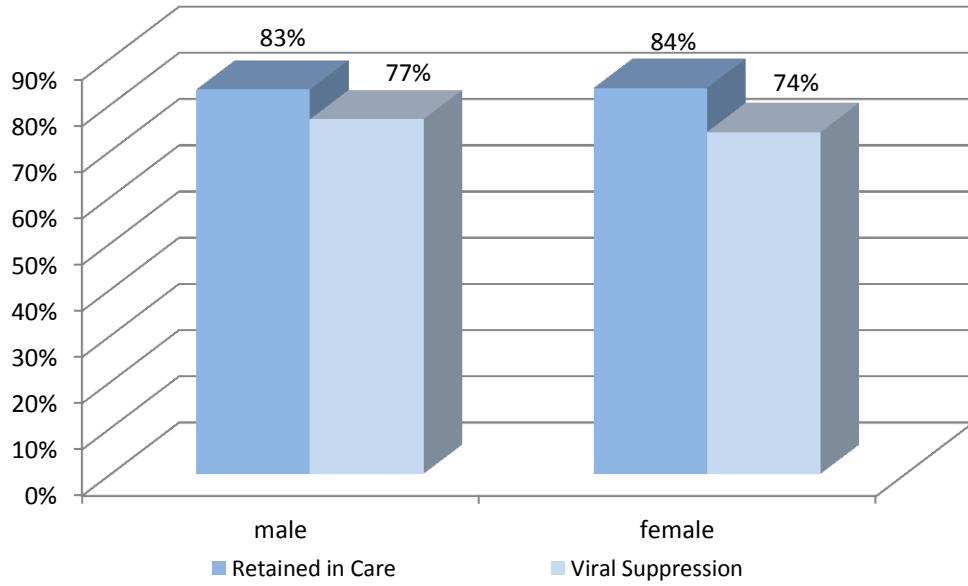
Characteristics	Diagnosed Iowans	Retained in Care per HRSA definition		Retained in Care per Iowa Definition		Viral Suppressed ( $\leq 200$ copies/ml)		
		#	# (%)	# (%)	Total #	Among PLWH (%)	Among in care (%)	
<b>Sex at Birth</b>								
Male	1,875	1,512 (81)	1,560 (83)	1,439	(77)	(92)		
Female	492	401 (82)	411 (84)	364	(74)	(89)		
<b>Age at Diagnosis</b>								
$\leq 12$	33	27 (82)	29 (88)	28	(85)	(97)		
13-24	367	267 (73)	276 (75)	235	(64)	(85)		
25-44	1,534	1,247 (81)	1,277 (83)	1,174	(77)	(92)		
45 or older	433	372 (86)	389 (90)	366	(85)	(94)		
<b>Ethnicity/Race</b>								
White, Not Hispanic	1,538	1,285 (84)	1,333 (87)	1,238	(80)	(93)		
Black, Not Hispanic	473	359 (76)	368 (78)	319	(67)	(87)		
Hispanic, All Races	197	135 (69)	137 (70)	127	(64)	(93)		
Asian, Not Hispanic	53	44 (83)	43 (81)	41	(77)	(95)		
Multi-race/other	106	90 (85)	90 (85)	78	(74)	(87)		
<b>Mode of Exposure</b>								
MSM	1,262	1,026 (81)	1,073 (85)	996	(79)	(93)		
IDU	191	159 (83)	160 (84)	141	(74)	(88)		
MSM/IDU	181	149 (82)	145 (80)	126	(70)	(87)		
Heterosexual Contact	435	359 (83)	364 (84)	329	(76)	(90)		
Hemoph./Coag./Blood	9	7 (78)	8 (89)	7	(78)	(88)		
NIR	257	187 (73)	193 (75)	177	(69)	(92)		
Pediatric/other	32	26 (81)	28 (88)	27	(84)	(96)		
<b>Region<sup>1</sup></b>								
Urban	1,741	1,427 (82)	1,457 (84)	1,323	(76)	(91)		
Rural	626	486 (78)	514 (82)	480	(77)	(93)		
<b>Country</b>								
US born	1,969	1,631 (83)	1,684 (86)	1,543	(78)	(92)		
Foreign born	398	282 (71)	287 (72)	260	(65)	(91)		
<b>TOTALS</b>	<b>2,367</b>	<b>1,913 (81)</b>	<b>1,971 (83)</b>	<b>1,803</b>	<b>(76)</b>	<b>(91)</b>		

<sup>1</sup> Urban counties are Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury.

