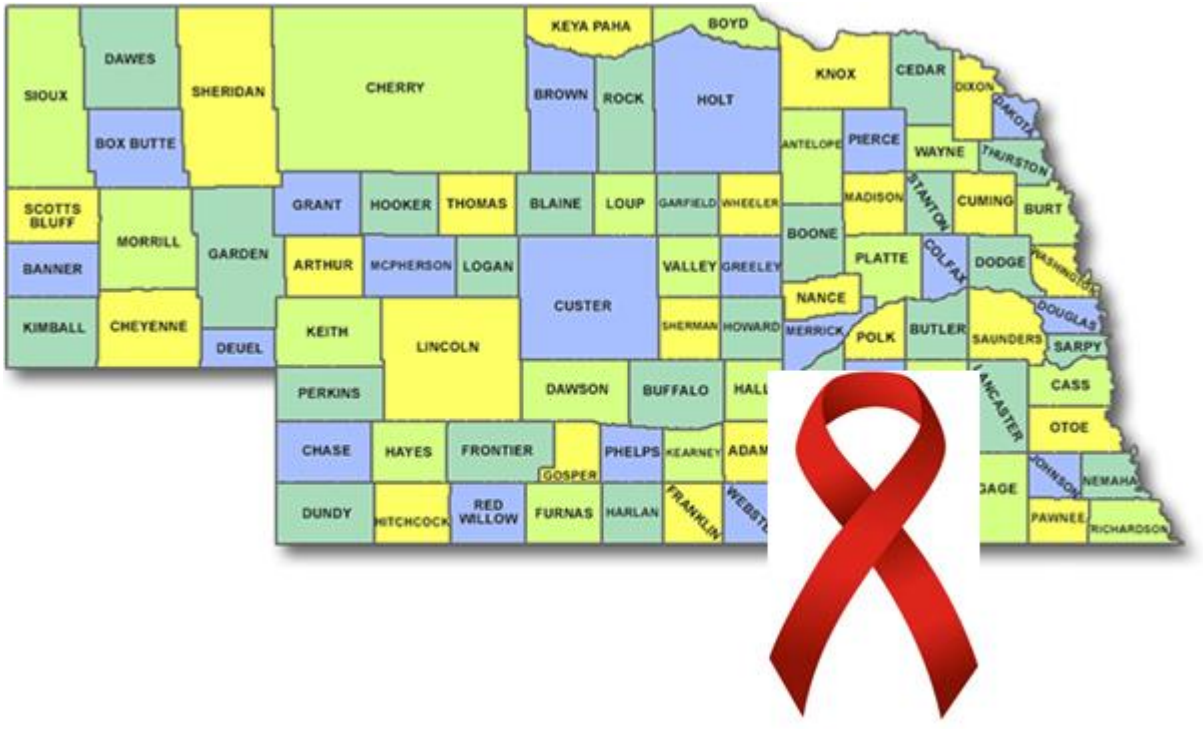
2015 Nebraska Epidemiologic Profile for HIV/AIDS, Sexually Transmitted Diseases and Hepatitis C



NEBRASKA

Good Life. Great Mission.

DEPT. OF HEALTH AND HUMAN SERVICES

Acknowledgments

This profile was compiled by Dennis Leschinsky, Marci Athey-Graham, Steve Jackson, Jeri Weberg-Bryce, Heather Younger, Stephanie Hummer, Chad Frank and Heather Krieger. Feedback on this report is welcome. Please send your comments and suggestions to:

Dennis Leschinsky
Nebraska Department of Health and Human Services
Infectious Disease Prevention Unit
PO Box 95026
Lincoln, NE 68509-5026
Email: dennis.leschinsky@nebraska.gov
Phone: 402-471-6373

A special thank you to Alagie Jatta and Jerry Harms from the Iowa Department of Public Health Bureau of HIV, AIDS and Hepatitis for their mentoring and sharing of their analytic code.

Table of Contents

Executive Summary

Epidemiology of HIV, AIDS and STDs in Nebraska

HIV diagnoses for the 10 years, 2006 through 2015 averaged 95 newly diagnosed HIV infections in Nebraska residents with a peak of 114 in 2010 and a low of 81 in 2015. Males have accounted for almost 80% of the HIV diagnoses since 2006. Sex with another male is the reported mode of exposure to HIV for over 60% of males diagnosed with HIV infection.

Black, non-Hispanics and Hispanic males are over-represented among persons with HIV/AIDS when their population sizes are taken into account. Black, non-Hispanics males have an HIV diagnosis rate more than 6 times higher than white, non-Hispanic males. Hispanic males have an HIV diagnosis rate twice as high as white, non-Hispanic males. Black, non-Hispanic females have an HIV diagnosis rate nearly eight times as high as white, non-Hispanic females.

Diagnoses of AIDS peaked in 1992, coinciding with expansion of the Centers for Disease Control and Prevention (CDC) definition of AIDS to include CD4+ cell counts less than 200 cells per milliliter or less than 14% of total lymphocytes. The introduction of highly active antiretroviral therapy (HAART) sparked a dramatic decline of AIDS diagnoses to just 39 in 2015. From 2006 to 2011, the average number of AIDS diagnoses in Nebraska was 58.

Persons who are diagnosed with AIDS within one year of their initial HIV diagnosis (late testers) fell from a peak of 52% in 2004 to 33% in 2014.

There were 22 deaths reported in 2014, the last year with complete reporting, just under the average of 24 for the 10 year period from 2005 to 2014.

Because of the advances in treatment for HIV infections, the number of persons living with HIV/AIDS has continually increased. As of December 31, 2015, 2247 persons were living with HIV/AIDS in Nebraska for a rate of 119 per 100,000 population. The three most populous counties in Nebraska (Douglas, Lancaster and Sarpy counties) account for 54% of the state's population and 82% of the number of HIV diagnoses in Nebraska.

Introduction

This report looks at the HIV epidemic in Nebraska through 2015, looking at the distribution of the disease by geographic distribution, age, race, gender and modes of transmission. The description of the HIV epidemic in Nebraska will assist public health officials, community planning groups and others in guiding prevention and service efforts, describe unmet needs in prevention and treatment and to evaluate programs and services in Nebraska. Five key questions will be addressed:

1. What are Nebraska's population characteristics

2. What is the epidemiology of HIV, AIDS and other STDs in Nebraska?

3. What are the risk factors for contracting HIV and other STDs in Nebraska?

4. What are the patterns of utilization of HIV care and services throughout the Nebraska?

5. What are the characteristics of those who know they are infected with HIV but are not receiving care?

DATA SOURCES

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

1. Core HIV/AIDS Surveillance

AIDS Case Surveillance

AIDS has been a reportable disease in Nebraska since 1983. Only persons diagnosed with AIDS, reported in Nebraska, and for whom last name, date of birth, race and ethnicity, gender, date of AIDS diagnosis, and living status (living or deceased at time of report) are known are included in this report. Cumulative AIDS cases include all reported cases, living or deceased. The definition of AIDS has been modified several times since the original 1982 case definition. That original definition included a list of opportunistic infections and diseases in persons with no known cause for diminished immunological functioning. At that time, no tests for HIV or for antibodies to the virus were available to confirm the diagnosis. The definition was first updated in 1985 to reflect new tests that detected either antibodies to the virus or the virus itself. The 1985 revised definition included several more medical conditions, when the conditions were accompanied by a positive serological or virological test for HIV. Another revision occurred in 1987, adding three more conditions, including wasting syndrome.

The most substantial revision occurred in 1993, when immunological conditions were added to the definition. A CD4+ cell count less than 200 cells per microliter or less than

14% of total lymphocytes was included as AIDS-defining, even in the absence of specific physical symptoms. Three additional conditions, pulmonary tuberculosis, recurrent pneumonia, and invasive cervical cancer were added to the list of 23 clinical conditions that met the criteria for AIDS as well. This revision, and particularly the inclusion of CD4+ cell counts as AIDS defining criteria, substantially increased the number of HIV-infected persons who were diagnosed with AIDS in 1992 and reported from 1992 to 1993. Each revision may affect the number of diagnoses in that year and in subsequent years, and may make assessing trends in the numbers of new cases more difficult.

HIV Case Surveillance

HIV became reportable by name in Nebraska on July 1, 1995. Anonymous testing in Nebraska ceased at that time except for those tests performed through home-collection kits. Persons older than 18 months were considered to be HIV infected if they had at least one confirmed positive test (antibody or antigen), a detectable quantity of virus or viral nucleic acid isolated (viral culture or polymerase chain reaction), or had a diagnosis of HIV infection documented by a physician. Only cases reported in Nebraska and for whom last name, date of birth, race and ethnicity, gender, date of first HIV diagnosis, and living status (living or deceased at time of report) are known are included in this report. Persons diagnosed with HIV before July 1, 1995, but who have not had a viral detection test or CD4+ count completed since July 1, 1995, may not have been reported to the Nebraska Department of Health and Human Services. HIV diagnosis data include persons reported to have tested positive for HIV while a resident of Nebraska, regardless of current diagnosis (HIV or AIDS). Also included are persons who were diagnosed with AIDS while residents of Nebraska but for whom residence at time of HIV diagnosis was unknown.

Diagnosis Date and Completeness of Surveillance Data

Data will be presented by the year the case of either HIV or AIDS was diagnosed (regardless of when it was reported). In 2011, all of HIV cases and AIDS cases were received within 6 months of diagnosis date. Persons diagnosed before July 1995, when HIV reporting by name began in Nebraska, and persons not in care are the most likely not to have been reported. For the most part, the data represent diagnosed cases well. They do not, however, include persons who have been infected but who have not been diagnosed. Delays in reporting might mean that a very small number of cases in the most recent year might have escaped inclusion. Reporting delays may vary among exposure, geographical, racial/ethnic, age, and gender categories. To minimize the effects of reporting delays, case reports received through February 29, 2016, have been used. These reports include only 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 and AIDS cases are counted only once in a hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for men with both a history of sexual contact with other men and a history of injection drug use. They make up a separate category. 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 Nebraska 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.

2. Sexually Transmitted Disease (STD) Surveillance

STD Case Reporting

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

3. HIV Counseling and Testing Data

Counseling and Testing System (CTS)

The Nebraska Department of Health and Human Services funds 68 free, confidential HIV testing and counseling sites in Nebraska. Participants complete risk assessments as part of a testing visit or during outreach. In 2015, 8990 HIV tests were conducted. Fifteen persons tested positive (0.2%). 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.

Vital Statistics Data

Birth and Death Data

The Nebraska Department of Health and Human Services collects information on all births and deaths in Nebraska. 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 HIV Surveillance Program review death certificates on a quarterly basis to ascertain deaths of HIV positive persons. The HIV Surveillance Program also electronically matches data with death databases annually to ascertain deaths of persons with HIV/AIDS.

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.

HIV Care Data

Ryan White Part B Data

Since 1993, the HIV/AIDS Program of the Nebraska Department of Health and Human Services has collected data on persons served by the Nebraska Ryan White Part B Program. To be eligible for Part B services, a person must have HIV, be a resident of Nebraska, and have an income that is equal to or less than 200% of the current year's federal poverty level. Part B services include medical case management, minority outreach services, emergency financial assistance, transportation services, outpatient medical care, oral health care, mental health services, and AIDS Drug Assistance Program (ADAP). Throughout Nebraska, the 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 Provide Enterprises in September 2001. A central server is used to house data from all Part B medical case management providers. Utilization of the current version of Provide Enterprises will ensure that all required client-level data elements will be collected by providers and reported to HRSA. Information collected from the service providers includes basic demographic and risk information, eligibility verification data (current address, current income, HIV diagnosis date, Nebraska Medicaid number), the type of services received, the date and quantity of services received, the cost of these services, and other pertinent information (history of substance abuse or mental health treatment, veteran status, current pregnancy status). The data indicate which Ryan White resources are being used, how often, and by whom. However, these data only reflect persons who (1) know their HIV serostatus, (2) are currently seeking care and treatment services from Ryan White 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 (income equal or less than 300% of the federal poverty limit). Purchase of insurance by the ADAP for HIV positive Nebraskans is a component of the program. The plan must provide access to antiretroviral (ARV) therapies and drug formularies that are comparable to the State's formulary. Nebraska'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 ADAP reporting purposes, data presented in the medication assistance and insurance assistance may be duplicated if a 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 two Part C providers in Nebraska, University of Nebraska Medical Center (UNMC) in eastern Nebraska and Community Action Partnership of Western Nebraska (CAPWN). 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. 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 status and (2) are currently seeking care and treatment services from Part C-funded providers.

Mental Health

Mental health statistics

According to the NE DHHS Division of Behavioral Health, approximately 62,000 Nebraskan adults have a serious mental health disorder, in addition to the approximately 134,000 Nebraskan adults with a substance abuse disorder. Access to care varies depending on the type of disability.

Guidelines for interpreting data from tables

Given the small number of newly identified infections annually in Nebraska, comparing a small change from year-to-year can be misleading. The text accompanying the table will highlight significant changes over time.

Look for consistencies with other information sources. Any difference in Nebraska data compared to regional or national data must be evaluated carefully. All data sources are not equally generalizable to the population of Nebraska. For scientific studies, the purpose and population studied should be scrutinized.

Diagnosis rates have been calculated for 12 month periods per 100,000 population. The denominator, unless noted, for calculating rates is based on the 2015 population estimates from the US Bureau of Census. The numerator is the number of cases reported for the 12 month period. To calculate the rate per 100,000, the numerator is divided by the 2015 estimated population and then that total is multiplied by 100,000. Race-specific rates are the number of cases for a race/ethnic group during a 12 month period divided by the race-specific estimated population, then multiplied by 100,000.

While care is taken to provide the most accurate data, these data have limitations. For the HIV/AIDS epidemic, only AIDS cases were reported early in the epidemic with a later adoption of HIV reporting (1995 for Nebraska). Because HIV infections can take years to develop into AIDS, AIDS case reports do not reflect current HIV trends. The data represent cases that occurred in persons living in Nebraska at the time of diagnosis. It

does not reflect persons who were diagnosed outside of Nebraska and then subsequently moved to Nebraska, except in the section covering the Ryan White Care Act.

Organization of the Profile

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

Section 1: Core Epidemiological Questions
This section provides the reader with an understanding of the characteristics of the general population of Nebraska, 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 Nebraska's population?
Orients the reader to the overall demographic and socioeconomic characteristics of the general population in Nebraska. May be used to establish a baseline for comparison to other states and other populations.

Question 2: What is the epidemiology, including the geographical distribution, of HIV and AIDS in Nebraska?
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 Nebraska?
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 Nebraska. It is organized around three key questions:

Question 1: What are the characteristics of persons living with HIV/AIDS who receive HIV services in Nebraska?
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 in Nebraska?
Characterizes the patterns of use of HIV primary medical care and support services by persons with HIV/AIDS.

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

Section 1: Core Epidemiologic Questions

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

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

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

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

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

Section Highlights

The 2015 population estimate from the US Census Bureau for Nebraska is 1,896,190 persons. While white, non-Hispanics comprise the majority of the state's population, approximately 20% of the state's population are members of racial or ethnic minority groups. Hispanics represent the largest minority group with an estimated 10% of the state's population.

Nebraska is divided into 93 counties. Three counties (Douglas, Lancaster, and Sarpy) comprise 54% of the state's population. Only 1 other county has a population of over 50,000 (Hall), while 13 counties have between 20,000 and 49,999 (Buffalo, Dodge, Scotts Bluff, Lincoln, Madison, Adams, Cass, Platte, Dawson, Gage, Saunders, Dakota, and Washington).

The state population resides mainly in the eastern part of the state with the three most populous counties in Nebraska (Douglas, Lancaster and Sarpy comprise 54% (1,032,224) of Nebraska's population. With the exception of Sarpy County, these counties have higher rates of poverty and persons who are foreign-born than the Nebraska average.

Approximately 12.4% of Nebraska's 2015 population lives under the federal poverty level, ranking as the 16th lowest in the US. For children, 15.8% live under the federal poverty level, also ranking as the 16th lowest in the US.

The percentage of Nebraskans over 65 years of age increased slightly from 13.5% in 2010 to 14.1% in 2015 ranking 32nd in the country.

Description of Nebraska's population

Nebraska is an agricultural state, with a land area of 76,824 square miles. Nebraska is divided into 93 counties with an estimated 2015 population of 1,896,190 persons, ranking 37th in the US.

Nebraska's population has shifted to become more urban. The three most populous counties (Douglas, Lancaster, and Sarpy) comprise 54% of the state's population (1,032,224). Twelve Nebraska counties have populations less than 1000 residents. These counties mainly are in the Sandhills region where large ranches predominate.

Racial/Ethnic Distribution

The 2015 population estimate by the United States Census is 1,896,190, ranking 37th in the US. The race/ethnic breakdown is 80.0% white, non-Hispanic, 4.7% Black, non-Hispanic, 2.3% Asian, 0.8% Native American/Alaska Native and 2% multi-racial. The ethnicity breakdown is 89.6% non-Hispanic and 10.4% Hispanic. The percentage of Nebraska's 2015 population estimate that is white, non-Hispanic is 80%, a decrease from 82.2% in the 2010 census. Hispanics represent the largest increase in that time period,

accounting for a 1% overall increase in the state's population. Hispanics (10.4%) are the largest minority population in Nebraska, representing over twice the population as the next largest minority population, Blacks/African Americans (4.7%). Nearly two-thirds (66.3%) of Black/African American Nebraskans live in Douglas County. Only 15% of the Black/African American population in Nebraska live outside Douglas, Lancaster or Sarpy counties.

Table 1. Nebraska's Population by Race, 2015

Race	Number	%
White, non-Hispanic	1,516,993	80.0
Black, non-Hispanic	88,699	4.7
Asian	43,021	2.3
Native American/Alaska Native, non-Hispanic	15,695	0.8
Multi-racial	33,127	1.7
Other	18,962	0.1

Ethnicity	Number	%
Hispanic	197,411	10.4
Non-Hispanic	1,702,779	89.6

Age Distribution

The estimated median age in Nebraska for 2015 is 36.3 years, up slightly from 36.2 in 2010. The median age varies greatly by race/ethnic group. For Black/African American the median age is 28.8 years and 23.5 for Hispanics. Nebraska ranks 32nd in the US for person over the age of 65 years (14.1%). Just under one quarter (24.8%) of the state's population is under the age of 18 years.

Table 2. Nebraska's Population by Age and Gender, 2015

Age Group	Females	Males	Total (%)
Less than 5	63,745	66,886	130,631 (6.9)
5-13	116,144	121,694	237,838 (12.5)
14-17	49,739	52,129	101,868 (5.4)
18-24	94,046	98,728	192,774 (10.2)
25-44	235,227	245,949	481,176 (25.4)
45-64	237,508	235,684	473,192 (25.0)
65 and older	154,613	124,098	278,711 (14.7)
Total	**951,022**	**945,168**	**1,896,190**

Poverty, Health Insurance, and Employment

Approximately 12.4% of Nebraska's 2015 population lives under the federal poverty level, ranking as the 16th lowest in the US. For children, 15.8% live under the federal poverty level, also ranking as the 16th lowest in the US. The high school graduation rate is second in the US (88%) and the percent who receive an associate's degree or higher ranks 14th in the US (45.6). The percentage of young adults not working or attending school is 9% (second in the US).

The average annual unemployment rate for Nebraska was 3.0% for 2015 compared to the national rate of 5.3%. Nebraska's unemployment rate for 2015 ranked second lowest in the US. The rate of unemployment was slightly higher in males than females (3.3% vs 2.8%) and much higher in minority populations (Black/African American 5.3%, Hispanic 5.0%) than white (2.6%).

Approximately 12% of Nebraska residents (Table 3) were without health insurance in 2015 (Nebraska BRFS Program, preliminary data). Coverage was lowest in the 18 to 24 year age group, then decreasing steadily. In general, males were more likely to go without health insurance. In looking at those below age 65 and 138% of the federal poverty limit, 24.4% of Nebraska residents lack health insurance (21st highest in the US).

Table 3. Percent Uninsured by Age, 2015

Age Group	Percent Uninsured		Total
	Females	Males	
18-24	19.1	22.3	20.7
25-34	17.3	21.1	19.2
35-44	14	13.2	13.6
45-54	11.6	12.8	12.2
55-64	6	8.1	7
65-74	1.3	1.5	1.4
74 and over	0.7	2.5	1.9

Source: Behavioral Risk Factor Surveillance System, Nebraska Department of Health and Human Services

Correctional Facilities

Nebraska has 10 state correctional facilities and a community-based correctional system. In 2014 (last year data is available) there were 5,119 inmates in the state system, an increase of 13% from 2011. There were 3,242 admissions and a total of 2,985 discharges in 2014. An additional 1,197 persons were admitted into the community-based system in 2014. Nebraska facilities were 128% of capacity in 2014.

Substance Abuse

Drug-related prison admissions can be used as an indicator of drug abuse levels in the state. In 2014 30% of the female admissions were due to drug-related offenses. For males, just under 12% were admitted for drug-related offenses. However, the number of males admitted for drug-related offenses was more than four times higher than females in 2014 (530 vs 119).

Negative consequences of alcohol and drug use in Nebraska are serious and include (among other things) deaths, treatment admissions, and arrests:

- There were an average of 543 alcohol-attributable deaths each year in Nebraska between 2006 and 2010 (CDC, ARDI), and alcohol was involved in more than one-third of all fatal motor vehicle crashes in Nebraska during 2014 (36.9%) (Nebraska Office of Highway Safety).
- Due primarily to the rise in opioid overdose deaths, the drug-induced death rate in Nebraska increased 55 percent over the past decade but remains only half the U.S. rate (NVR, NCHS).
- Alcohol was listed as the primary drug of choice in nearly two-thirds of all substance abuse treatment admissions in Nebraska during 2014 (62.1%), followed by methamphetamine (13.9%), marijuana (10.1%), and opiate drugs (5.0%) (Magellan Treatment Database).
- Alcohol accounted for one-quarter of all arrest offenses in Nebraska during 2013 (23.0%) while drug abuse violations accounted for 1 in 7 (14.6%) (Nebraska Crime Commission, UCR).

Among Nebraska high school students during 2015, 26.6 percent reported ever using marijuana compared to a much lower percentage reporting lifetime non-medical use of prescription drugs (13.5%), inhalants (8.1%), synthetic marijuana (7.5%), cocaine (5.3%), and ecstasy (5.1%), followed by lesser percentages for other substances (YRBS).

Illicit drug use among Nebraska residents tends to be less common than among persons nationally across virtually all substances, highlighted by past month and lifetime marijuana use being only half as common among Nebraska high school students compared to their counterparts nationally in 2013 (YRBS).

Mental Health

Roughly 1 in 6 Nebraska adults in 2014 (17.7%) reported ever being diagnosed with depression (BRFSS). About 1 in 12 adults (8.2%) during the same year reported past month frequent mental distress (i.e., poor mental health on 14 or more of the past 30 days). About 2 in 5 (38.1%) of those with frequent mental distress did not report diagnosed depression in 2014. One-quarter of Nebraska high school students in 2015 (24.1%) reported depression symptoms during the past year (YRBS).

According to the Nebraska Division of Behavioral Health's Magellan Treatment Database, there were 41,215 mental health services provided to 22,579 Nebraska residents between July 2013 and June 2014.

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

Epidemiology of HIV and AIDS in Nebraska

This section will present data on who, when where and how HIV and AIDS cases are occurring in Nebraska and if it may be changing over time. Data will be presented by year of diagnosis, regardless of the year of report. Unless noted, all data are from case surveillance data from the HIV/AIDS Surveillance Program at the Nebraska Department of Health and Human Services. For HIV and AIDS cases diagnosed through December 31, 2015 will be presented.

Section Highlights

In 2015, 81 cases of newly identified HIV infections were reported in Nebraska compared to the 5 year average of 83 for the 2011 to 2015 report period. The average for the report period compares to 107 for the previous five year period (2006 to 2010). The age group most affected is 25 to 34 years followed by 35-44 years. Infection in males is significantly higher than in females (85% of newly identified cases were male during the report period).

