

# 2020 North Dakota HIV, STI, TB & Viral Hepatitis Epidemiologic Profile

November 2021

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## Introduction

The HIV, STIs, TB and Viral Hepatitis Epidemiologic Profile describes the epidemiology of HIV/AIDS; sexually transmitted infections (chlamydia, gonorrhea and syphilis); tuberculosis (latent and active); hepatitis B (HBV); and hepatitis C (HCV) in North Dakota during 2020. This profile covers the general epidemiology of the above conditions in terms of gender, age, race, geography and associated casual factors. This profile was created to assist in developing a Comprehensive Jurisdictional HIV and Viral Hepatitis Prevention and Care Plan. Information in this report is used to characterize and predict the changing epidemic at the local level. North Dakota data is summarized annually to help the North Dakota Department of Health (NDDoH) answer questions about how to prevent these diseases in the population.

Table 1. Common abbreviations/acronyms used throughout this profile

<b>ABBREVIATION</b>	<b>FULL DESCRIPTION</b>
<b>ADAP</b>	AIDS Drug Assistance Program
<b>AIDS</b>	Acquired Immunodeficiency Syndrome
<b>ART</b>	Antiretroviral Therapy
<b>CDC</b>	Centers for Disease Control & Prevention
<b>CSTE</b>	Council of State and Territorial Epidemiologists
<b>CTR</b>	Counseling, Testing, and Referral
<b>EHARS</b>	Electronic HIV/AIDS Reporting System
<b>HBV</b>	Hepatitis B Virus
<b>HCV</b>	Hepatitis C Virus
<b>HIV</b>	Human Immunodeficiency Virus
<b>IDU</b>	Injection Drug Use
<b>HRSA</b>	Human Resources and Services Administration
<b>MSM</b>	Men Who Have Sex with Men
<b>NDDOH</b>	North Dakota Department of Health
<b>PLWH</b>	Persons Living With HIV/AIDS
<b>PrEP</b>	Pre-exposure prophylaxis
<b>PWID</b>	Persons Who Inject Drugs
<b>RW</b>	Ryan White
<b>STI</b>	Sexually Transmitted Infection
<b>TB</b>	Tuberculosis

## Data Sources

Data was compiled from several sources to present the most complete picture of the epidemiology of diseases as possible. However, because few behavioral or supplemental surveillance projects are available in North Dakota, core surveillance data is utilized extensively. Each data source has strengths and limitations. A brief description of each source follows.

## Maven

The North Dakota Electronic Disease Surveillance System, known as Maven, is a system that allows public health officials to receive, manage, process and analyze disease and other condition-related data. Maven offers tools for automatic disease reporting, case investigations, and case follow-up and management within the state of North Dakota. It is an integrative system allowing easy sharing and connecting among the NDDoH, local public health and providers.

## HIV/AIDS Data Sources

### HIV/AIDS Case Surveillance

A diagnosis of HIV/AIDS is a mandatory reportable condition to the NDDoH according to North Dakota Century Code Chapter 23-07-01 and North Dakota Administrative Code Chapter 33-06-01. Reports of HIV/AIDS cases can be provided by physicians, hospitals, laboratories and other institutions. The data is stored in the electronic HIV/AIDS Reporting System (eHARS) and Maven databases. Statistics and trends presented in this report were derived from HIV/AIDS case data reported to the NDDoH cumulatively starting in 1984 through December 31, 2020.

### HIV/HCV Counseling and Testing Data

The NDDoH contracted with 21 Counseling, Testing and Referral (CTR) sites in 2020. CTR sites offer free, confidential HIV and HCV rapid and confirmatory testing and counseling in North Dakota. Participants complete risk assessments as part of their visit. These risk assessments along with demographics, testing history, test results and sexual health history information are reported to the NDDoH via Maven.

### HIV Care Data/Ryan White Part B Program

The North Dakota Ryan White Part B Program assists low-income North Dakota residents living with HIV or AIDS to access confidential health and supportive services. The program was implemented in 1991. To participate in the North Dakota Ryan White Part B Program one must be a resident of North Dakota, have a gross income of less than 400% of the current Federal Poverty Level and have proof of HIV infection.

Part B services include core and supportive medical services. Core services include outpatient/ambulatory medical services, AIDS Drug Assistance Program (ADAP), oral health care, health insurance premium assistance, mental health services and medical case management. Supportive services include non-medical case management, housing services, medical transportation services and emergency financial assistance.

The Ryan White Part B Program manages program information using Maven. This has allowed for integration and sharing of information between HIV Prevention and Surveillance programs. This system ensures that required client-level data elements are collected and reported to HRSA. The "real time" nature of the networked system allows the Ryan White Part B Program to monitor specific indicators (e.g., number of clients without medical insurance) in a timelier

fashion, and it gives case managers access to view lab work and medication so that clients can be served more efficiently.

## STI Data Sources

### STI Surveillance Case Reporting

The NDDoH STI Program conducts statewide surveillance to determine the number of reported cases of STIs. The data is used to monitor trends and to offer voluntary partner counseling and partner notification services. Chlamydia, gonorrhea and syphilis cases are mandatory reportable conditions in North Dakota. STI surveillance data can serve as surrogate markers for unsafe sexual practices and may demonstrate changes in behavior among specific populations that increase their risk for HIV infection. Because of a shorter time from infection to symptomatic disease, STI diagnoses may better indicate recent unsafe behavior and/or changes in community norms. In addition, certain STIs can facilitate the transmission of HIV infection.

## Tuberculosis Surveillance Data

Tuberculosis (*Mycobacterium tuberculosis* and *Mycobacterium bovis*) disease and tuberculosis infection are mandatory reportable conditions and must be reported to the NDDoH according to North Dakota Administrative Code Chapter 33-06. The data are stored within Maven and are used to monitor ongoing treatment and management of tuberculosis disease and tuberculosis infection. The Maven system also serves as a method of communication between the TB Prevention and Control program and the TB contract pharmacy to ensure timely medication dispensing.

## Viral Hepatitis Surveillance Data

The Hepatitis Program receives reports of acute and chronic cases of HBV and HCV infections. HBV infections are investigated to determine if post-exposure immune-prophylaxis procedures for contacts were followed. Follow-up is conducted with females of child-bearing age (14 to 49 years) who are HBV positive to determine if they are pregnant. Pregnant females who are HBV positive are then followed by the perinatal HBV prevention coordinator in the immunization program. The coordinator ensures the hospital has HBV immune globulin (HBIG) for administration to the baby at time of delivery. The coordinator also confirms the baby is given the HBV vaccine series and ensures serology testing is done at completion of the vaccine series to ensure the child is not infected and is immune to the HBV virus.

Cases of HCV that are reported as acute are followed by a case investigation. Cases of HCV that are determined to be chronic HCV are not routinely investigated. There is no partner notification conducted by the NDDoH. Under-reporting of both acute and chronic HCV infections in North Dakota is likely. Data reported here does not distinguish between resolved and active infections.



## Vital Statistics Data

### Birth and Death Data

The NDDoH Division of Vital Statistics collects information on all births and deaths in North Dakota. The birth certificate form includes demographic information on the newborn infant and the parents, prenatal care, maternal medical history, mode of delivery, events of labor and abnormal conditions of the infant. Death certificates include demographics, underlying cause of death and factors contributing to the death. The surveillance program reviews death certificates on a weekly basis to ascertain deaths of HIV-positive persons. The surveillance program also electronically matches data with death and birth databases annually to ascertain deaths of persons with HIV/AIDS and births to HIV-infected females.

## Demographic Data

### U.S. Census Bureau

The U.S. Census Bureau collects and provides timely information about the people and economy of the United States. The U.S. Census Bureau website (<http://www.census.gov>) includes data on demographic characteristics (e.g., age, race, ethnicity and sex) of the population, family structure, educational and income level, housing status and the proportion of persons who live at or below the poverty line. 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. For this report, 2019 population estimates are used unless otherwise noted.

## Guidelines to Interpretation of the Data

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

The data has certain limitations. This report will not specifically differentiate, unless indicated, whether an individual is or is not at the stage of AIDS for HIV infections. The first AIDS case reported in North Dakota was diagnosed in 1984. Reporting of HIV-infected persons in North Dakota began in 1984. HIV surveillance reports may not be representative of all infected persons, because not all infected persons have been tested or reported. Data are collected for the entire state of North Dakota, which include data for patients who are diagnosed for the first time in North Dakota, as well as patients who move to North Dakota after they have been diagnosed. Data do not necessarily consider emigration out of North Dakota, although efforts are made to account for this in HIV prevalence data. State and county of diagnosis do not change even if a person moves to a different county or out of state.

The data presented in this profile only includes cases that met the current case definition documented by CSTE and CDC. This report does not include cases that have not been diagnosed by laboratory methods or a health care provider.

Rates have been calculated for 12-month periods per 100,000 persons. The denominator for calculating rates, unless otherwise noted, is based on 2019 population estimates from the U.S. Census Bureau. The numerator is the number of cases reported during the 12-month period. This number is divided by the population estimate and multiplied by 100,000. For example, race-specific rates are the number of cases reported for a racial/ethnic group during the preceding 12-month period divided by the estimated population for that race/ethnicity and multiplied by 100,000. Those categorized as white are white, alone. Hispanic ethnicity can be of any race. If a race is not included in a graph, it is due to small numbers.

The data presented in this report are current as of time of publication. However, the data may be variable as new information is received and may differ from other reports.

## Impact of COVID-19 Pandemic on Data

Data for 2020 should be interpreted with caution due to the impact of the COVID-19 pandemic on access to testing, care-related services and case surveillance activities. The NDDoH does not receive negative reports, therefore does not know the true impact of the COVID-19 pandemic on testing. However, at the North Dakota Public Health Lab testing rates significantly reduced from 2019 to 2020 (HIV decreased 40%, syphilis decreased 35% and gonorrhea/chlamydia decreased 18%). Electronic lab reporting from all laboratories decreased in Quarter 2 (April, May, June) for positive syphilis and chlamydia tests but remained stable for gonorrhea. Through the pandemic, COVID-19 has highlighted the importance of HIV and STI programs and retaining an adequate public health workforce and identified opportunities to increase services.

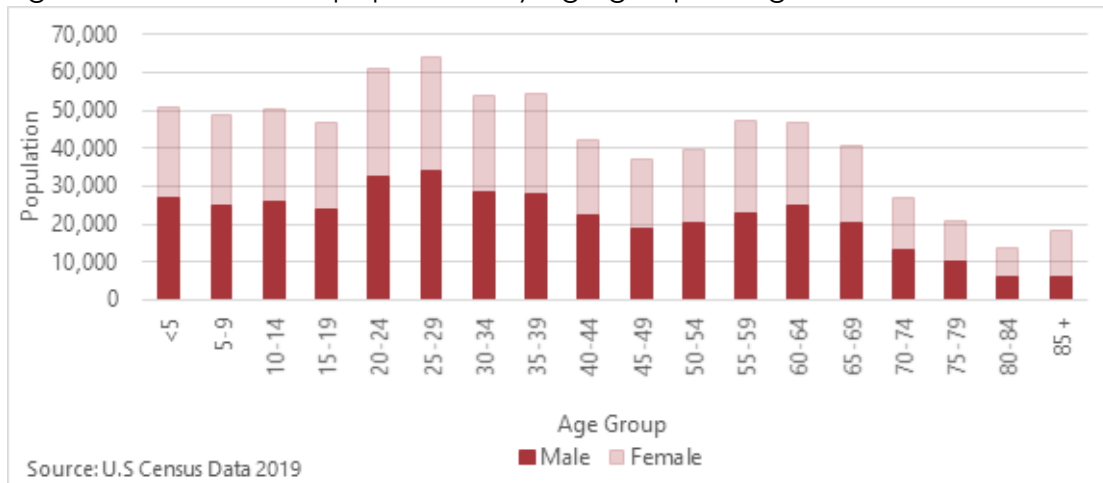
## North Dakota Demographics

North Dakota is a rural state that covers 70,704 square miles, and in 2019, had an estimated population of 762,062, according to the U.S. Census Bureau. North Dakota ranks 47<sup>th</sup> in the nation by population. It contains 53 incorporated counties and 357 cities. Nine cities have populations of more than 10,000 and 20 cities have populations of more than 2,500. County populations in North Dakota range from 750 to 181,923 people. The six counties along the eastern border with Minnesota account for more than one-third of the state's population.

### Age and Gender Distribution

At the time of the most current U.S. Census estimates for gender and age (2019), North Dakota's population was 51% male and 49% female. More than one quarter (28.1%) of North Dakota's population is over the age of 55. Of the remaining 71.9%, adults ages 20 to 24 are disproportionately represented. Within that group, there are 13% more males than females. The most considerable discrepancy between males and females is between the ages of 25 and 29, where there are nearly 13.3% more males than females.

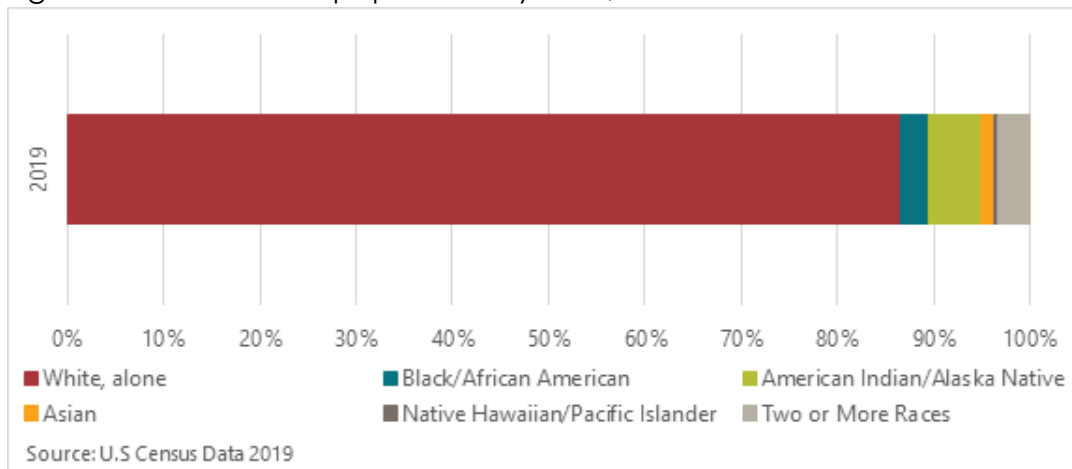
Figure 1. North Dakota population by age group and gender, 2019



### Race Distribution

The majority of North Dakota’s population (89.0%) reports white as their race. The largest minority group is American Indian and Alaskan Native, accounting for 6.9%, most of whom reside in Rolette and Sioux counties. The African American/Black population follows, accounting for an estimated 3.9% of the total population, which increased from 2.9% the previous year.

Figure 2. North Dakota population by race, 2019



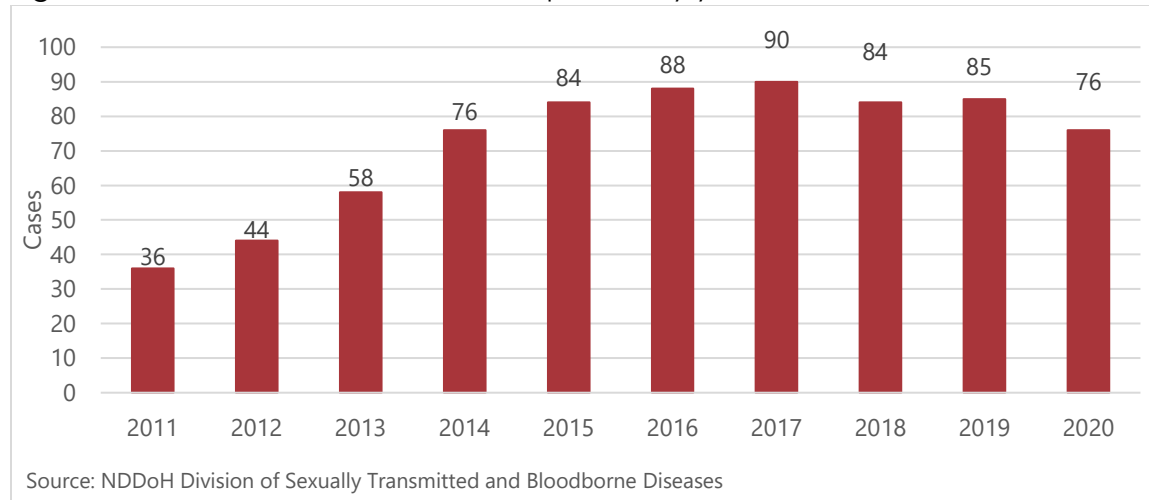
### Social Characteristics

The social characteristics estimates of North Dakota include education, place of birth and poverty level. The majority (93.5%) of the population age 25 and older have graduated from high school. The percentage of the population born in a country other than the United States is 4.1%. Roughly ten percent (10.6%) of the North Dakota population live on wages below the federal poverty level. For a household of one, that equates to \$12,760 in 2020.

# Human Immunodeficiency Virus (HIV)

In 2020, there were 76 reported cases of HIV/AIDS. This number includes new diagnoses and individuals previously diagnosed who have moved to the state for the first time.

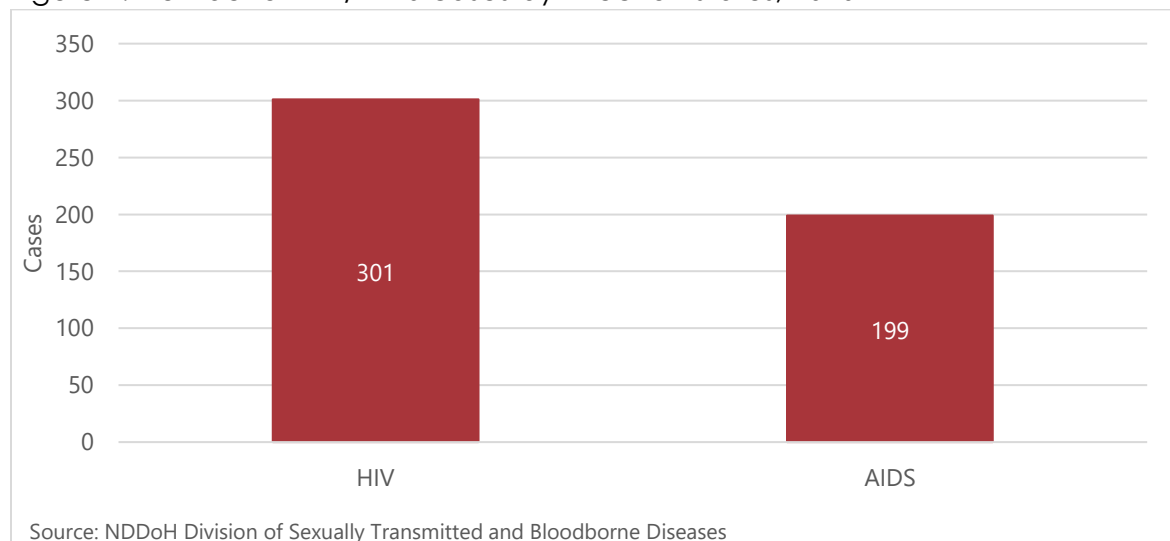
Figure 3. Number of HIV/AIDS cases reported by year, 2011-2020



## HIV Prevalence

There were 500 people with HIV/AIDS known to be living in North Dakota as of December 31, 2020. Of those, 301 are at the stage of HIV infection, and 199 have progressed to an AIDS diagnosis. The group is made up of 339 males, 160 females and 1 transgender female. Just over half (n=253) were diagnosed in North Dakota, with the rest moving to North Dakota sometime after their initial diagnosis.

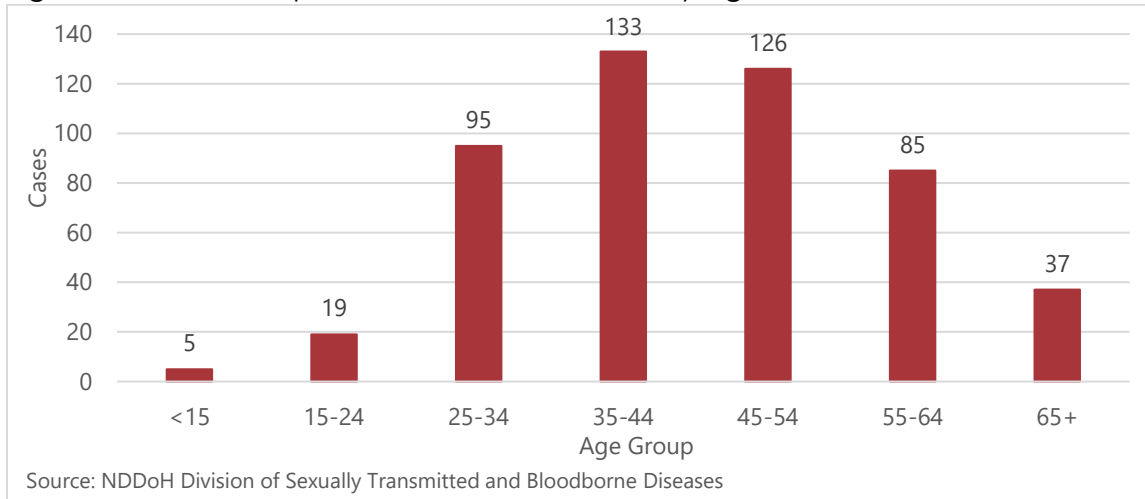
Figure 4. Number of HIV/AIDS cases by infection status, 2020



## Age

Of the prevalent cases of HIV in ND, the average age was 44 years old in 2020.