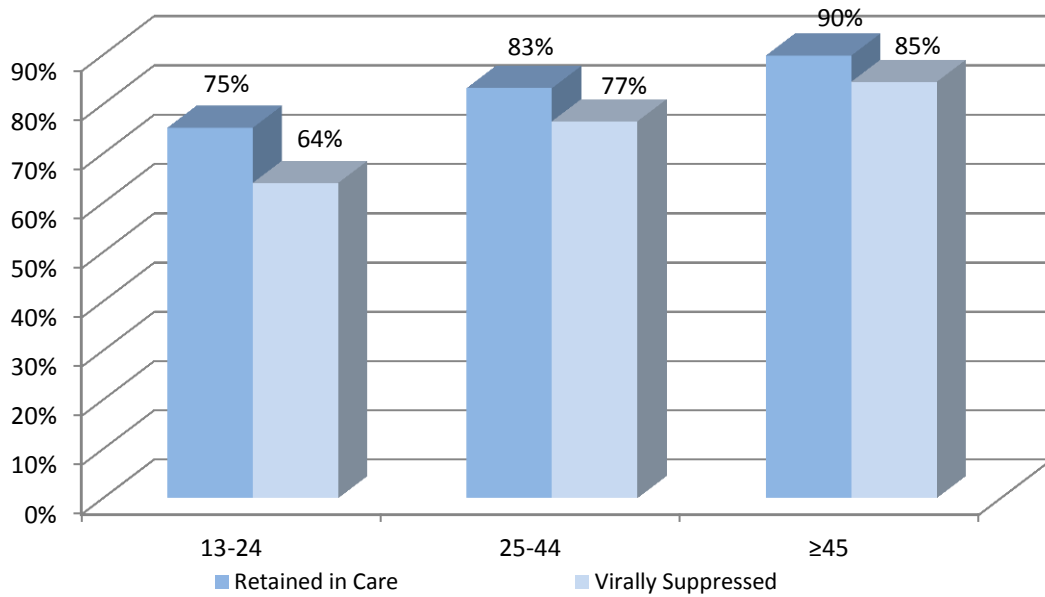
Note the high viral suppression rates among those who are retained in care. This demonstrates the importance of having strong programs to retain people in care. If people regularly attend at least two appointments for HIV primary medical care, they are very likely to achieve a suppressed viral load.

The following figures (63-66) illustrate the differences in retention and viral suppression described in the text above.

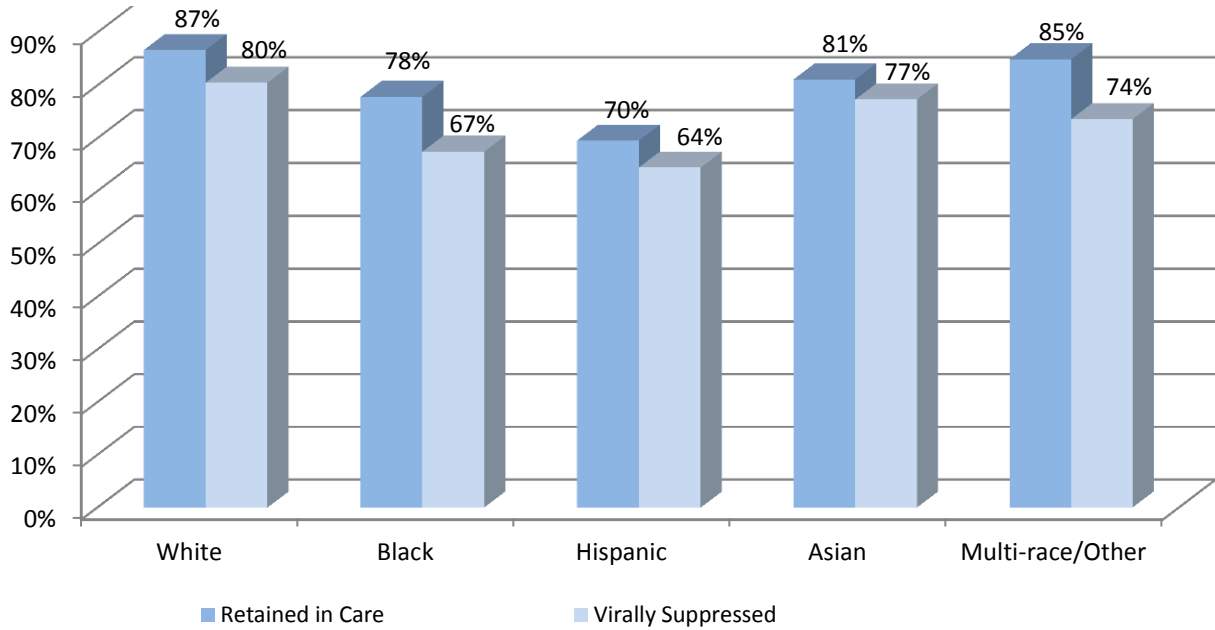
**Figure 63**  
**Retention and Viral Suppression by Sex**  
**2015**