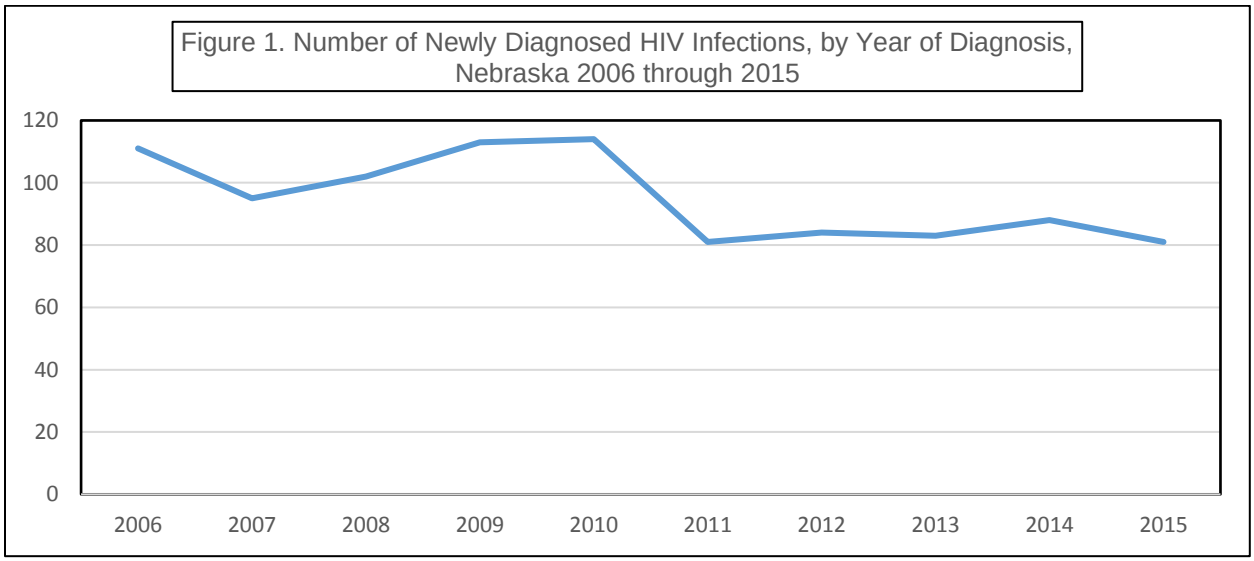
Persons living with HIV or AIDS in Nebraska affected 125 persons per 100,000 population in 2015, compared to 116 person per 100,000 in 2011.

The mean age of infection for 2015 was 33 years which is down slightly from 10 years ago (34 years). The mean age of infection in 2015 in males is slightly lower than females (35 years vs 33 years). For AIDS diagnoses, the mean age in 2015 was 37 for males and females.

Diagnoses among the MSM population have increased in recent years. MSM remains the predominant risk category. In 2015, 78% of all males diagnosed with HIV reported having sex with other males. Researchers at Emory University partnered with CDC to estimate the MSM population in the United States (Grey JA, Bernstein KT, Sullivan PS, Purcell DW, Chesson HW, Gift TL, Rosenberg ES. Estimating the population sizes of men who have sex with men in US states and counties using data from the American Community Survey. JMIR Public Health Surveill 2016;2(1):e14. DOI: 10.2196/publichealth.5365). The estimate for Nebraska is that 1.9% of the adult men had sex with another man in the past five years with an estimate of 13,198 MSM in Nebraska for 2013.

Diagnoses of HIV Infection

Figure 1 shows the number of HIV diagnoses in Nebraska since 2006.The number of newly diagnosed HIV infections have decreased 27% in 2015 compared to ten years ago. While the number of new cases have dropped since 2006, the number has remained relatively stable for the past five years (range 81 to 88 new reported infections per year).



Factors Affecting the Number of Diagnoses

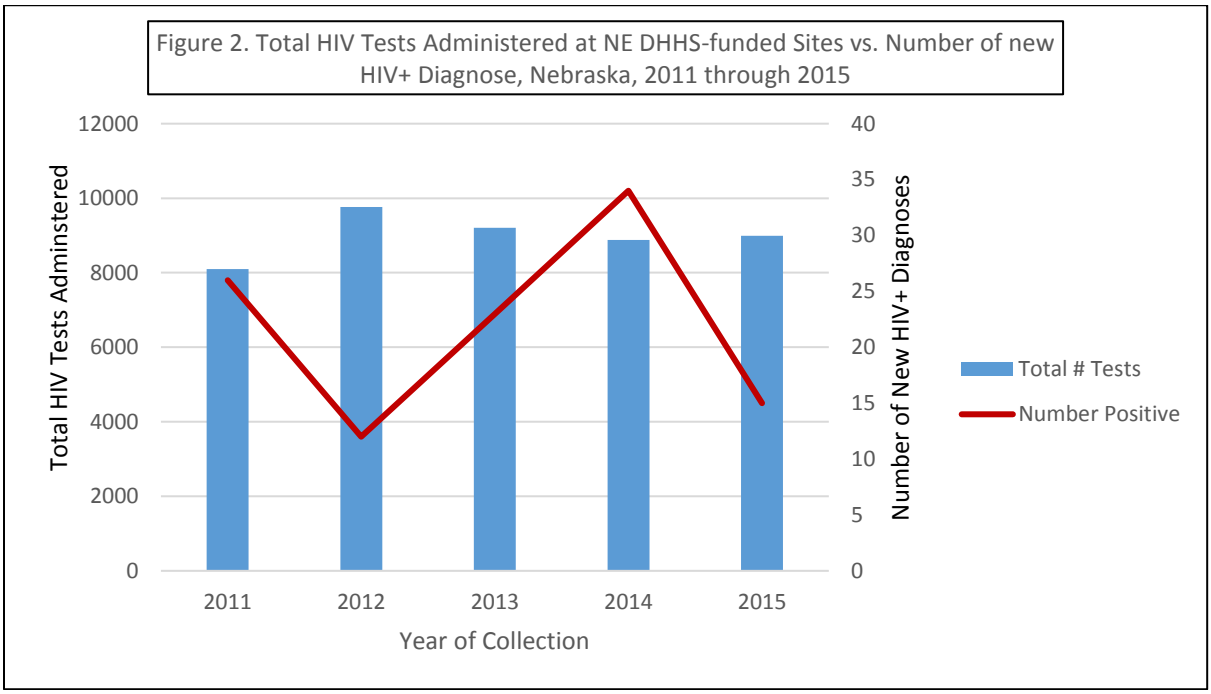
While HIV diagnoses are one of the best indicators of HIV disease, they do not provide the entire picture of HIV disease. Many factors impact when and if a person gets tested for the disease. These factors include:

- Risk perception—a person will not seek testing if they do not perceive themselves at risk for HIV
- Access to care—a person might lack insurance, transportation or proximity to a clinic or test site
- Lack of knowledge regarding HIV including symptoms and modes of transmission
- Language barriers
- Stigma surrounding HIV and AIDS

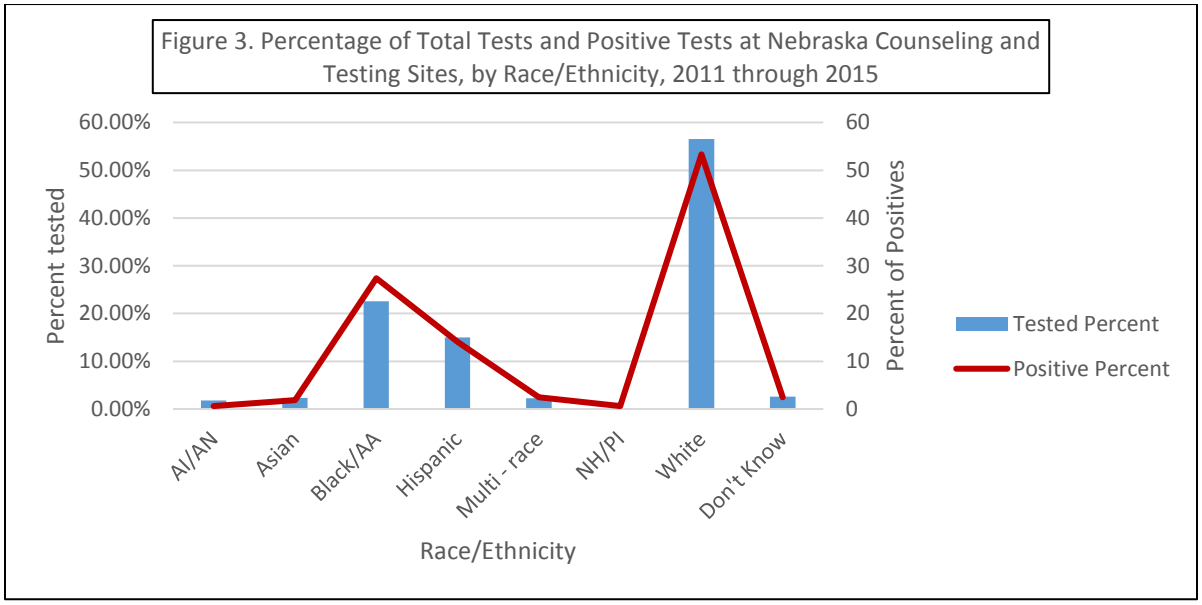
The NE DHHS HIV Prevention Program offers testing at 68 Counseling and Testing Sites (CTS) across Nebraska. Over the past five years, these sites have performed an average of 8989 tests per year, with an average of 22 positive tests per year (Table 4). The number of persons tested increased by 21% between 2011 and 2012, then decreased by 8% between 2012 and 2015 (Figure 2).

Table 4. Number of Persons Tested and Positive at Nebraska Counseling and Testing Sites, 2011 through 2015

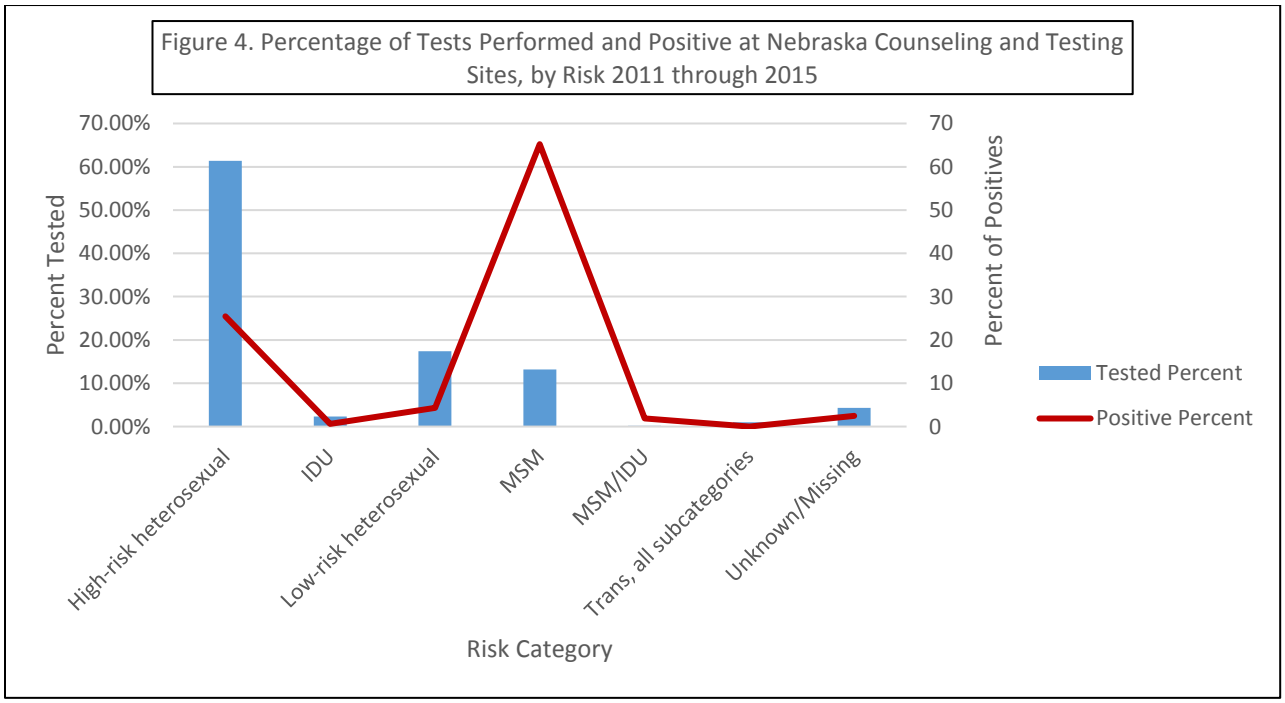
Year	Number of Tests	Number Positive	Percent Positive
2011	8,101	26	0.3
2012	9,766	12	0.1
2013	9,208	23	0.3
2014	8,879	34	0.4
2015	8,990	15	0.2



Blacks/African Americans represented about 23% of the persons tested at the CTS sites between 2011 and 2015 (approximately 4.5 times greater than in the overall Nebraska population, Figure 3). The positive tests, by and large, corresponded to the racial/ethnicity breakdown of those tested. The percentage of Black/African Americans testing positive was slightly greater than the percentage of those tested, while it was the opposite for whites. However, the total number of positives is small enough such that a difference of one would make an impact on the percent of positive tests for each racial/ethnicity category.

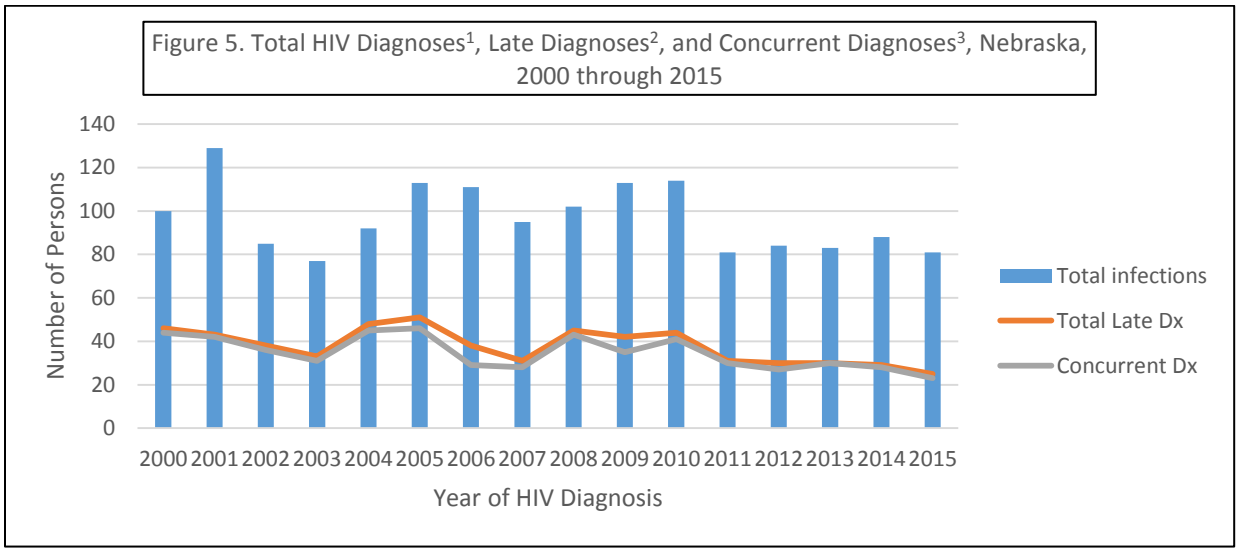


The high risk heterosexuals (HRH) comprised the majority of persons tested (61%), but MSM comprised the majority of those testing positive (65%, Figure 4). Persons identifying as MSM (including MSM/IDU) comprised less than 14% of those tested, but 67% of those who tested positive.



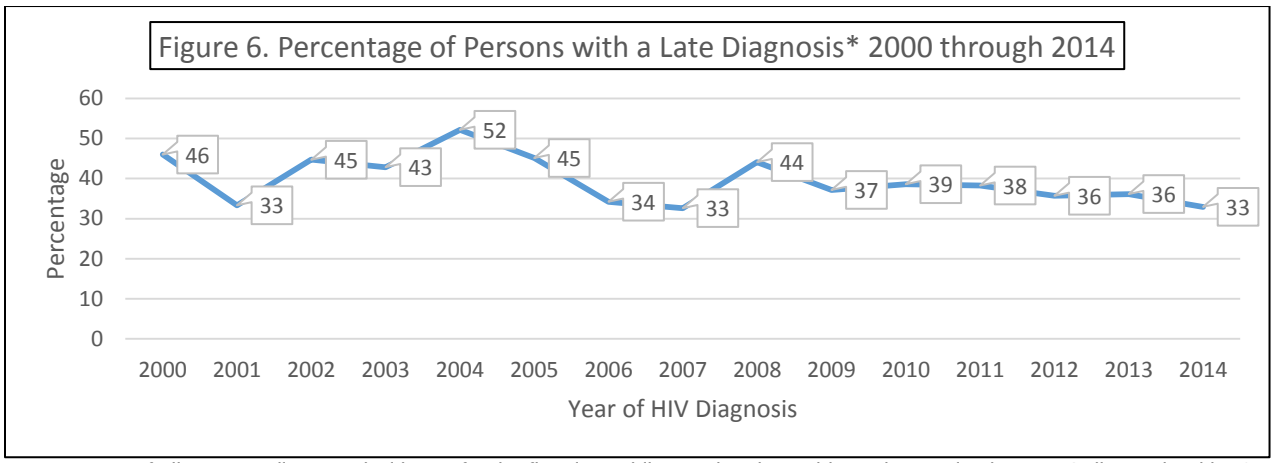
Delays in Testing

Although time of infection is generally not known, the length of time between HIV diagnosis and AIDS diagnosis can be used to give a general idea of how far along in the course of the disease a person is when the first HIV diagnosis is made. A short period of time between HIV diagnosis and AIDS diagnosis suggests that a person may have been infected for 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 they get into treatment quickly, respond well to therapy, and adhere to treatment regimens, they may never be diagnosed with AIDS, or would at least have a longer time from HIV diagnosis to AIDS diagnosis.



1 Includes all persons reported to have tested positive for HIV for the first time while a resident of Nebraska, regardless of current diagnosis (HIV or AIDS).
2 Includes all persons reported to have tested positive for HIV for the first time while a resident in Nebraska who were also diagnosed with AIDS with 12 months of their initial HIV diagnosis.
[3] Includes all persons with late diagnosis whose AIDS diagnosis was within one month of their initial HIV diagnosis.

Figure 5 depicts the percentage of persons diagnosed with HIV in a given year who were diagnosed with AIDS within 12 months of their initial HIV diagnosis. These persons are often called late testers as they seek their initial test in a later phase of their HIV infection. A high percentage of late testers suggest than many people are being diagnosed late in the course of their infection. A low percentage indicates persons were diagnosed early in the course of their infection or that they received treatment promptly and did not progress to AIDS within a year.



* Percentage of all persons diagnosed with HIV for the first time while a Nebraska resident who received an AIDS diagnosis with 12 months of their initial HIV diagnosis.

The percentage of persons with less than one year from HIV diagnosis to AIDS fell from a peak of 52% in 2004 to 33% in 2014 (Figure 6). This decrease could be due to people seeking testing earlier in the course of their infection and/or due to the effect of antiretroviral therapies available since 1995. Over the past 5 years the number has decreased slightly. This might be due to a segment of the population that is lacking HIV education.

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. Nationally, 32% of persons diagnosed in 2009 were late testers[1]. The number of late testers in Nebraska is a cause for concern, especially for minorities. According to a CDC study, late testers are more likely to be heterosexual, have lower education levels, and be members of racial and ethnic minorities[2]. Across the United States, minorities are much less likely to access health care in a timely manner and often enter the system when their medical conditions are more complicated and pronounced. 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 others.

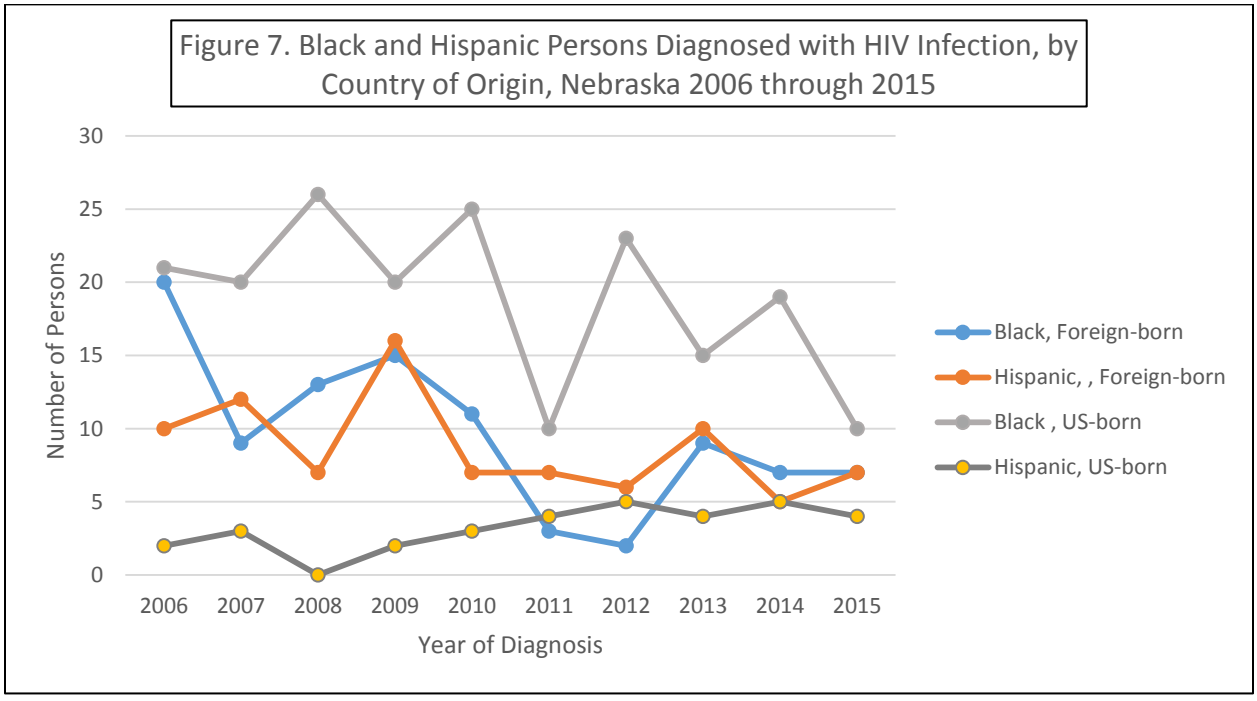
[1] Centers for Disease Control and Prevention. HIV Surveillance Report, 2014; vol. 26. http://www.cdc.gov/hiv/library/reports/surveillance/. Published November 2015. Accessed [July 21, 2016].
[2] Late Versus Early Testing of HIV – 16 Sites, United States, 2000-2003. CDC. MMWR 2003;52(25);581-586

Immigration of HIV-Positive Persons to Nebraska

Immigration of HIV-positive persons to the United States can have 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 the surveillance system. Thus, if immigrants with previously documented diagnoses are counted by the place of residence at the time of first test or treatment within the United States. So such persons are counted among Nebraska's new HIV diagnoses if the first test or treatment occurred in Nebraska after settling in the United States. Since immigration status is not collected on case report forms or in interviews, illegal or undocumented immigrants may also be diagnosed as residents of Nebraska.

As of January 4th, 2010, HIV infection was removed from the list of illnesses that barred admission to the US of any foreign national from Section 212 (a)(1)(A)(i) of the Immigration and Nationality Act (the Act) by the Department of Health and Human Services (HHS). Prior to that date, the Act rendered inadmissible any applicant for a visa or admission to the US who had HIV. However, a number of waivers were available for humanitarian and family unit concerns. HIV-infected persons admitted on such waivers were counted as new Nebraska diagnoses if, after entering the US, they resettled in Nebraska and first received testing or treatment here.

Figure 7 shows the number of diagnoses of HIV infections for persons in Nebraska who were born in foreign countries. Country of origin is collected on the confidential case report form and can be used as an imperfect surrogate for who is an immigrant. Since 2006, the number of foreign-born persons has ranged from 7 to 21, with the high of 21 in 2010 and the low of 7 in 2011 and 2012. Hispanics and Blacks accounted for 81% of the foreign-born persons diagnosed with HIV in Nebraska from 2006 to 2015.



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

Past increases in diagnoses among foreign-born persons may have had some impact on interpretation of epidemiologic data in Nebraska. Most obviously, the number of diagnoses among US-born persons may be misinterpreted, particularly those of African Americans and US-born Hispanics. If the number of new diagnoses among foreign-born individuals remains constant or decreases, the effect on the interpretation of the epidemic among US-born persons in Nebraska will be lessened.

Figure 8 shows how the diagnosis curve for Nebraska differs if foreign-born persons are plotted separately from US-born persons. The increase in HIV diagnoses in 2004, 2005 and 2009 were affected by the increase in HIV diagnoses in foreign-born persons. However since that time, the fluctuation in the number of HIV diagnoses in Nebraska has largely been driven by US-born persons.