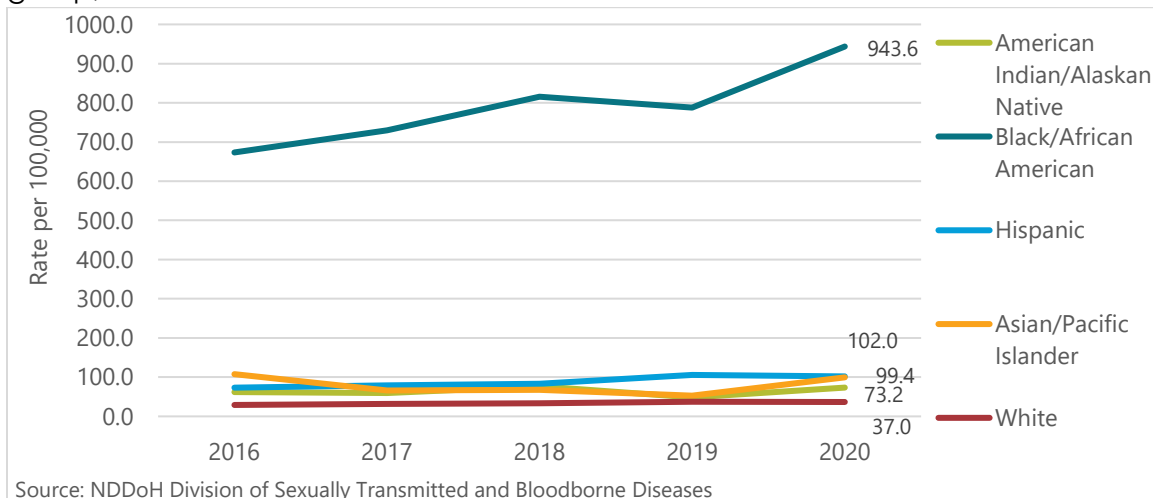
Figure 5. Number of prevalent HIV/AIDS cases by age, 2020



## Race

Both groups, those who identify as white and Hispanic, saw a slight decrease in the rate of prevalent HIV/AIDS in 2020. Conversely, American Indian/Alaskan Native, Black/African American and Asian/Pacific Islander North Dakotans reported an increase in HIV/AIDS prevalence. Black/African American North Dakotans are 14 times more likely to be living with HIV/AIDS compared to all North Dakotans, with a case rate of 943.6 cases per 100,000.

Figure 6. Prevalent HIV/AIDS case rate per 100,000 persons in North Dakota by race group, 2016-2020



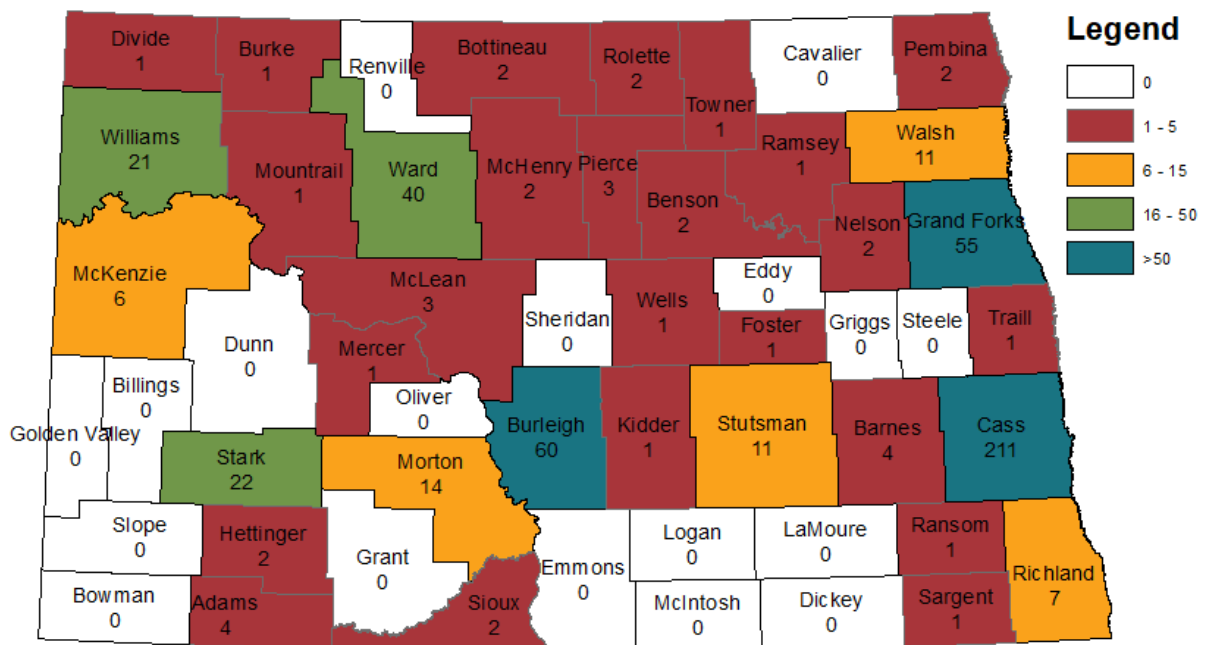
## Perinatal Exposures

Perinatal HIV is the transmission of HIV from mother to child. Treatment of the mother during pregnancy and treatment of the infant after birth can minimize the risk of HIV transmission. The NDDoH follows up regarding the pregnancy status of all females of child-bearing age (14 to 49 years) who are HIV positive. During 2020, there were 17 infants born to mothers who are HIV positive. All infants were treated prophylactically with ART and are HIV negative.

## Geography

There was at least one person known to be living with HIV in 35 of 53 counties as of December 31, 2020.

Figure 7. Currently living HIV/AIDS cases in ND by county, 2020



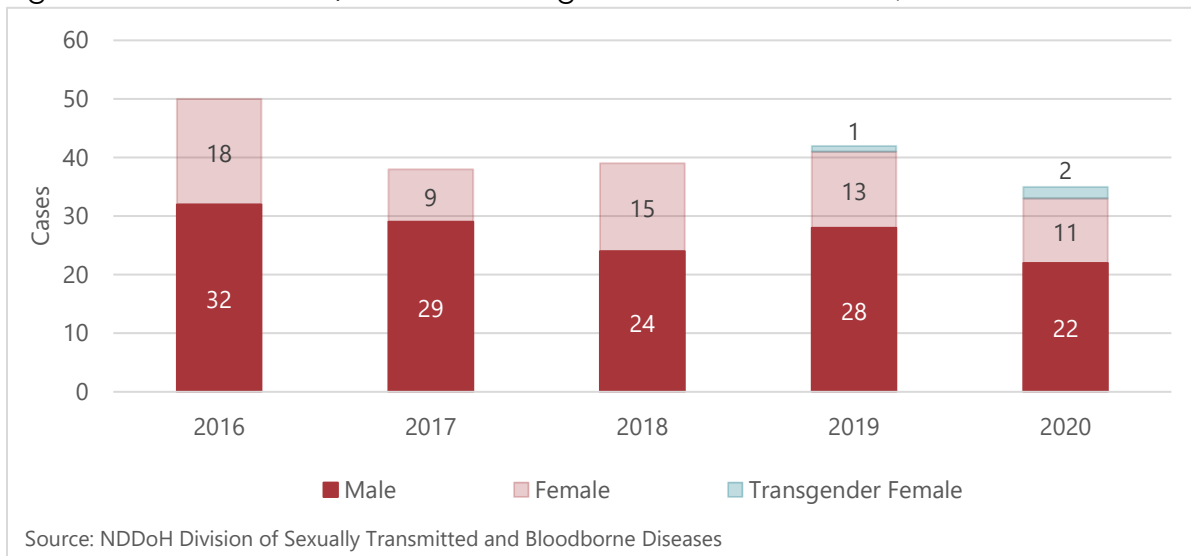
## 2020 HIV/AIDS Incidence

Incidence refers to cases newly diagnosed within the state during a given year. Persons diagnosed in another state, who then move to North Dakota, are not counted in an incidence report. North Dakota reported 35 new cases of HIV/AIDS in 2020.

## Gender

Of the 35 incident cases, 22 (63%) identify as male, 11 as female and two as transgender female.

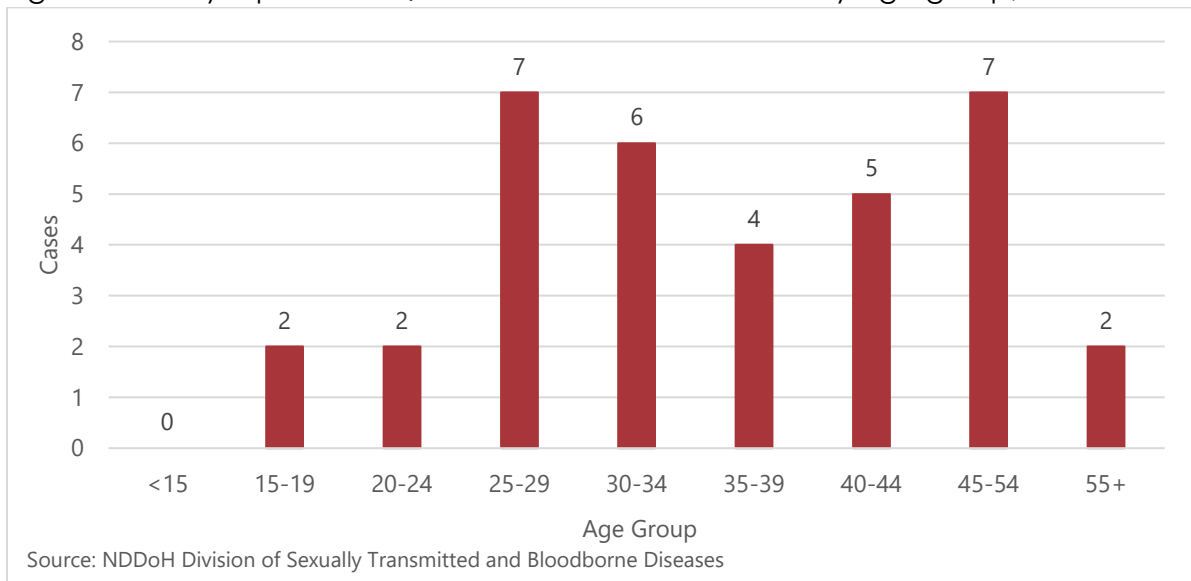
Figure 8. Gender of HIV/AIDS cases diagnosed in North Dakota, 2016-2020



### Age

In 2020, the age range of newly diagnosed HIV cases was 19 to 68 years old, with a mean age of 37.

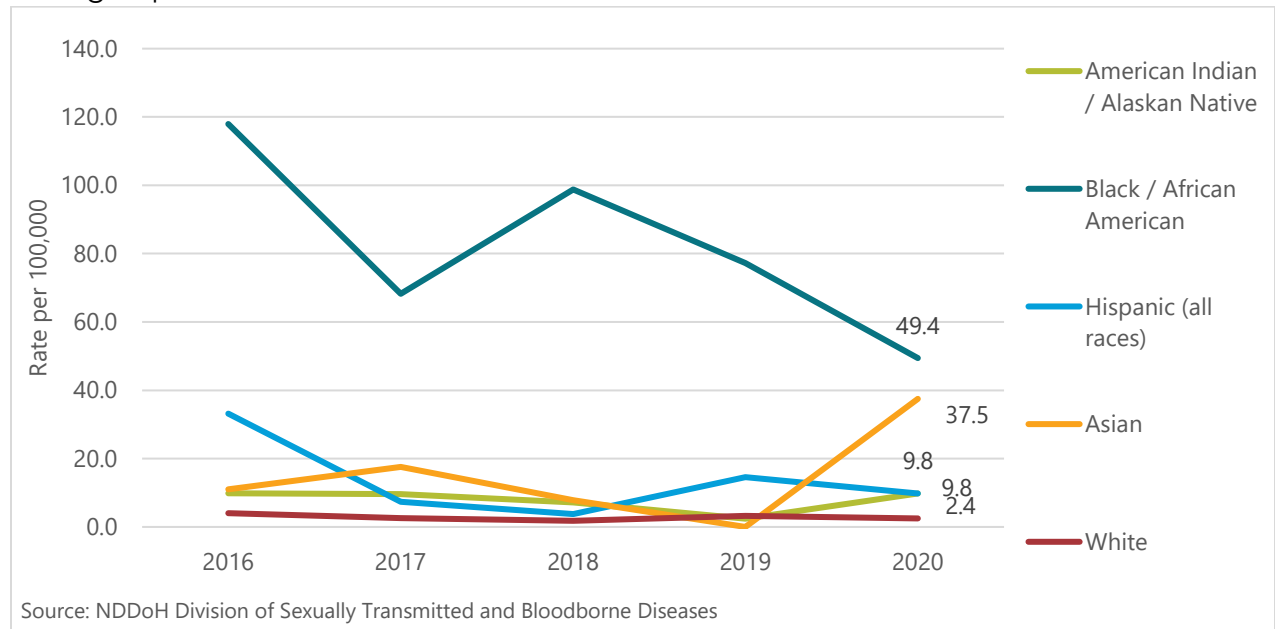
Figure 9. Newly reported HIV/AIDS cases in North Dakota by age group, 2020



### Race

In 2020, white was the most common race reported for incident HIV cases. White Americans accounted for 16 of the cases, with a rate of 2.4 cases per 100,000. Black/African Americans had the second highest number of reported HIV cases with 11. However, due to North Dakota demographics, Black/African Americans reported an incidence rate of 49.4 per 100,000.

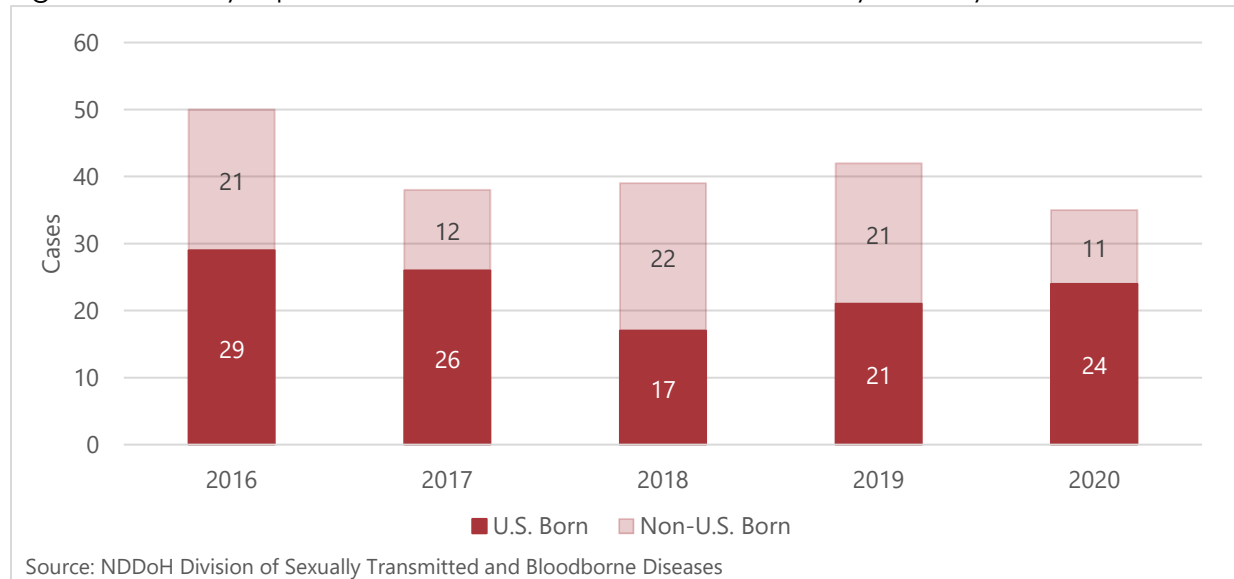
Figure 10. Newly reported HIV/AIDS cases rate per 100,000 persons in North Dakota by race group, 2016-2020



### Country of Birth

HIV incidence includes cases that are newly diagnosed in North Dakota. This can include persons that acquired their infection in a country outside the United States and then move directly to North Dakota. In 2020, 11 (31%) of the incident cases were non-U.S. born.

Figure 11. Newly reported HIV/AIDS cases in North Dakota by country of birth, 2016-2020

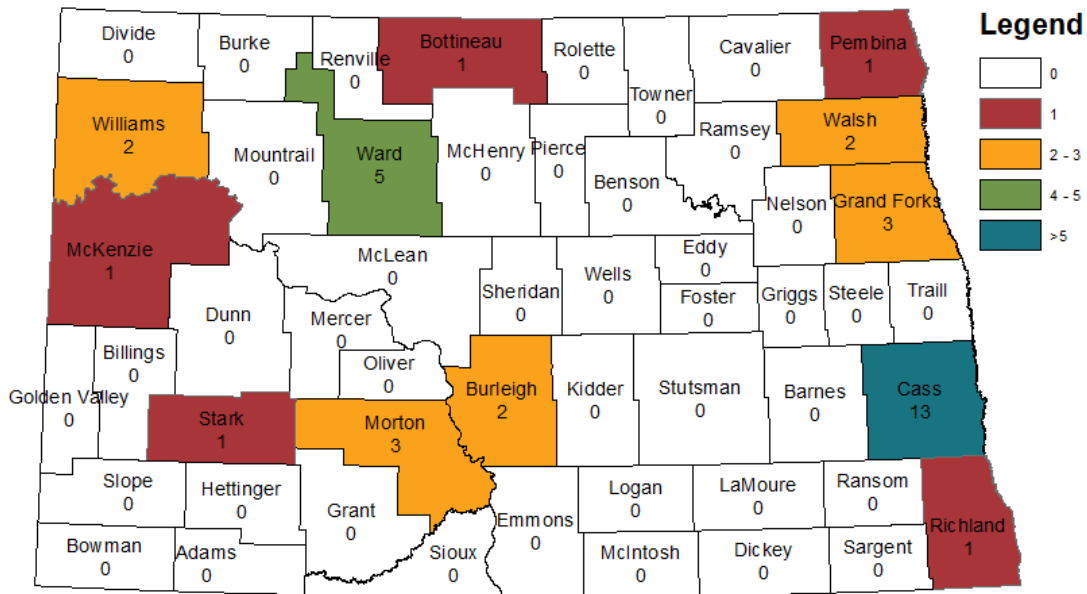


### Geography

In 2020, 12 counties reported at least one new case of HIV with 37% of cases being from Cass County.



Figure 12. Newly diagnosed cases of HIV in North Dakota by county, 2020.



### Risk of Infection

Nationally, HIV is most often reported among men who have sex with men (MSM). North Dakota risk data shows similar patterns between prevalent cases and incident cases among males from 2016 to 2020. In female cases in North Dakota, heterosexual contact remains to be the primary risk factor. Nationally, transgender females are disproportionately affected by HIV because of multiple factors including stigma related to gender identity, unstable housing, limited employment options and high-risk behaviors such as unprotected receptive anal intercourse and injection drug use.

Figure 13. Risk factors for males newly diagnosed with HIV, 2016-2020

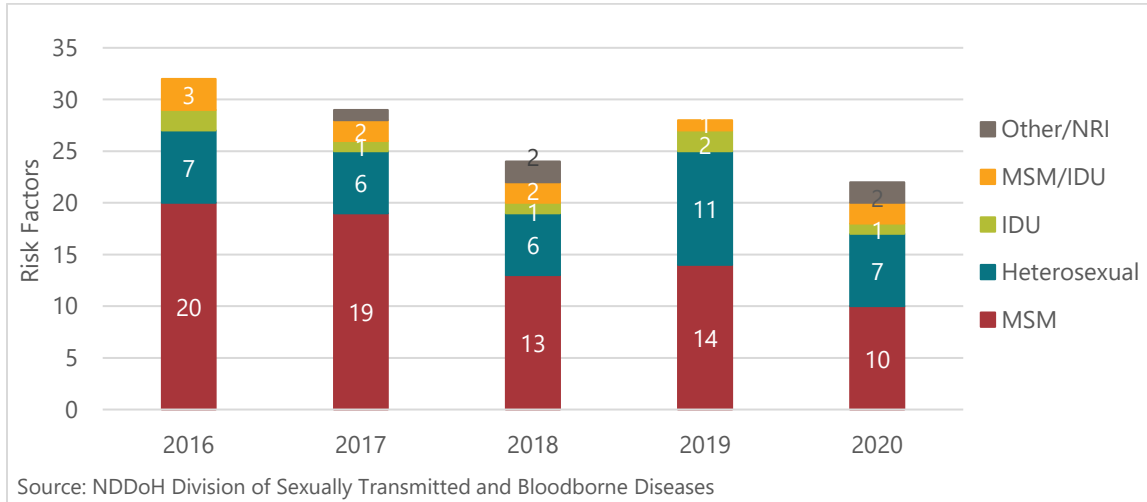
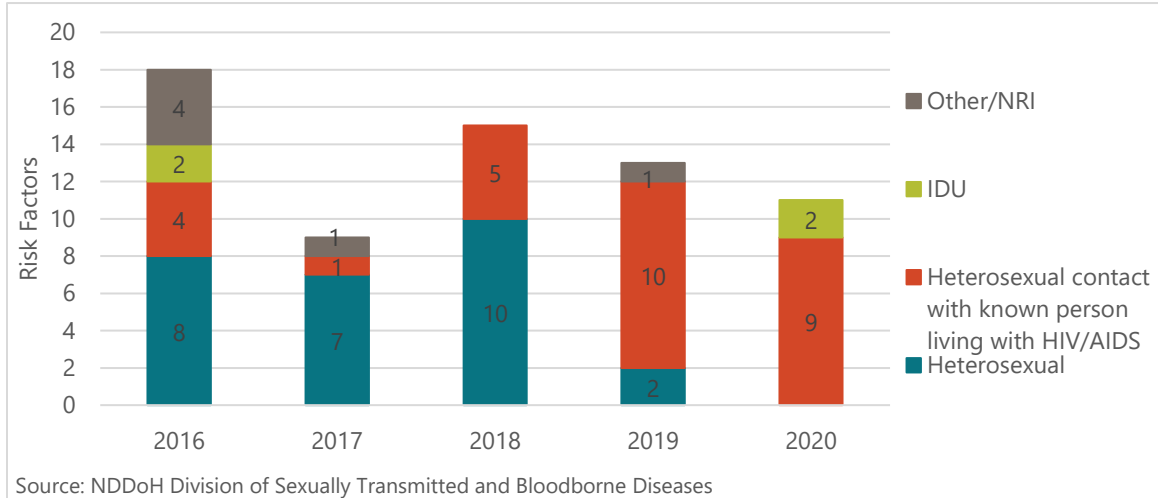


Figure 14. Risk factors for females newly diagnosed with HIV, 2016-2020



## HIV Care – Ryan White Part B Program

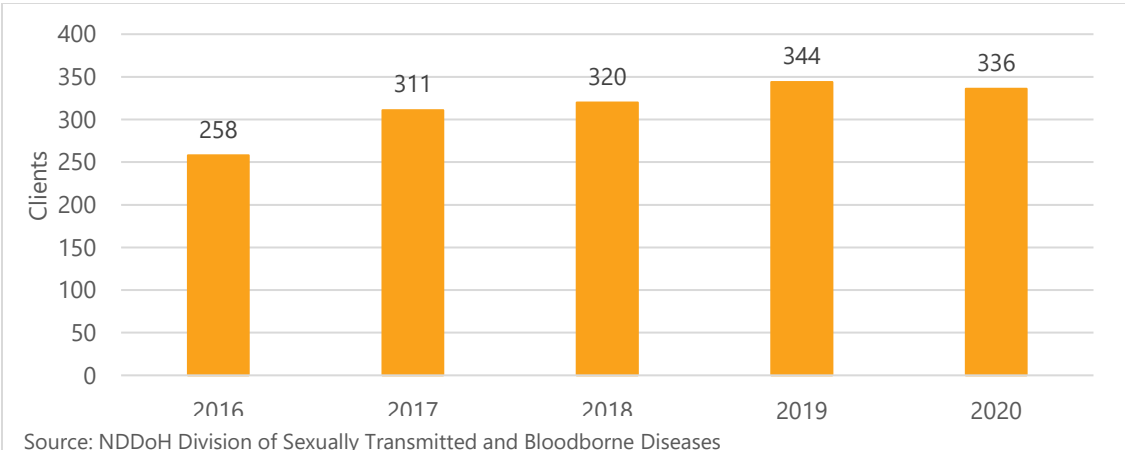
The North Dakota Ryan White Program Part B is federally funded by Health Resources Services Organization (HRSA) and administered by the NDDoH. To be eligible for the program, an individual must be living with HIV, a North Dakota resident and have a gross household income at or below 400% of the federal poverty level (2020 FPL: \$51,040 for a household of one).