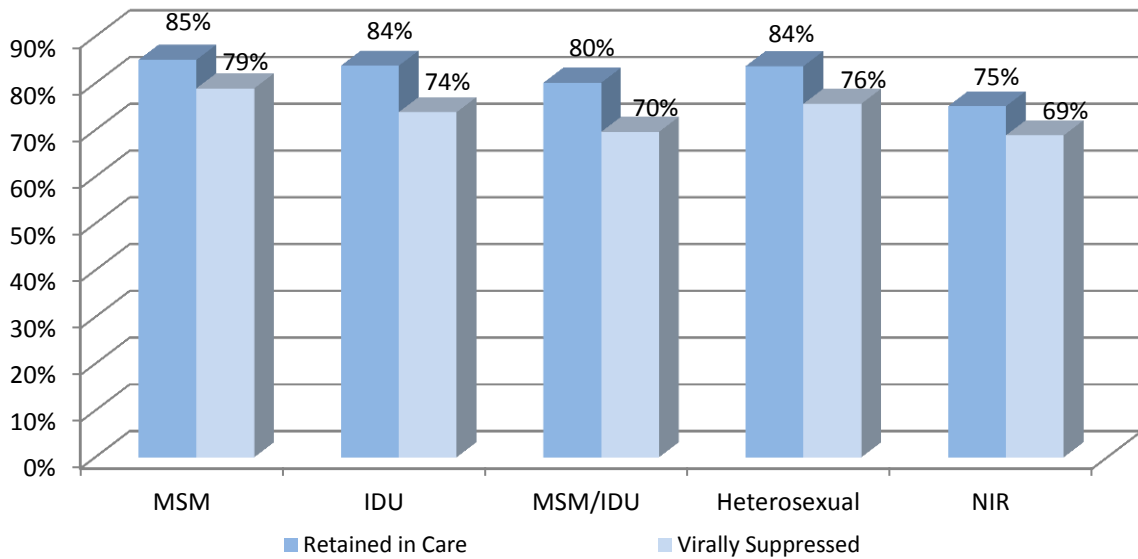
**Figure 64**  
**Retention and Viral Suppression by Age Group**  
**2015**



**Figure 65**  
**Retention and Viral Suppression by Race and Ethnicity**  
**2015**



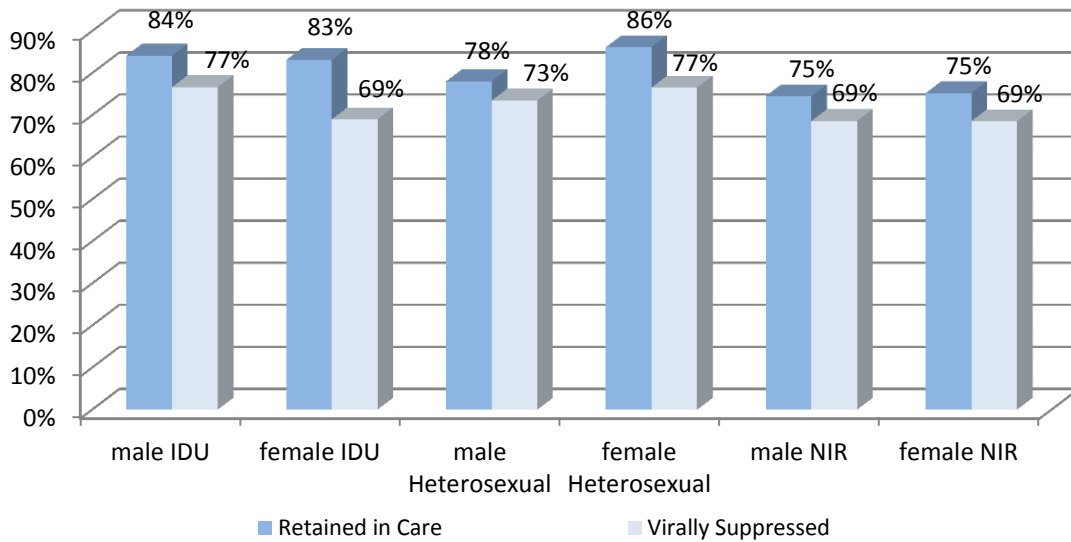
**Figure 66**  
**Retention and Viral Suppression by Mode of Exposure**  
**2015**