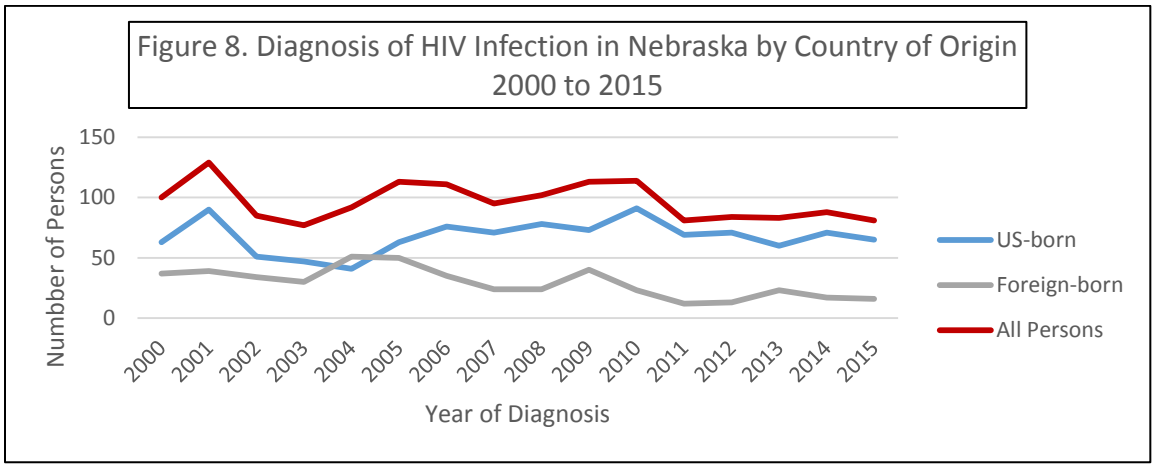


Table 5. Region of Origin for Foreign-born Persons Diagnosed in Nebraska 2011 through 2015

Region	Number	Percent
Central/South America/Caribbean	10	28.6%
Africa	15	42.9%
Asia	9	25.7%
Other	1	2.9%
Total	35	

If foreign-born persons diagnosed in Nebraska differ substantially from US-born persons in terms of gender, race and ethnicity, risk or age, then they will affect trends in overall diagnoses among these strata.

Summary of Statewide HIV Data

- The number of newly diagnosed HIV infections has decreased from 111 in 2006 to 81 in 2015. The decrease has been seen among both foreign-born and US-born persons.
- The number of diagnoses among foreign-born persons increased significantly beginning in 2000 and peaked in 2004 with 51. Since 2010, the numbers of diagnoses among foreign-born persons has decreased more rapidly than among the number of US-born persons.
- Thirty-three percent of persons diagnosed with HIV in 2014 that developed AIDS within 1 year of their HIV diagnosis, a decrease from 39% in 2010. This may indicate better outreach to at-risk population leading to more focused testing. More than (34%) of all late diagnoses between 2005 and 2014 were also concurrently diagnosed with AIDS at the time of HIV diagnosis.
- The number of tests conducted at DHHS-funded test sites averaged 8989 per year from 2011 to 2015. An average of 22 persons tested positive per year, an average annual positivity rate of 0.24%.

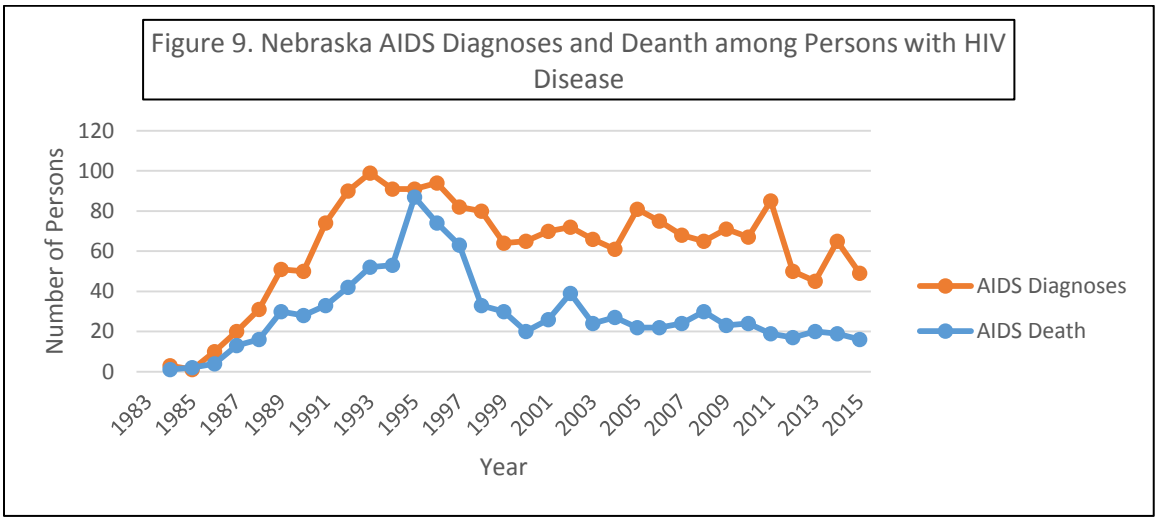
Diagnosis of AIDS

The number of Nebraska' s AIDS diagnoses, based on residence in Nebraska as of the date the person first met the CDC surveillance case definition for AIDS, and the number of deaths of persons with HIV/AIDS are presented in Figure 9 and Table 6.

In Nebraska, AIDS diagnoses peaked in 1993 with 99, corresponding to a change in the AIDS surveillance case definition in 1992. The 1992 case definition was changed to add CD4+ cell counts of less than 200 cells per microliter of serum (or less than 14% of total lymphocytes) as AIDS-defining conditions. Nationally this time period represents a peak in the epidemic. Shortly after the peak, highly active antiretroviral medications (HAART) were approved and had a major impact on the persons infected with HIV who progressed to AIDS.

The number of AIDS diagnoses have decreased since 1997. While there has not been similar drop in HIV infections at that time, the decrease is probably due to the introduction of HAART and the subsequent improvements to adherence to therapy. The number of persons who are late testers can have an impact on the number of AIDS diagnoses. If the late testers can be identified sooner, the progression to AIDS diagnoses can be delayed with treatment.

There were 49 new AIDS diagnoses in 2015, which was similar to the average for the report period of 51. The average of AIDS diagnoses in Nebraska for the past 10 years is 61, so there has been a noticeable decrease, despite a spike of 85 new diagnoses in 2011. If the recent trend of decreasing AIDS diagnoses, we could see the number of AIDS cases decrease to levels not seen since before the 1980s.



In addition to a decrease in the number of AIDS diagnoses, there has been a significant decrease in deaths of persons with AIDS. The number of deaths peaked in 1995 (87), but after the introduction of HAART the numbers have dropped dramatically. The average number of deaths for the report period is 16, slightly lower compared to the average for the past 10 years of 20 deaths.

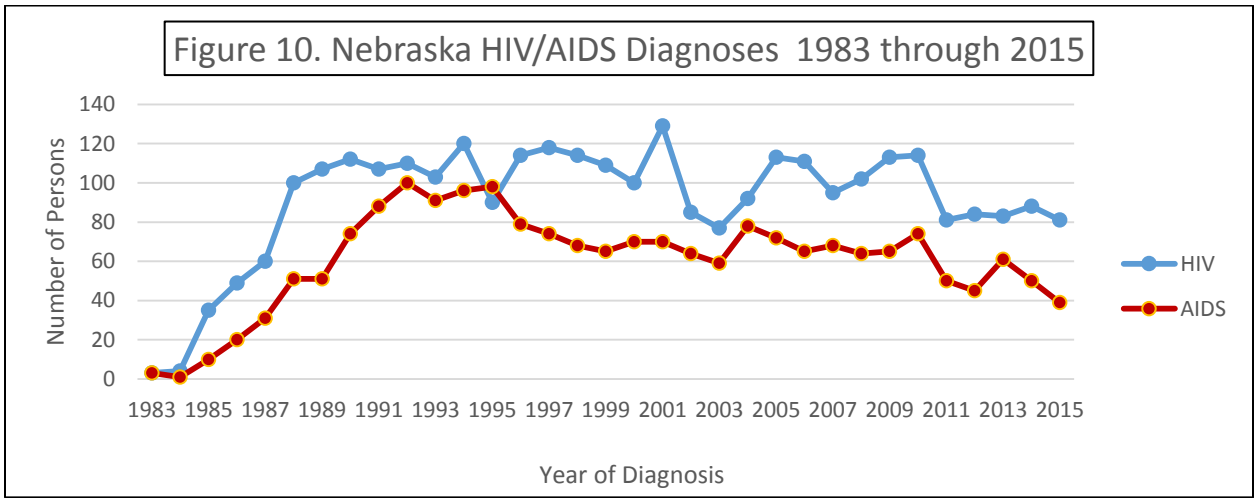
Table 6. Nebraska AIDS Diagnoses and Deaths of Persons with AIDS by Year of Diagnosis or Death*		
Year of AIDS Diagnosis	**AIDS Diagnoses**	**AIDS Death**
1983	3	1
1984	1	2
1985	10	4
1986	20	13
1987	31	16
1988	51	30
1989	50	28
1990	74	33
1991	90	42
1992	99	52
1993	91	53
1994	91	87
1995	94	74
1996	82	63
1997	80	33
1999	65	20
2000	70	26
2001	72	39
2002	66	24
2003	61	27
2004	81	22
2005	75	22
2006	68	24
2007	65	30
2008	71	23
2009	67	24
2010	85	19
2011	50	17
2012	45	20
2013	65	19
2014	49	16
2015	48	8

Summary of Statewide AIDS Data

- AIDS diagnoses peaked in 1992, coinciding with the change in definition of AIDS to include CD5+ 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 AIDS diagnoses beginning in 1996.
- The low for AIDS diagnoses was 45 in 2012. For the report period of 2011 through 2015, there was an average of 51 AIDS diagnoses per year.
- Deaths from AIDS peaked in 1994 and has continued to drop with a low of 8 in 2015.

Prevalence of HIV/AIDS

As of December 31st, 2015, there were 2,336 person living with HIV/AIDS in Nebraska.



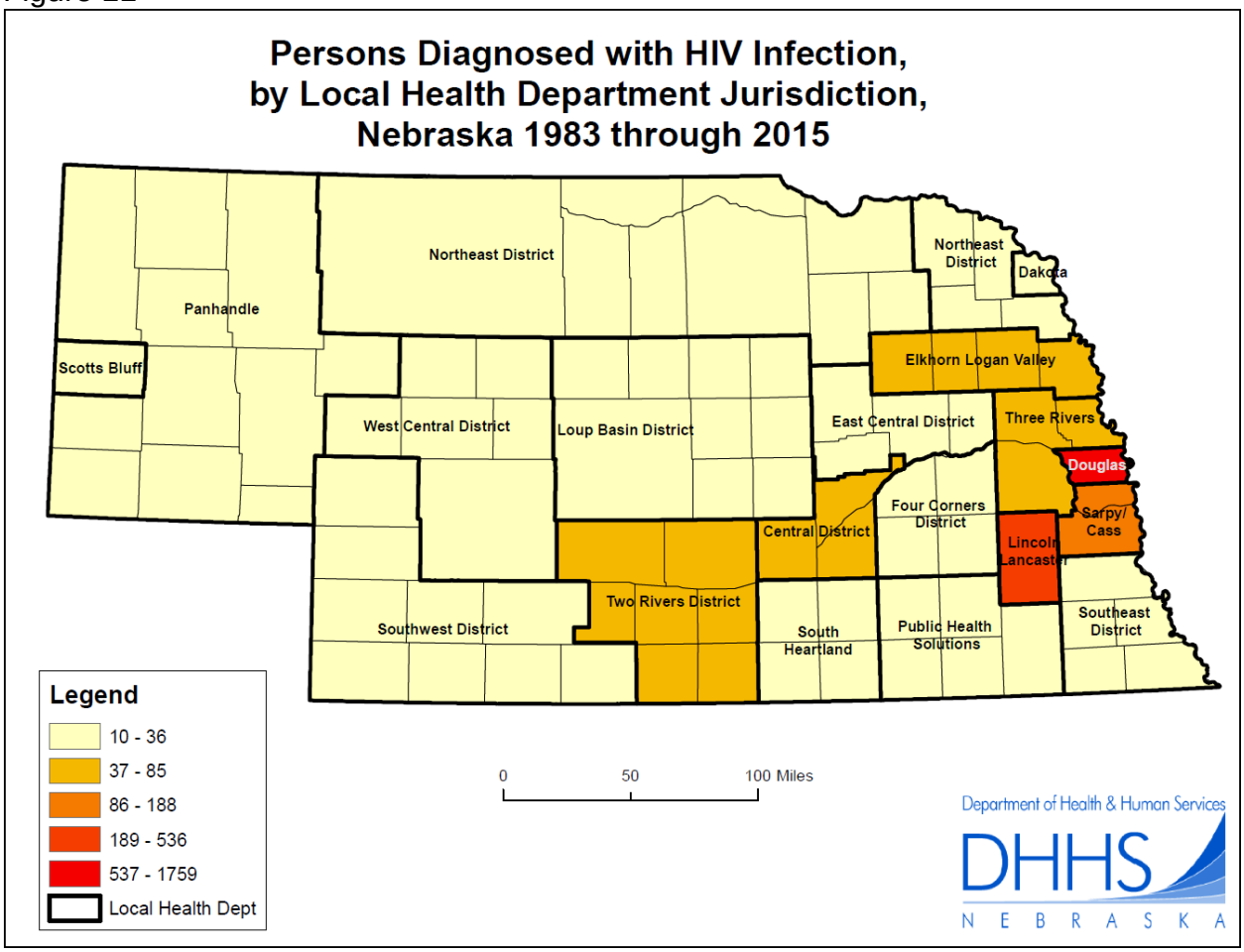
Estimated Prevalence

CDC estimates that 20% of HIV-infected persons nationally are undiagnosed. In Nebraska, that would mean there may be 467 HIV-infected persons who have not been diagnosed. Adjusting the data gives an HIV/AIDS prevalence estimate of 2,803 persons living with HIV-infection in Nebraska at the end of 2015.

Geographical Distribution of HIV and AIDS

Since reporting began in 1983, 3,005 persons initially diagnosed with HIV infection while living in Nebraska have lived in 73 of 93 Nebraska counties. While 54% of the state's population live in the 3 largest counties (Douglas, Lancaster and Sarpy), 82% of the persons resided in those counties at the time of diagnosis. (Figure 11)

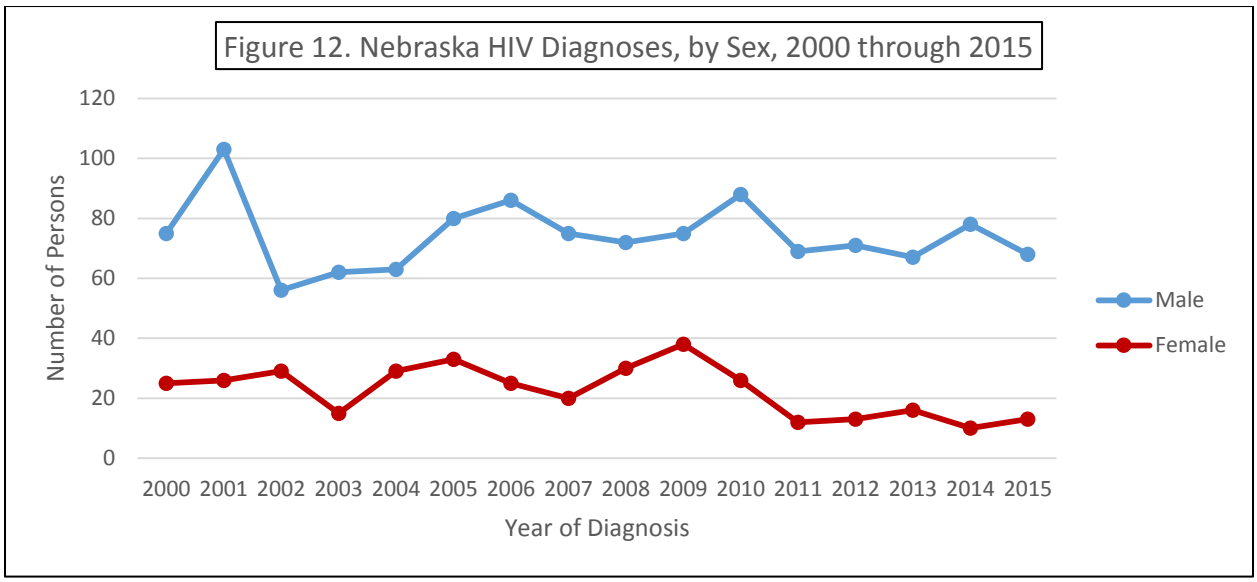
Figure 11

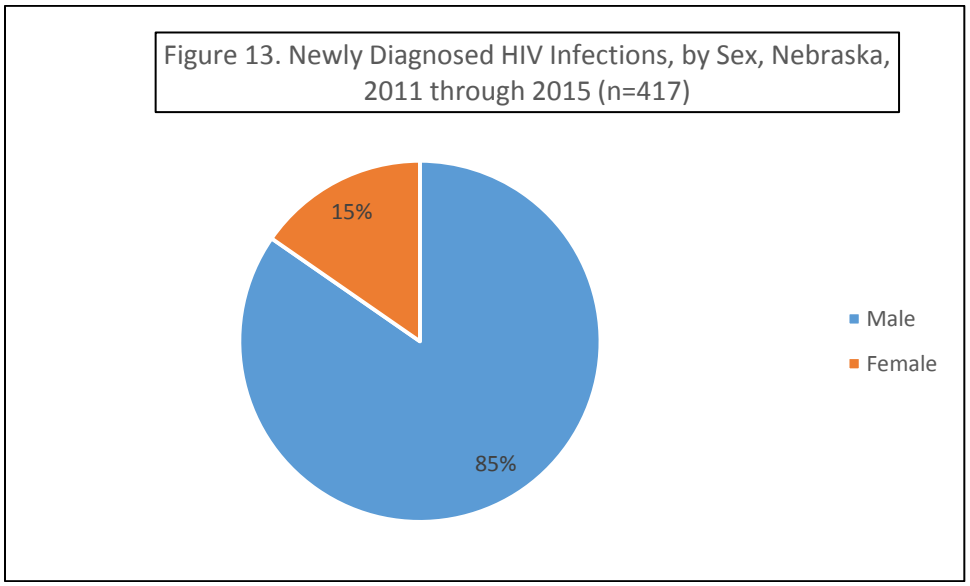


Sex and Age

Sex—HIV Diagnoses

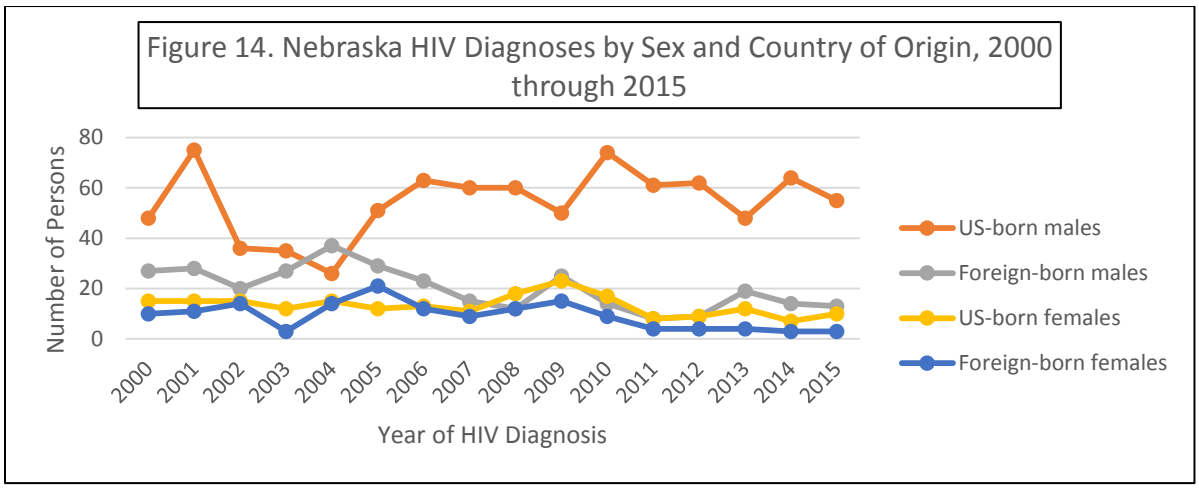
Figure 12 shows the number of HIV diagnoses by sex since 2000. Males accounted for 76% of the new diagnoses since 2000. However for the 2011 to 2015 report period, that percentage increased to 85% (Figure 13).





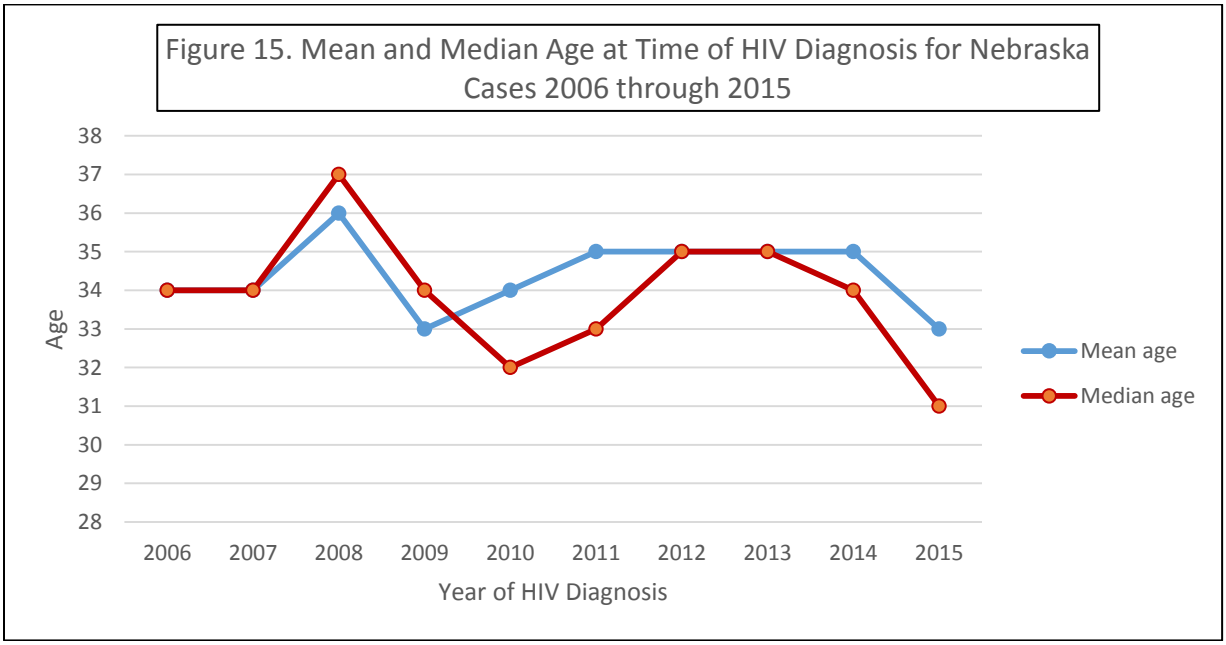
Then increase in newly identified HIV infections in Nebraska was in part due to an increase in foreign-born males (Figure 14). However, since 2004, that number has declined to approximately the same level of females regardless of country of origin. Since that time, US-born males have contributed the majority of newly identified HIV infections in Nebraska.

Among females, both foreign-born and US-born have remained relatively low. There was a small peak from 2008 to 2010 among US-born females, but even the highest number was much smaller compared to US-born males.