The Ryan White Part B program funds case management and core and support services, helping individuals to get linked to and stay in medical care and treatment. Core services reimbursed through Ryan White Part B include HIV-related outpatient ambulatory medical care, medication and insurance premium assistance through AIDS Drug Assistance Program (ADAP), oral health care, outpatient mental health services, substance abuse outpatient care and medical case management. Support services reimbursed include non-medical case management, emergency financial assistance (rent and utilities), medical transportation and nutritional supplements.

The Ryan White Part B program is a safety net program and a payer of last resort where services are reimbursed when another payer is not available. Clients who are eligible for other assistance programs, including Medicaid, Medicare and private commercial insurance, must seek coverage through those programs first. Ryan White will wrap around those services and cover the remaining costs of treatment and HIV-related medical care.

As of December 31, 2020, of the 500 estimated persons living with HIV in North Dakota, 309 (62%) were enrolled in the ND Ryan White program in 2020. The total number of clients enrolled in the Ryan White program in 2020 was 336. This is a decrease of 2% from 2019.

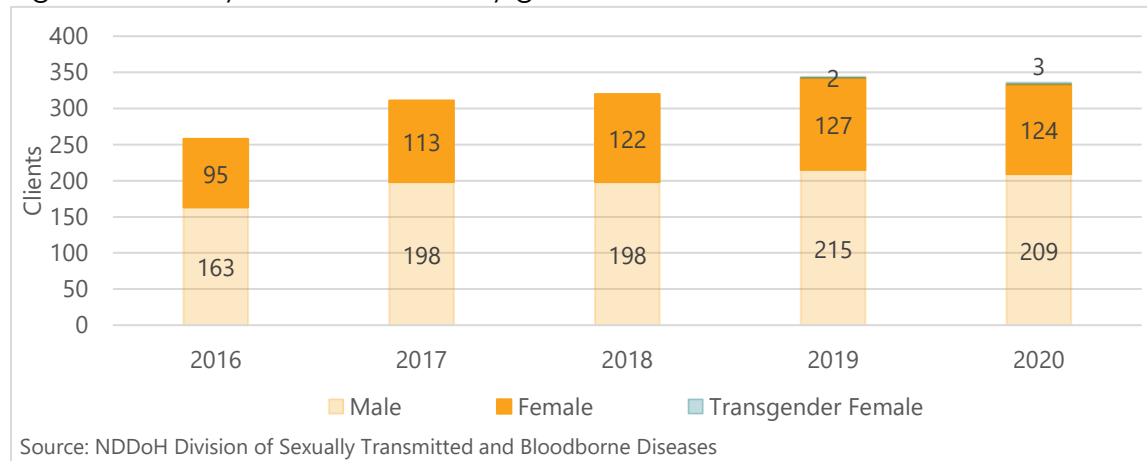
Figure 15. Total number of enrolled Ryan White clients in North Dakota, 2016-2020



## Gender

Of the 336 enrolled clients, 209 (62%) identify as male, 124 (37%) as female, and three as transgender females.

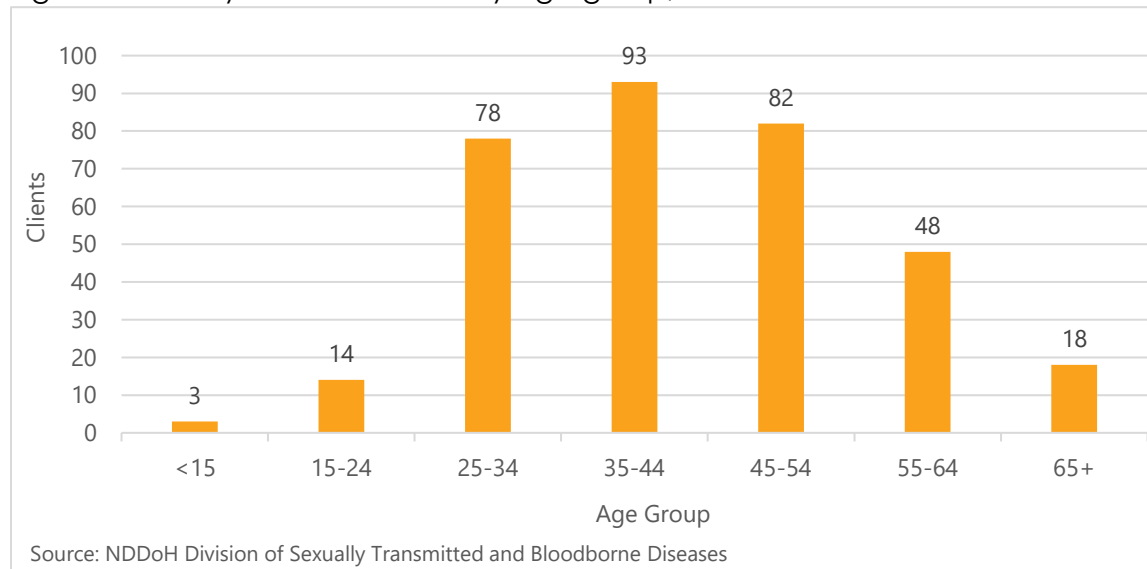
Figure 16. ND Ryan White clients by gender, 2016-2020



## Age

Majority of clients (28%) are between the ages of 35 and 44, followed by the 45-54 age group (24%). The average age is 43.

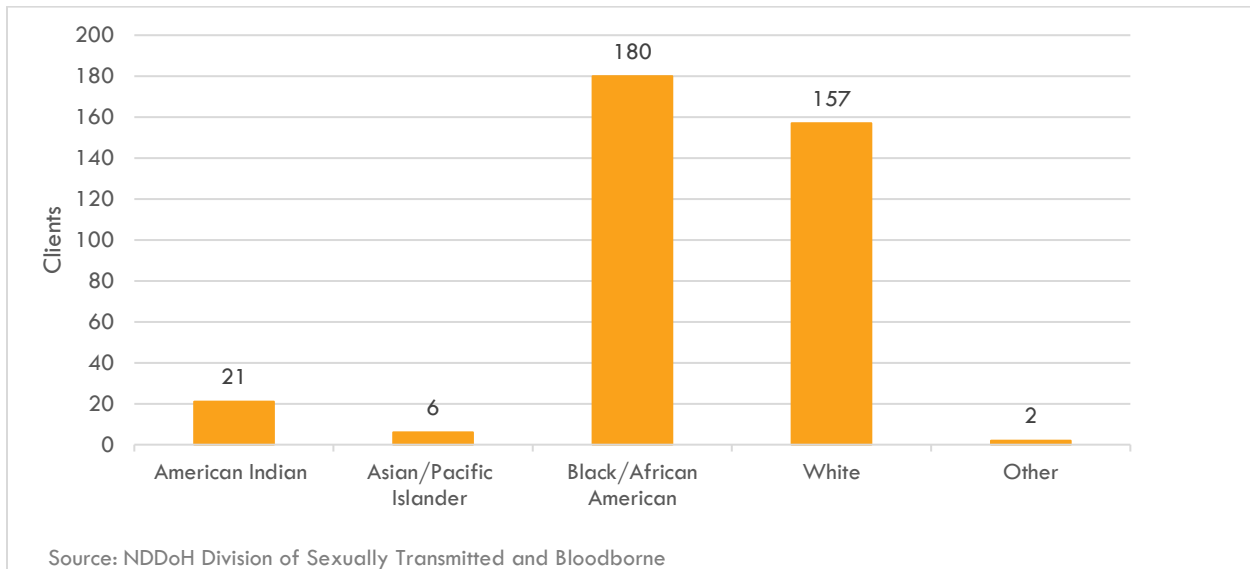
Figure 17. ND Ryan White clients by age group, 2020



## Race

Of the 336 enrolled clients, 180 (54%) are Black/African American, 137 clients (41%) are White and 21 (6%) are American Indian. Twenty-two (6%) clients identified as Hispanic or Latino.

Figure 18. ND Ryan White clients by race and ethnicity, 2020



## Geography

Ryan White case management and services reimbursement are provided through fourteen contracted agencies: 10 local public health departments (including three remote locations) and one community action agency.

The eastern region—including the most populated city in the state, Fargo—serves most (64%) of the Ryan White clients in North Dakota. The south-central region—including the state capital, Bismarck—served 19% of the enrolled clients.

Table 2. ND Ryan White clients enrolled by region and case management agency, 2020

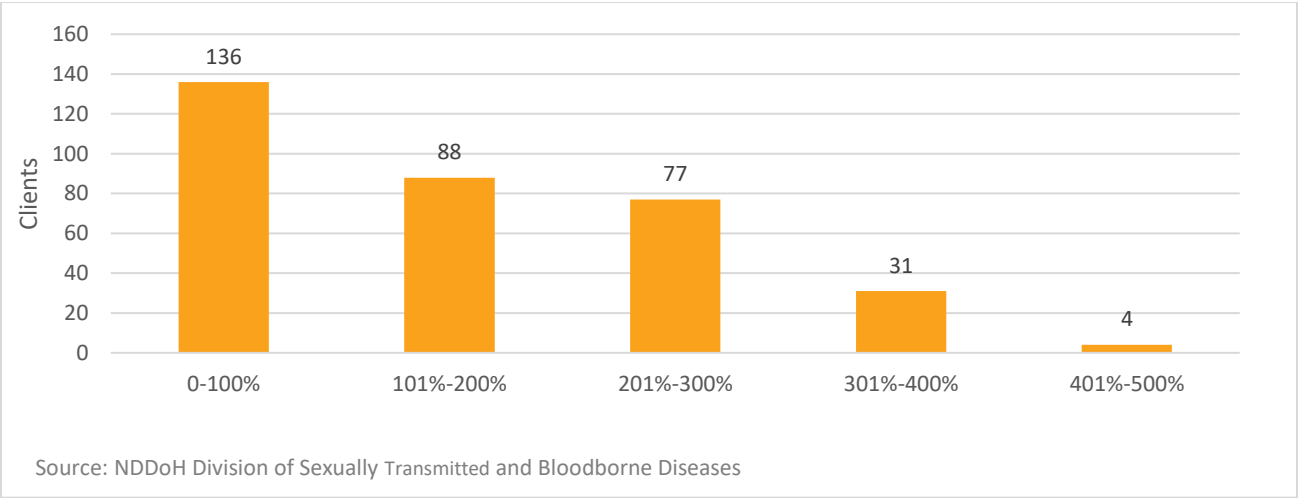
Case Management Agency	Number of Clients (N)	Proportion (%)
<b>Western Region</b>	<b>23</b>	<b>7</b>
SW District Health Unit – Dickinson	15	4
Upper Missouri District Health Units (including 3 remote locations)	8	2
<b>South-central Region</b>	<b>64</b>	<b>19</b>
Bismarck Burleigh Public Health - Bismarck	44	13
Central Valley Health Unit – Jamestown	10	3
Custer Health – Mandan	10	3
<b>North-central Region</b>	<b>33</b>	<b>10</b>
First District Health Unit – Minot	30	9
Lake Region District Health - Devils Lake	3	1
<b>Eastern Region</b>	<b>216</b>	<b>64</b>
Fargo Cass Public Health – Fargo	176	52

Grand Forks Public Health - Grand Forks	35	10
Richland County Health – Wahpeton	5	1
<b>Total</b>	<b>336</b>	

Poverty Level

Majority of Ryan White clients are low income. Of the 336 enrolled clients, 136 (40%) have an annual household income below the federal poverty level, and an additional 88 (26%) have a household income between 101% and 200% of the poverty level.

Figure 19. ND Ryan White clients by federal poverty level, 2020



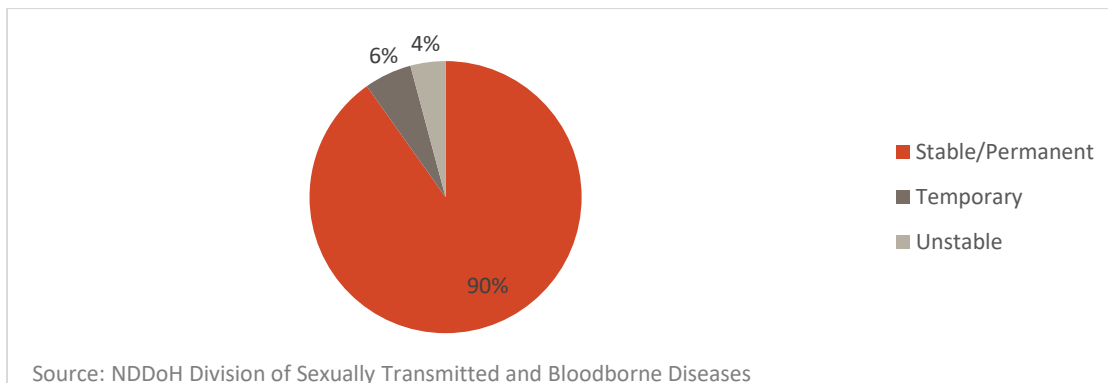
Housing Status

Access to affordable housing is essential for engagement and retention in medical care and treatment. Clients who lack stable housing are more likely to fall out of care and have interruptions in treatment, leading to treatment resistance and ultimately poor medical outcomes.

Of the 336 enrolled clients, 303 (91%) reported having stable housing. Nineteen clients (6%) reported temporary housing which includes transitional housing for homeless people, staying with friends or family, staying in institutions such as hospitals, substance use or mental health treatment facilities, correctional facilities or staying in a hotel/motel. Fourteen clients (4%) reported having unstable housing or being homeless.

Even though most clients report stable housing many still rely on rental assistance from Department of Housing and Urban Development (HUD), Housing Opportunities for Persons Living with HIV (HOPWA), emergency assistance through the Ryan White program and other housing assistance programs.

Figure 20. Proportion of ND Ryan White clients by housing status, 2020



### Insurance Status

Having health coverage is essential for persons living with HIV to cover medical care and treatment costs. The Ryan White program is not considered health insurance. However, the program provides a safety net for uninsured clients by covering the cost of HIV-related medical care and medications and helps clients enroll in eligible coverage. The program also wraps around public or private health coverage and covers deductibles, copays and select insurance premiums.

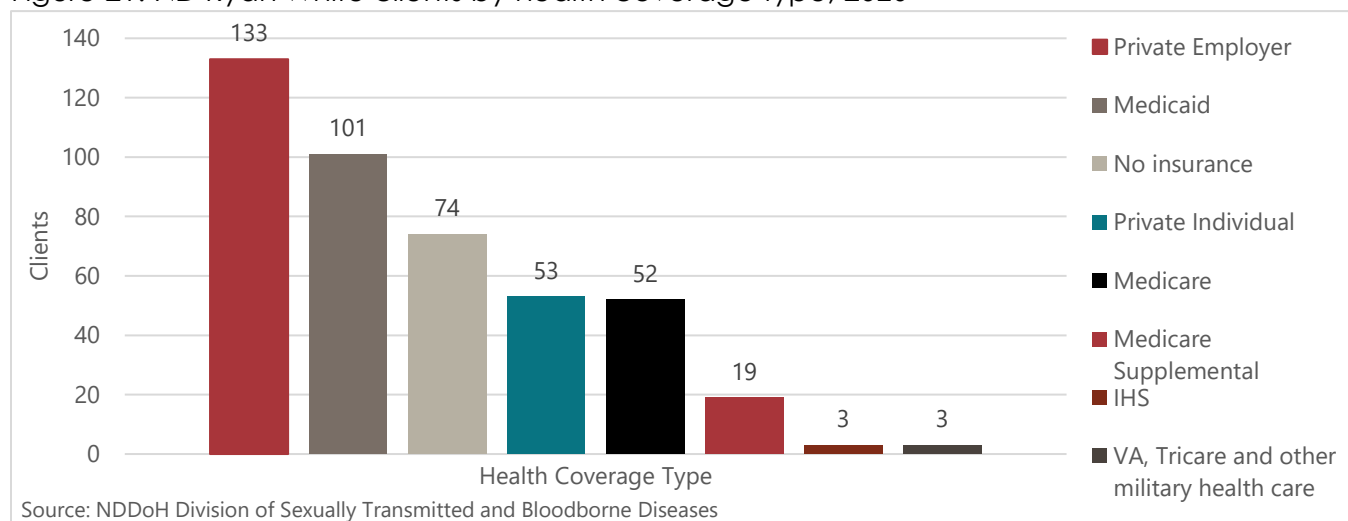
Ryan White clients often experience gaps or changes in health coverage. Enrolling in health coverage can also be confusing or overwhelming. Ryan White program and case management agencies work closely with local Federally Facilitated Marketplace to screen Ryan White clients for eligible coverage and help them enroll in private individual insurance through the Marketplace. Clients may receive insurance premium assistance for Marketplace insurance after the tax premium has been applied.

In 2020, 133 clients (40%) were enrolled in private employer coverage; 101 (30%) were enrolled in Medicaid and 74 clients (22%) reported having no insurance at some point during the year. The percent of uninsured clients decreased from 30% in 2019 to 22% in 2020.

Reasons for being uninsured include: if employed - transitioning between jobs or not being offered employer-based coverage; if unemployed - not qualifying for Medicaid due to the five-year ban for permanent residents, having a temporary visa or missing the open enrollment period for health coverage.

Clients eligible for health coverage are allowed three months of full medication assistance while enrolling in eligible coverage. After three months of coverage clients can receive insurance premium and medication copay assistance only.

Figure 21. ND Ryan White clients by health coverage type, 2020



### Ryan White Part B Services

The North Dakota Ryan White Program Part B reimburses core medical services consisting of AIDS Drug Assistance Program (ADAP), HIV related outpatient medical care, dental care, vision care, outpatient mental health, substance abuse services, and medical case management. The reimbursed support services include non-medical case management, emergency assistance, medical transportation and nutritional supplements.

Since the implementation of the Affordable Care Act in 2014, persons living with HIV are no longer barred from purchasing insurance due to a pre-existing condition. In addition, North Dakota expanded Medicaid coverage to include those with income up to 139% of the FPL. With more insured clients, Ryan White program expenses for medications and medical care decreased and program eligibility was expanded from 300% of the poverty level to 400% in 2015 and to 500% in fiscal year 2021 starting on April 1, 2021. Additionally, more funds were available for other core and support services such as dental care and emergency assistance.

In 2020, the most utilized services continued to be non-medical and medical case management, ADAP, ambulatory/outpatient medical care and emergency assistance for rent.