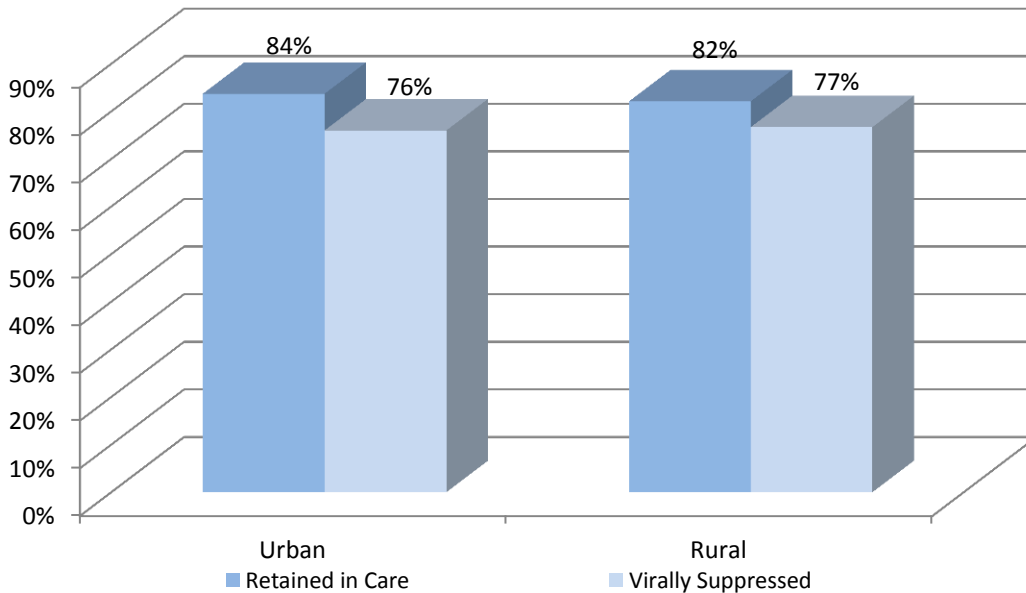


Looking at mode of exposure by sex (for those modes of exposure that include both males and females) adds another layer of complexity. These data are not included in Table 54. As Figure 67 shows, females who inject drugs are retained in care at lower rates than are males who inject drugs. On the other hand, males who had heterosexual exposures were both linked and retained at lower rates than females who were exposed through heterosexual exposures. Among people without an identified risk, sex did not affect rates of linkage or retention.