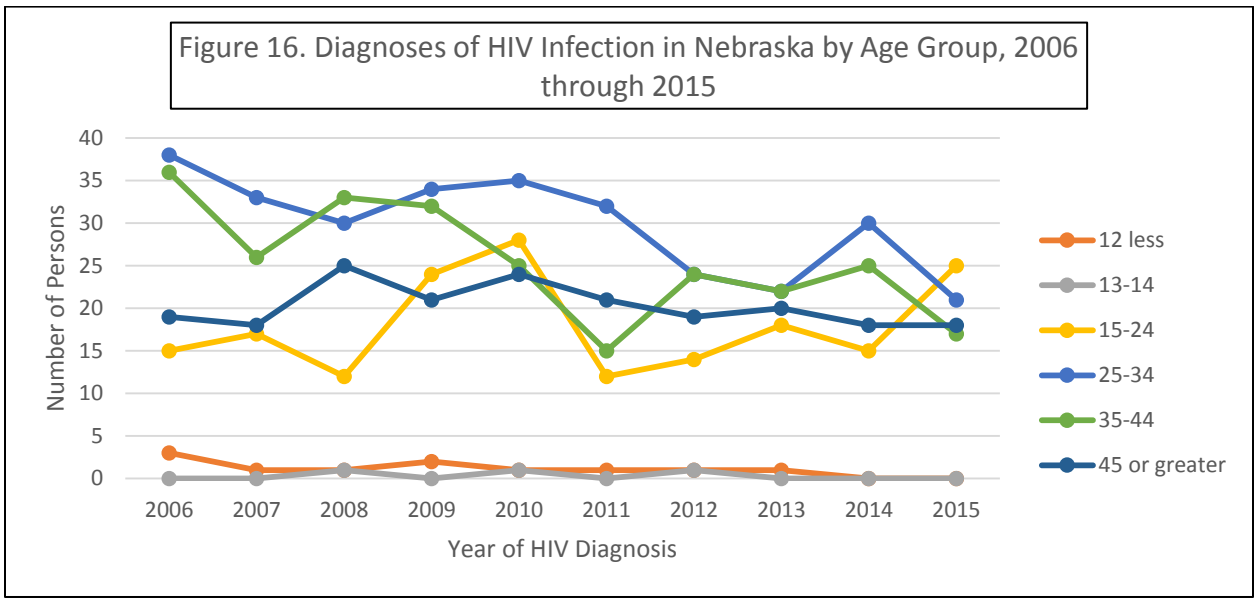
Age—HIV Diagnoses

The mean and median age at time of diagnosis has not changed much over the past 10 years (Figure 15). The apex for both mean and median age occurred in 2008 (mean 36, median 37). The years with the lowest mean age was 2009 and 2015 (33 years) and lowest median age was 2015 (31 years). The mean and median age for females (mean 33 median 32) is slightly younger than males (mean 35 median 34) for the past 10 years.



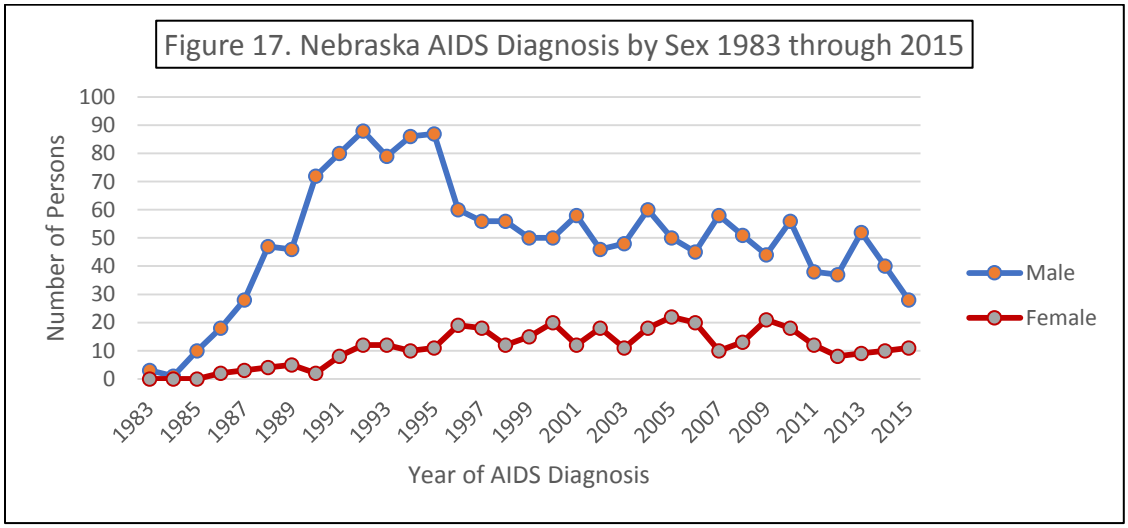
As seen in Figure 16, the age group most affected is 25 to 34 year olds with 31% over the report period. However, in 2015, the most common age group was 15-24 year olds, which caused the decrease in the mean and median age (above). If this continues, new outreach to young adults will be needed to address this. That age group has grown up

with social media and outreach efforts will need to include social media to target young adults.



Sex—AIDS Diagnoses

Historically, females have accounted for only a small proportion of Nebraska's AIDS diagnoses (Figure 17). Only 360 of 1994 (18%) of AIDS cases diagnosed in Nebraska have been in females. Diagnoses of AIDS among males peaked in 1992 with 88 and dropped dramatically after introduction of highly active anti-retroviral treatment (HAART). The trend among males since 2000 has been decreasing, although with minor fluctuations (peak in 2004 with 60 and low in 2015 with 28).



Age—AIDS Diagnoses

The median age at AIDS diagnosis in Nebraska rose slightly over from 1996 to 2014 (35 in 1996 to 39 in 2014) then jumped to age 45 in 2015 (Figure 18). This increase in median age is probably due to improvement in treatments which prolongs the time from HIV diagnosis to AIDS diagnosis. The number of persons diagnosed with HIV infections aged over 45 (above) will be a population that HIV Surveillance will be monitoring.

The mean and median age for females (35 and 35, respectively) were one year younger than for males.

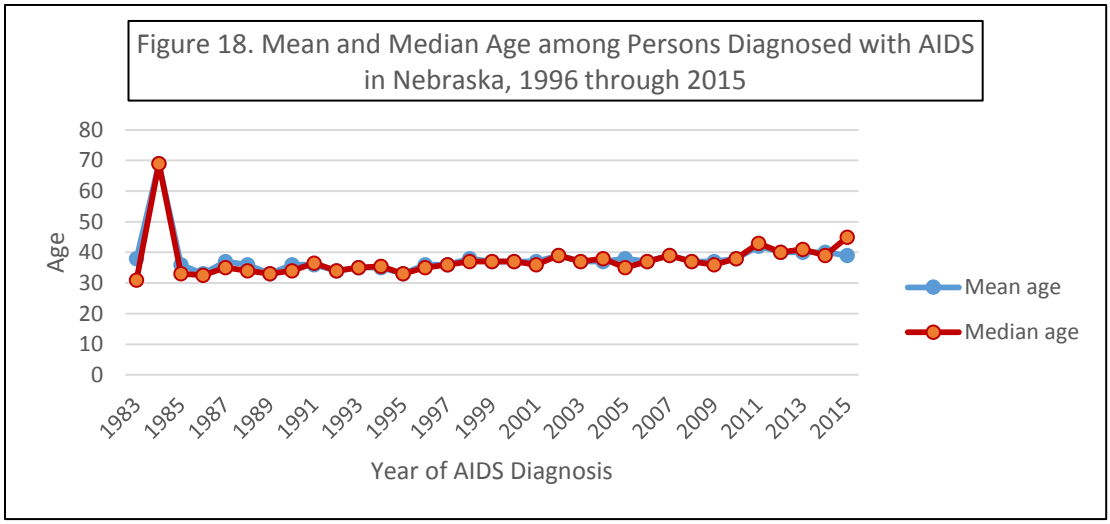
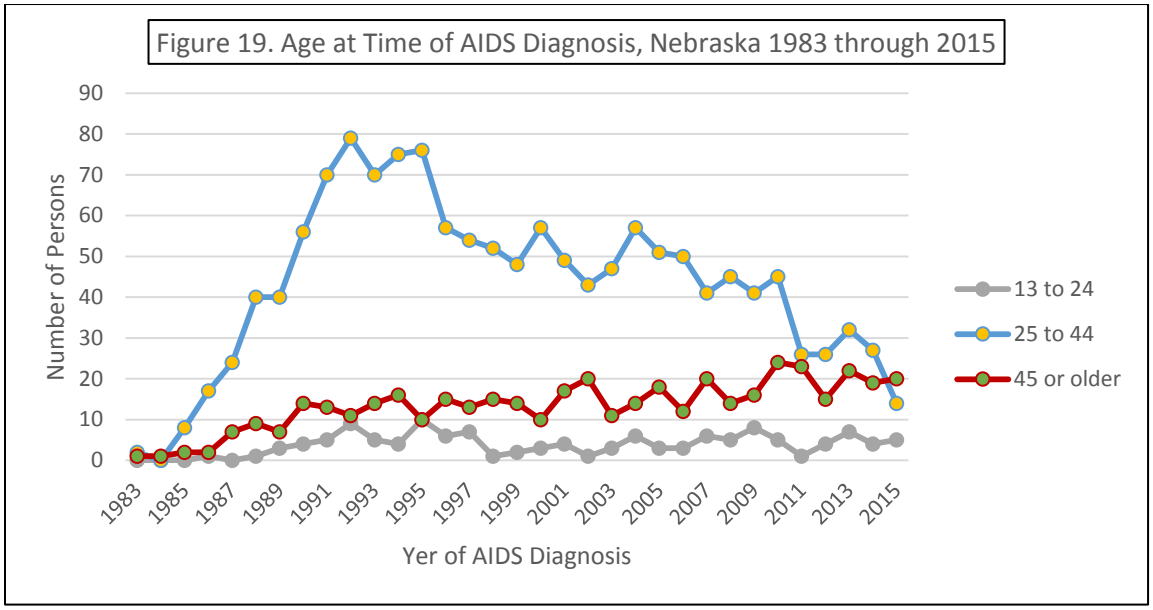


Figure 19 shows, AIDS diagnoses over time by age group. The 25 to 44 year age group had a dramatic increase, peaking at 79 in 1992, then dropping after the advent of HAART. In 2015 for the first time, this age group was not the most common, dropping below the 45 and older age group. That age group has increase slightly over the past 20 years (ranging from 15 in 1996 to 24 in 2010).



Figures 19 and 20 show HIV and AIDS diagnoses, respectively, by sex. The percentage of HIV diagnoses among males has been above 80% since 2011 (Figure 19). The proportion of AIDS diagnoses among males ranged from 68% (2009) and 85% (2007 and 2013).

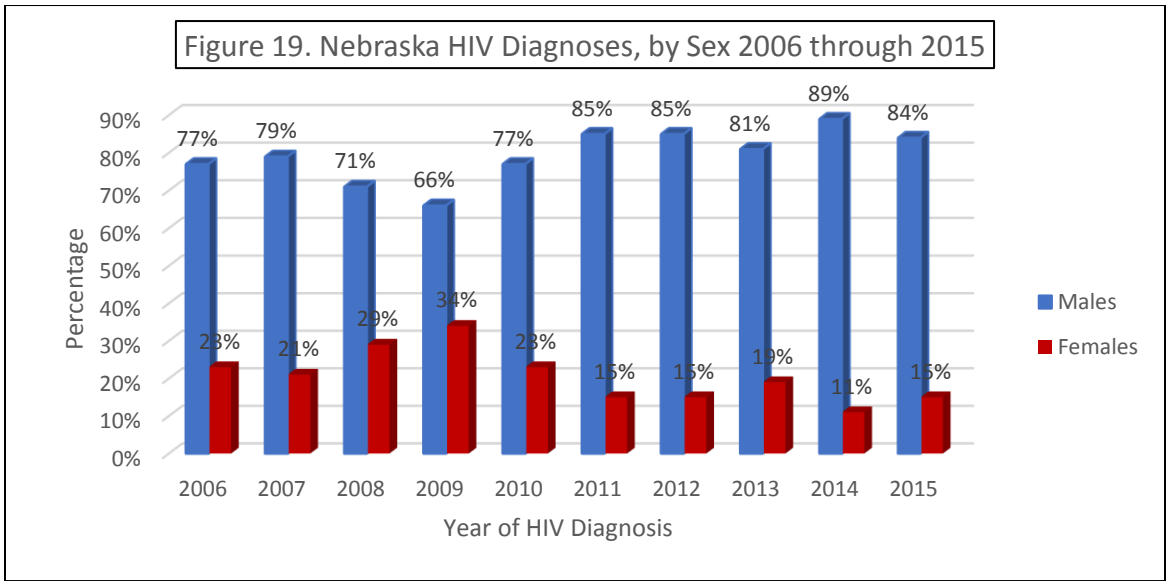
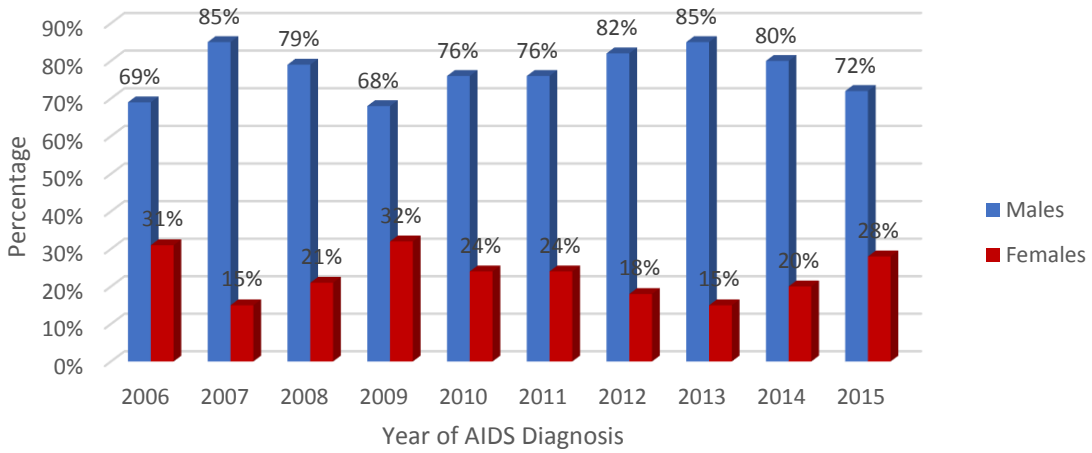


Figure 20. Nebraska AIDS Diagnoses, by Sex 2006 through 2015



Summary of Age and Gender Data

- The overall trend in diagnosis of HIV in Nebraska has mirrored the diagnosis of HIV among US-born males.
- Diagnoses of HIV and AIDS overwhelmingly have occurred among men and among persons aged 25 to 44 years.
- Over the past 10 years, the median age at HIV diagnosis has decreased from 37 in 2008 to 31 in 2015. The median age at AIDS diagnosis increased slightly from 36 in 2006 to 39 in 2014, then jumped to 45 in 2015.

RACE AND ETHNICITY

Race and Ethnicity—HIV diagnoses

While the number of newly diagnosed HV cases in the time period 2006 to 2015 are predominately white, non-Hispanics, Black non-Hispanics with newly diagnosed HIV infections are over-represented by a factor of five compared to the overall Nebraska population (Figure 21). Black non-Hispanics constitute an estimated 4.9% of the overall Nebraska population according to the 2015 population estimates from the United States Census Bureau. Also of note is the comparison of the proportion of newly diagnosed HIV infections in Nebraska among Hispanics in the 2011 to 2015 time period (14% of new HIV diagnoses) to the overall population (10% of Nebraska's population).

Diagnosis of HIV in minorities can be affected by increases in diagnosis of HIV in foreign-born persons. In the past 10 years the highest number of Blacks occurred in 2006 with 41 persons diagnosed. Of those 41, 20 were among those who were foreign-born (Figure 22). Among Hispanics, the number of those newly diagnosed with HIV were greater among foreign-born Hispanics, except in 2014 when 5 occurred in both US-born and foreign-born. Nearly all the white, non-Hispanic diagnoses have been among US-born persons.

Figure 21. Newly Identified HIV Infections, by Race/Ethnicity, Nebraska, 2006 to 2015

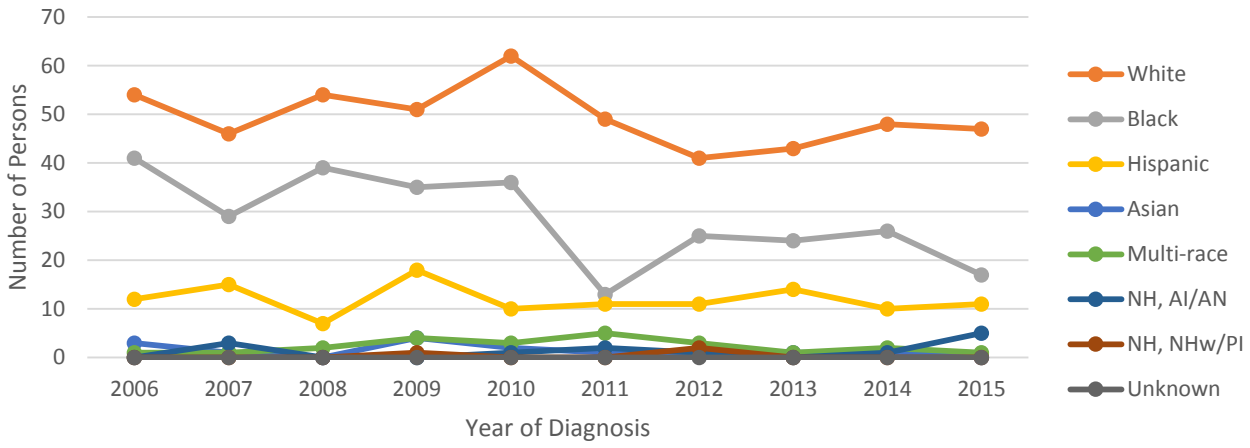
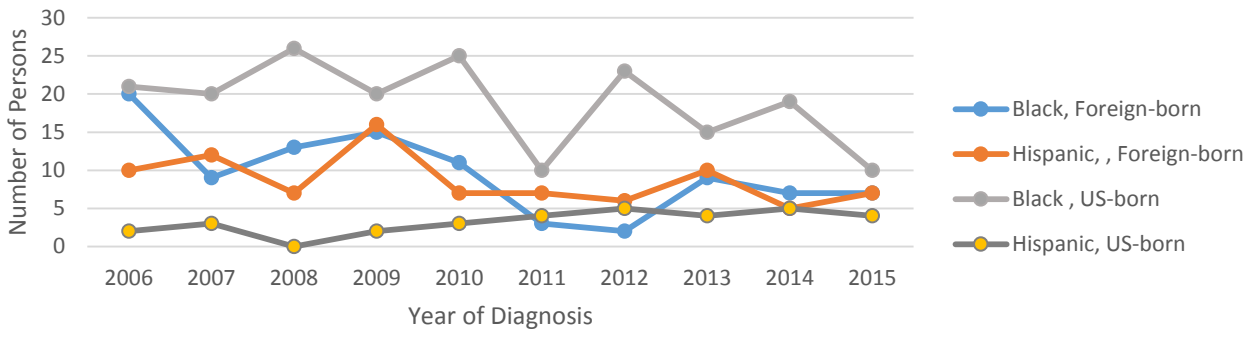


Figure 22. Black and Hispanic Persons Diagnosed with HIV Infection, by Country of Origin, Nebraska 2006 to 2015



From 2011 to 2015, non-Hispanic Blacks had the highest rate of infection (24.5 per 100,000) among the racial/ethnic groups with more than 50 diagnosed persons (Table 7). Non-Hispanic Blacks were 8 times more likely to be diagnosed with HIV than the non-Hispanic white population during the report period. Just under half of the non-Hispanic Blacks (45%) who were newly diagnosed with HIV were born outside the US.

Table 7. HIV Diagnoses, by Race/Ethnicity and Sex, Nebraska, 2011 through 2015									
Race/Ethnicity	**Males**			**Females**			**Total**		
	N	%	Rate	N	%	Rate	N	%	Rate
White	205	58.07	5.48	23	35.94	0.6	228	54.68	3.01
Black	75	21.25	34.12	30	46.88	14.36	105	25.18	24.5
Hispanic	51	14.45	10.47	6	9.38	1.62	57	13.67	6.15
Asian	3	0.85	3.38	1	1.56	1.02	4	0.96	2.14
Multi-race	12	3.40	15.85	0	0.00	0	12	2.88	7.8
NH, AI/AN	7	1.98	18.68	2	3.13	5.15	9	2.16	19.66
NH, NHw/PI	0	0.00	0	2	3.13	72.86	2	0.48	35.78
Total	353		8.48	64		1.5	417		4.46

The race/ethnicity and country of origin by sex breakdown for the newly identified HIV infections in 2015 are shown in Table 8. This follows previously described trends: white, non-Hispanic males account for the largest share of new infections, but black, non-Hispanic and Hispanic males are disproportionately affected. However, both of those groups are affected by immigration where the risk of infection might be different than in the US. For females, white, non-Hispanics accounted for most of the new diagnoses, but black, non-Hispanics were disproportionately affected.

Of note is the American Indian/Alaska Native, non-Hispanics. Two-thirds of the cases that occurred in this group between 2011 and 2015 occurred in 2015. Surveillance staff will be monitoring this trend and if needed, HIV Prevention staff will help address the at-risk group.

Table 8. HIV Diagnoses, by Race/Ethnicity and Country of Origin, Nebraska, 2015					
Males	**2015 Diagnoses**			**US-born only**	
Race/Ethnicity	**Number**	**%**	**#/100,000**	**USA**	**%**
White	41	60.3%	5.5	41	74.5%
Black	12	17.6%	26.3	7	12.7%
Hispanic	10	14.7%	9.7	3	5.5%
Multi-race	1	1.5%	6.1	1	1.8%
NH, AI/AN	4	5.9%	51.5	3	5.5%
TOTAL	68			55	
Females	**2015 Diagnoses**			**US-born only**	
Race/Ethnicity	**Number**	**%**	**#/100,000**	**USA**	**%**
White	6	46.2%	0.8	6	60.0%
Black	5	38.5%	11.6	3	30.0%
Hispanic	1	7.7%	1.1	1	10.0%
Multi-race	0	0.0%	0	0	0.0%
NH, AI/AN	1	7.7%	12.6	0	0.0%
TOTAL	13			10	

Race and Ethnicity—AIDS diagnoses

Figures 23 and 24 show the number of AIDS diagnoses by racial/ethnic breakdown and country of origin for those groups that averaged at least 1 AIDS diagnosis per year between 2006 and 2015. Not surprisingly, most of the diagnoses occurred in US-born white non-Hispanics. Among foreign-born persons, both Black, non-Hispanics and Hispanics ranged between 2 and 10 new diagnoses for the past 10 years.