Table 3. ND Ryan White Part B services by cost and number of clients served, 2020

Core Service	Clients Served	Cost
Ambulatory/Outpatient Medical Care	79	\$46,745.28
Dental Care	25	\$12,414.89
Medical Case Management	233	\$18,571.72
Mental Health	5	\$1,861.33
Vision Care	15	\$3,830.04
<b>Support Services</b>		



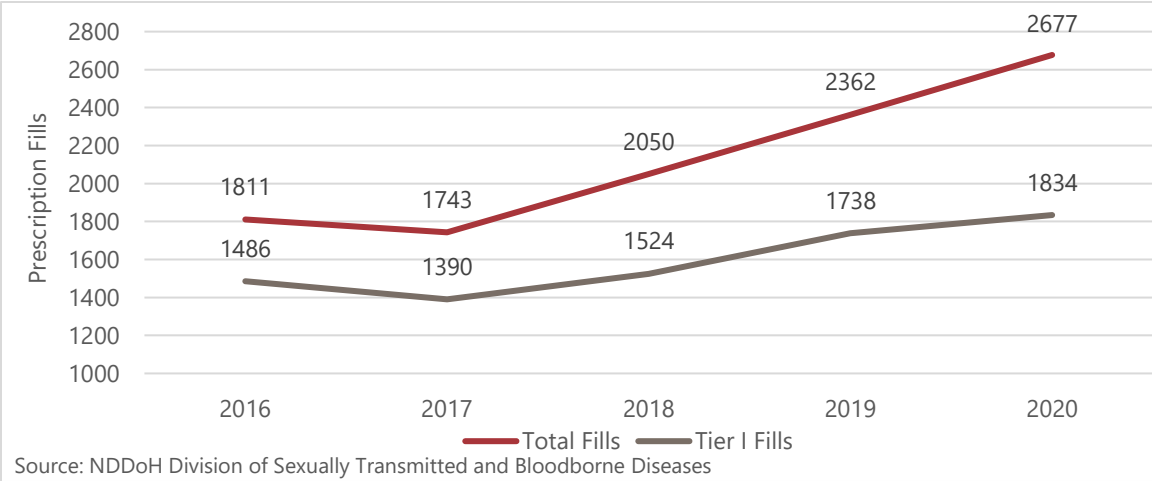
Case Management (non-medical)	329	\$149,183.75
Case Manager Mileage for Home Visit	4	\$46.03
Emergency Assistance: Miscellaneous	1	\$200.94
Emergency Assistance: Rent	55	\$47,181.87
Emergency Assistance: Utilities	24	\$8,837.64
Nutritional Supplements	6	\$1,067.08
Transportation	33	\$4,359.60
<b>Total</b>	<b>332</b>	<b>\$542,119.96</b>

**ADAP (AIDS Drug Assistance Program)**

ADAP provides medication assistance to uninsured clients and insurance assistance to those with health coverage. Insurance assistance covers medication copays and insurance premiums for private insurance and Medicare Part D (drug coverage).

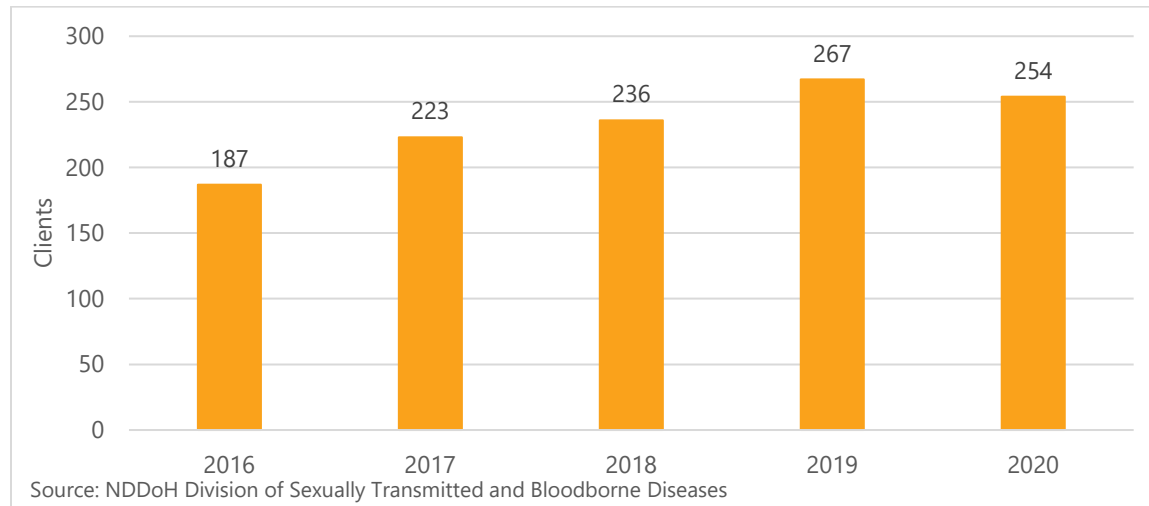
The graph below shows the number of monthly prescriptions fills for calendar years 2016 through 2020. The number of fills decreased from 2016 to 2017 due to clients enrolling in health coverage through the Marketplace, clients qualifying for expanded Medicaid and increased number of available single tablet regimens. Figure 22 shows all medication fills and Tier I fills, which are antiretroviral medications for the treatment of HIV.

Figure 22. ND ADAP medication fills, 2016-2020



In 2018, the ADAP formulary was opened to include all medications with the exception of certain categories. In 2019, changes to MMIS allowed all copays to be reimbursed. Both changes, in addition to an increasing number of clients each year, contributed to an increase in medication fills since 2017. There was a 13% increase in overall fills and a 6% increase in Tier I fills from 2019 to 2020.

Figure 23. Number of clients who received ADAP medication assistance in ND, 2016-2020



Of the 336 enrolled clients, 254 (76%) received assistance through ADAP. Of those, 85 (33%) received full pay medication assistance through ADAP only, 189 clients (74%) received drug copay and deductible assistance and 67 (26%) received insurance premium assistance.

Table 4. ND ADAP assistance, 2020

Type of Assistance	Clients Served	Total Cost	Cost/Client
Medication (full pay)	85	\$963,609.08	\$11,336.58
Total insurance (copays & premiums)	202*	\$728,587.19	\$3,605.23
Copays/deductibles	189	\$480,437.39	\$2,542.00
Insurance premiums	67	\$247,819.80	\$3,698.80
<b>Total ADAP</b>	<b>254*</b>	<b>\$1,453,761.84</b>	<b>\$5,612.98</b>

\*Unduplicated

The cost per served client for medication assistance, not considering drug rebates, is \$11,336.58. This is three times higher than the cost of insurance copay and premium assistance of \$3,605.23 per client. Due to the higher cost per client for medication assistance, clients are required to enroll in eligible insurance. Overall, the annual cost per client served through ADAP is \$5,612.98.

# HIV Care Continuum

The HIV care continuum is a model that outlines the steps of HIV medical care from the initial diagnosis to achieving the goal of viral suppression and it indicates the proportion of individuals living with HIV who are engaged at each stage. The continuum has the following stages: diagnosis of HIV infection, linkage to care, retention in care, receipt of antiretroviral therapy and achievement of viral suppression. As various obstacles contribute to low engagement in HIV care and limit the effectiveness of efforts to improve health outcomes, the care continuum is used to identify gaps in HIV services and develop strategies to enhance engagement in care and outcomes for PLWH.

The CDC currently uses two different continuums. The HIV prevalence-based continuum shows steps of the continuum as a percentage of the total number, or the prevalence, of PLWH (persons who know and the estimated number of people who do not know their HIV status). The diagnosis-based continuum shows steps as a percentage of the number of PLWH who have been diagnosed. As a low-incidence state, North Dakota has adopted the diagnosis-based continuum.

The continuum steps below are for PLWH in North Dakota as of December 31, 2020. The measurement year is the calendar year 2020.

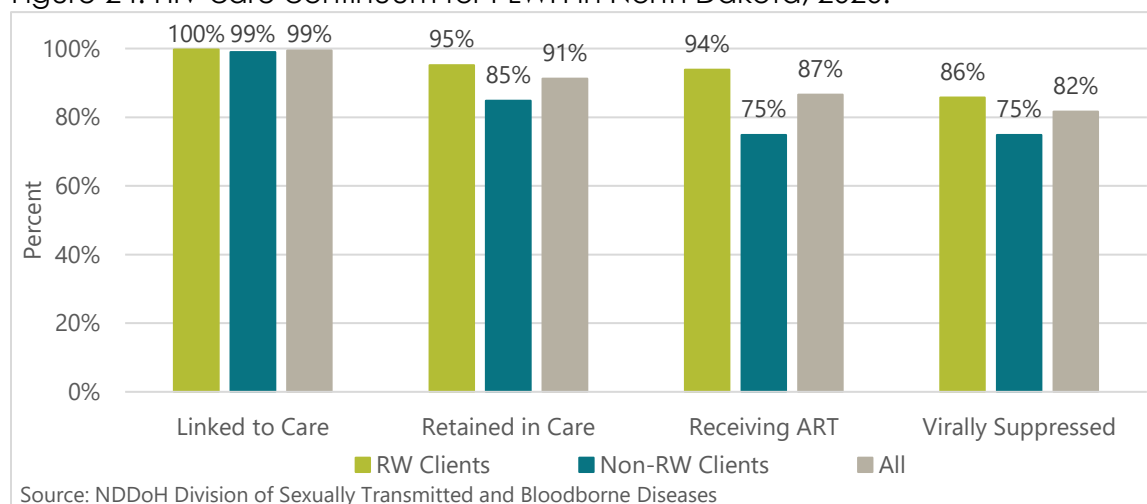
- HIV-diagnosed: number of prevalent HIV cases; prevalent cases include the number of newly diagnosed HIV cases in North Dakota, as well as previously diagnosed HIV cases who moved to the state and were living in North Dakota as of December 31, 2020
- Linked to care: the number of PLWH in the calendar year 2020 who had one or more viral load or CD4 tests after their diagnosis date
- Retained in care: the number of PLWH with one or more viral load or CD4 lab tests in 2020
- Antiretroviral use: number of PLWH who have a documented antiretroviral therapy (ART) prescription in the Maven surveillance system in 2020
- Viral load suppression: number of PLWH whose most recent HIV viral loads in 2020 were less than 200 copies/milliliter (mL).

Limitations: HIV is a reportable condition in North Dakota and all viral load and CD4 lab tests are electronically reported to the NDDoH. However, the NDDoH does not perform medical chart reviews on PLWH to determine all HIV-related medical visits or antiretroviral use. The lack of review contributes to the possible underreporting of the number of individuals linked and retained in care and underreporting of individuals receiving ART. The number of individuals prescribed ART is determined by using Ryan White ADAP reimbursed claims data. Therefore, only individuals on RW and whose medications are reimbursed through ADAP or those that are virally suppressed are reported as receiving ART. This excludes individuals not on RW and those

on RW but whose medications are reimbursed through primary coverage (i.e., private insurance, Medicaid or Medicare).

In 2020, there were 500 PLWH in North Dakota. Of those, 62% were enrolled in RW. Ninety-nine percent of all PLWH are linked to care and reported at least one medical visit since their diagnosis. Ninety-one percent were retained in care by having a medical visit in 2020 and 82% were virally suppressed.

Figure 24. HIV care continuum for PLWH in North Dakota, 2020.



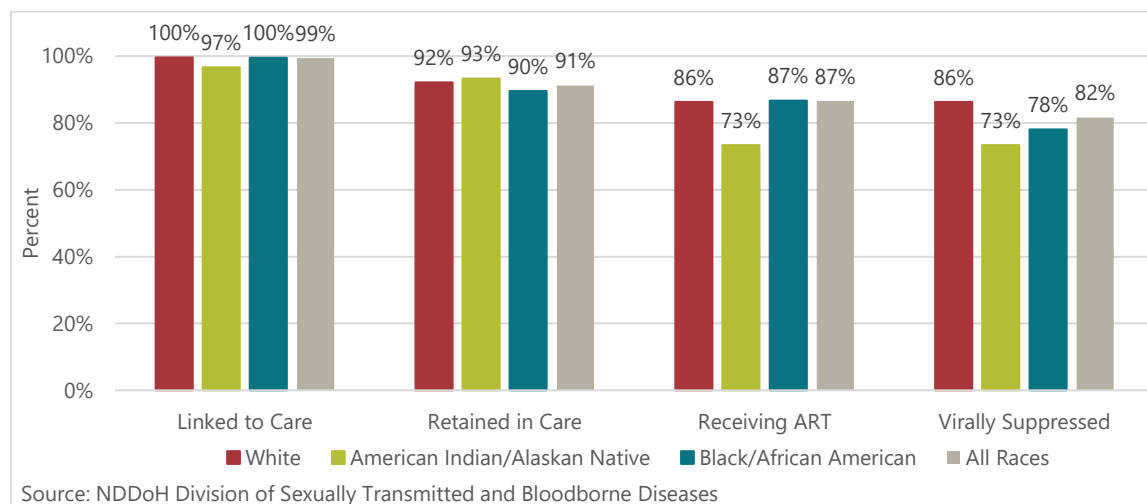
There is a significant disparity between the PLWH not enrolled in RW versus those enrolled (Figure 24). Eighty-five percent of non-RW PLWH are retained in care and 75% are virally suppressed, compared to 95% of RW clients who are retained in care and 86% who are virally suppressed.

Reaching viral load suppression is essential for several reasons. Viral suppression ensures that the health of the person is maintained or restored. It also minimizes or eliminates short- or long-term damage caused by the virus, and it lowers the risk of HIV transmission since there is a lower amount of virus in the blood and body fluids.

### Disparities by Race

In 2020, American Indian/Alaskan Natives reported the lowest viral suppression rate with a rate of 73%, although this is an increase from 60% in 2019. This population has the lowest denominator of 30 PLWH and can widely differ due to the law of small numbers. Whites have a denominator of 241, and Black/African Americans have a denominator of 210.

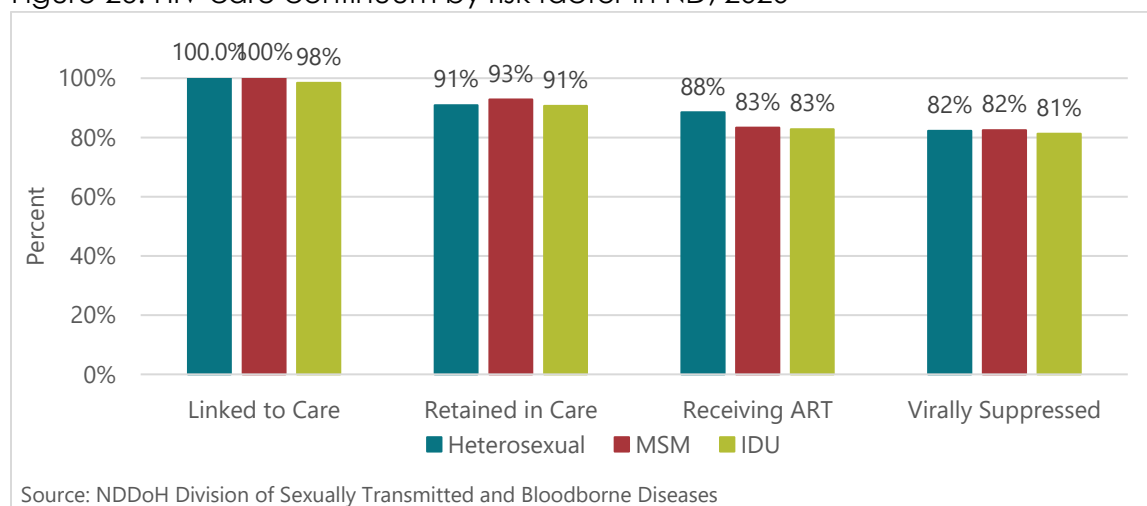
Figure 25. HIV care continuum by race in ND, 2020.



### Disparities by Risk

Persons who inject drugs have a lower viral suppression rate than those with other risk factors but has increased from 70% to 81%. Overall risk did not impact viral suppression greatly in 2020 compared to previous years.

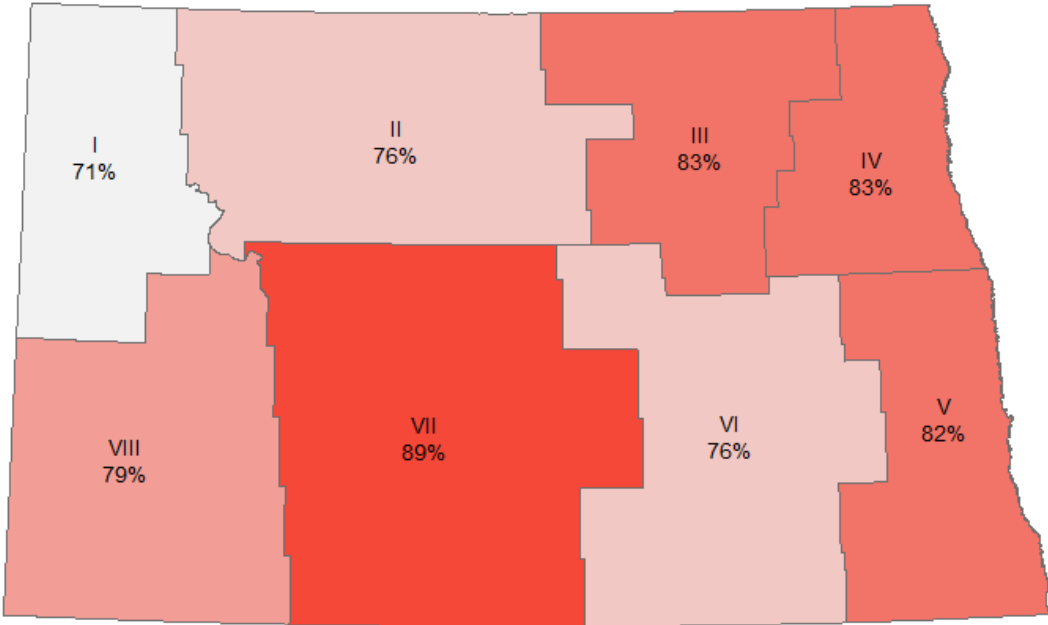
Figure 26. HIV care continuum by risk factor in ND, 2020



### Disparities by Geography

There are also disparities in achieving viral suppression by geographic region. Region 1 (Divide, Williams and McKenzie County) has the lowest viral suppression rate of all PLWH. This region does not have an infectious disease specialty provider.

Figure 27. HIV care continuum by region in ND, 2020



The HIV Care Continuum provides a model to monitor progress toward the ND Integrated HIV and Viral Hepatitis Prevention and Care Plan's objectives that follow the National HIV/AIDS Strategy. The NDDoH continues to identify appropriate interventions to address the racial and socio-economic disparities and determine necessary re-engagement activities to improve outcomes at each stage of the care continuum. The NDDoH will reevaluate the existing services, such as partner services, additional testing for comorbidities, educational opportunities regarding care and treatment and prevention with positives activities to assess their effectiveness and potential improvement areas.

# Viral Hepatitis

Hepatitis is the general term that means “inflammation of the liver.” Many factors can cause hepatitis, including toxins, drugs, viruses, parasites and other factors. There are several types of viral hepatitis, but hepatitis A (HAV), hepatitis B (HBV) and hepatitis C (HCV) are the most common types of viral hepatitis in the U.S. and North Dakota. HAV is transmitted via fecal-oral route. HBV and HCV will be discussed in this document.

## Hepatitis B Virus (HBV)

In 2020, 83 cases of HBV were reported in North Dakota as meeting the CDC case definition. Reported numbers include both confirmed and probable cases.

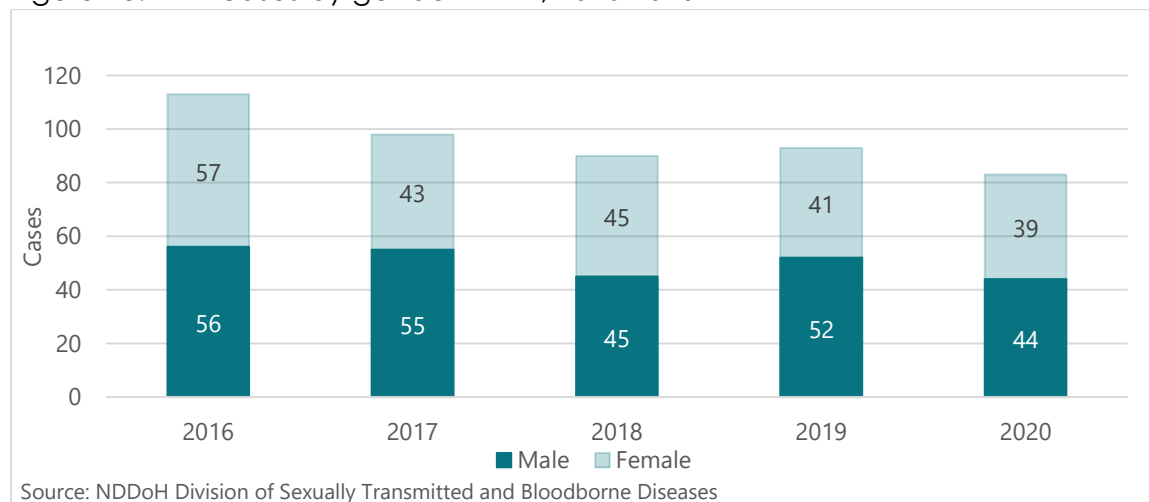
### Acute HBV

Four of the 83 cases were acute, meaning they were recently infected within the past 6 months. The rest of the cases were chronic but being reported for the first time.

### Gender

Of the 83 reported cases, 53% were male. Gender is reported by the laboratory/provider. Current gender identity data is unavailable.

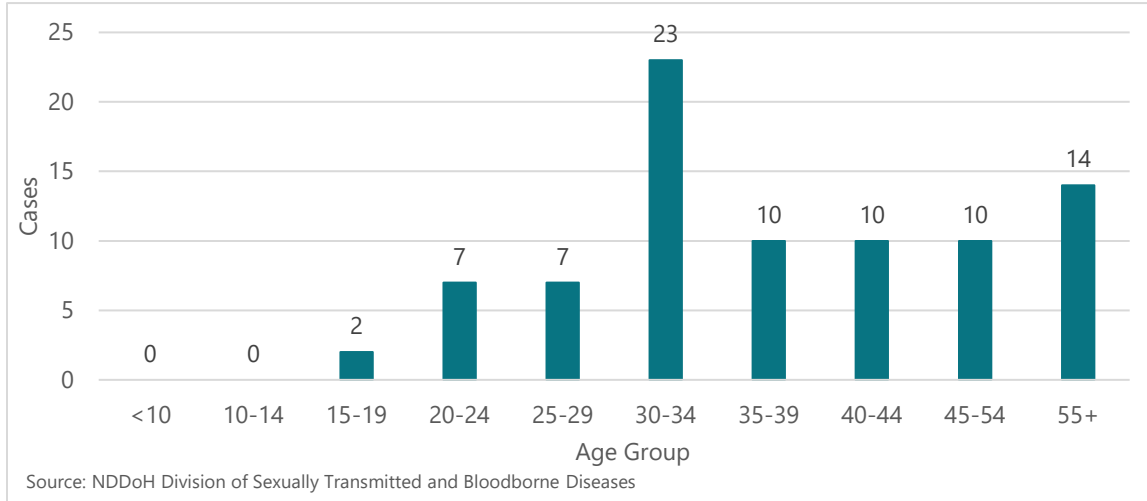
Figure 28. HBV cases by gender in ND, 2016-2020



### Age

The age range of newly reported HBV cases in 2020 was 16 to 85 years old, with an average age of 39.