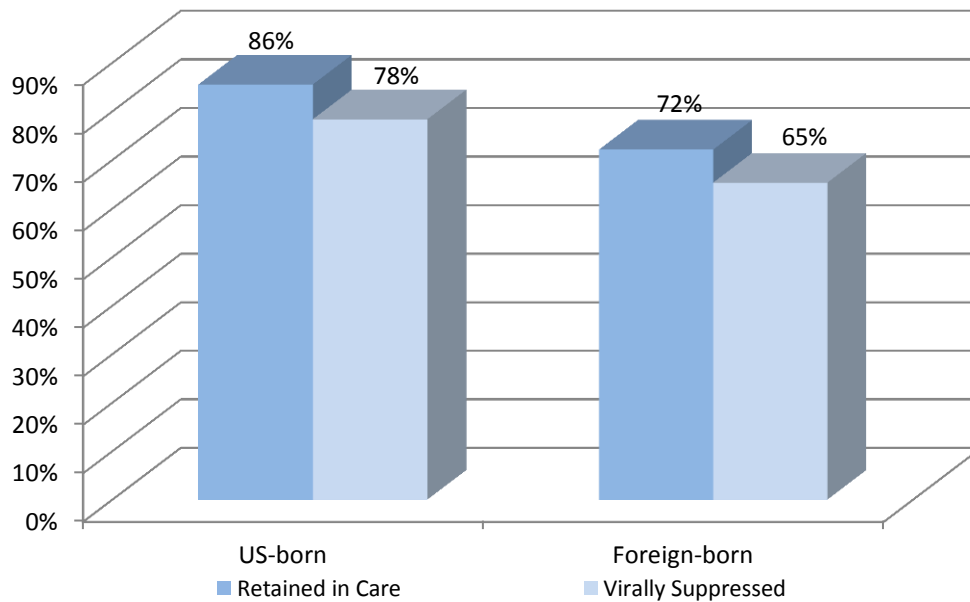
**Figure 67**  
**Retention and Viral Suppression by Mode of Exposure and Sex**  
**2015**



**Figure 68**  
**Retention and Viral Suppression by Geographical Population**  
**2015**



**Figure 69**  
**Retention and Viral Suppression by Country of Origin**  
**2015**



In summary, Iowa's continuum of care demonstrates that there are substantial numbers of people who have yet to be diagnosed. With 19% of Iowans living with HIV still undiagnosed, Iowa ranks among the bottom five states for the proportion of people who are undiagnosed. Some of this may reflect the very disperse distribution of PLWH in Iowa. Des Moines, the largest metropolitan area in the state, houses less than 30% of all people living with HIV in the state. Given the comparatively low prevalence of HIV in Iowa, that means that no area or medical provider is likely to encounter many people who have HIV. Clearly, a focus on increasing routine and targeted testing in Iowa will be an important strategy for reducing the number of transmissions occurring in the state and improving long-term health outcomes for those who are currently undiagnosed.

Once people are diagnosed, Iowa has high rates of linkage to care, although a number of populations take longer to link. Black, non-Hispanic persons, Hispanic persons, those with heterosexual or unidentified modes of exposure, people under the age of 24, and foreign-born people take longer to link than other populations who are diagnosed with HIV in Iowa.

Retention in care and re-engagement of those who have been lost to care should also be focused for future prevention and care strategies. Only 83% of people diagnosed with HIV are retained in care, and this differs by population. The same groups that take longer to link are less likely to be retained in care or to achieve viral suppression.