Figure 23. Nebraska AIDS Diagnoses among US-born Persons 2006 through 2015

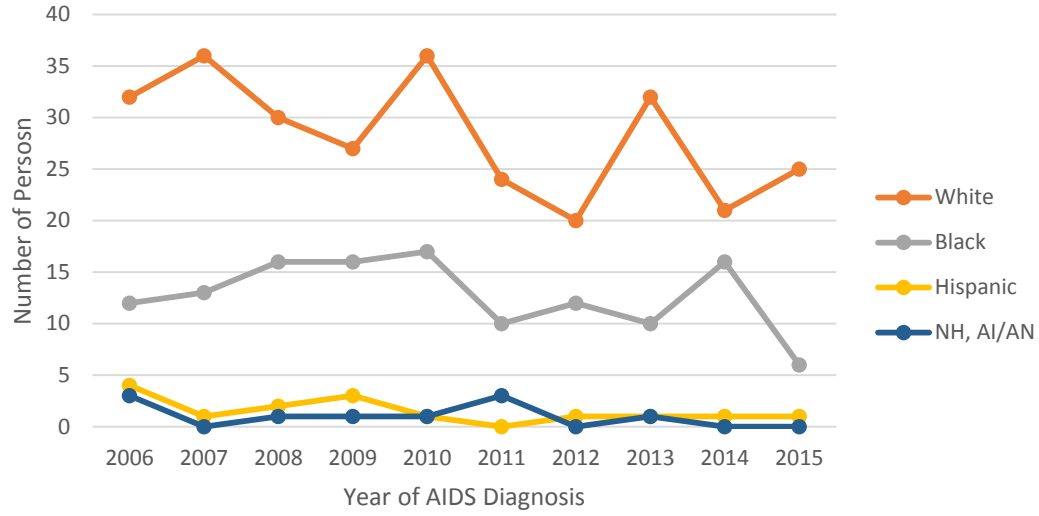
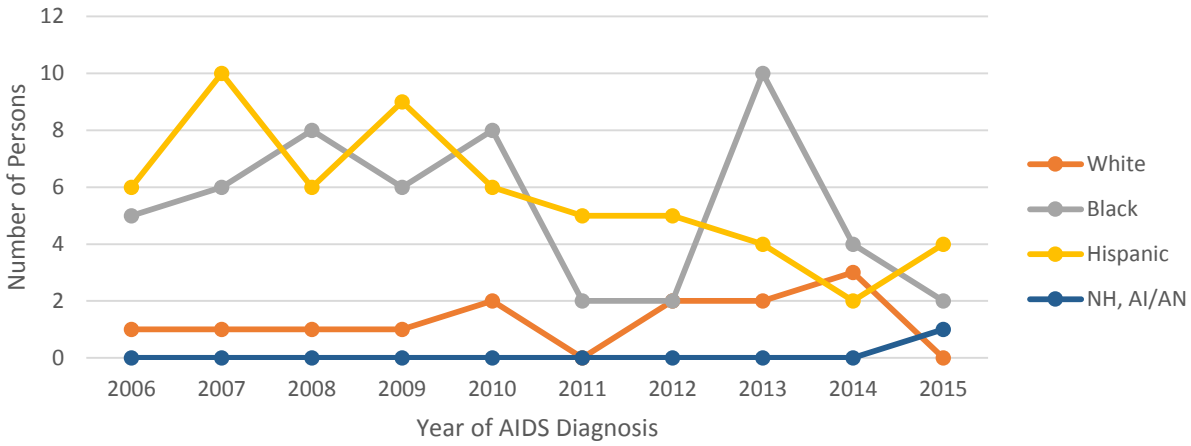


Figure 24. Nebraska AIDS Diagnoses among Foreign-born Persons 2006 through 2015

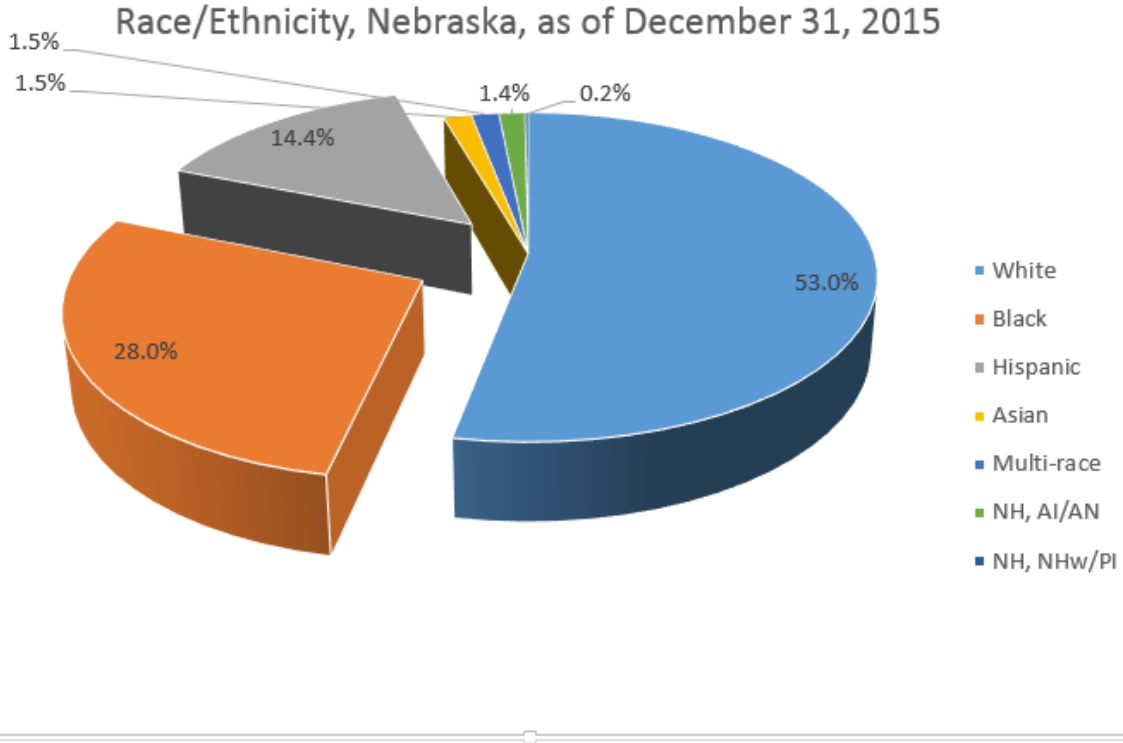


Race and Ethnicity—Persons Living with HIV or AIDS (PLWHA)

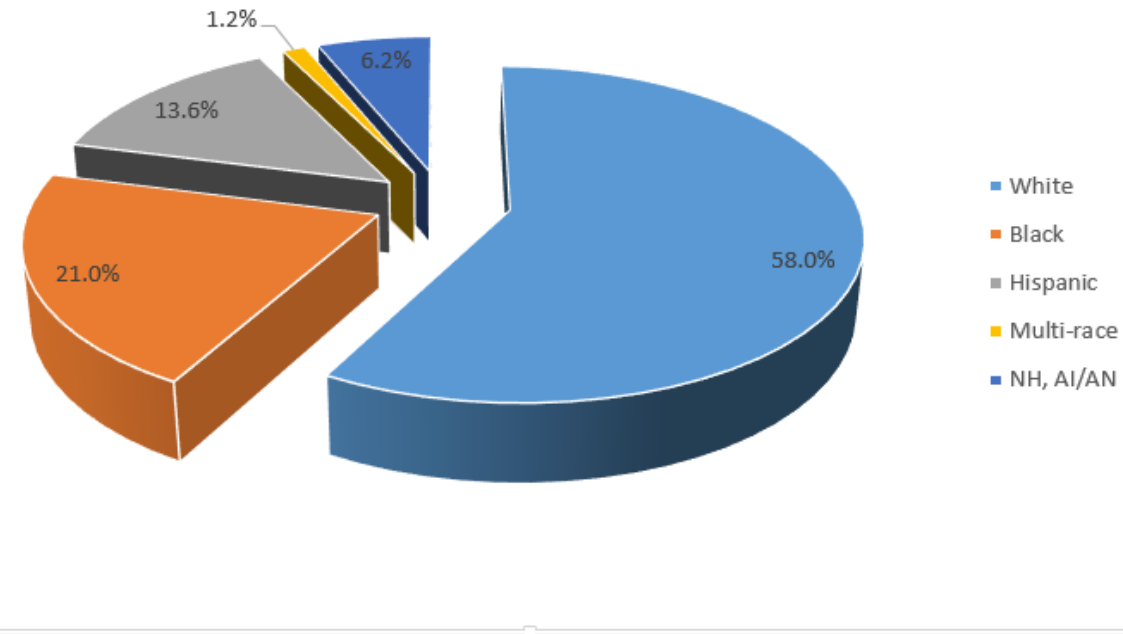
The percent of PLWHA by race and ethnicity compared to the percent of new HIV infections is shown in Figure 25. The highest are in whites, followed by Blacks. For PLWHA, the percent identified as Black is over 5 times the overall Nebraska population identified as Black or African American.

In comparison to the newly identified HIV infections, the proportion is largely the same, but the percentage identified as white is somewhat higher (58% vs 53% and lower in Blacks (21% vs 28%).

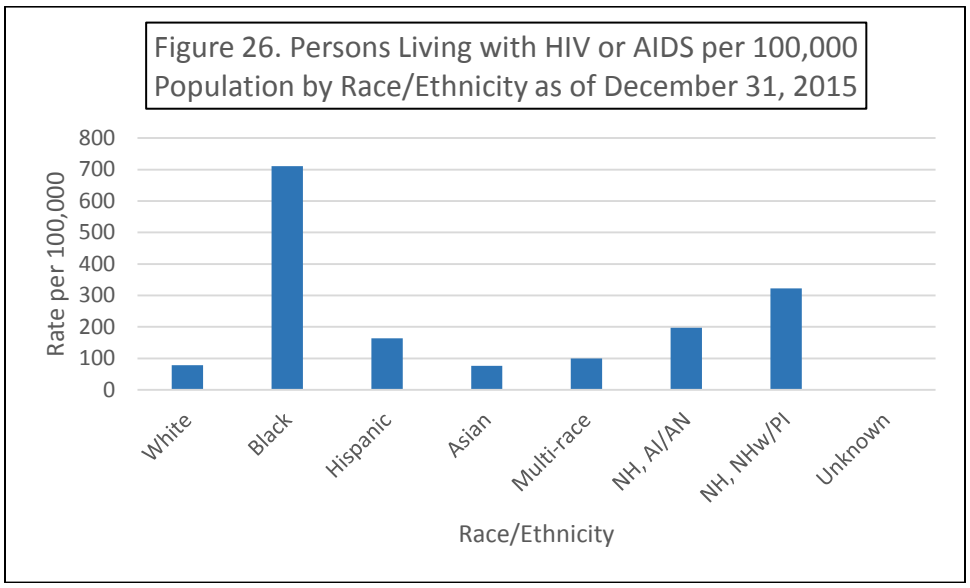
Figure 25. Percent of HIV/AIDS Prevalence by Race/Ethnicity, Nebraska, as of December 31, 2015



Percent of Newly Diagnosed HIV Infections, by Race/Ethnicity, Nebraska, 2015



The rates per 100,000 population for PLWHA are shown in Figure 26. The rate of PLWHA for Blacks is 9 times higher than whites (710 vs 78).



Race, Ethnicity and Sex—HIV Diagnoses

Table 9 shows the number of new HIV diagnosis by race, ethnicity and sex in Nebraska for 2015 and the five year total for 2011 to 2015. While white non-Hispanics are the highest racial group affected, the percent of newly identified HIV infections in Nebraska is lower than the percent of white non-Hispanics in the overall Nebraska population (80%). For females, white non-Hispanics accounted for the largest percentage in 2015, but black non-Hispanics accounted for the largest percentage in the 5 year report period.

As noted previously in this report, black non-Hispanics are overrepresented in the HIV epidemic in Nebraska. This holds true when looking at the epidemic by sex. For 2015, the rate per 100,000 of newly identified HIV infections for black non-Hispanic males was nearly 5 times higher than for white non-Hispanic males. For females, the disparity is even greater (14.5 times greater) for black non-Hispanic females compared to white non-Hispanic females.

Table 9.	Number of New HIV Diagnoses in 2015 by Race, Ethnicity and Gender, Nebraska									
Race/Ethnicity	Newly Identified HIV Infections									
	Male					Female				
	Number	%	#/100,000	5 yr Total	%	Number	%	#/100,000	5 yr Total	%
White	41	60.3%	5.5	205	58.1%	6	46.2%	0.8	23	35.9%
Black	12	17.6%	26.3	75	21.2%	5	38.5%	11.6	30	46.9%
Hispanic	10	14.7%	9.7	51	14.4%	1	7.7%	1.1	6	9.4%
Multi-race	1	1.5%	6.1	12	3.4%	0	0.0%	0	0	0.0%
NH, AI/AN	4	5.9%	51.5	7	2.0%	1	7.7%	12.6	2	3.1%
NH, NHw/PI	0	0.0%	0	0	0.0%	0	0.0%	0	2	3.1%
TOTAL	68			353		13			64	

Race, Ethnicity and Sex – AIDS Diagnoses

Table 10 shows AIDS diagnoses in 2015 and cumulatively through 2015. Although the cumulative AIDS diagnoses are overwhelmingly among whit, non-Hispanic persons, AIDS diagnosis rates show that some minority populations are more severely impacted than the white, non-Hispanic population.

Black, non-Hispanic males had an AIDS diagnosis rate of 8.8, 3.5 time that white, non-Hispanic males. Black, non-Hispanic females had a diagnosis rate of 9.3, 10 times higher than that of white, non-Hispanic females. Hispanic males had a rate twice as high as the white, non-Hispanic male rate.

Table 10. Number of New and Cumulative AIDS Diagnoses in 2015 by Race, Ethnicity and Gender, Nebraska			
Males	**2015 Number**	**2015 rate/100,000**	**Cumulative Number**
White	18	2.4	1,069
Black	4	8.8	330
Hispanic	5	4.8	184
Asian	0	0	10
Multi-race	0	0	18
NH, AI/AN	1	12.9	16
NH, NHw/PI	0	0	1
Total Males	**28**	**3.0**	**1,628**
Females	**2015 Number**	**2015 rate/100,000**	**Cumulative Number**
White	7	0.9	156
Black	4	9.3	143
Hispanic	0	0	38
Asian	0	0	6
Multi-race	0	0	9
NH, AI/AN	0	0	14
NH, NHw/PI	0	0	1
Total Females	**11**	**1.2**	**366**

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

Table 11 shows the numbers of persons living with HIV or AIDS (PLWHA) whose first diagnosis was as a Nebraska resident as of December 31, 2015 by race, ethnicity and sex. The prevalence of HIV and AIDS for white, non-Hispanic persons was 78.5 per 100,000 population compared to 710.3 per 100,000 and 164.1 per 100,000 for Hispanics. Black, non-Hispanic persons had over 9 times higher the prevalence per 100,000 than white, non-Hispanic persons. Hispanic persons had just over twice the prevalence rate per 100,000 than white non-Hispanic persons.

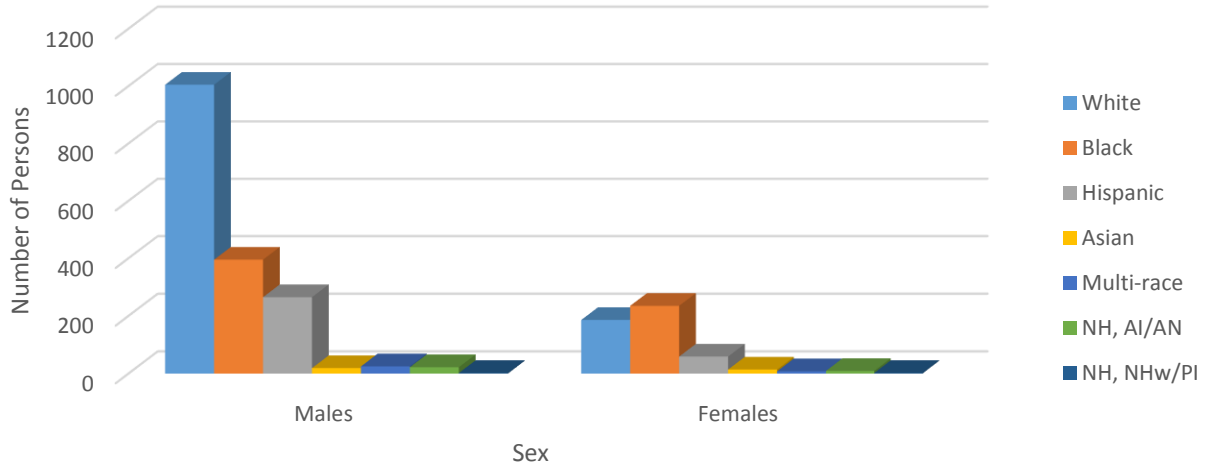
Table 11. Persons Living with HIV/AIDS as of December 31, 2015, Nebraska

Race/Ethnicity	Males	Rate	Females	Rate	TOTAL	Rate
White	1005	133.8	186	24.3	1191	78.5
Black	395	866.8	235	544.9	630	710.3
Hispanic	265	256.78	59	62.6	324	164.1
Asian	19	91.4	14	63.0	33	76.7
Multi-race	25	153.7	8	40.3	33	99.6
NH, AI/AN	22	283.4	9	113.5	31	197.5
NH, NHw/PI	2	308.2	2	339.0	4	322.8
Unknown	0		1		1	
TOTAL	1733	253.8	514	53.9	2247	118.5

While blacks account for 4.9% and Hispanics account for 10.2% of the state's total population, they account for 28.0% and 14.4% of the total HIV/AIDS prevalence in Nebraska as shown in Figure 25. In 2015, the trend continued, although the number of new diagnoses among white, non-Hispanics increased 5% compared to the overall proportion among PLWHA.

Despite the disproportionate numbers of persons living with HIV or AIDS per 100,000 population among black, non-Hispanics and Hispanics, white non-Hispanic males still account for the largest number of persons living with HIV/AIDS in Nebraska (Figure 27)

Figure 27. Number of Persons Living with HIV or AIDS on December 31, 2015 by Race, Ethnicity and Sex, Nebraska



The comparatively small numbers of minorities in the state explain the paradox of small numbers of diagnoses, but high rates of diagnoses and prevalence. The 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 small number of diagnoses, the impact of high infection rates within that population can be devastating. For that reason, both the rate per 100,000 and the absolute numbers of infection must be considered when prioritizing prevention and care activities.

Summary of Race and Ethnicity Data:

- Black, non-Hispanics and Hispanics are over-represented among HIV and AIDS diagnoses when population sizes are taken into account. Black, non-Hispanic males have HIV diagnosis rates six higher than white, non-Hispanic males.
- Black, non-Hispanic females have a diagnosis rate of over 22 times greater than white, non-Hispanic females.
- Absolute numbers and rates (per 100,000 population) need to be taken into consideration when prioritizing populations for prevention and care strategies.

HIV AND AIDS BY EXPOSURE CATEGORY

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

Disease Intervention Specialists (DIS) are public health workers trained in interviewing persons diagnosed with sexually transmitted diseases (STDs) and HIV infections to determine risks, identify contacts and to discuss measures to reduce transmission. In Nebraska, DIS focus on persons newly diagnosed with HIV, syphilis and gonorrhea. The DIS are located in the local health departments in the two largest counties (Douglas and Lancaster counties) and at the Nebraska Department of Health and Human Services Division of Public Health. After receiving reports on a positive lab test, the DIS reach out to the health care provider and the patient to determine risk factors, identify potential contacts in need of testing and/or treatment and direct the person to resources to assist them. For the newly identified persons with HIV infection, the DIS found an average of 6 contacts. The average time of interview was 13 days after being assigned to the DIS.

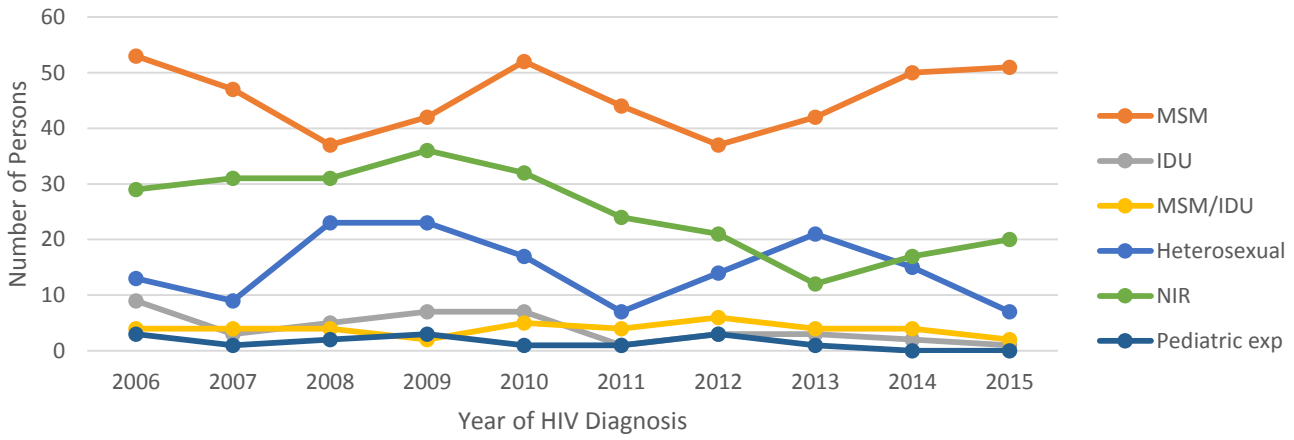
It is important to keep in mind that the category 'heterosexual contact' is likely to be underestimated, particularly for females and foreign-born persons. 'Heterosexual contact' includes person who report sexual contact with a person with documented HIV infection, or with a person at high risk for infection (IDU, hemophiliac, transplant/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 are considered to have 'no risk reported or identified' (NIR). Adults and adolescents born or had sex with someone born in a country where heterosexual exposure was believed to the predominant mode of transmission are no longer classified as having heterosexually acquired HIV. These reports are now classified as NIR, as long as there is no other information placing them in another category (MMWR 1994:43:15-60).

Exposure categories—HIV Diagnoses

The numbers of newly diagnosed HIV infections in Nebraska from 2006 to 2015 are shown in Figure 28. MSM remains the predominant mode of transmission. The rise in the numbers in MSM since 2012 might be attributed to the decrease in those with no identified risk. Of those with a known mode of transmission, heterosexual exposure was the second most common for the entire 10 year period. Of the 15 perinatal/pediatric

exposures, 4 were diagnosed after the age 13 all of whom were foreign-born. Of the remaining 11 pediatric cases, 7 were also foreign-born.

Figure 28. Newly Identified HIV Infections by Risk Factory, Nebraska, 2006 through 2015



Persons with no identified risk ranged from 12 to 36 over the past 10 years with an overall decline over those 10 years. Some persons classified as NIR can be reclassified as new information becomes available.

Figures 29 and 30 shows the modes of transmission stratified by country of origin. In most years heterosexual transmission was the highest when there was a mode of transmission identified.

Figure 29. Newly Identified HIV Infections among US-born Persons, Nebraska, 2006 through 2015

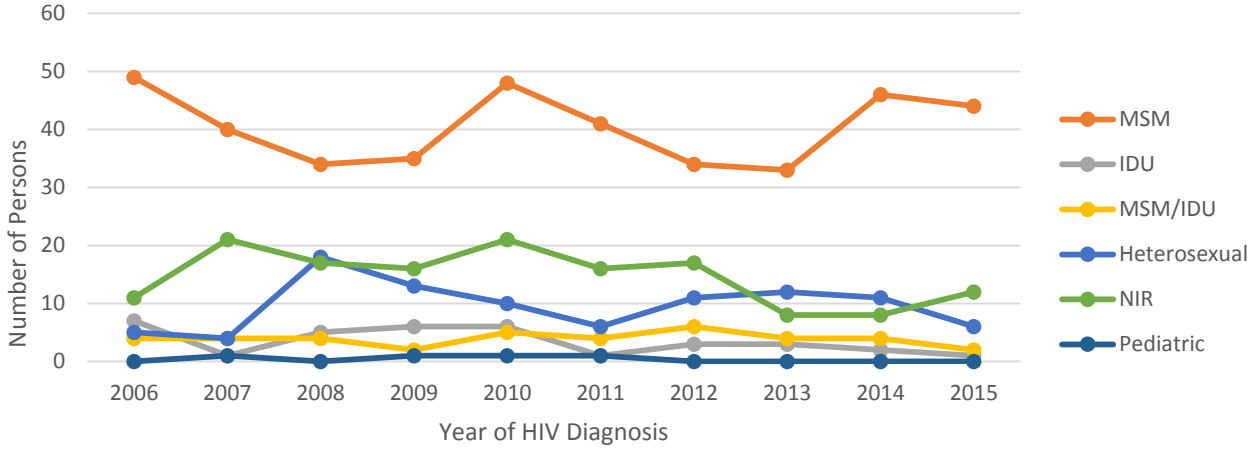
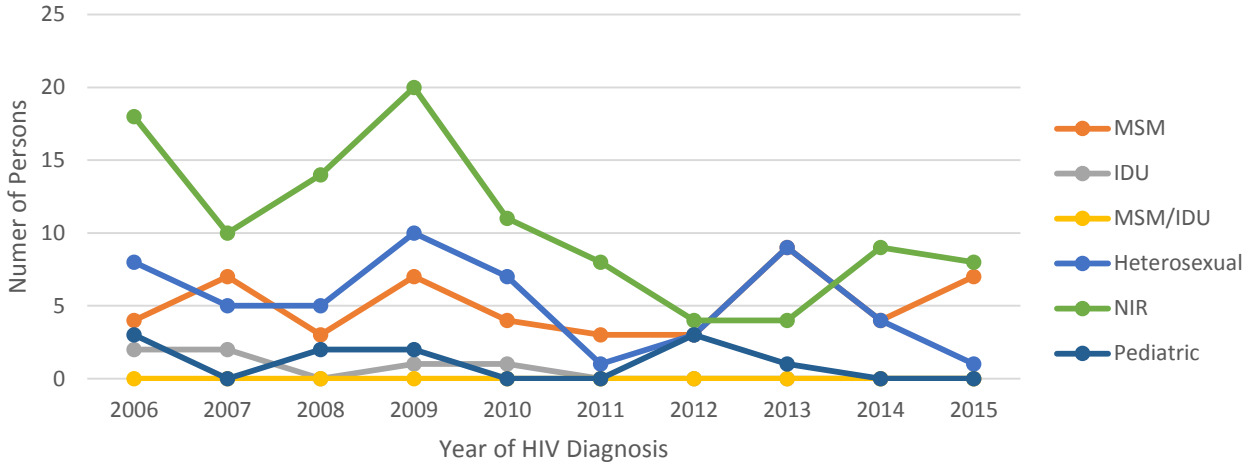


Figure 30. Newly Identified HIV Infections among Foreign-born Persons, Nebraska, 2006 through 2015



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.

Table 12 shows the exposure categories by country of origin for the newly identified HIV infections in 2015.