Figure 29. HBV cases by age in ND, 2020



### Race

Most HBV cases are Black/African American or Asian and occur in persons born in countries where HBV is endemic. Since vaccination programs were started in the United States, the number of HBV infections among American-born individuals has been drastically reduced. Of the 65 cases with a known country of birth, 58 were born outside of the United States.

Figure 30. HBV rates by race in ND, 2016-2020

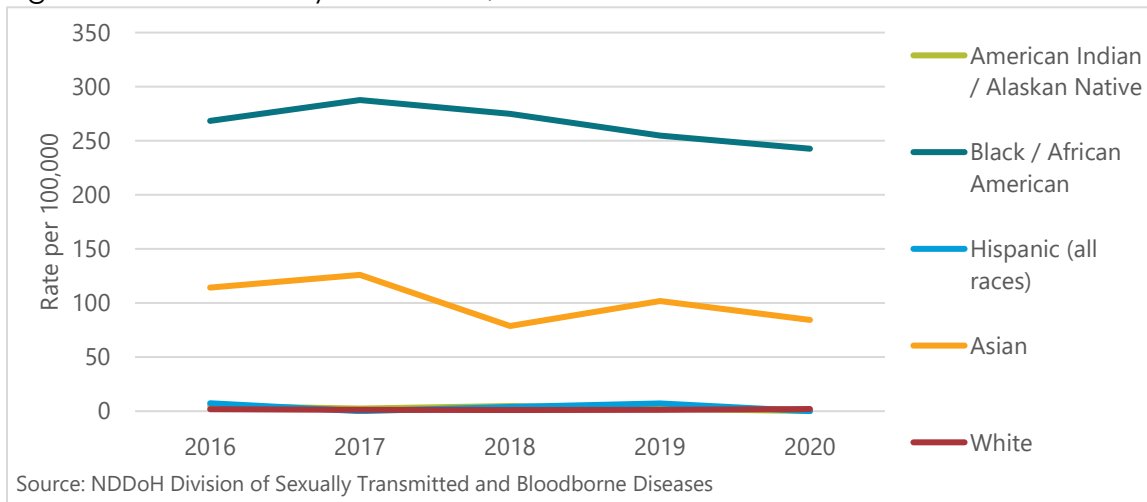
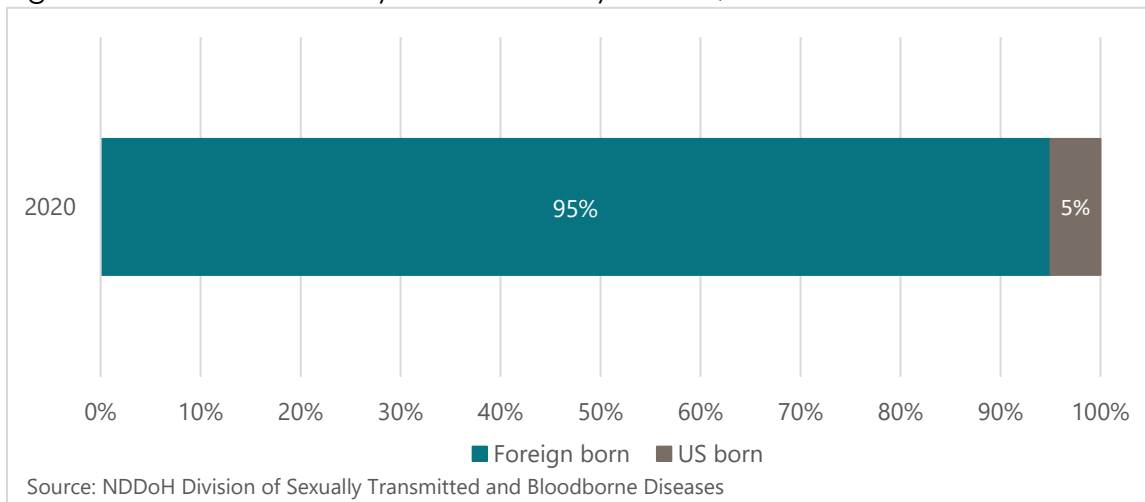




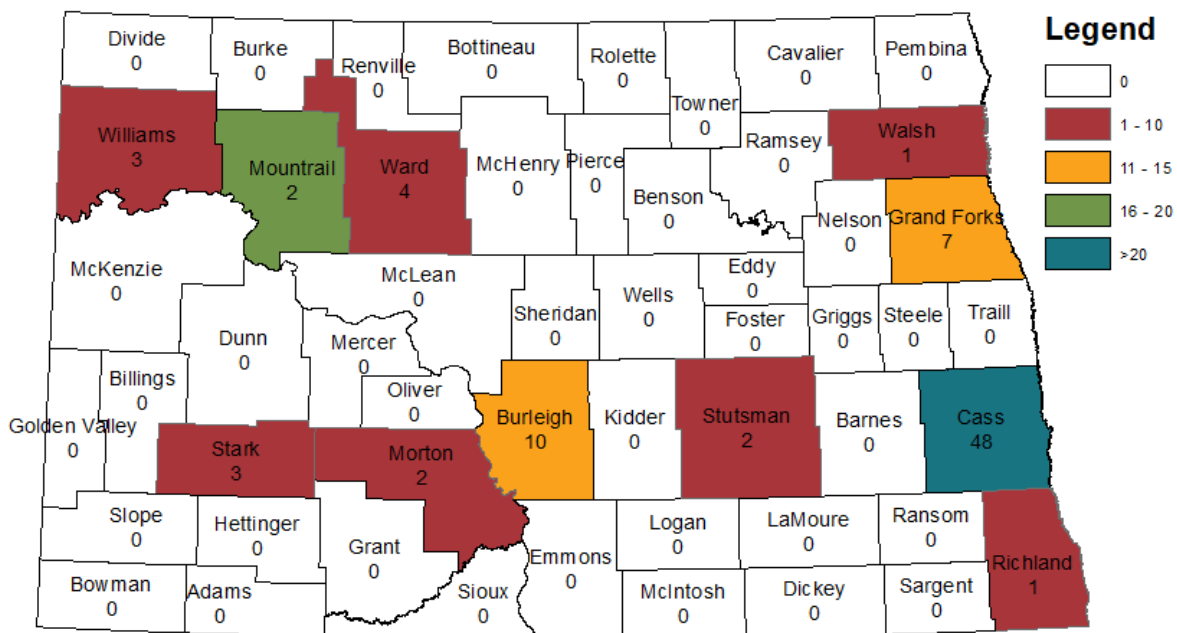
Figure 31. ND HBV cases by known country of birth, 2020



### Geography

In 2020, 11 counties reported at least one HBV case. The map below lists the number of cases reported by county. The shading indicates the rate of HBV per 100,000 persons by county.

Figure 32. ND HBV case counts and rates per 100,000 persons by county, 2020



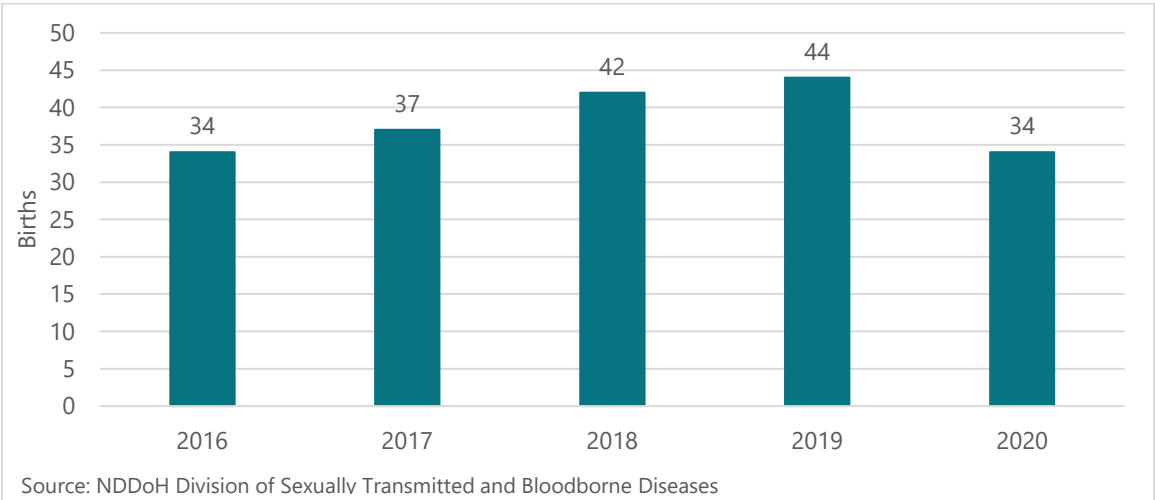
### Perinatal Follow-Up

The North Dakota Perinatal Hepatitis B Prevention Program seeks to prevent perinatal hepatitis B infections by managing infants born to hepatitis B positive women. Case management includes contacting hepatitis B positive women before delivery to educate them regarding

hepatitis B virus transmission and the importance of hepatitis B immune globulin (HBIG) and hepatitis B vaccine for their infant. The perinatal hepatitis B coordinator then notifies the hospital where the woman is planning to deliver so they are prepared to administer HBIG and hepatitis B vaccine to the infant at birth.

After delivery, the perinatal hepatitis B coordinator works with the infant’s health care provider to ensure that all three doses of vaccine are given and that hepatitis B serology testing is performed at nine months of age, 1-2 months after the last dose of vaccine. Hepatitis B serology testing is essential to determine if the infant gained protection from the vaccine and ensure they did not develop hepatitis B infection. In 2020, there were 34 births to hepatitis B positive women with all infants being negative for hepatitis B infection.

Figure 33. ND births to hepatitis B positive women, 2016-2020



### Hepatitis C Virus (HCV)

In 2020, North Dakota received 823 reports of persons newly identified as having a positive laboratory result that indicates past or present HCV infection. This number includes cases that may be chronic, acute, resolved, or unknown.

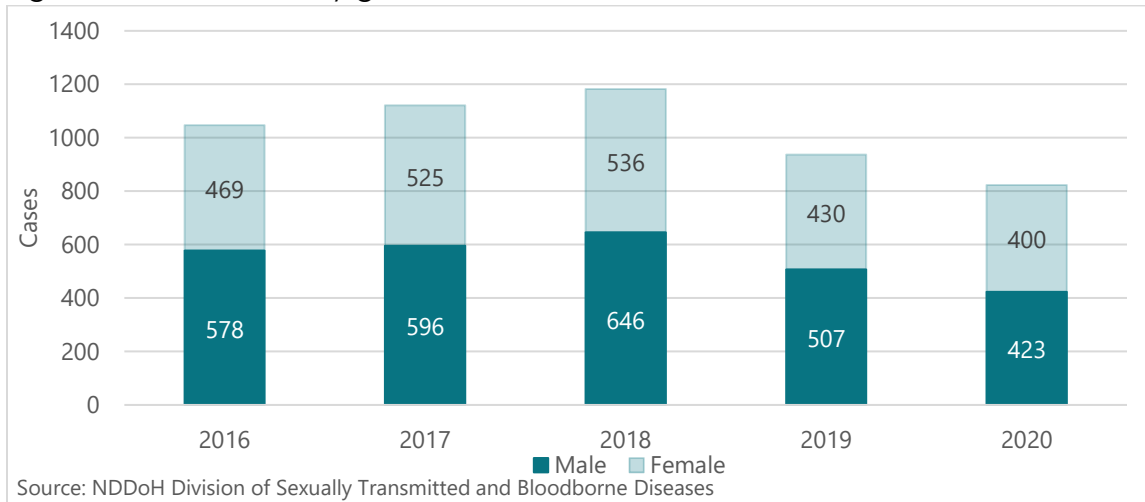
#### Acute HCV

Of the 823 cases, none were reported as acute. Acute hepatitis C is not often identified in North Dakota due to symptom history not being reported and/or testing occurring outside the acute phase.

#### Gender

Of the 823 HCV positive reports, 51% were male as reported by the laboratory or provider. Current gender identity data is unavailable.

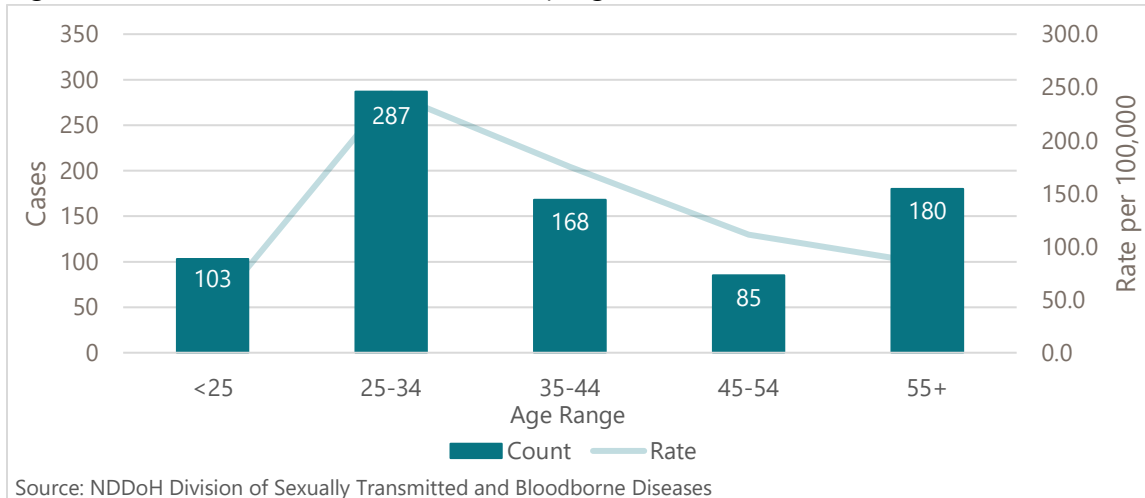
Figure 34. HCV cases by gender in ND, 2016-2020



### Age

HCV infections in North Dakota are predominantly adult infections. The 25 to 34 age group has more than double the rate of infection compared to the 55+ population at 244 cases per 100,000. The average age of HCV cases in 2020 was 39 years.

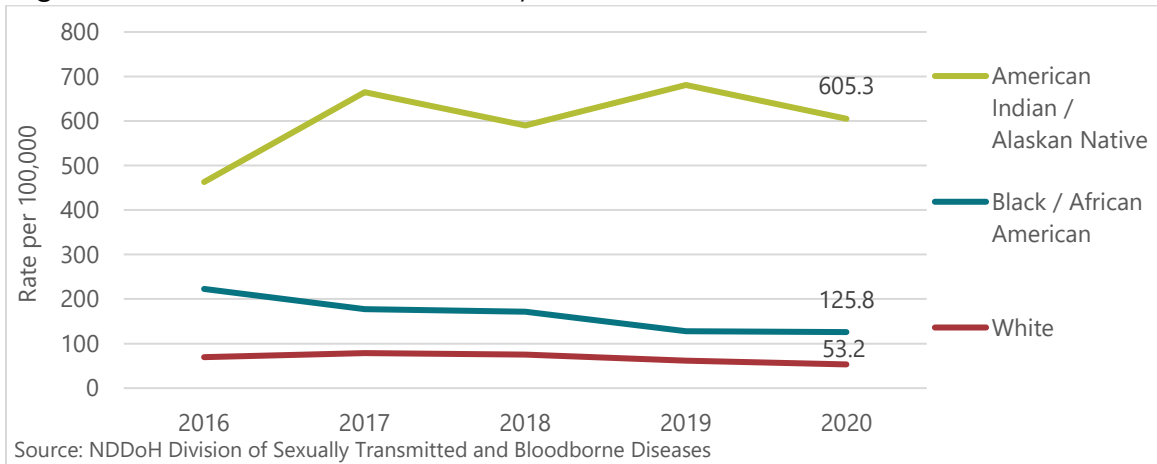
Figure 35. HCV case count and rate by age, 2020



### Race

Of the 823 cases in 2020, 625 had a documented race. American Indian/Alaskan Natives had a case count of 248 and had the highest rate of 605.3 cases per 100,000 followed by Black/African Americans with a case count of 28, a rate of 125.8 cases per 100,000. There were 348 cases reported among whites, with a case rate of 53.2 cases per 100,000.

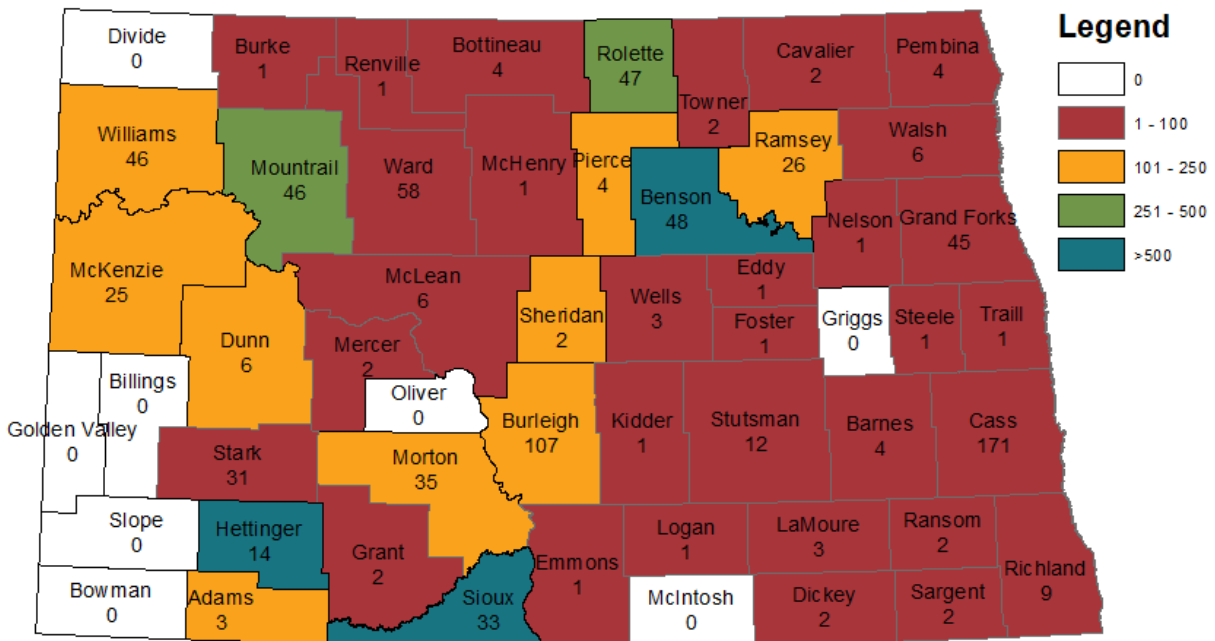
Figure 36. HCV incident case rate by race in North Dakota, 2016-2020



### Geography

In 2020, 45 counties reported at least one HCV case. The map below lists the number of reported cases by county. The shading indicates the rate of HCV per 100,000 persons by county. Sioux County had the highest rate with 780 cases per 100,000.

Figure 37. ND HCV case counts and rate per 100,000 by county, 2020

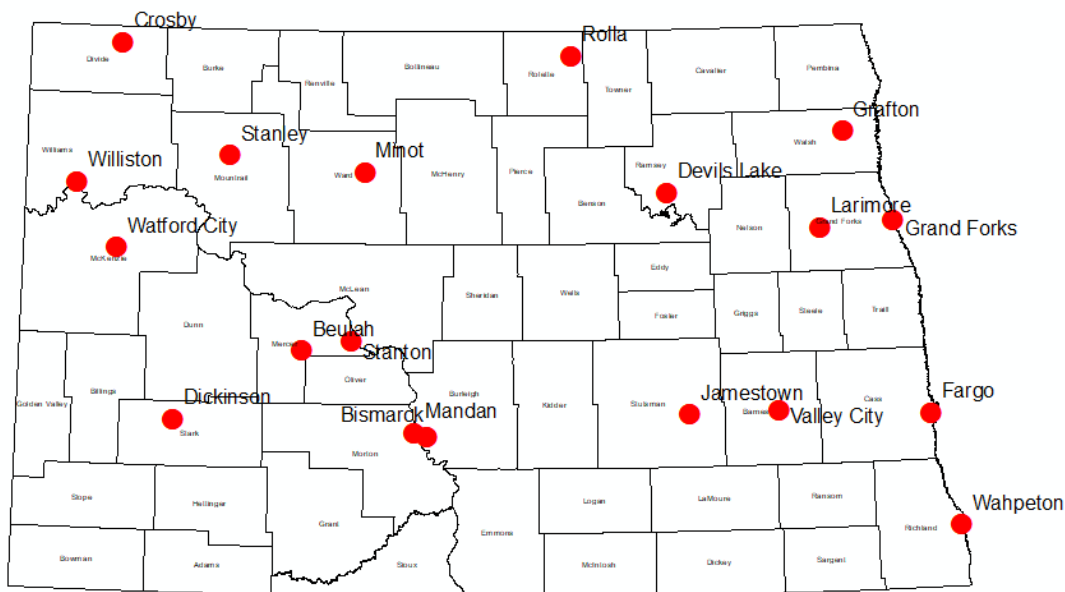


# HIV and HCV Counseling, Testing and Referral Program

The Counseling, Testing and Referral (CTR) Program offers HIV and HCV testing. Additionally, CTR sites provide HAV and HBV vaccinations to those at risk for HCV. This program aims to increase the accessibility of HIV and HCV health care services for populations at risk. CTR sites seek to inform clients of their HIV and HCV status, counsel and support risk reduction and secure needed referrals (i.e., medical, social, prevention and partner services).