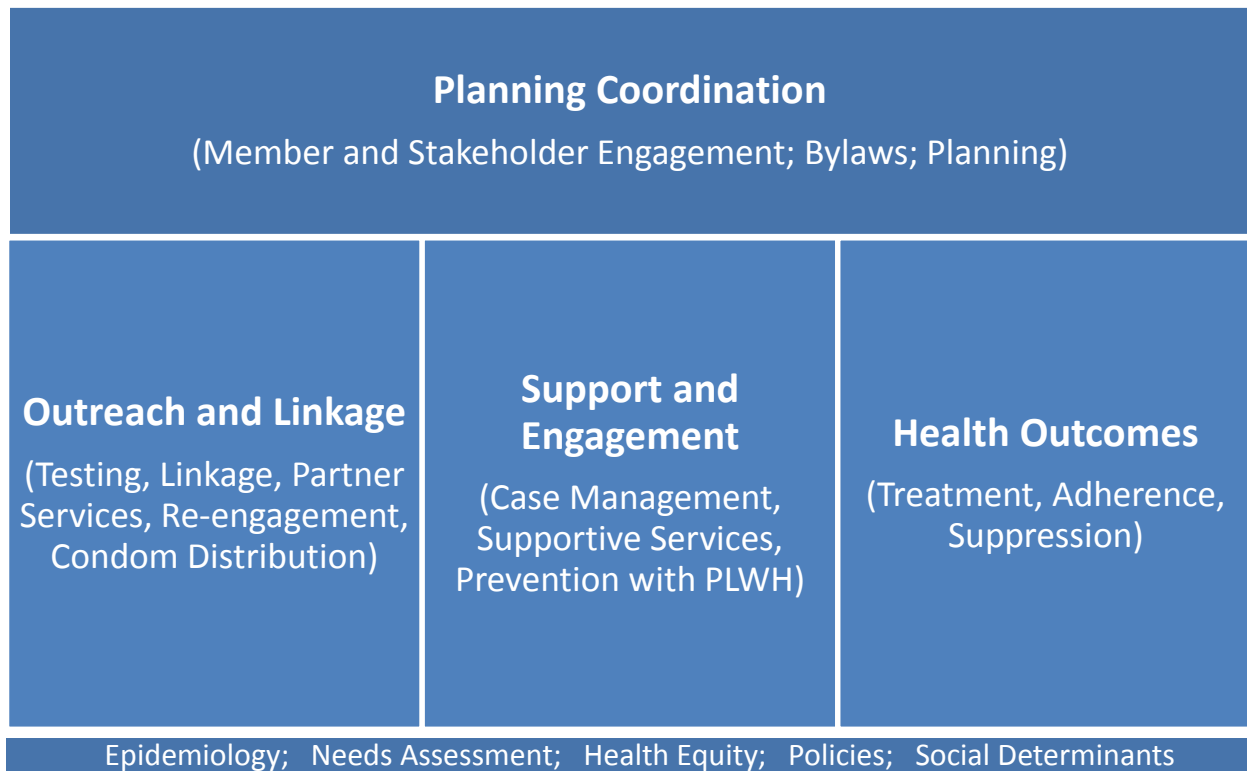
**Utilization of the HIV Continuum of Care**

The care continuum demonstrates where prevention and care efforts should be targeted to have the greatest effect on reducing transmission of HIV and improving health outcomes for Iowans living with HIV. It gives a visual representation of where the weakest links are in our system of care in Iowa.

The HIV and Hepatitis Community Planning Group (CPG) works with the Iowa Department of Public Health to plan and evaluate prevention and care strategies and activities. In 2011, the CPG and IDPH worked with a consultant to realign the CPG committees with the concept of the HIV Continuum of Care.

The committee structure is shown below.

**Figure 70  
CPG Committee Structure to Support the HIV Continuum of Care**



Each committee examines and uses relevant epidemiological data, conducts and/or reviews needs assessments, examines health equity and social determinants, and identifies policies and regulations that impede or encourage the delivery of prevention and care services.

All committee members engage in the following activities:

- Gather and evaluate information and data to enrich and strengthen discussions and decisions;

- Discuss opportunities and challenges to ensure the highest success of current goals, objectives, and strategies;
- Monitor the engagement process to ensure that the identified strategies promote a coordinated, collaborative, and seamless approach to HIV and HCV prevention, care, and treatment services; and that they address health disparities related to HIV and HCV; and
- Review and update the plans and the components therein.

More specifically, the committee charges are detailed below:

#### **Outreach and Linkage Committee**

This committee advises IDPH on implementation, monitoring, and evaluation of **testing, linkage, partner services, re-engagement, and condom distribution activities.**

#### **Support and Engagement Committee**

This committee advises IDPH on **case management, support services, and prevention-with-positives programming activities.**

#### **Health Outcomes Committee**

This committee advises IDPH on **treatment, adherence, and viral load suppression activities.**