Table 12. Newly Diagnosed HIV Infections, by Exposure Category and Country of Origin, Nebraska, 2015

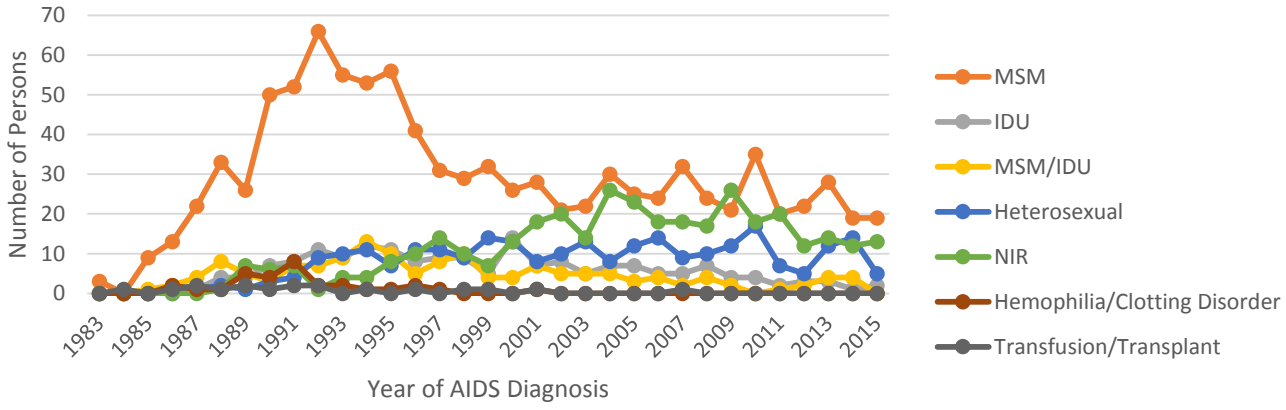
	All Persons		**USA**		**Other**	
Exposure Category	Number	Percent	Number	Percent	Number	Percent
MSM	51	63.0%	44	67.7%	7	43.8%
IDU	1	1.2%	1	1.5%	0	0.0%
MSM/IDU	2	2.5%	2	3.1%	0	0.0%
Heterosexual	7	8.6%	6	9.2%	1	6.3%
NIR	20	24.7%	12	18.5%	8	50.0%
TOTAL	**81**		**65**		**16**	

Sixty-three percent of all newly identified diagnoses were in MSM. Of the 51 males reporting MSM exposure, 44 (86%) were US-born. No identified risk was identified in nearly one-quarter of the new diagnoses in 2015.

Exposure Category—AIDS Diagnoses

Men who have sex with men have historically accounted for the largest numbers of adult and adolescent AIDS diagnoses in Nebraska. The numbers peaked at 66 in 1992 then dropped to a low of 19 in 2014 and 2015 (Figure 31).

Figure 31. Adult and Adolescent Diagnoses of AIDS by Exposure Category, Nebraska, 1983 to 2015



The number of AIDS diagnoses among heterosexual exposure has ranged from 5 in 2015 and 17 in 2010 since the overall peak occurred in 1992. Among those reporting IDU exposure only, the peak occurred in 2000 with 14 and dropped to 1 in 2014.

The decrease in IDU and MSM/IDU compared to the cumulative total of AIDS diagnoses can be seen in Table 13. The 2015 AIDS diagnoses with no identified risk unfortunately was higher than the historical average.

Table 13. Number of New and Cumulative AIDS Diagnoses, Nebraska

	2015		Cumulative	
Exposure Category	**Number**	**Percent**	**Number**	**Percent**
MSM	19	48.7%	967	48.5%
IDU	2	5.1%	184	9.2%
MSM/IDU	0	0.0%	148	7.4%
Heterosexual	5	12.8%	262	13.1%
NIR	13	33.3%	361	18.1%
Hemophilia/Clotting Disorder	0	0.0%	31	1.6%
Transfusion/Transplant	0	0.0%	18	0.9%
TOTAL	39		1994	

Exposure Category –Persons Living with HIV and AIDS

Numbers of PLWHA by exposure category are shown in Table 14. Because the population of these risk groups are unknown, we are not able to calculate rates per 100,000.

Just under half of all PLWHA in Nebraska are MSM. Of those with a known mode of exposure, heterosexual contact is the next most frequent with over 16% of PLWHA reporting that risk. Injecting drug users account for 8% of all PLWHA.

Table 14. Persons Living with HIV/AIDS, by Exposure Category and Country of Origin, Nebraska, as of December 31, 2015

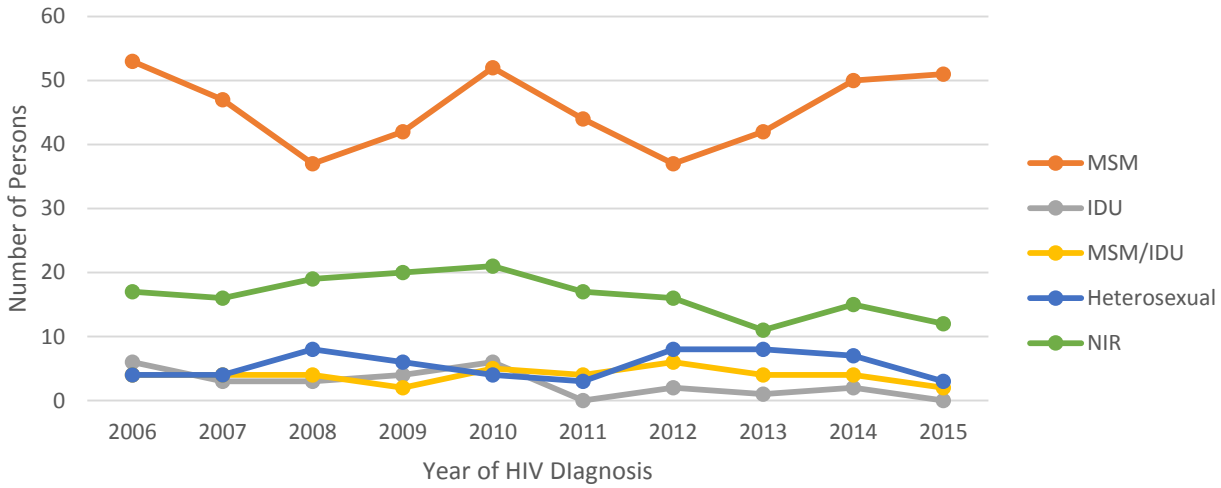
	All Persons		US-born		Foreign-born	
Exposure Category	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
MSM	1057	47.0%	889	54.1%	168	27.8%
IDU	160	7.1%	133	8.1%	27	4.5%
MSM/IDU	141	6.3%	119	7.2%	22	3.6%
Heterosexual	370	16.5%	243	14.8%	127	21.0%
NIR	470	20.9%	226	13.8%	244	40.3%
Pediatric	34	1.5%	22	1.3%	12	2.0%
Other	15	0.7%	10	0.6%	5	0.8%
TOTAL	**2247**		**1642**		**605**	

The exposure category could not be identified for forty percent of foreign-born PLWHA. The next most common risk category was MSM, followed by heterosexual contact.

Exposure Category and Sex—HIV Diagnoses

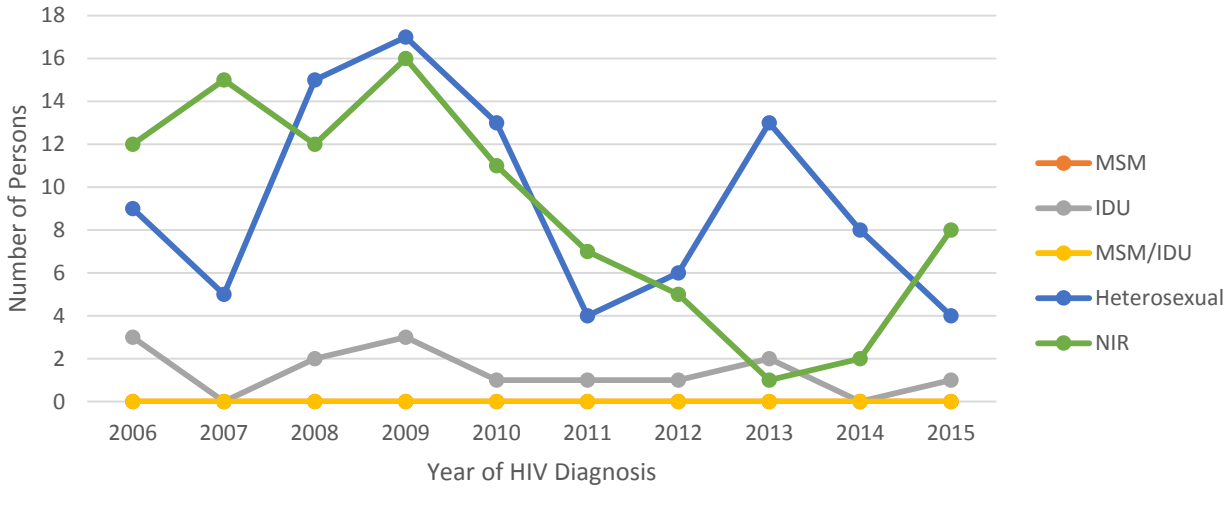
Figure 32 show the exposure category for adult and adolescent males for the past 10 years. The categories for IDU, MSM/IDU and heterosexual contact have accounted for less than 10 diagnoses, each.

Figure 32. HIV Diagnoses by Exposure Category for Adult and Adolescent Males, Nebraska, 2006 through 2015



For females, the exposure categories for adult and adolescent females is shown in Figure 33. Those with no identified risk dropped significantly from 2009 to 2013, but have since given up about half of that decrease. Heterosexual transmission peaked in 2009 with 17 and dropped to a low of 4 in both 2011 and 2015.

Figure 33. HIV Diagnoses by Exposure Category for Adult and Adolescent Females, Nebraska, 2006 through 2015



Exposure category by sex and country of origin diagnosed in 2015 is shown in Table 15. Three-quarters of males were among MSM. For US-born males, the percentage increased to 80% but for foreign-born males the percentage dropped to about 54%.

For females in diagnosed in 2015 with an identified exposure category, heterosexual contact was the most frequently identified risk. No risk was identified for the three foreign-born females diagnosed in 2015.

Table 15. Newly Identified HIV Infections, by Exposure Category and Country of Origin, Nebraska, 2015

Males	**All Persons**		**US-born**		**Foreign-born**	
Exposure Category	Number	Percent	Number	Percent	Number	Percent
MSM	51	75.0%	44	80.0%	7	53.8%
IDU	0	0.0%	0	0.0%	0	0.0%
MSM/IDU	2	2.9%	2	3.6%	0	0.0%
Heterosexual	3	4.4%	2	3.6%	1	7.7%
NIR	12	17.6%	7	12.7%	5	38.5%
TOTAL	**68**		**55**		**13**	
Females	All Persons		US-born		Foreign-born	
Exposure Category	Number	Percent	Number	Percent	Number	Percent
IDU	1	7.7%	1	10.0%	0	0.0%
MSM/IDU	0	0.0%	0	0.0%	0	0.0%
Heterosexual	4	30.8%	4	40.0%	0	0.0%
NIR	8	61.5%	5	50.0%	3	100.0%
TOTAL	**13**		**10**		**3**	

Exposure Category and Gender—AIDS Diagnoses

Figure 34 shows the cumulative AIDS diagnoses in Nebraska by exposure category. MSM comprise the largest exposure category, with a peak of 66 in 1992 to low of 19 in both 2014 and 2015.

Figure 34. Nebraska Adult and Adolescent Diagnoses of AIDS by Exposure Category 1983 to 2015

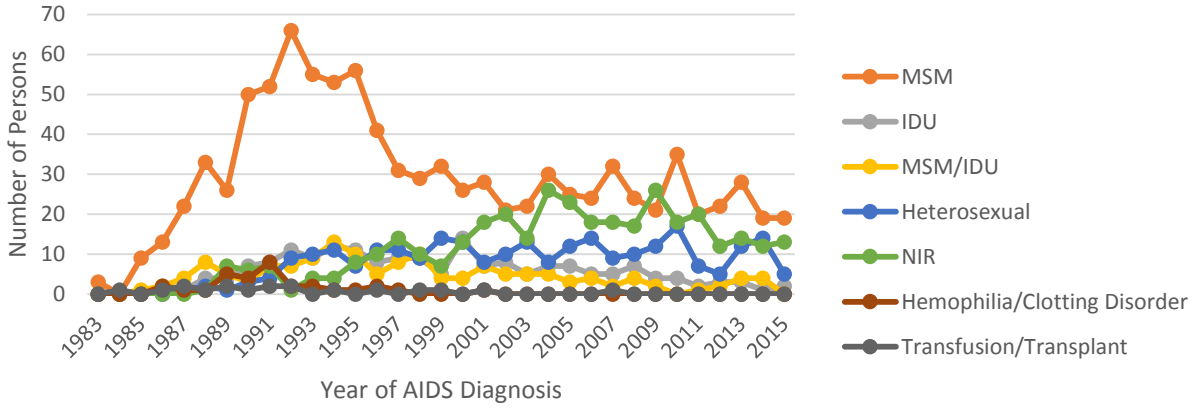


Table 16 shows the Nebraska AIDS diagnoses in 2015 as well as the cumulative total by exposure category. Of note both IDU and MSM/IDU were down significantly in 2015 compared to the cumulative total. Unfortunately, the only risk category that was higher in 2015 than the cumulative total was the no identified risk category which makes it difficult to identify trends.

Table 16. Nebraska AIDS Diagnoses in 2015 and Cumulative, by Exposure Category

	2015		Cumulative	
Exposure Category	**Number**	**Percent**	**Number**	**Percent**
MSM	19	48.7%	967	48.5%
IDU	2	5.1%	184	9.2%
MSM/IDU	0	0.0%	148	7.4%
Heterosexual	5	12.8%	262	13.1%
NIR	13	33.3%	361	18.1%
Hemophilia/Clotting Disorder	0	0.0%	31	1.6%
Transfusion/Transplant	0	0.0%	18	0.9%
TOTAL	39		1,994	

Exposure Category and Gender—Persons Living with HIV and AIDS

In looking at the exposure category of PLWHA by gender (Table 17), three-quarters of males were categorized as MSM, IDU or MSM/IDU with MSM accounting for the vast majority (61%). For females, nearly half reported heterosexual contact and another 12% reported IDU as the exposure category. Over one-third (36%) were classified as no identified risk (NIR). Females are over twice as likely to be classified as NIR (36% vs 17%). This could be attributed to the higher likelihood of females being exposed through

heterosexual contact and the requirement that a risk be documented for the partner. If the partner has no documented risk, the female is classified as NIR.

Table 17. Persons Living with HIV/AIDS as of December 31, 2015, by Exposure Category and Sex, Nebraska

	Males		Females		
Exposure Category	**Number**	**Percent**	**Number**	**Percent**	**TOTAL**
MSM	1,057	61.0%	NA		1,057
IDU	98	5.7%	62	12.1%	160
MSM/IDU	141	8.1%	NA		141
Heterosexual	121	7.0%	249	48.4%	370
NIR	288	16.6%	186	36.2%	474
Pediatric	17	1.0%	16	3.1%	33
Hemophiliac/Clotting factor	5	0.3%	0	0.0%	5
Transplant/Transfusion	6	0.3%	1	0.2%	7
TOTAL	**1,733**		**514**		**2,247**

Exposure Category and Race—HIV Diagnoses, 2011 through 2015

Table 18 shows the exposure category by race/ethnicity for newly diagnosed HIV infections in the report period. MSM was the greatest risk identified in each racial/ethnic group.

The large number categorized as NIR in the minority groups is a barrier to understanding how HIV is transmitted in these groups. If those identified with no identified risk can be classified into a known risk group, prevention efforts can be crafted to target those subgroups more efficiently.

Table 18. Newly Identified HIV Infections, by Exposure Category and Race/Ethnicity, Nebraska 2011 through 2015

Exposure	**White**		**Black**		**Hispanic**		**Asian**		**NH, AI/AN**		**Other**		**TOTAL**	
Category	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
MSM	140	61.4%	37	35.2%	33	57.9%	3	75.0%	4	44.4%	7	50.0%	224	53.7%
IDU	7	3.1%	2	1.9%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	10	2.4%
MSM/IDU	18	7.9%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	20	4.8%
Heterosexual	20	8.8%	31	29.5%	10	17.5%	0	0.0%	1	11.1%	2	14.3%	64	15.3%
NIR	41	18.0%	32	30.5%	13	22.8%	1	25.0%	3	33.3%	4	28.6%	94	22.5%
Pediatric	2	0.9%	1	1.0%	1	1.8%	0	0.0%	0	0.0%	1	7.1%	3	0.7%
TOTAL	**228**		**105**		**57**		**4**		**9**		**14**		**417**	

In looking at exposure category and country of origin for non-Hispanic blacks and Hispanics (Table 19), we can see that over one-quarter of blacks diagnosed with HIV from

2011 through 2015 are foreign-born. For Hispanics, that percentage is even higher (39%).

Table 19. Newly Identified HIV Infections among Non-Hispanic Blacks and Hispanics, by Exposure Category and Country of Origin, Nebraska, 2011 though 2015

	Black				Hispanic			
Exposure Category	**US-born**	**Percent**	**Foreign-born**	**Percent**	**US-born**	**Percent**	**Foreign-born**	**Percent**
MSM	36	46.8%	1	3.6%	14	63.6%	19	54.3%
IDU	2	2.6%	0	0.0%	0	0.0%	0	0.0%
MSM/IDU	2	2.6%	0	0.0%	0	0.0%	0	0.0%
Heterosexual	23	29.9%	8	28.6%	4	18.2%	6	17.1%
NIR	14	18.2%	18	64.3%	3	13.6%	10	28.6%
Pediatric	0	0.0%	1	3.6%	1	4.5%	0	0.0%
TOTAL	**77**		**28**		**22**		**35**	

Table 19 indicates that for US-born non-Hispanic black persons (African Americans), MSM is the most commonly identified exposure category (47%). Among foreign-born non-Hispanic black persons, the most common exposure category is heterosexual contact. However, the majority of foreign-born non-Hispanic persons had no identified risk, limiting the understanding of the epidemic among this group.

Among Hispanic persons, a slightly different pattern is observed. Hispanics, both US-born and foreign-born, were most often classified as MSM. Foreign-born Hispanics were twice as likely to report no identifiable risk.

Exposure Category and Race—AIDS Diagnoses

Differences between racial and ethnic groups are also evident among cumulative AIDS diagnoses (Table 20). A lower proportion of black, non-Hispanic persons has been attributed to MSM and a higher proportion attributed to heterosexual contact and injection drug use than among white, non-Hispanic persons.

Table 20. Persons Diagnosed with AIDS, by Exposure Category and Race/Ethnicity, Nebraska

	White		Black		Hispanic		Asian		NH, AI/AN		Other		TOTAL	
Exposure Category	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
MSM	722	58.9%	141	29.9%	78	35.1%	7	43.8%	9	30.0%	10	34.5%	**967**	**48.5%**
IDU	101	8.2%	54	11.4%	17	7.7%	0	0.0%	9	30.0%	3	10.3%	**184**	**9.2%**
MSM/IDU	110	9.0%	29	6.1%	7	3.2%	0	0.0%	2	6.7%	0	0.0%	**148**	**7.4%**
Heterosexual	105	8.6%	107	22.7%	37	16.7%	2	12.5%	5	16.7%	6	20.7%	**262**	**13.1%**
NIR	133	10.9%	131	27.8%	80	36.0%	7	43.8%	5	16.7%	7	24.1%	**361**	**18.1%**

Pediatric	7	0.6%	7	1.5%	0	0.0%	0	0.0%	0	0.0%	2	6.9%	**15**	**0.8%**
Hemophiliac/Clotting factor	32	2.6%	2	0.4%	1	0.5%	0	0.0%	0	0.0%	1	3.4%	**31**	**1.6%**
Transfusion/Transplant	15	1.2%	1	0.2%	2	0.9%	0	0.0%	0	0.0%	0	0.0%	**18**	**0.9%**
TOTAL	**1225**		**472**		**222**		**16**		**30**		**29**		**1,994**	

Comparison of HIV diagnoses from 2011 through 2015 and cumulative AIDS cases reveals almost no difference in the proportion of MSM except for Hispanics where there is a lower proportion of AIDS cases compared to recent HIV infections.

Exposure Category by Race, Ethnicity and Sex—HIV Diagnoses 2011 through 2015

Among males diagnosed with HIV from 2011 through 2015, MSM was the most common exposure category for all race and ethnicity groups (Table 21). Black, non-Hispanic males have a lower proportion classified as MSM compared to white, non-Hispanic males (49% vs 68%).

For females, heterosexual contact was the most common risk classification (55%) overall. However, over one-third reported no identified risk.

Table 21. Newly Identified HIV Infections, by Exposure Category, Race/Ethnicity and Sex, Nebraska 2011 through 2015

Males

Exposure Category	**White**		**Black**		**Hispanic**		**Asian**		**NH, AI/AN**		**Other**		**TOTAL**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
MSM	140	68.3%	37	49.3%	33	64.7%	3	100.0%	4	57.1%	7	58.3%	**224**	**63.5%**
IDU	4	2.0%	1	1.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**5**	**1.4%**
MSM/IDU	18	8.8%	2	2.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**20**	**5.7%**
Heterosexual	8	3.9%	14	18.7%	5	9.8%	0	0.0%	1	14.3%	1	8.3%	**29**	**8.2%**
NIR	33	16.1%	20	26.7%	12	23.5%	0	0.0%	2	28.6%	4	33.3%	**71**	**20.1%**
Pediatric	2	1.0%	1	1.3%	1	2.0%	0	0.0%	0	0.0%	0	0.0%	**4**	**1.1%**
TOTAL	**205**		**75**		**51**		**3**		**7**		**12**		**353**	

Females

Exposure Category	**White**		**Black**		**Hispanic**		**Asian**		**NH, AI/AN**		**Other**		**TOTAL**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%%**	**#**	**%**
IDU	3	13.04%	1	3.3%	0	0.0%	0	0.0%	1	50.0%	0	0.00%	**5**	**7.8%**
Heterosexual	12	52.17%	17	56.7%	5	83.3%	0	0.0%	0	0.0%	1	50.00%	**35**	**54.7%**
NIR	8	34.78%	12	40.0%	1	16.7%	1	100.0%	1	50.0%	0	0.00%	**23**	**35.9%**
Pediatric	0	0.00%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.00%	**1**	**1.6%**
TOTAL	**23**		**30**		**6**		**1**		**2**		**2**		**64**	

Exposure Category by Race, Ethnicity, and Sex—AIDS Diagnoses

Cumulative AIDS cases by exposure, race/ethnicity and sex are shown in Table 22. Two-thirds of all AIDS diagnoses among white, non-Hispanic males occurred in MSM. Among black, non-Hispanic males, only 42% were classified as NIR.

Among females, heterosexual contact was the most common exposure category. While no identified risk was the second most common exposure category for females diagnosed with AIDS, for some groups IDU was the second most common. Those include white, non-Hispanic and American Indian/Alaska Native females. However, IDU was not overly common among females recently diagnosed with HIV so IDU may not be as large a risk as it was in the past.