The NDDoH contracted with 21 free and confidential CTR sites in 2020. With satellite clinics and non-contracted partners, 37 facilities across North Dakota are offering CTR services (Figure 38). Please note in the figure below some cities have multiple CTR sites; thus, the number of dots does not equate to the total number of sites offering CTR services. Contracted CTR sites consist of eight family planning clinics, seven local public health units, four student health centers and two pregnancy/sexual health clinics. Note that seven family planning clinics or local public health units also offer services at their county correctional facilities. CTR sites often have the advantages of providing comprehensive health care, including STI testing and treatment, additional vaccinations, primary health care, substance abuse referrals and many other services, and integrated HIV and HCV testing.

Figure 38. Location of CTR sites

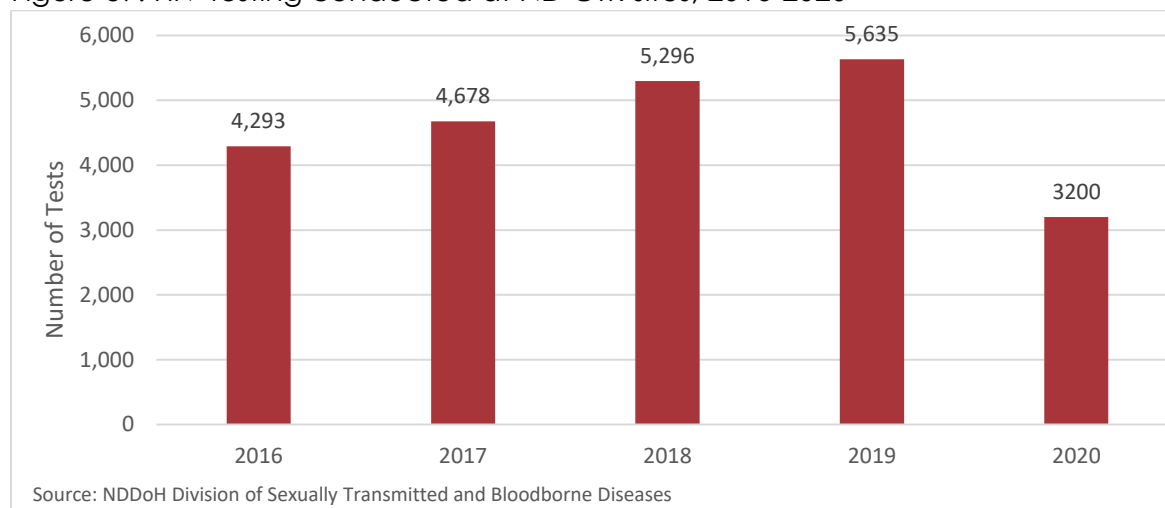


## HIV/AIDS Counseling, Testing and Referral Data

In 2020, CTR sites conducted 3,200 HIV tests, a 43.2% increase from 2019. During the COVID-19 pandemic response, many CTR sites experienced diversion to pandemic activities including

contact tracing, testing and vaccination. Several facilities closed for a period of time during the pandemic and/or stopped offering services for the CTR program.

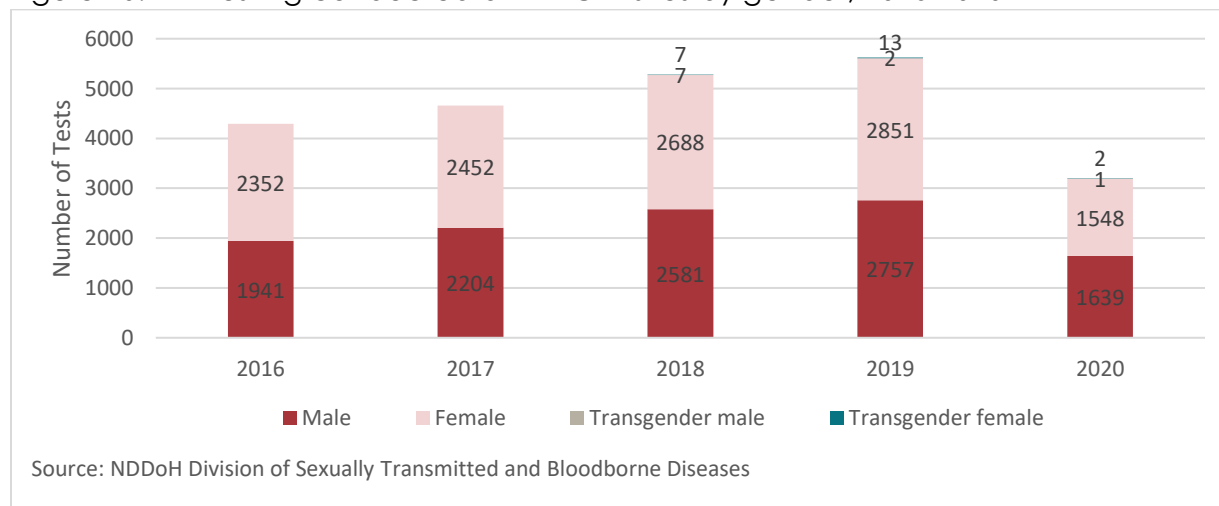
Figure 39. HIV testing conducted at ND CTR sites, 2016-2020



### Gender Identity

Of the 3,200 tests, 1,639 (51.2%) were male and 1,548 (48.4%) were female. Only three HIV tests were performed among individuals identifying as transgender - two transgender females and one transgender male. Three individuals reported having a gender identity that is not male, female, or transgender and seven individuals refused to report or had an unknown current gender identity. Although there was a significantly larger number of males tested compared to females tested, 2020 was the first year in the last five years in which more males were tested than females. In the CTR program, family planning clinics typically screen many female patients, and these sites experienced a significant service disruption which could highlight the decrease in female testing in 2020.

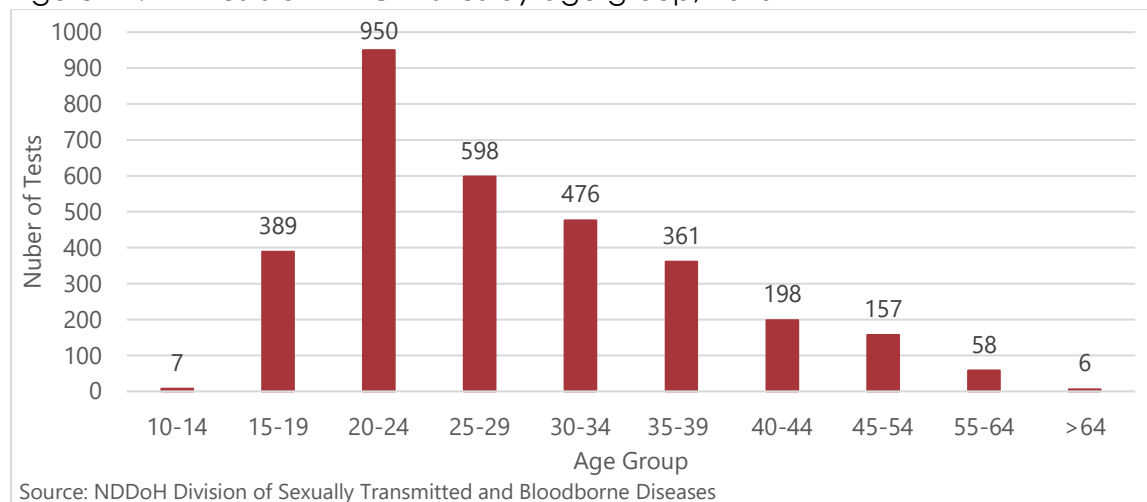
Figure 40. HIV testing conducted at ND CTR sites by gender, 2016-2020



## Age

Almost half (48.3%) of clients tested for HIV were between 20 and 29. This is consistent with the same age groups with the highest number of incident cases of HIV in North Dakota. The age group with the third highest number of individuals tested was 30 to 34 years in 2020 and 15 to 19 years in 2019.

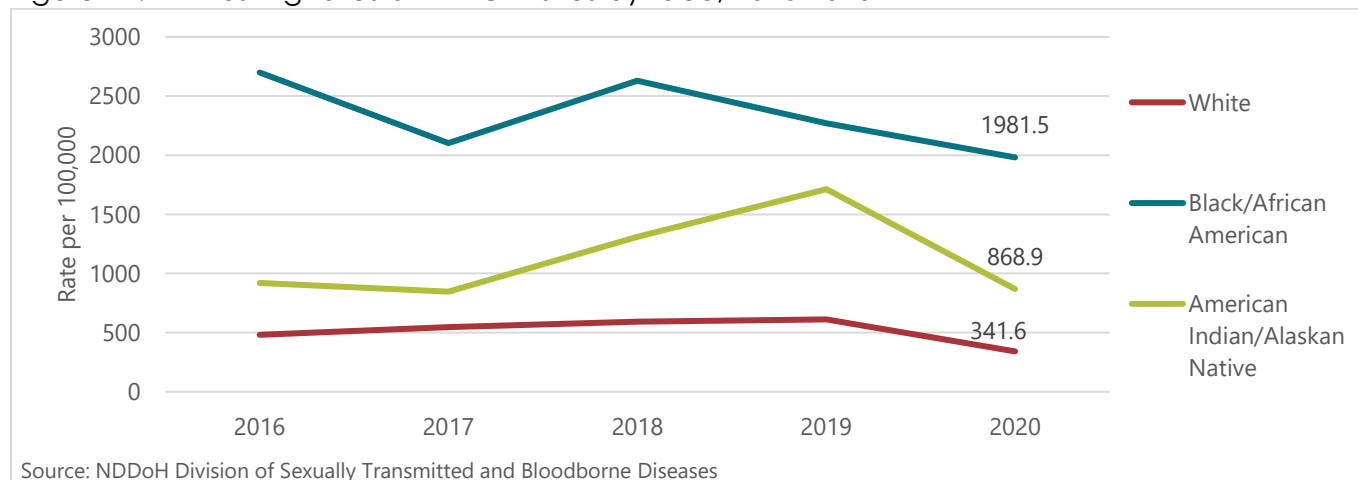
Figure 41. HIV tests at ND CTR sites by age group, 2020



## Race

In 2020, North Dakota CTR sites tested 2,234 people identifying as white, 441 as Black/African Americans, 356 as American Indian/Alaskan Native and 56 as Asian. Testing rates and incident rates of HIV are highest among Black/African Americans. Although the HIV incidence rate for North Dakota is high among Black/African Americans from outside the U.S., only 51 (11.6%) Black/African Americans tested at CTR programs were known born outside the United States. Increased efforts must be made to ensure this target population is being tested in North Dakota.

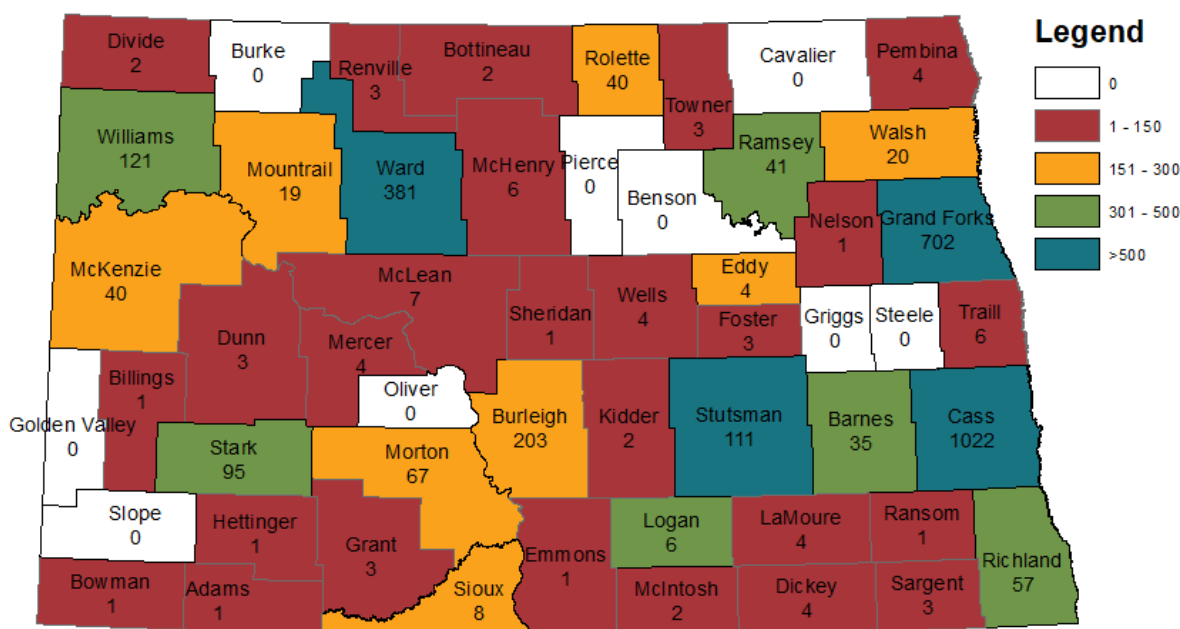
Figure 42. HIV testing rates at ND CTR sites by race, 2016-2020



## Geography

Of the HIV tests performed at CTR sites in 2020, 3,045 or 95.2% of those tested were North Dakota residents. The remaining individuals resided in 15 different states. In North Dakota, residents in 44 of 53 counties were reported to have received an HIV test.

Figure 43. Number of HIV tests and rates per 100,000 by ND county, 2020

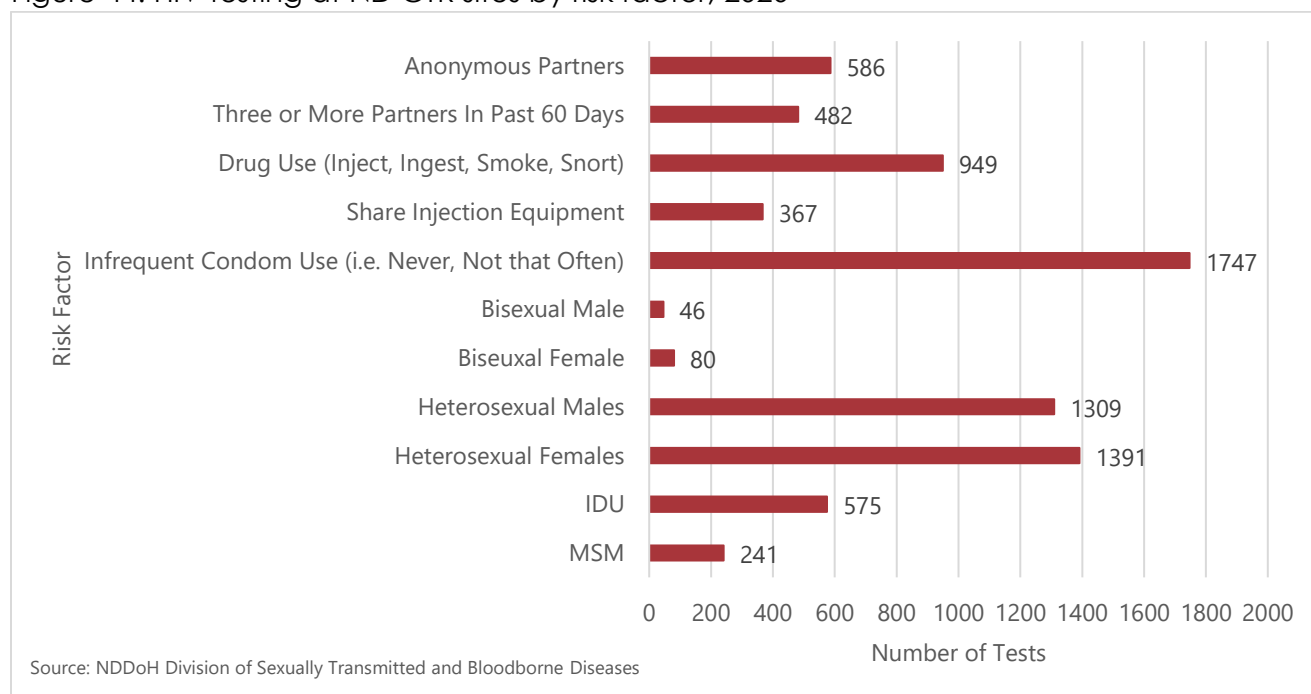


## Risk Factors

In 2020, 18% of clients identify as a person who injects drugs (PWID) either currently or in the past. Of males tested at CTR sites, 14.7% identified as MSM. For those tested for HIV, 54.6% reported never using condoms or not that often in the previous 12 months and 15.1% had three or more partners in the past 60 days. Also, 18.3% reported having anonymous sex partners over the last 12 months.



Figure 44. HIV testing at ND CTR sites by risk factor, 2020



### HIV Positives Identified at CTR Sites

In 2020, 10 individuals were identified as being rapid HIV positive. Of those 10, five were confirmed to be newly identified HIV cases. The rapid HIV test used at CTR sites had a 0.16% false positive rate in 2020 with five clients identified to have a false positive rapid HIV test. This false positive rate is similar to the rate seen in 2019. Of the new cases identified in 2020, two were male and three were female. Three cases identified as white, one as American Indian/Alaska Native and one as Asian. Of male cases, one individual identified as MSM. None of the five newly diagnosed HIV case reported a history of injection drug use. Two of the newly identified cases had heard of HIV PrEP but had not taken PrEP at the time of their diagnosis or in the 12 months prior.

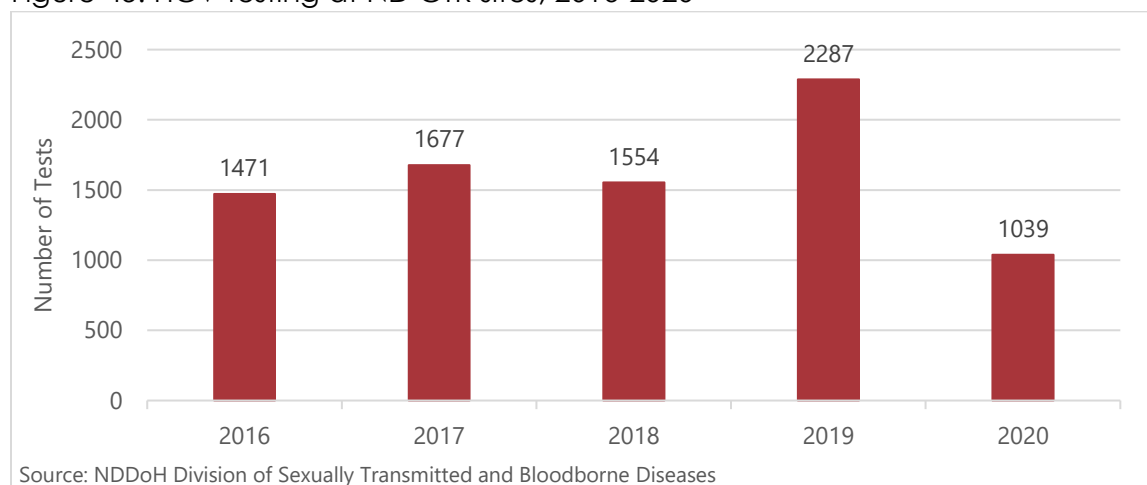
### HIV PrEP Referrals CTR Sites

In 2020, 25.8% of those tested for HIV reported having ever heard of HIV PrEP compared to 19.6% in 2019. Eighty clients reported using PrEP in the previous 12 months and 62 were currently on PrEP. In 2019, there were 63 clients on HIV PrEP. CTR staff determined that PrEP was recommended for 355 (11.1%) of those tested for HIV. Of those individuals, 173 (48.7%) had never heard of PrEP. The CTR programs aim to provide education to clients tested for HIV about the many HIV prevention tools available, including increasing the number of clients recommended for PrEP to be referred and linked to a PrEP care provider. In 2020, only four CTR sites were prescribing PrEP.

## HCV Counseling, Testing and Referral Data

In 2020, 1,039 patients were tested for HCV, a 54.6% decrease from 2019. During the COVID-19 pandemic response many of CTR sites experienced diversion to pandemic activities including contact tracing, testing and vaccination. Several facilities closed for a period of time during the pandemic and/or stopped offering services for the CTR program.

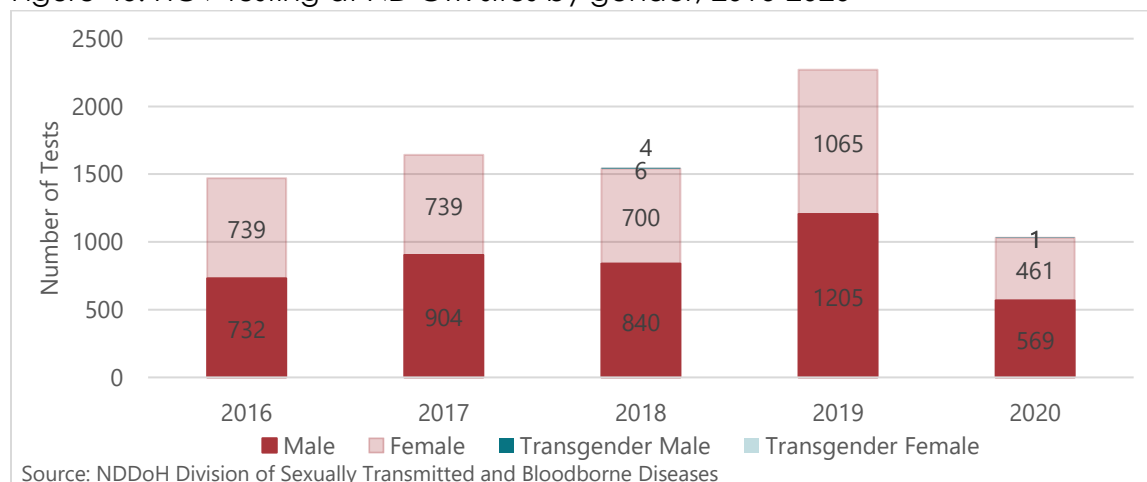
Figure 45. HCV testing at ND CTR sites, 2016-2020



### Gender

In 2020, CTR sites tested 569 (54.8%) males, 461 (44.4%) females, one individual identifying as transgender female, one individual identified as another gender and seven individuals had an unknown gender or refused to report their gender were tested for HCV.