#### **Planning Coordination Committee - Member and Stakeholder Engagement**

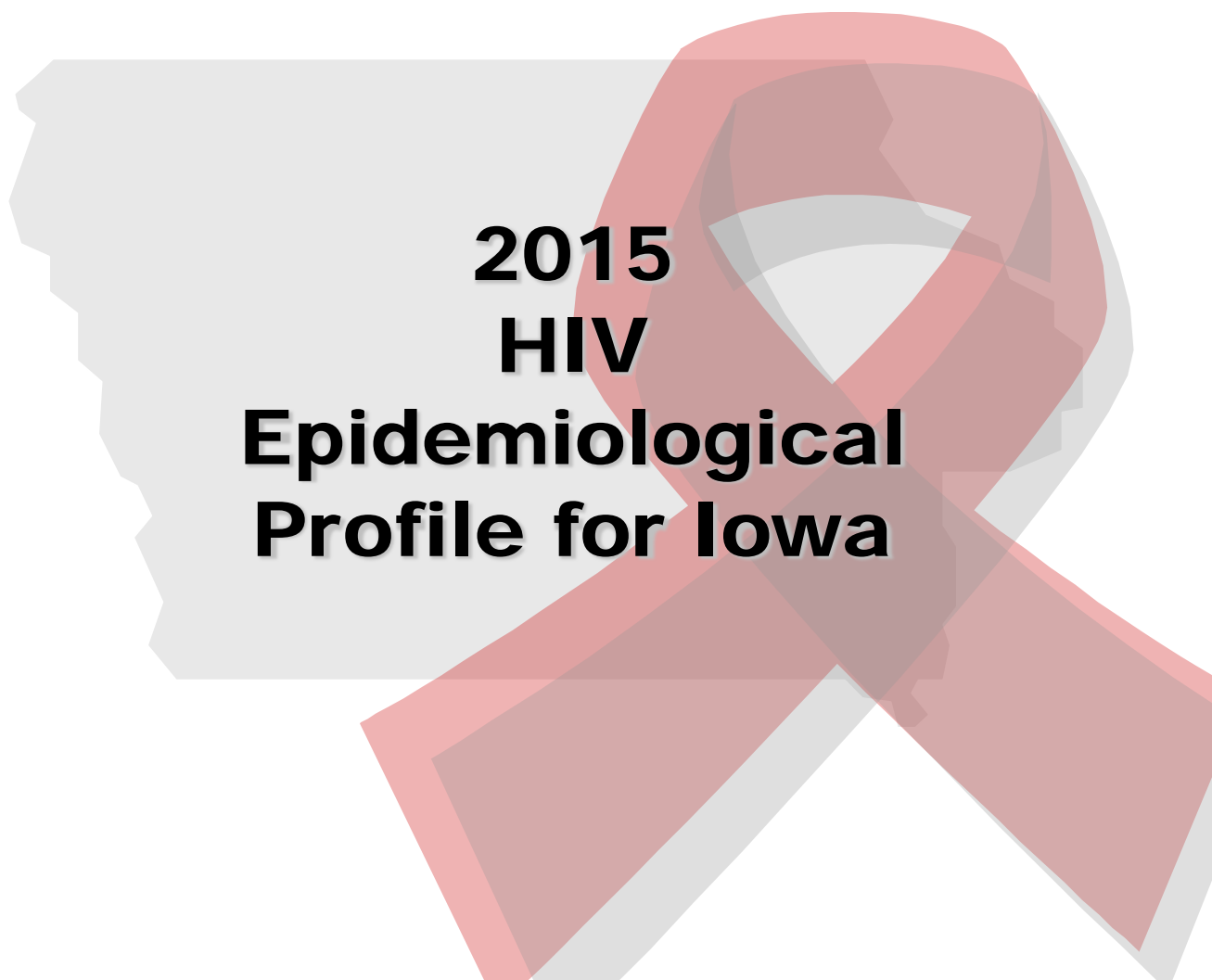
This committee identifies and implements strategies to **recruit, engage, and retain CPG members** who represent:

- The diversity of people living with HIV and viral hepatitis;
- Other key stakeholders in HIV and viral hepatitis prevention, care, and related services;
- Organizations that can best inform and support the development and implementation of comprehensive, statewide plans.

This committee is responsible for maintaining an **orientation and training** curriculum for new members and providing them with member responsibilities. The committee also advises IDPH on ongoing leadership development and technical assistance needs of the CPG.

In addition, the CPG works closely with the Quality Management (QM) Team. In 2014, Iowa launched its QM Team. The QM Team guides the work of the Ryan White Quality Management Program, which aims to ensure the highest quality of medical and support services to achieve optimal health outcomes for Iowans living with HIV. Currently, the QM Team is monitoring 23 performance measures aligned along the HIV continuum of care. In addition to statewide outcome measures, there are several indicators focused on the Ryan White system of care in Iowa, such as churn within the AIDS Drug Assistance Program and the percent of men who have sex with men (MSM) tested for syphilis at three Iowa Part C clinics. In the future, the Quality Management Plan will be expanded to incorporate more HIV Prevention and STD Program performance measures.





2015  
HIV  
Epidemiological  
Profile for Iowa

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