Table 22. Cumulative AIDS Diagnoses, by Exposure Category, Race/Ethnicity and Sex, Nebraska

Males

	White		Black		Hispanic		Asian		NH, AI/AN		Other		TOTAL	
Exposure Category	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
MSM	722	67.5%	141	42.7%	78	42.4%	7	70.0%	9	56.3%	10	52.6%	**967**	**59.4%**
IDU	59	5.5%	29	8.8%	13	7.1%	0	0.0%	1	6.3%	1	5.3%	**103**	**6.3%**
MSM/IDU	110	10.3%	29	8.8%	7	3.8%	0	0.0%	2	12.5%	0	0.0%	**148**	**9.1%**
Heterosexual	34	3.2%	53	16.1%	20	10.9%	0	0.0%	2	12.5%	1	5.3%	**110**	**6.8%**
NIR	100	9.4%	71	21.5%	64	34.8%	3	30.0%	2	12.5%	5	26.3%	**245**	**15.0%**
Pediatric	2	0.2%	4	1.2%	0	0.0%	0	0.0%	0	0.0%	1	5.3%	**7**	**0.4%**
Hemophiliac/Clotting factor	32	3.0%	2	0.6%	1	0.5%	0	0.0%	0	0.0%	1	5.3%	**36**	**2.2%**
Transfusion/ Transplant	10	0.9%	1	0.3%	1	0.5%	0	0.0%	0	0.0%	0	0.0%	**12**	**0.7%**
TOTAL	**1,069**		**330**		**184**		**10**		**16**		**19**		**1,628**	

Females

	White		Black		Hispanic		Asian		NH, AI/AN		Other		TOTAL	
Exposure Category	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
IDU	42	26.9%	25	17.6%	4	10.5%	0	0.0%	8	57.1%	2	20.0%	**81**	**22.1%**
Heterosexual	71	45.5%	54	38.0%	17	44.7%	2	33.3%	3	21.4%	5	50.0%	**152**	**41.5%**
NIR	33	21.2%	60	42.3%	16	42.1%	4	66.7%	3	21.4%	2	20.0%	**118**	**32.2%**
Pediatric	5	3.2%	3	2.1%	0	0.0%	0	0.0%	0	0.0%	1	10.0%	**9**	**2.5%**
Hemophiliac/Clotting factor	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**
Transfusion/Transplant	5	3.2%	0	0.0%	1	2.6%	0	0.0%	0	0.0%	0	0.0%	**6**	**1.6%**
TOTAL	**156**		**142**		**38**		**6**		**14**		**10**		**366**	

Summary of Exposure Data

- MSM remains the predominant exposure category among persons diagnosed with HIV and in 2015, 75% of new HIV diagnoses were classified as MSM.
- Excluding those classified as no identified risk, heterosexual contact was the second most common exposure category. Among females, heterosexual contact is the most commonly identified exposure category.
- Persons classified as no identified risk still constitute a significant total of newly diagnosed HIV infections (23% from 2011 through 2015).
- As a group, MSM account for just under half of all people living with HIV or AIDS in Nebraska as of December 31, 2015. Heterosexual contact was the second most common exposure category (16%). No identified risk was reported for 21% of PLWHA.
- Among women, heterosexual contact was the most common risk, accounting for 55% of the diagnoses in women in Nebraska from 2011 through 2015. Over one third (36%) of women had no identified risk during that time period. The lack of knowledge of HIV status or risk among heterosexual partners probably constitutes a majority of these unknown modes of transmission.

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

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

Section Highlights

- Chlamydia is the most commonly reported bacterial STD in Nebraska, with nearly 8,000 cases reported in 2015. Chlamydia has increased 18% since 2011.
- Gonorrhea has increased 28% since 2011 with a total of nearly 1,700 cases reported in 2015.
- While the numbers of syphilis are low compared to chlamydia and gonorrhea, the number of reported syphilis infections have increased nearly three-fold since 2011.
- For, the age range most affected are 15 to 24 years of age (65%). For gonorrhea, the age range most affected are 2 to 29 years (54%). While the most common age range for reported syphilis is 25-29 (30%), there is a much higher percentage of cases (40%) reported among those older than 35 years compared to chlamydia (7%) and gonorrhea (14%).
- Black, non-Hispanics are overrepresented among those diagnosed with chlamydia, gonorrhea and syphilis. In fact, black, non-Hispanic is the most common racial/ethnic group diagnosed with gonorrhea in Nebraska from 2011 through 2015. The proportion gonorrhea cases among white, non-Hispanics have increased from 21% to 34% of all cases from 2011 to 2015.
- Chlamydia was diagnosed in females at over twice as often as males while just over half of gonorrhea cases were reported in females. However for syphilis, males outnumbered females almost 9 to 1.

HIV/AIDS Risk Assessment and Behavioral Data

From 2011 and 2015, just under 45,000 persons were tested for HIV tests through the Nebraska DHHS HIV Prevention program.

Looking at the demographics of the CTS clients, black/African Americans and Hispanics were tested at a higher proportion than the overall Nebraska population (Table 23).

However, that is close to the proportion of HIV infections among these two minority populations in Nebraska.

Table 23. Demographic and Risk Characteristics of Persons Tested at Nebraska Counseling and Testing Sites, Nebraska, 2011 through 2015		
Race/Ethnicity	**Total**	**Percent**
White	25,399	56.5%
Black/African American	10,138	22.6%
Hispanic	6,730	15.0%
Multi - race	1,018	2.3%
American Indian or Alaska Native	817	1.8%
Native Hawaiian or Pacific Islander	102	0.2%
Unknown	1,176	2.6%
Sex		
Female	20,838	46.4%
Male	24,037	53.5%
Transgender - FTM	5	0.0%
Transgender - MTF	20	0.0%
Transgender - Unspecified	4	0.0%
Unknown	38	0.1%
Risk		
High-risk heterosexual contact	27,572	61.4%
High-risk sex with transgender or female to female contact	318	0.7%
IDU	1,030	2.3%
Low-risk heterosexual contact	7,821	17.4%
Low-risk sex with transgender or female to female contact	107	0.2%
MSM	5,942	13.2%
MSM/IDU	72	0.2%
MTFSM	28	0.1%
MTFSM/IDU	1	0.0%
Unknown	1,937	4.3%

Positives

Persons testing positive at CTS sites from 2011 to 2015 were predominantly male (Table 24). The race/ethnic breakdown is similar to the overall HIV epidemic with Black/African Americans over-represented. The majority of those testing positive are MSM.

Table 24. Demographic and Risk Characteristics of Persons Testing Positive for HIV at Nebraska Counselling and Testing Sites, Nebraska, 2011 through 2015		
Race/Ethnicity	**Total**	**Percent**
White	88	53.3%
Black	41	27.4%
Hispanic	21	13.0%
Multi-race	2	1.2%
NH, AI/AN	1	0.6%
Asian	3	22.0%
Native Hawaiian or Pacific Islander	1	0.6%
Unknown	4	2.5%
Sex		
Male	139	85.6
Female	22	14.4
Risk		
High-risk heterosexual contact	41	26.00%
IDU	1	0.70%
Low-risk heterosexual contact	7	5.20%
MSM	105	63.00%
MSM/IDU	3	2.20%
Unknown	4	3.00%

Sexually Transmitted Disease (STD) data

STDs are among the most frequently reported infectious diseases and constitute a significant health problem in Nebraska. While STD rates suggest risker sexual behavior, the do not necessarily correlate with HIV infection. However, the presence of non-ulcerative STDs, such as chlamydia and gonorrhea, increase the likelihood of HIV transmission.

The three bacterial STDs reportable to the Nebraska Department of Health and Human Services 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 where race, age or county of residence is missing. Race is missing for a number of cases, especially chlamydia. 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 (ex, only case with lab confirmation of disease are reported) and may not be necessarily representative of the characteristics of all infected individuals.

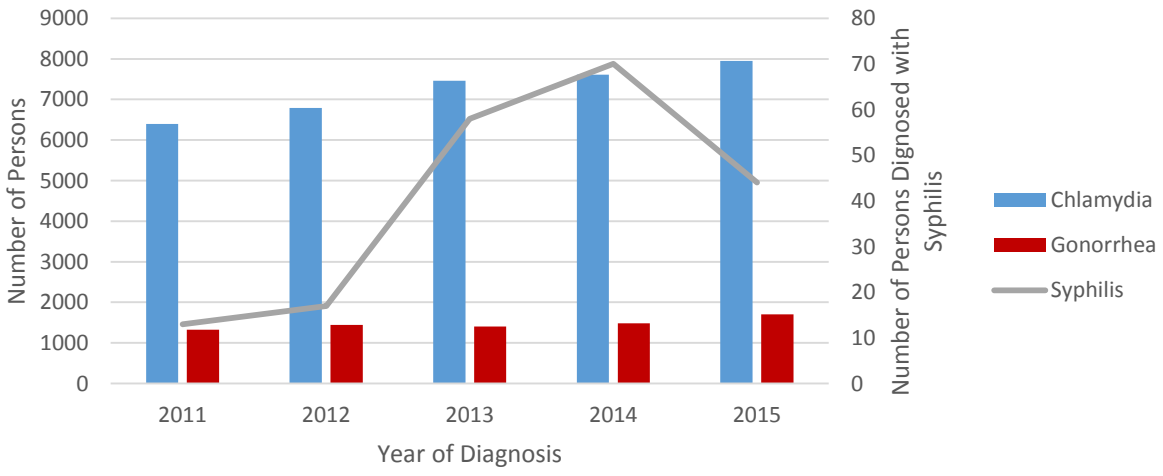
Women are generally reported with STDs more frequently than men. Because of the nature of the specimen collection procedure and of screening criteria for publicly funded screening programs, women are often tested for STDs as a routine part of a routine pelvic exam, while men are tested only if they are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

The Nebraska Infertility Prevention Plus Project (NIPPP) provides screening for chlamydia to all sexually active women who are 25 years of age or younger. Women over age 25 can receive the testing if they have certain risk factors such as new or multiple partners in the last 90 days, contact with an infected partner, or clinical signs or symptoms of disease. The main purpose of NIPPP is to implement prevention strategies, including screening, that will reduce the complications caused by Chlamydia trachomatis. From the beginning, women have been targeted by the project. The complications associated with women are more costly, women access services more readily. Also, by screening women, the partners can be treated.

There are currently 93 clinics enrolled in NIPPP Project sites consists of Family Planning and Title X clinics, student health centers, correctional facilities, community health centers, tribal clinics, HIV clinics, homeless shelters, treatment facilities, and 2 local health departments in high morbidity areas. NIPPP testing identified 1,918 persons with chlamydia in 2015, which is 24% of all the persons reported with chlamydia in Nebraska.

New cases of three reportable STDs in Nebraska are shown in Figure 35. Chlamydia is the most frequently reported STD in Nebraska with 7974 infections reported in 2015. This is the highest number of cases reported in at least twenty years. For the past two decades, the incidence of gonorrhea has been fluctuated between 1,100 and 1,700 cases per year. The incidence of syphilis increased significantly since 2011 (13 cases reported), peaking at 65 in 2014.

Figure 35. Number of Reported STDs, Nebraska, 2011 through 2015



Chlamydia

In the United States, urogenital infections of *Chlamydia trachomatis* occur very frequently among sexually active adolescents and young adults. CDC estimates that 2.86 million people are newly infected annually. Asymptomatic infection is common among both men and women. Sexually active adolescents and young adults should be routinely screened for chlamydia during annual examinations, even if symptoms are not present. In women, untreated chlamydia can result in pelvic inflammatory disease (PID), which can cause infertility, ectopic pregnancy, and chronic pelvic pain.

Chlamydia remains the most common reported bacterial STD in the US and Nebraska. In 2015 there were 7,974 cases (420 cases per 100,000 population) reported to the STD Prevention Program. Females account for 68% of all the reported cases in 2015 (Table 25).

Table 25.	**Reported Chlamydia Infections by Sex, Nebraska 2011 through 2015**					
Year	2011	2012	2013	2014	2015	**TOTAL**
Sex						
Male	1,986	2,061	2,218	2,331	2,545	**11,141**
Female	4,776	4,636	4,969	5,091	5,429	**24,901**
TOTAL	**6,762**	**6,697**	**7,187**	**7,422**	**7,974**	**36,042**

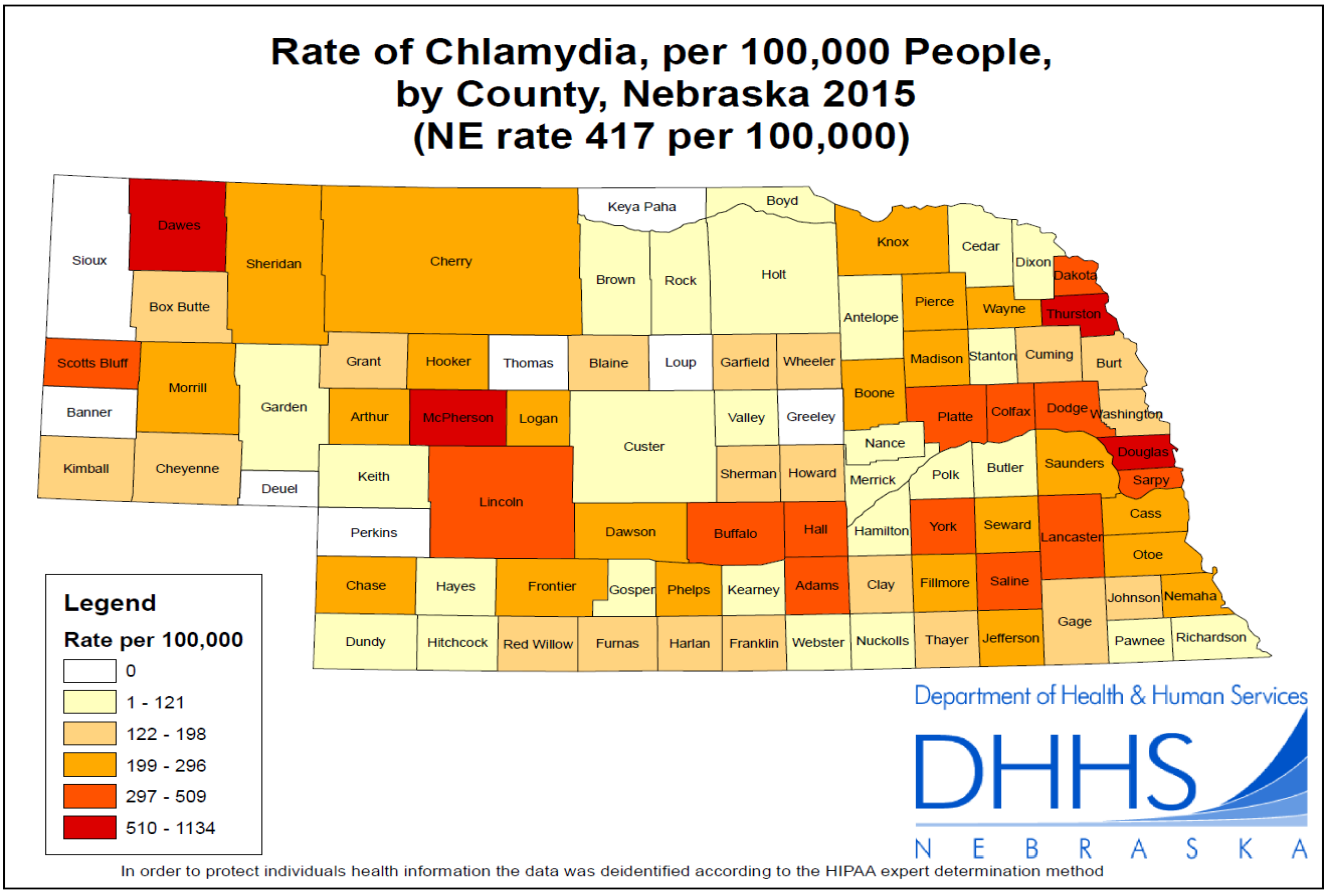
Table 26 shows the number of reported chlamydia infections by age group. The vast majority of reports are in persons between 15 and 29 years of age with only 16% outside of that age range.

Table 26:	**Reported Chlamydia Infections, by Age Group, Nebraska, 2011 through 2015**									
Age Group	**Year**									
	2011		**2012**		**2013**		**2014**		**2015**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
<10	4	0.06	6	0.09	9	0.12	6	0.08	3	0.05
10-14	35	0.55	35	0.52	33	0.44	29	0.38	57	0.73
15-19	1588	25	1626	24	1651	22	1654	21.75	1943	25
20-24	2661	42	2869	42	3188	43	3234	43	3143	40
25-29	1198	19	1307	19	1487	20	1533	20	1481	19
30-34	501	8	529	8	615	8	672	9	716	9
35-44	308	5	319	5	374	5	365	5	388	5
45+	97	2	88	1	87	1	111	1	120	2
Total	**6,392**	**100**	**6,779**	**100**	**7,444**	**100**	**7,604**	**100**	**7,851**	**100**

Table 27, shows the number of reported cases of chlamydia by race/ethnicity in 2015. White, non-Hispanics account for 43% of the reported cases, followed by black, non-Hispanics with 19%.

Table 27. Number of Chlamydia Infections, by Race/Ethnicity, Nebraska 2011 through 2015										
Race/Ethnicity	**Year**									
	2011		**2012**		**2013**		**2014**		**2015**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
AI/AN	122	2	94	1	111	1	142	2	170	2
Asian	41	1	63	1	60	1	87	1	80	1
Black	1,633	26	1,570	23	1,487	20	1,548	20	1,503	19
Hawaiian/PI	2	0	14	0	13	0	16	0	21	0
Hispanic	476	7	452	7	579	8	602	8	762	10
Multiple	7	0	25	0	23	0	14	0	20	0
White	2,278	36	2,210	33	2,301	31	2,560	34	2,733	43
Other	80	1	75	1	91	1	104	1	296	4
Refused	0	0	0	0	158	2	185	2	0	0
Unknown	1,759	27	2,287	34	2,592	35	2,319	31	2,273	29
Total	**6,398**	**100**	**6,790**	**100**	**7,415**	**100**	**7,577**	**100**	**7,858**	**100**

The geographic distribution of chlamydia infections is shown in Figure 36. Higher rates are typically seen in more populated areas.



Gonorrhea

In the US, CDC estimates that there are 820,000 new infections of *Neisseria gonorrhoeae* each year. Most infection among men produces symptoms that cause them to seek curative treatment soon enough to prevent serious sequelae but this may not be soon enough to prevent transmission to others. Many infections among women do not produce recognizable symptoms until complications (PID) have occurred. Both symptomatic and asymptomatic cases of PID can result in tubal scarring that leads to infertility or ectopic pregnancy. Because gonococcal infections among women often are asymptomatic, an important component of gonorrhea control in the US and Nebraska continues to be the screening of women at high risk for STDs.

The number of reported cases with gonorrhea in Nebraska increased incrementally form 2011 to 2015 to 1,699 reported cases (90 per 100,000 population), up from 1,348 (73 per 100, 000) in 2011 (Table 28).

Table 28.	**Reported Gonorrhea Infections, by Sex, Nebraska 2011 through 2015**					
Year	**2011**	**2012**	**2013**	**2014**	**2015**	**TOTAL**
Sex						
Male	529	633	685	684	841	3,372
Female	819	775	691	763	858	3,906
TOTAL	**1,348**	**1,408**	**1,376**	**1,447**	**1,699**	**7,278**

The age distribution of persons reported with gonorrhea is shown below in Table 28. The age distribution is slightly older than chlamydia. For gonorrhea, 29% of persons reported are over the age of 29.

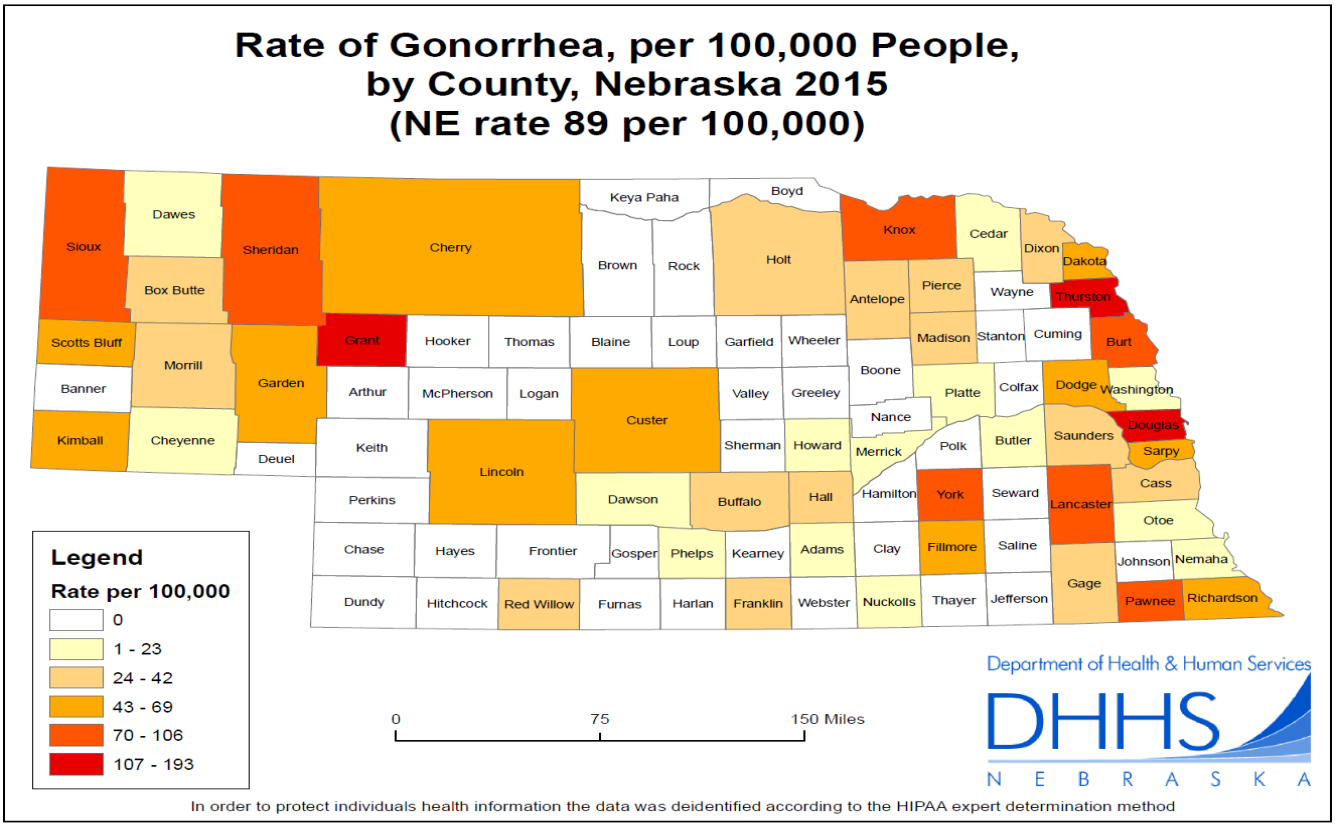
Table 28:	**Reported Gonorrhea Infections, by Age Group, Nebraska, 2011 through 2015**									
Age Group	**Year**									
	2011		**2012**		**2013**		**2014**		**2015**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
<10	1	0.08	0	0	0	0	1	0.07	1	0.06
10-14	6	0.45	2	0.14	7	0.5	8	0.54	8	0.48
15-19	332	25	292	20	234	17	212	14	281	17
20-24	527	40	521	36	463	33	520	35	540	32
25-29	241	18	309	21	331	24	337	23	363	22
30-34	94	7	161	11	162	12	182	12	246	15
35-44	96	7	101	7	144	10	147	10	168	10
45+	29	2	55	4	59	4	72	5	59	4
Total	**1,326**	**100**	**1,441**	**100**	**1,400**	**100**	**1,479**	**100**	**1,672**	**100**

Table 29 shows the incidence by race/ethnicity for 2015. While black, non-Hispanics are the most common racial/ethnic group, the percent of persons Black, non-Hispanic has

dropped from 50% in 2011 to 39% in 2015. White, non-Hispanics increased from 21% to 34% during that time.

Table 29. Reported Gonorrhea Infections by Race/Ethnicity, Nebraska, 2011 through 2015										
Race/Ethnicity	**Year**									
	2011		**2012**		**2013**		**2014**		**2015**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
AI/AN	24	2	22	2	21	2	33	2	39	2
Asian	9	1	10	1	7	1	5	0	6	0
Black	668	50	596	41	547	39	595	40	652	39
Hawaiian/PI	0	0	0	0	2	0	3	0	2	0
Hispanic	51	4	60	4	51	4	53	4	99	6
Multiple	2	0	8	1	4	0	8	1	6	0
White	274	21	406	28	389	28	465	32	570	34
Other	13	1	13	1	11	1	17	1	62	4
Refused	1	0	0	0	22	2	31	2	0	0
Unknown	286	22	326	23	343	25	262	18	238	14
Total	1,328	100	1,441	100	1,398	100	1,472	100	1,673	100

Figure 37 shows the geographic distribution of gonorrhea from 2011 to 2015.



Syphilis

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

Cases of syphilis reported to the Nebraska Department of Health and Human Services 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 than can last an entire lifetime. Other reasons for case reporting include the prevention of tertiary syphilis or neurosyphylis and spread to others.

Table 30 shows the number of syphilis infections by sex. Males predominant by almost a 9 to 1 ratio from 2011 through 2015.