Figure 46. HCV testing at ND CTR sites by gender, 2016-2020

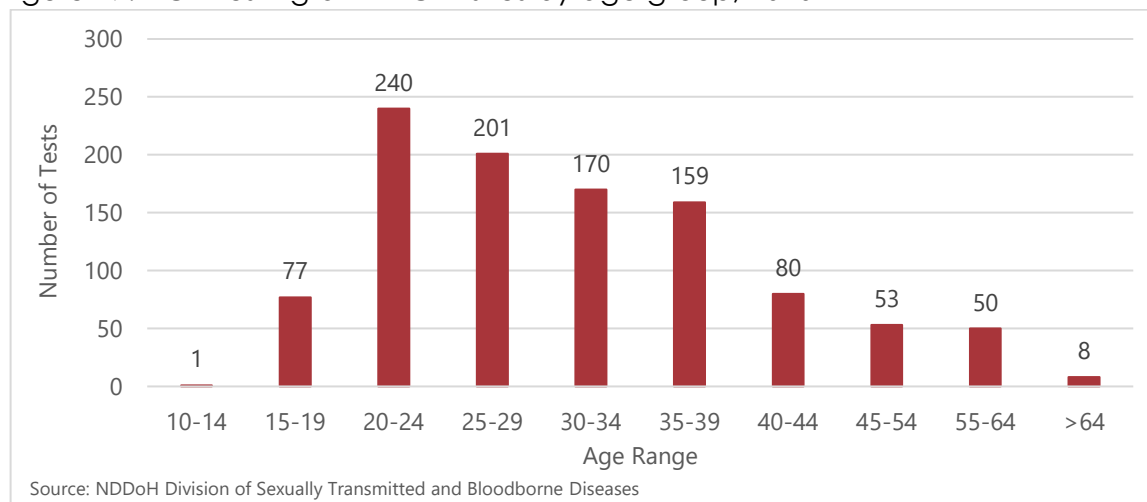


### Age

There has been an increase in HCV infections in North Dakota and nationwide among persons under 35 years of age. CTR sites are excellent places for testing young individuals in North

Dakota. In 2020, 66.3% of individuals tested for HCV were under the age of 35. Baby boomers, those born between 1945 and 1965, also have a higher rate of hepatitis C infection in the U.S. and North Dakota. CTR sites may screen baby boomers if they have an identified risk or have no health insurance as many baby boomers are referred to a primary care provider. CTR sites tested only 59 individuals that fit into the baby boomer age group.

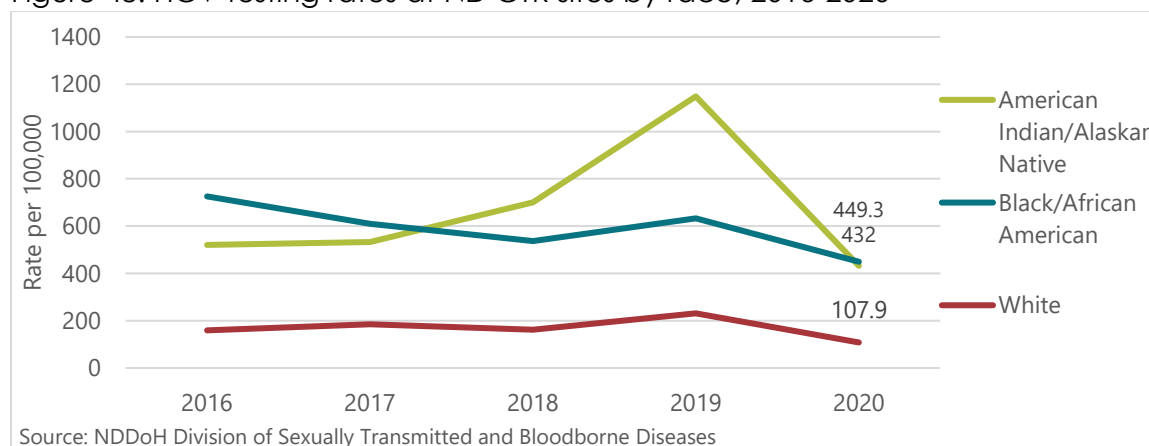
Figure 47. HCV testing at ND CTR sites by age group, 2020



## Race

In 2020, the majority (68.0%) of those tested for HCV were white. Clients also identified as 17.0% American Indian/Alaska Native, and 9.6% were Black/African Americans. Testing rates were highest among Black/African Americans followed closely by American Indians/Alaskan Natives. American Indian/Alaskan Natives are the population in North Dakota with the greatest HCV disparity in North Dakota.

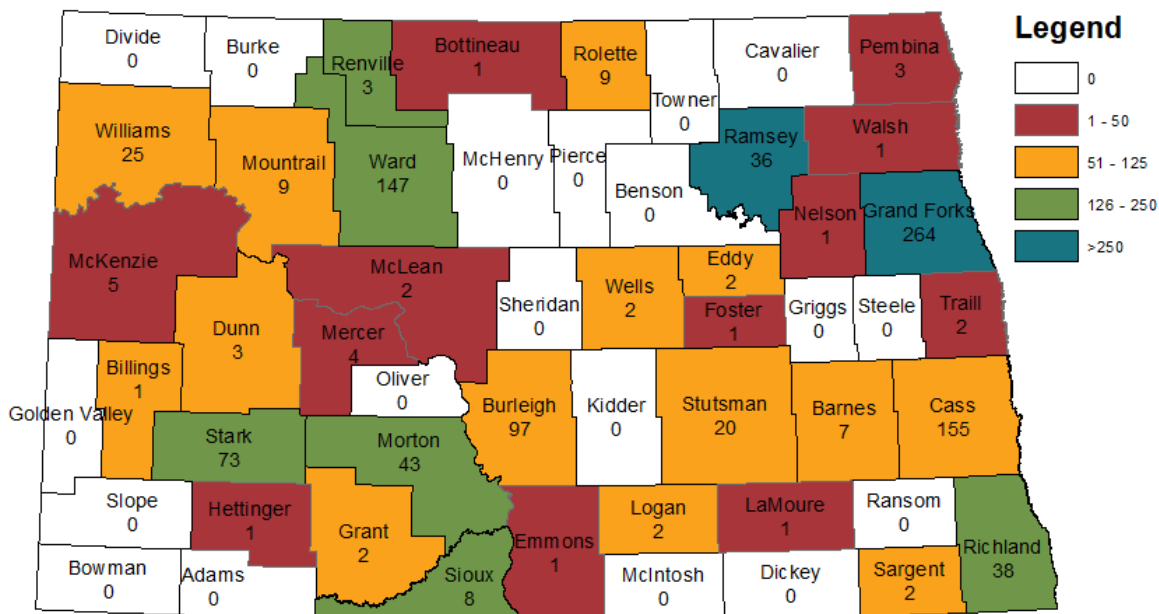
Figure 48. HCV testing rates at ND CTR sites by race, 2016-2020



## Geography

Of all HCV tests performed at CTR sites in 2020, 972 (93.6 %) were among ND residents. CTR sites also tested clients from an additional five states. Residents of 35 of 53 counties were reported to have received an HCV test at CTR sites in 2020.

Figure 49. Number of HCV tests and rates per 100,000 persons by ND county, 2020



## Risk Factors

Many clients tested for HCV at CTR sites have multiple risk factors. Of those tested, 32.9% (342) identified injecting drugs, either currently or in the past. Of those who had a history of injection drug use, 64.9% reported sharing injection equipment. One commonly reported additional risk factor reported by 14.2% of individuals was receiving tattoos or piercings in an unsterile environment (14.2%). Of all the males tested for HCV, 20.9% identified as MSM.

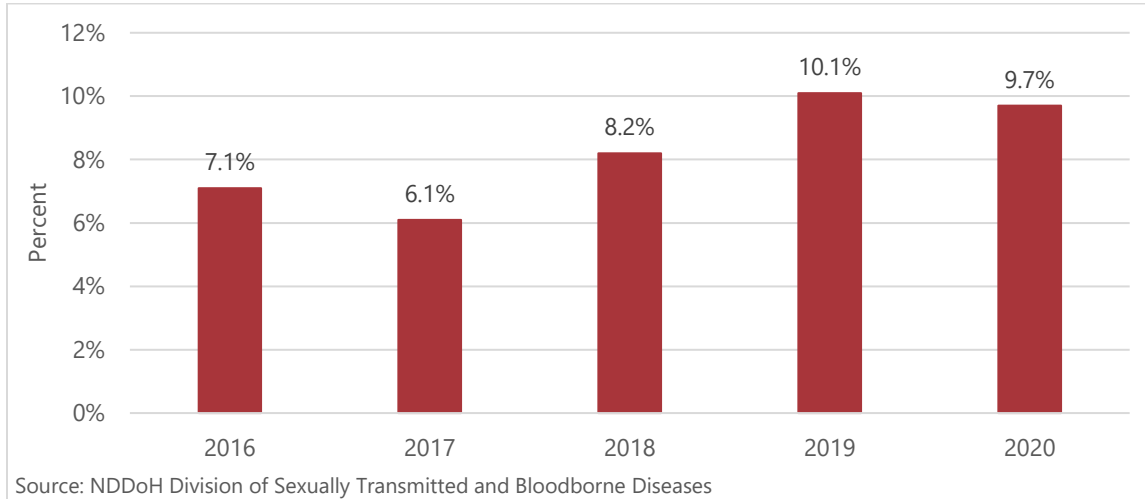
## HCV Positives Identified at CTR Sites

In 2020, 99 (9.7%) individuals were identified as being rapid HCV positive. Of those identified as rapid positive, there were 47 (47.5%) females and 51 (51.5%) males. The ages of those identified ranged from 19 to 67 with 51.5% being under the age of 35. Of the rapid HCV positives that were identified, 77 (77.8%) identified as having a history of or currently injected drugs. Confirmatory tests were performed on 75 of 99 rapid HCV positive cases identified at CTR sites.

Between those who were tested by rapid and conventional technologies, there were a total of 112 individuals who had a positive hepatitis C test result. Of those, 63.4% were identified as currently infected with HCV or have a chronic HCV infection. Twenty-five individuals were identified as RNA negative and have resolved HCV infections and 16 individuals only had a

positive rapid HCV result thus had an unknown HCV status. CTR sites often provide linkage to care services, ensuring that clients are referred to appropriate health care such as a substance abuse provider or a health care provider for hepatitis C treatment evaluation.

Figure 50. Percentage of HCV rapid positives, 2016-2020

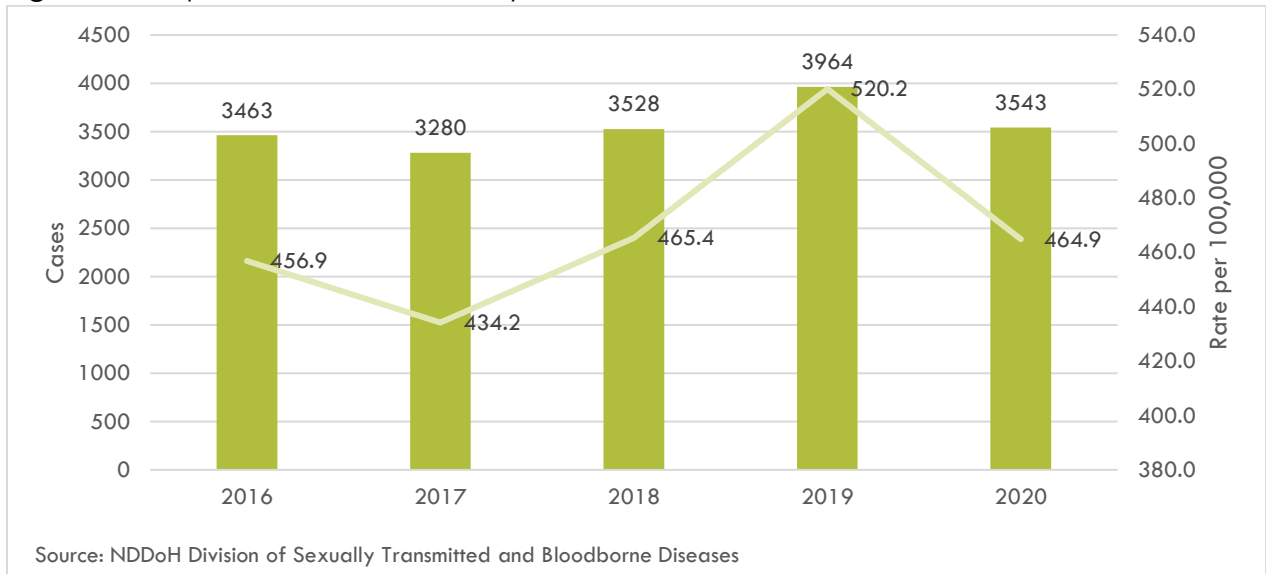


# Sexually Transmitted Infections (STIs)

## Chlamydia

Chlamydia is the most common notifiable disease in the United States reported to the CDC. In 2020, North Dakota reported 3,543 cases of chlamydia, a rate of 464.9 cases per 100,000 persons.

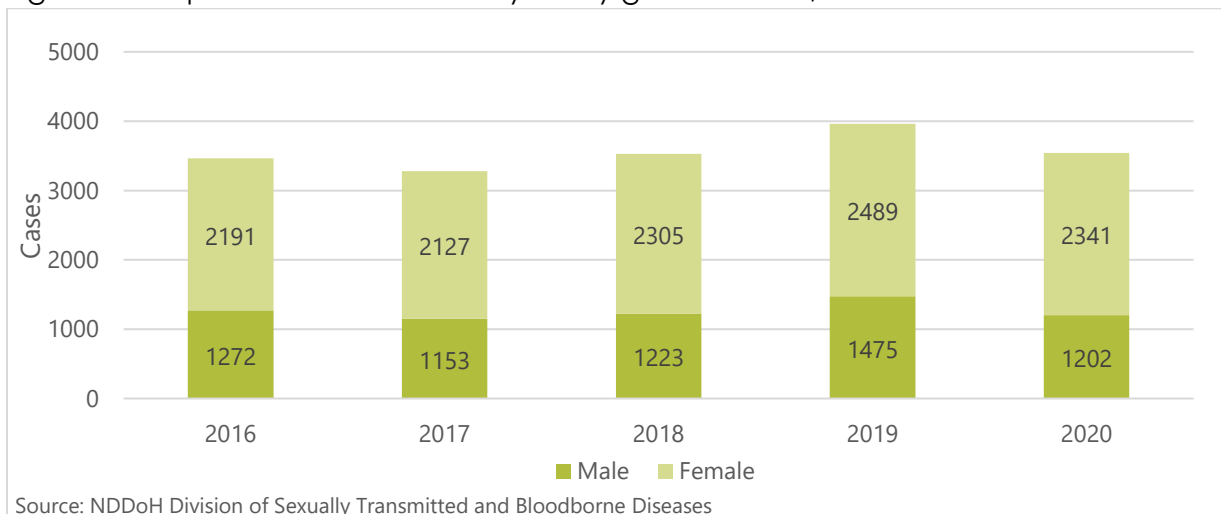
Figure 51. Reported cases of chlamydia and North Dakota incident rate, 2016-2020



## Gender

Of the chlamydia cases reported in 2020, 2341 (66%) were female as reported by the laboratory and/or provider. This distribution is expected as females are screened more frequently for the disease through annual gynecological visits, prenatal care and age-based screening recommendations. Current gender identity data is unavailable.

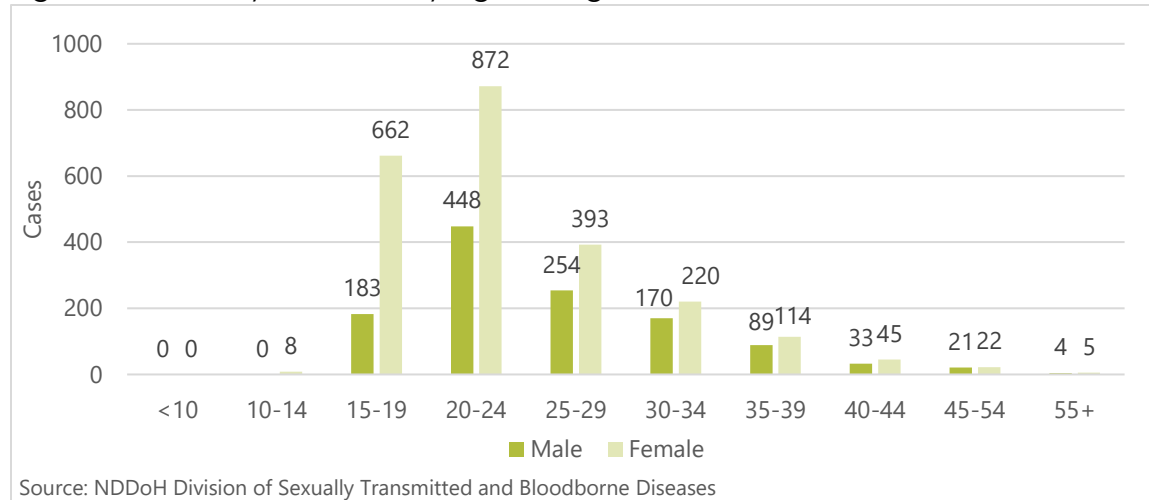
Figure 52. Reported cases of chlamydia by gender in ND, 2016-2020



## Age

Over 40% of chlamydia cases over the past five years have been in adults between the ages of 20 and 24. The second highest age category is teenagers aged 15 to 19. Male cases of chlamydia are on average older than female cases.

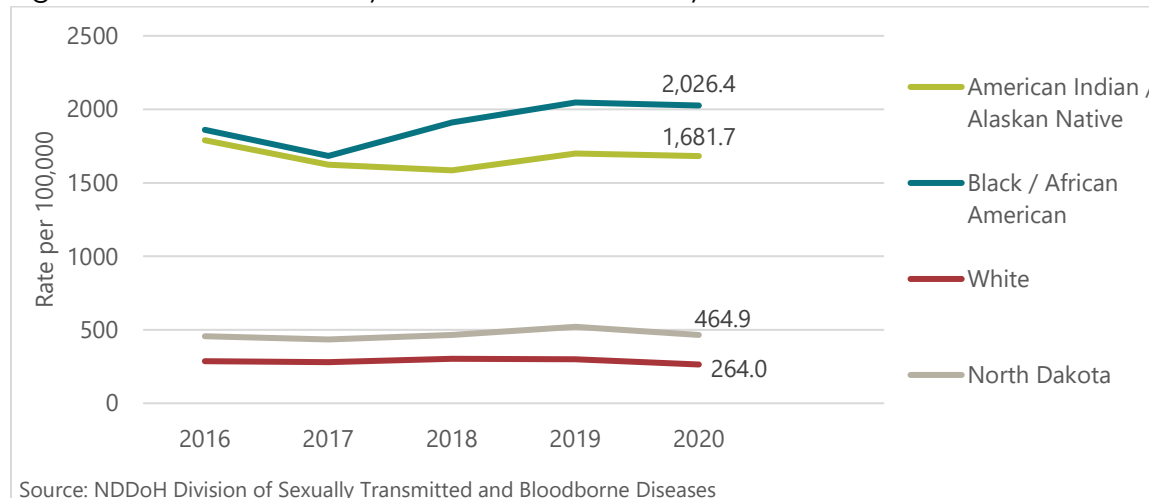
Figure 53. Chlamydia cases by age and gender in ND, 2020



## Race

Of the cases with a known race (n=2,912), 1,726 cases were reported among whites, followed by American Indian/Alaskan Natives with 689 cases and Black/African Americans with 451 cases. Due to smaller population sizes, Black/African Americans had the highest rate of 2,026 cases per 100,000 persons.

Figure 54. Rates of chlamydia in North Dakota by race, 2016-2020

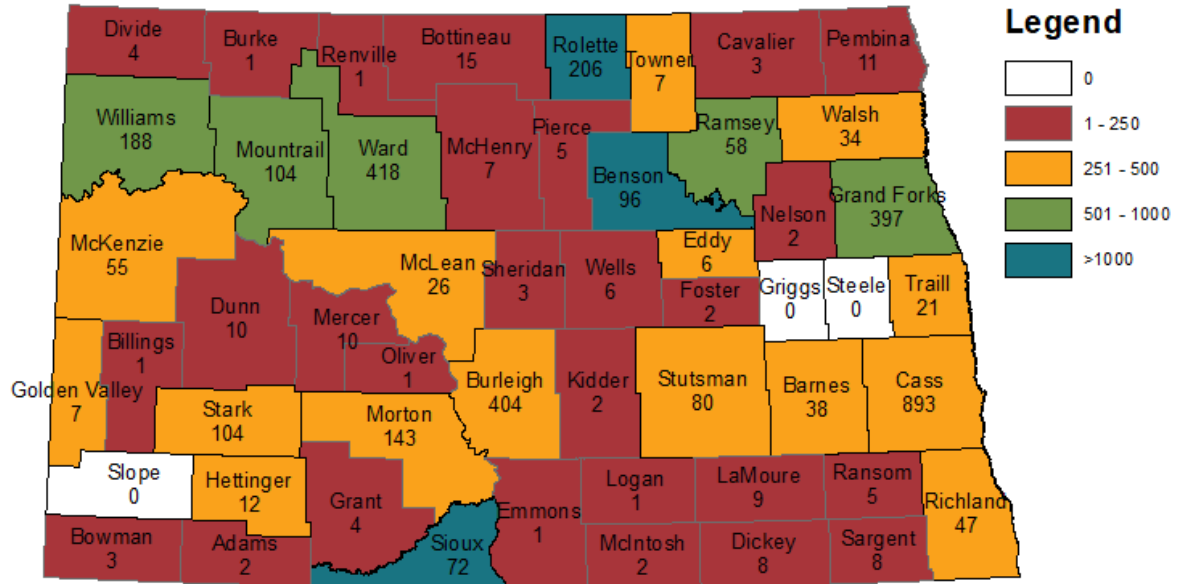


## Geography

In 2020, 50 of 53 counties reported at least one case of chlamydia. The map below lists the number of reported cases by county. The shading indicates the rate of chlamydia per 100,000 persons by county. Sioux, Rolette and Benson Counties reported the highest rates of chlamydia in 2020. See Appendix A for detailed counts and rates by county for 2016-2020.