Table 30. Reported Syphilis Infections, by Sex, Nebraska, 2011 through 2015

Year	2011	2012	2013	2014	2015	TOTAL
Sex						
Male	12	13	46	59	46	176
Female	1	3	8	6	2	20
TOTAL	**13**	**16**	**54**	**65**	**48**	**196**

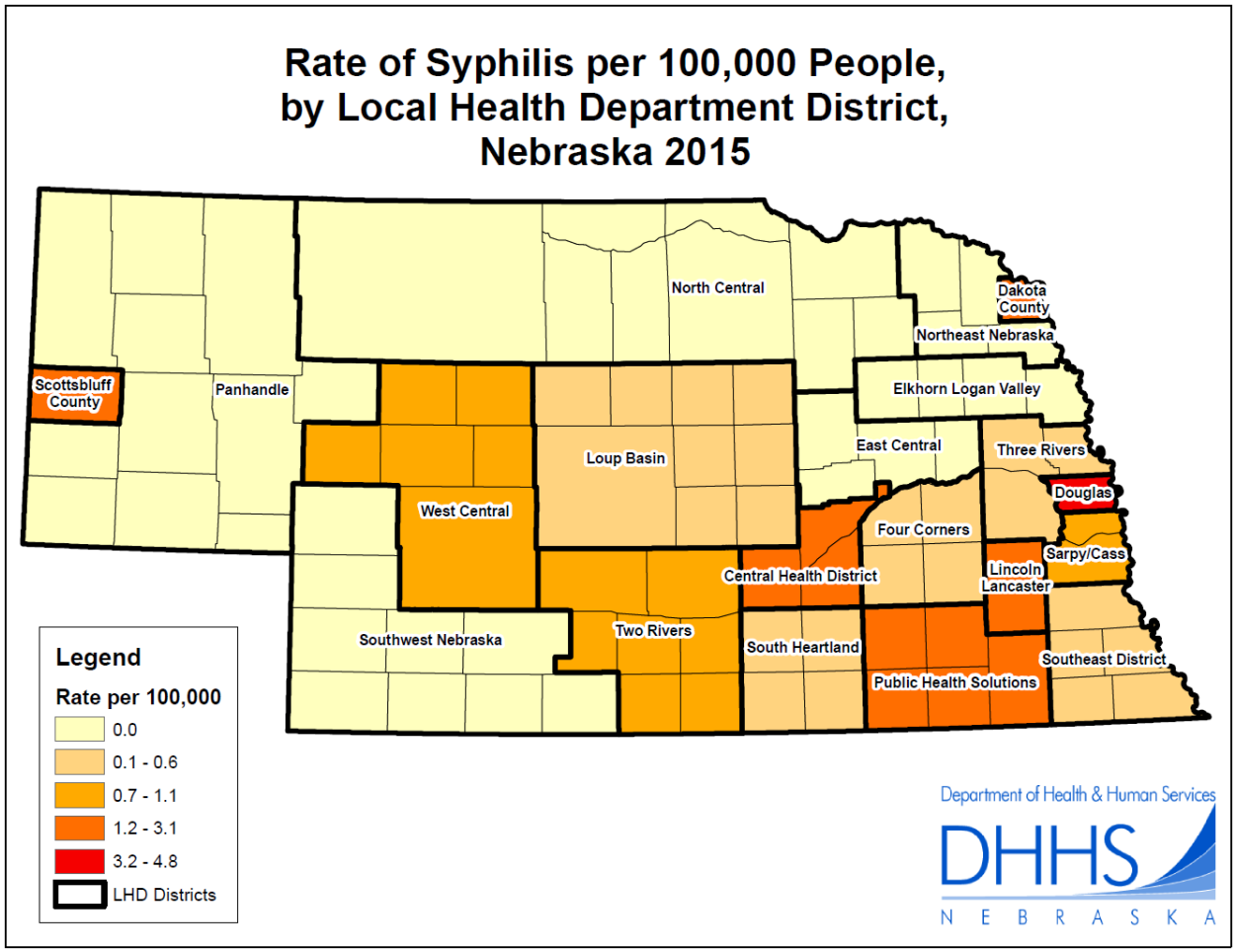
Table 31 shows the distribution of reported Syphilis infections by age group. Syphilis differs from both chlamydia and gonorrhea by being occurring more frequently in persons over the age of 29. From 2011 through 2015, 54% of reported infections occurred in person aged 30 years or older.

Table 31: Number and Percent of Syphilis Cases by Age Group and Year													
Age Group	**Year**												
	2010		**2011**		**2012**		**2013**		**2014**		**2015**		**Total**
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
15-19	1	8	1	8	0	0	1	2	0	0	1	2	4
20-24	0	0	3	23	3	18	12	21	17	24	6	14	41
25-29	0	0	1	8	4	24	20	34	16	23	12	27	64
30-34	0	0	1	8	3	18	11	19	8	11	8	18	31
35-44	6	50	3	23	2	12	7	12	14	20	9	20	41
45+	5	42	4	31	5	29	7	12	15	21	8	18	44
Total	**12**	**100**	**13**	**100**	**17**	**100**	**58**	**100**	**70**	**100**	**44**	**100**	**214**

Table 32 shows the reported syphilis infections by race/ethnicity. Similar to gonorrhea, the proportion of infections among black, non-Hispanics has dropped from 2011 to 2015, while the proportion among white, non-Hispanics has increased.

Table 32: Number and Percent of Syphilis Cases by Race/Ethnicity										
Race/Ethnicity	**Year**									
	2011		**2012**		**2013**		**2014**		**2015**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
AI/AN	0	0	0	0	1	2	2	3	3	6
Asian	0	0	0	0	2	3	2	3	1	2
Black	5	38	6	35	15	26	24	34	10	20
Hispanic	0	0	2	12	2	3	1	1	2	4
Multiple	0	0	0	0	1	2	0	0	0	0
White	4	31	7	41	28	48	30	43	23	46
Other	0	0	0	0	0	0	1	1	0	0
Unknown	4	31	2	12	9	16	10	14	10	20
Total	**13**	**100**	**17**	**100**	**58**	**100**	**70**	**100**	**49**	**100**

Figure 38 shows the geographic distribution of syphilis in Nebraska from 2011 through 2015.



Viral Hepatitis

Viral hepatitis describes those infections that can cause inflammation of the liver, are infectious and are infectious. Common symptoms of viral hepatitis include jaundice, abdominal pain, fatigue, loss of appetite, and nausea. Infections caused by hepatitis A, B, and C are reportable in Nebraska.

Hepatitis C

There were an estimated 30,000 new hepatitis C virus (HCV) infections in the US in 2014 as well as an additional 3.9 million chronic HCV infections. Using CDC's national estimates that approximately 1.3 to 1.9% of the state's population or 24,650 to 36,028 are infected with HCV. Since 2011, 5,223 cases of HCV have been reported to NE DHHS. CDC recently made recommendations that each person born between 1946 and 1964 be tested for HCV infection.

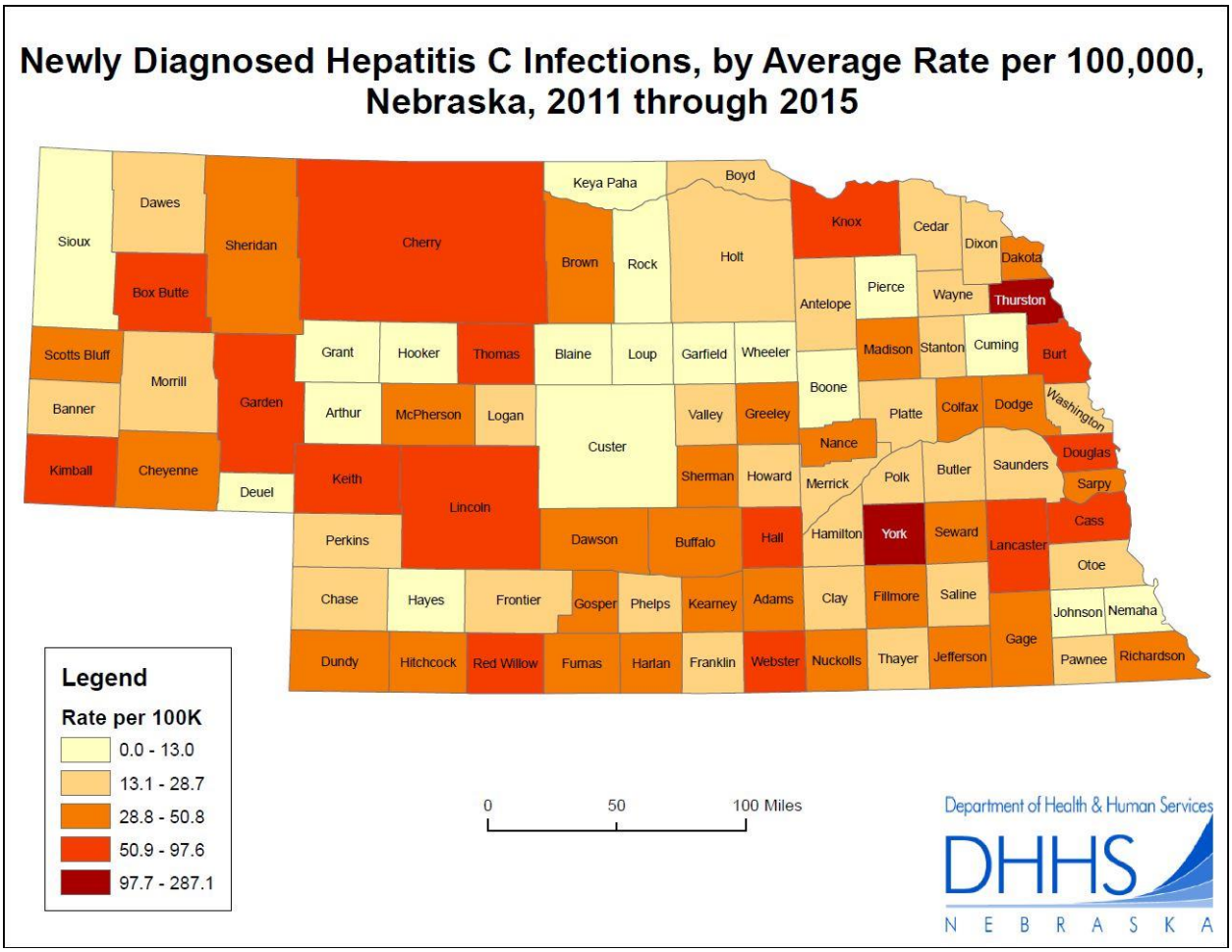
That can be seen in the increase in persons reported HCV infections over the age of 55 years since 2011 (Table 33).

Table 33. Number of Reported Hepatitis C Infections, by Age Group, Nebraska, 2011 through 2015						
Age Group	**2011**	**2012**	**2013**	**2014**	**2015**	**TOTAL**
00 to 12 yrs	5	4	5	9	4	**27**
13 to 14 yrs	0	0	1	1	0	**2**
15 to 24 yrs	35	59	78	71	81	**324**
25 to 34 yrs	121	119	143	163	142	**688**
35 to 44 yrs	149	156	196	156	170	**827**
45 to 54 yrs	341	292	299	281	269	**1,482**
55 to 64 yrs	210	255	274	336	378	**1,453**
65 or greater	45	59	65	107	134	**410**
TOTAL	**906**	**944**	**1,061**	**1,124**	**1,178**	**5,213**

The vast majority of newly identified HCV infections did not have data on race or ethnicity (Table 34). Of those that did, the most commonly reported race was white during 2011 through 2015.

Table 34. Number of Reported HCV Infections, by Race, Nebraska, 2011 through 2015						
RACE	**2011**	**2012**	**2013**	**2014**	**2015**	**TOTAL**
American Indian or Alaska Native	12	9	9	15	12	**57**
Asian	2	0	5	5	0	**12**
Black or African American	5	5	7	25	30	**72**
Native Hawaiian or Other Pacific Islander	0	1	2	1	0	**4**
Unknown	540	497	524	424	345	**2,330**
White	90	98	90	151	221	**650**
TOTAL	**649**	**610**	**637**	**621**	**608**	**3,125**

Nearly two-thirds (65%) of the newly diagnosed hepatitis C infections live in the three largest counties in Nebraska (Douglas, Lancaster and Sarpy), however, HCV is present across Nebraska (Figure 39).



Section 2

Ryan White Care Act Special Questions and Considerations

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

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

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

This section describes the characteristics of person living with HIV in Nebraska who receive Ryan White services, their patterns of use of HIV primary care and support services and a description of who is not receiving HIV primary medical care. The information presented includes a description of Ryan White Program and its services; a breakdown of program participants by demographic information, housing status, and

medical insurance provider; and a summary of the utilization of Ryan White Part B and C services. The information may be used by prevention and care planning groups to identify gaps in services or to help target services to specify populations of HIV-positive persons.

Section Highlights

- Nebraska receives Ryan White Part B and Part C funds for the delivery of essential services to individuals and families with HIV disease. In 2015, 474 persons received Ryan White Part B services (not including ADAP), including medical and non-medical case management, mental health, emergency financial assistance, transportation services, and other support services. Medical case management was the most utilized Part B-funded service.

- The AIDS Drug Assistance Program (ADAP) enrolled 993 persons living with HIV/AIDS in 2015 receiving either the medication assistance or the insurance assistance.

- A community health center and the UNMC HIV Clinic receive Part C funds in Nebraska. Beyond assistance with primary medical care, case management, treatment adherence counseling and oral health were the services most utilized.

- In general, persons utilizing Part B and C and ADAP services were similar in demographics to persons living with HIV as presented earlier in this profile.

- At the end of 2014, there were 2247 persons in Nebraska living with HIV/AIDS. Of these 862 were out of care (no evidence of CD4 or viral loads). Persons out of care were more likely to have HIV (non-AIDS), be members of a racial minority, have been born outside the US, reside in rural counties or have lived longer since having been diagnosed with HIV.

Ryan White HIV/AIDS Treatment Extension Act Services

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

Congress reauthorized the CARE Act in 1996, 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. Nebraska receives funding for Part A, B C and an AIDS Education Training Center.

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 medications through the AIDS Drug Assistance Program (ADAP).

The Part B program, which includes ADAP, serves as the payer of last resort for persons living with HIV (PLWH) who are uninsured or who have inadequate insurance and cannot cover the costs of care on their own. In other words, clients must be ineligible for all other resources, including Medicaid, before being enrolled. ADAP also assists individuals who are low income and have adequate insurance coverage, but cannot cover the costs of their premiums, medication, copayments and deductibles. In 2015, 474 Nebraskans received support services through the Ryan White Part B program and 933 were enrolled in ADAP. Nebraska has 7 service providers that serve all counties throughout the state.

AIDS Drug Assistance Program

Nebraska's ADAP provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured persons living with HIV/AIDS. Nebraska's 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 this assistance, individuals must make less than 300% of the Federal Poverty Limit (supportive services remain at 200%).

The ADAP is administered by UNMC and uses a centralized pharmacy that distributes drugs to clients statewide. The Ryan White ADAP Drug Utilization Review Committee provides periodic review of ADAP, including the ADAP formulary. One hundred forty-eight medications are provided to low-income individuals with HIV. The categories of drugs include nucleoside analogues, non-nucleoside reverse transcriptase inhibitors, nucleotide reverse transcriptase inhibitors, protease inhibitors, fusion inhibitors, PCP prophylaxis medications, antidepressant/anxiety medications, antipsychotic/hypnotic medications, antifungals, anti-mycobacterials, general antivirals, and an anti-neoplastic medication.

Part C Early Intervention Services Programs

Ryan White Part C funds are provided directly to clinics to support primary medical care and other services for low-income people with HIV disease. There are two Part C clinics in the state that are accessible to low-income, HIV-positive Nebraska residents. One is CAPWN in Gering and the other is at the University of Nebraska Medical Center in Omaha.

Part C services include:

- Medical evaluation, clinical care, antibody testing and risk-reduction counseling;

- Antiretroviral therapies; protection against opportunistic infections; an ongoing medical, oral, nutritional, psychosocial and other care services for HIV-infected clients;
- Case management to ensure access to services and continuity of care for HIV-infected clients; and
- Attention to other health problems that occur frequently with HIV infection, including TB and substance abuse.

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

Characteristics of Part B Support Service Clients

Primary Demographic Characteristics

Table 35 shows the basic demographics of Ryan White Part B recipients in Nebraska for 2015. In terms of race/ethnicity, both Black/African American and Hispanics received services a little over the overall HIV proportion seen in Nebraska with white, non-Hispanics below the proportion in the overall HIV patient demographics. Otherwise, it is fairly consistent with the demographics seen in the Nebraska PLWHA population.

Table 35. Demographic Characteristics of Persons Receiving Ryan White Part B, Nebraska, 2015

Race*	**Number**	**Percent**
White	312	64.4%
Black/African American	143	29.5%
American Indian or Alaska Native	14	2.9%
Asian	6	1.2%
Native Hawaiian or Pacific Islander	1	0.2%
Unknown	8	1.7%
Ethnicity		
Hispanic	85	17.9%
Non-Hispanic	389	82.1%
Sex		
Male	335	70.7%
Female	133	28.1%
Transgender	3	0.1%
Unknown	3	0.1%
Age		
<12 years	1	0.2%

13-24 years	19	4.0%
25-44 years	202	42.6%
45-64 years	234	49.4%
65 or older	19	4.0%
Federal Poverty Level		
Below 100% of the FPL	292	62%
100%-138% of the FPL	65	14%
139%-200% of the FPL	73	15%
201%-250% of the FPL	27	6%
251%-400% of the FPL	12	3%
401%-500% of the FPL	5	1%
*data includes persons categorized in multiple race categories		

A similar breakdown for ADAP and Part C were not available at the time of this report.

Question 2: What are the utilization pattern of HIV services by persons with HIV in Nebraska?

Utilization of Ryan White Part B Support Services

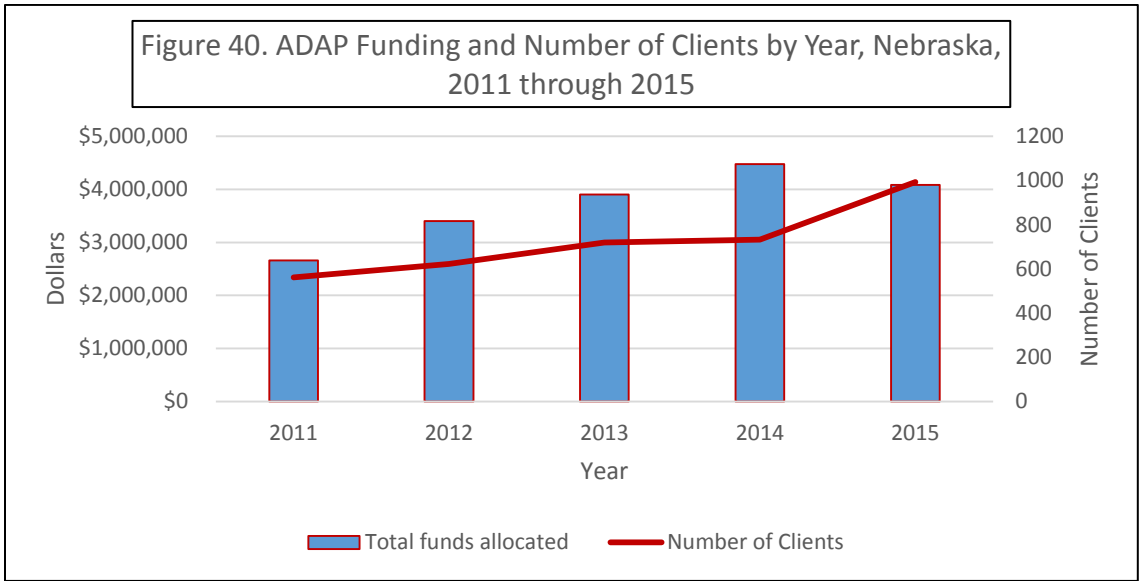
The allocations of Ryan White Part B for fiscal year 2015 is shown in Table 36. Over 90% went into core medical services. Of the nearly $2.37 million for core medical services, approximately 75% went into ADAP. Of the remaining $600,000 for core medical services, 77% went toward medical case management.

For support services, over 72% went to minority outreach (39%) and housing assistance (33%).

Table 36:	**Ryan White Part B FY 2015, Allocations**		
Core Medical Services ($2,366,091)			
	ADAP	$1,766,038	
	Mental Health	$18,713	
	Medical Case Management	$463,944	
	Oral Health	$40,000	
	Outpatient Ambulatory Services	$77,396	
Support Services ($167,501)			
	Direct Client Services		
	Housing Assistance	$56,098	
	Utility Assistance	$7,812	
	Transportation	$16,213	
	Food/Non-Food Items	$8,008	
	Minority Outreach	$65,108	
	Psychosocial Support	$14,262	

Utilization of the AIDS Drug Assistance Program

The five year funding trend is shown in Figure 40 along with the number of clients. Overall, both the funding and number of clients increased from 2011 to 2015. The funding peaked in 2014 while the number of clients peaked in 2015.



Utilization of Ryan White Part C Early intervention services

The services provided by Ryan White Part C in fiscal year 2015 is shown in Table 37. Primary health care constitutes the largest item in RW Part C. For the Western Nebraska allocation, dental health and mental health/substance abuse was not broken out from primary health care.

Table 37: Ryan White Part C, FY 2015 Allocations

Services	UNMC	Western Nebraska
Primary Health Care (includes diagnostic testing)	$519,921	$33,914
Dental Health	$36,202	NA
Mental Health/Substance Abuse	$19,863	NA
Medical Case management	NA	$28,822
TOTAL	**$575,986**	**$62,736**

Table 38 shows the number of clients in Ryan White Part C by year and location. Overall there was a decline (19%) in the number of clients from 2011 to 2015, largely due to persons accessing healthcare through the Affordable Care Act. However, there was an increase of 21% from 2014 to 2015.

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

Table 38: Comparison of number of clients served yearly by Nebraska Ryan White Part C Program, 2011-2015

	Number of Clients		
Year	**UNMC Part C Program**	**Western Nebraska**	**Total**
2011	554	52	606
2012	492*	50	542
2013	381*	45	426
2014	374*	48	422
2015	451	61	512

*Reductions due to persons who accessed healthcare through the Affordable Care Act

This section presents information about Nebraska's efforts to measure unmet need for HIV primary care among persons who are HIV positive. Persons with a diagnosis of HIV were more likely to be out of care than persons with a diagnosis of AIDS. This is probably due to several factors such as severity of illness, being younger and possibly lacking health insurance.

Nearly two-thirds (64.5%) of the non-Hispanic Native American/Alaskan Native are out of care. This could be due to stigma and/or lack of support in the community or distance from an Indian Health Service clinic. Hispanics also have a high rate of persons not in care (49.7%). Since Hispanics make up a larger proportion of PLWHA population, making inroads in this population is imperative.

Nebraska is embarking on a data to care program in which public health staff will attempt to reach persons living in Nebraska but have not received care for over a year. The goal of this program is to reduce the number of PLWHA who are not receiving care. The benefit of this is two-fold. The first goal is to improve the health of the infected person. As more people are treated and have a sustained undetectable viral load, the second goal is to slow the spread of HIV and reverse the tide of the HIV epidemic.

Table 39.	Characteristics of Persons with Unmet HIV Care Needs, Nebraska							
	Total PLWA	Total PLWH	in care		Not in care			
			PLWA	PLWH	PLWA	%	PLWH	%
Male	950	783	616	445	334	35.2%	338	43.2%
Female	252	262	172	152	80	31.7%	110	42.0%
<12	14	22	9	17	5	35.7%	5	22.7%
13 to 24	181	226	106	125	75	41.4%	101	44.7%
25 to 34	484	402	310	210	174	36.0%	192	47.8%
35 to 44	339	256	234	151	105	31.0%	105	41.0%
45 to 54	149	112	102	74	47	31.5%	38	33.9%
55 to 64	31	26	24	19	7	22.6%	7	26.9%
65 plus	4	1	3	1	1	25.0%	0	0.0%
White	618	573	423	348	195	31.6%	225	39.3%
Black	342	288	231	160	111	32.5%	128	44.4%
Hispanic	186	138	97	66	89	47.8%	72	52.2%
Asian	18	15	12	10	6	33.3%	5	33.3%
Multi-Race	19	14	15	9	4	21.1%	5	35.7%
NH, AI/AN	16	15	8	3	8	50.0%	12	80.0%
NH, NHw/PI	3	1	2	1	1	33.3%	0	0.0%
unknown	0	1	0	0	0	n/a	1	100.0%
MSM	553	504	359	309	194	35.1%	195	38.7%
IDU	101	59	66	30	35	34.7%	29	49.2%
MSM/IDU	74	67	48	39	26	35.1%	28	41.8%
Heterosexual	200	170	131	99	69	34.5%	71	41.8%
NIR	257	217	171	99	86	33.5%	118	54.4%
Pediatric	8	25	7	20	1	12.5%	5	20.0%
Clotting factor	4	1	2	1	2	50.0%	0	0.0%
Transfusion	5	2	4	0	1	20.0%	2	100.0%
US-Born	879	763	591	454	288	32.8%	309	40.5%
Other	323	282	197	143	126	39.0%	139	49.3%