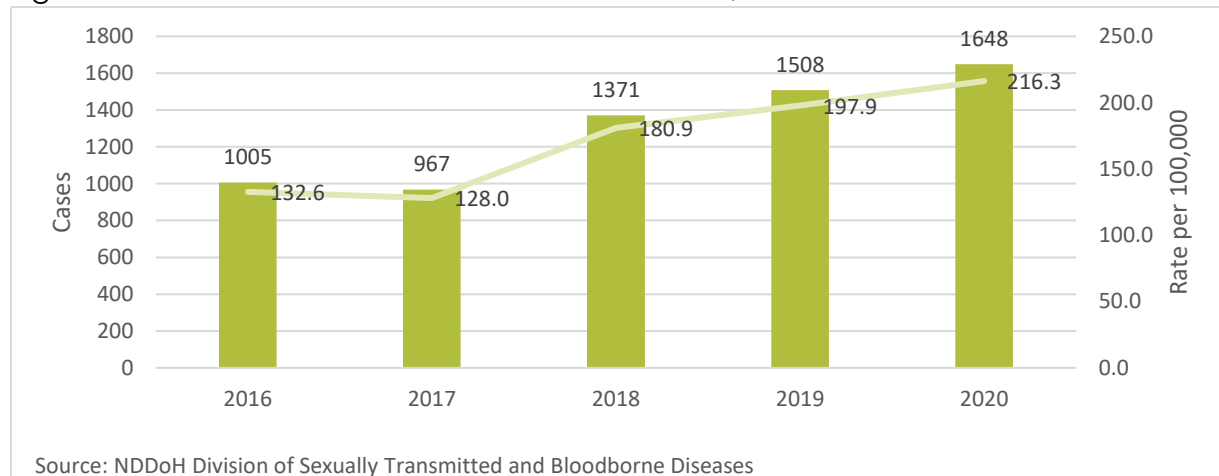
Figure 55 Chlamydia cases by ND county shaded by rate, 2020



## Gonorrhea

Unlike the other conditions in 2020, there was an increase in the number of gonorrhea cases reported in North Dakota with a total of 1,648 cases. Gonorrhea cases have increased across the United States at unprecedented rates.

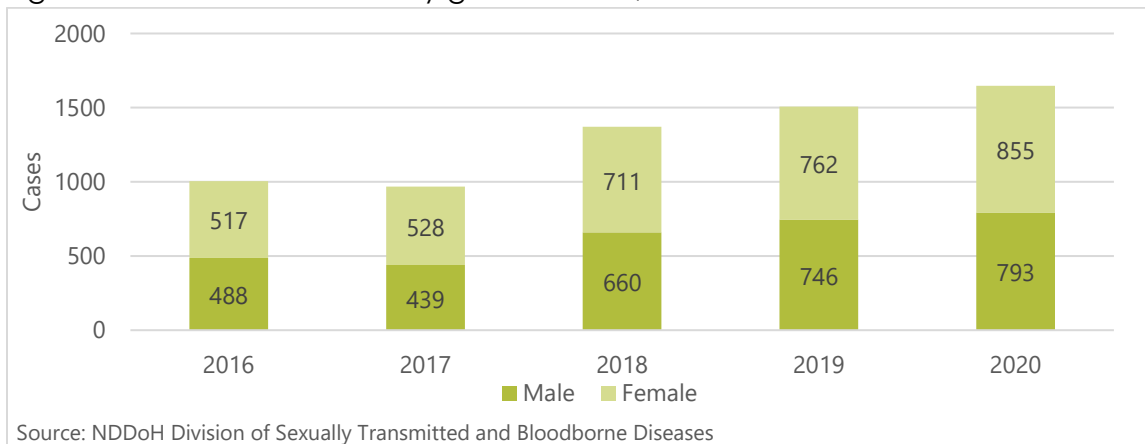
Figure 56. Gonorrhea cases and North Dakota rate, 2016-2020



## Gender

The gender distribution of gonorrhea is more evenly spread than chlamydia. Of the 1648 cases in 2020, 855 (52%) were female and 793 (48%) were male as reported by the laboratory and/or provider. Current gender identity data is unavailable.

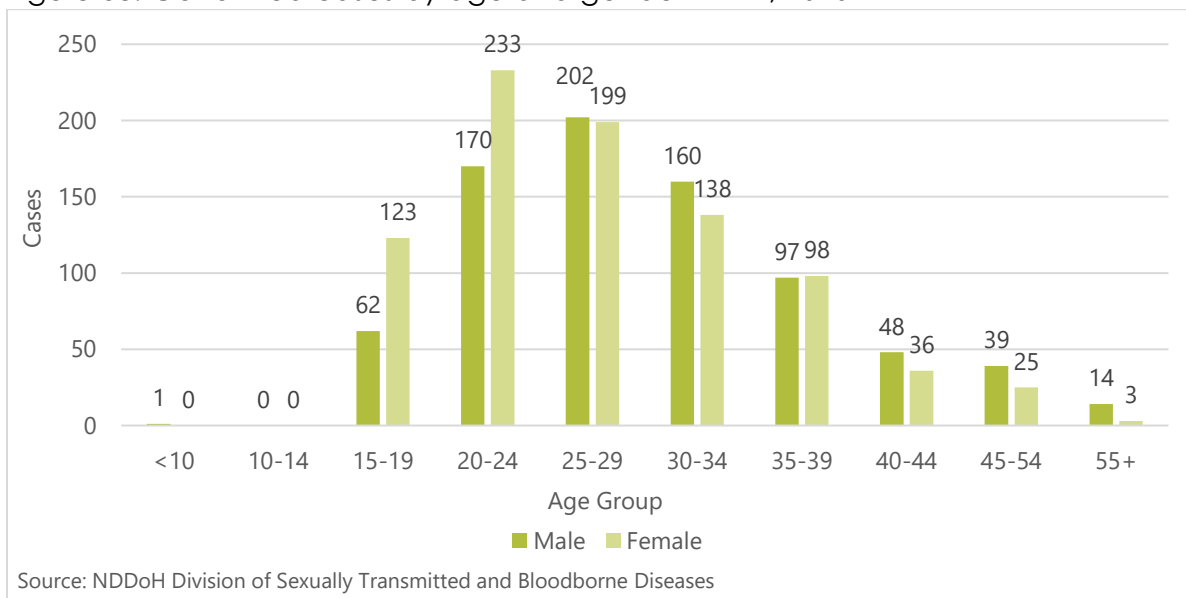
Figure 57. Gonorrhea cases by gender in ND, 2016-2020



### Age

Teenagers and young/early adults continue to be disproportionately affected by gonorrhea. The majority (49%) of cases reported are among persons between the age of 20-29. Male cases are on average older than female cases.

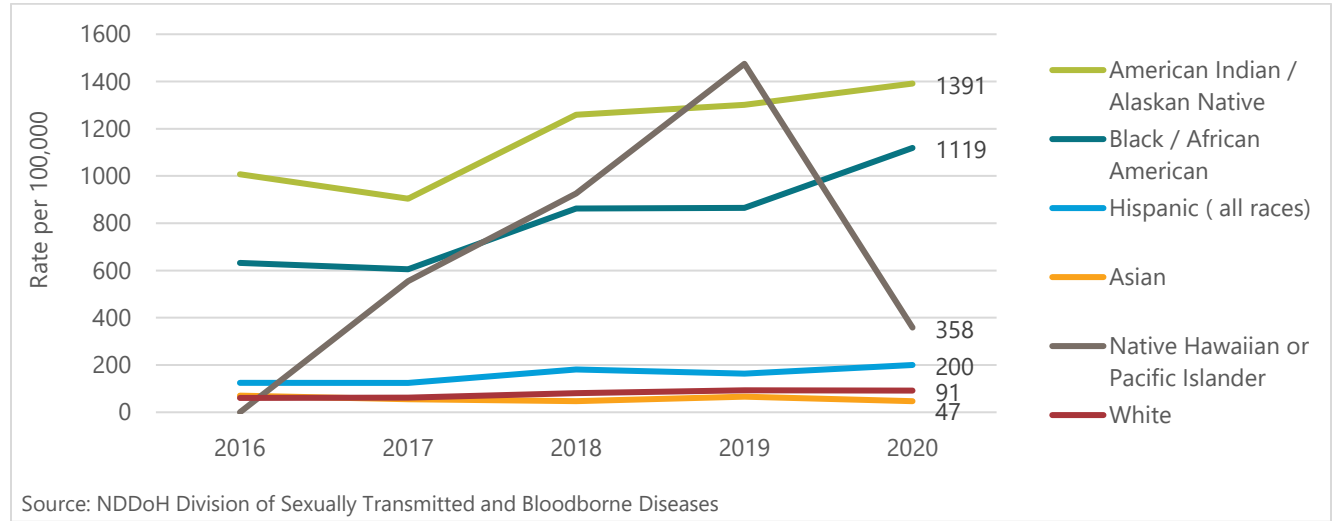
Figure 58. Gonorrhea cases by age and gender in ND, 2020



### Race

North Dakota reported increased gonorrhea rates among nearly all races in 2020. American Indians/Alaskan Natives accounted for 570 cases, a rate of 1,391 cases per 100,000 persons. Two hundred forty-nine cases were reported among Black/African Americans, a rate of 1119 cases per 100,000. White North Dakotans reported a total of 597 cases, with a rate of 91 cases per 100,000.

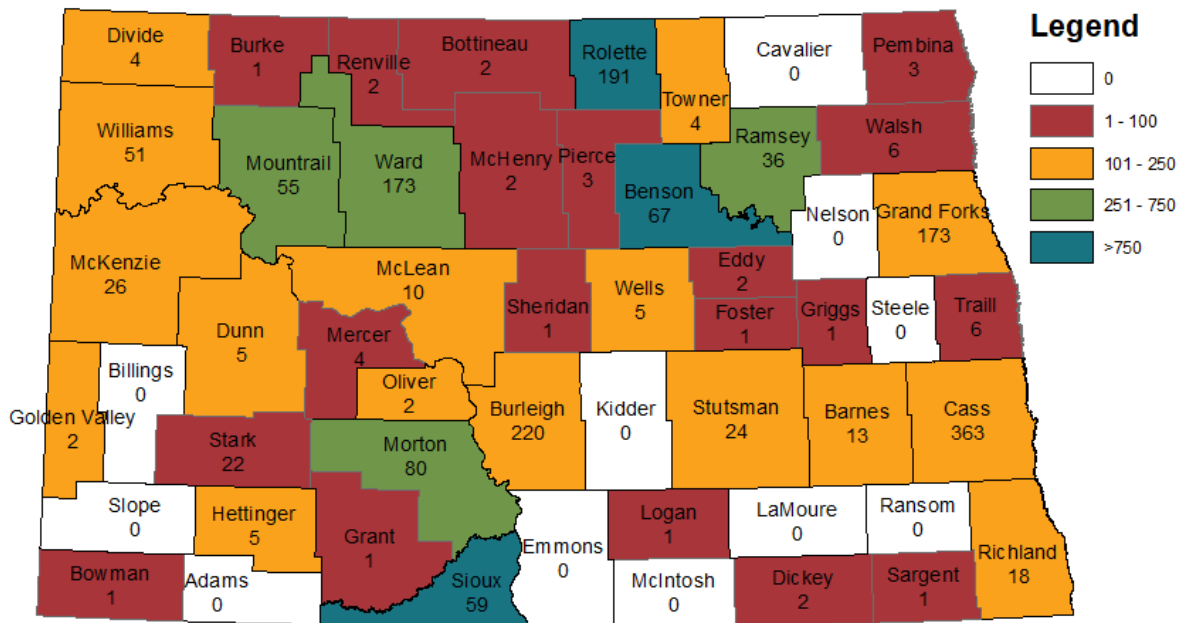
Figure 59. Gonorrhea rates by race in ND, 2016-2020



### Geography

In 2020, 42 counties reported at least one case of gonorrhea. The map below lists the number of reported cases by county. The shading indicates the rate of gonorrhea per 100,000 persons by county. Sioux, Rolette and Benson Counties reported the highest rates of gonorrhea in 2020. See Appendix B for detailed counts and rates by county for 2016-2020.

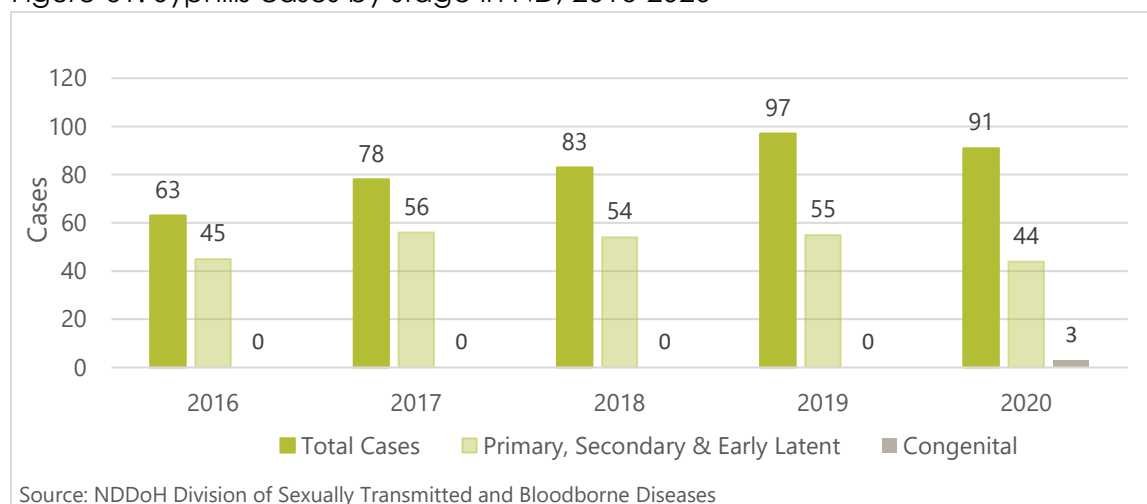
Figure 60. Gonorrhea case counts and rate per 100,000 persons by ND county, 2020



## Syphilis

In 2020, a total of 91 cases of syphilis were reported. Of the cases reported, 44 were early stage (primary, secondary, or early latent stages) of syphilis. Primary and secondary syphilis cases are diagnosed based on the presence of symptoms at the time of testing. Early latent is diagnosed based on the exposure occurring within the last 12 months in the absence of symptoms.

Figure 61. Syphilis cases by stage in ND, 2016-2020



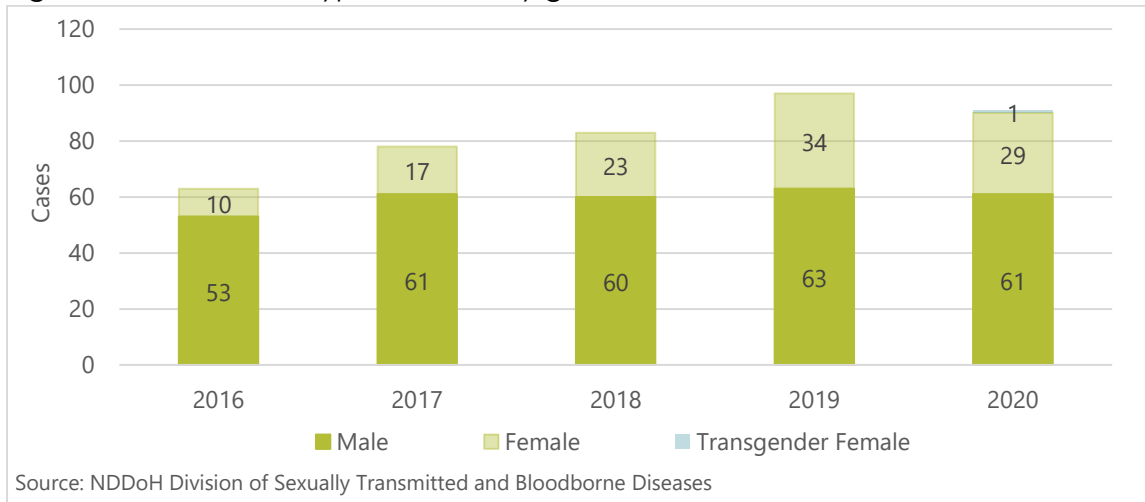
## Congenital Syphilis

For the first time in over a decade, the NDDoH received reports of congenital syphilis. Congenital syphilis is acquired by a fetus before birth due to mom not being diagnosed and/or not treated appropriately. In 2018, due to the increase of syphilis cases among women of childbearing age, the NDDoH recommended pregnant women be tested three times throughout pregnancy for syphilis, at first prenatal visit, 28-32 weeks and at the time of delivery. Two moms received prenatal care but were only tested for syphilis at first prenatal visit and became infected after and the third mom received no prenatal care. The infants were all appropriately treated for their infections.

## Gender

Of the 91 syphilis cases in 2020, 61 (67%) cases were reported among males. Female cases continue to increase.

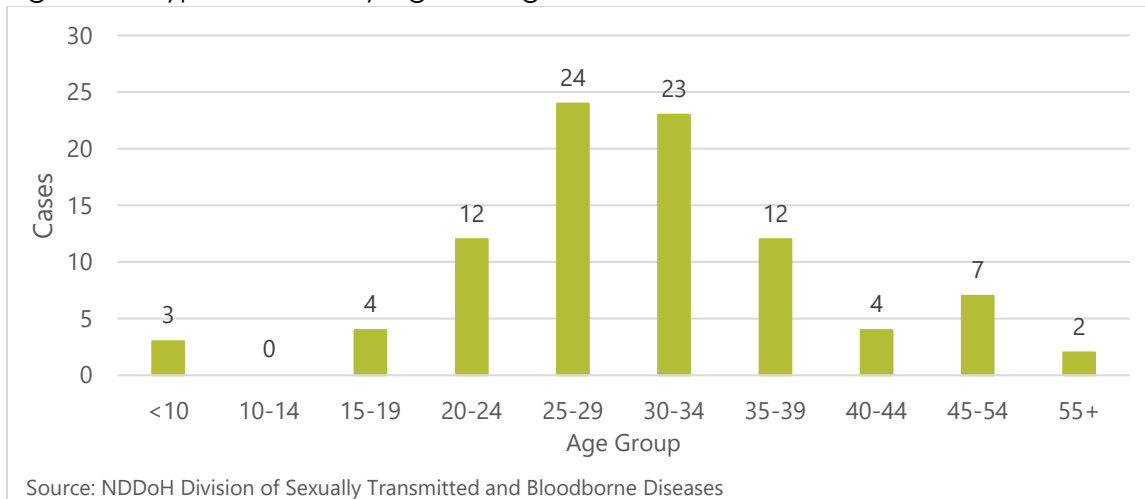
Figure 62. Number of syphilis cases by gender in ND, 2016-2020



### Age

The mean age of syphilis cases is higher than for chlamydia and gonorrhea cases. In 2020, the average age of syphilis cases was 31 years old.

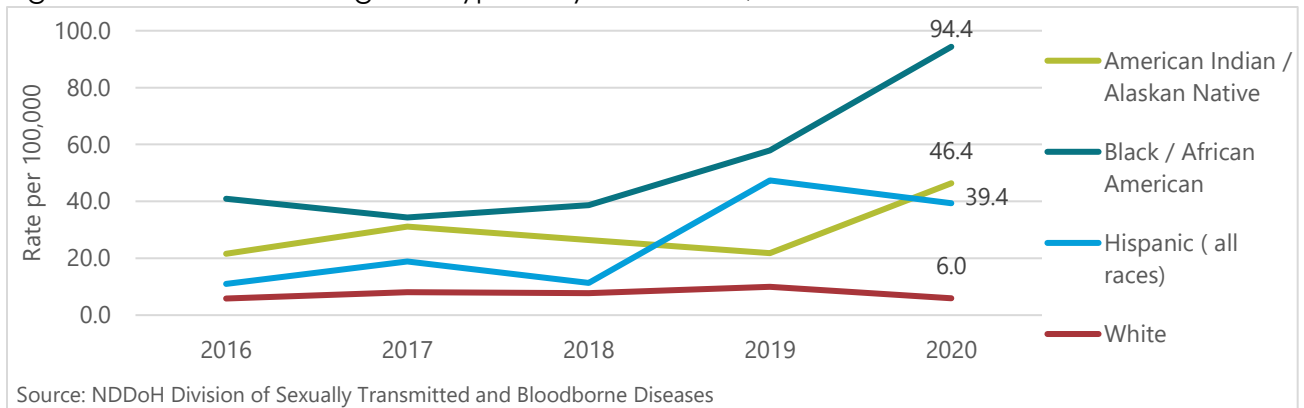
Figure 63. Syphilis cases by age and gender in ND, 2020



### Race

Black/African Americans and American Indian/Alaskan Natives reported increased rates in 2020 and had the greatest rate at 94.4 infections per 100,000 persons and 46.4 infections per 100,000 persons respectively.

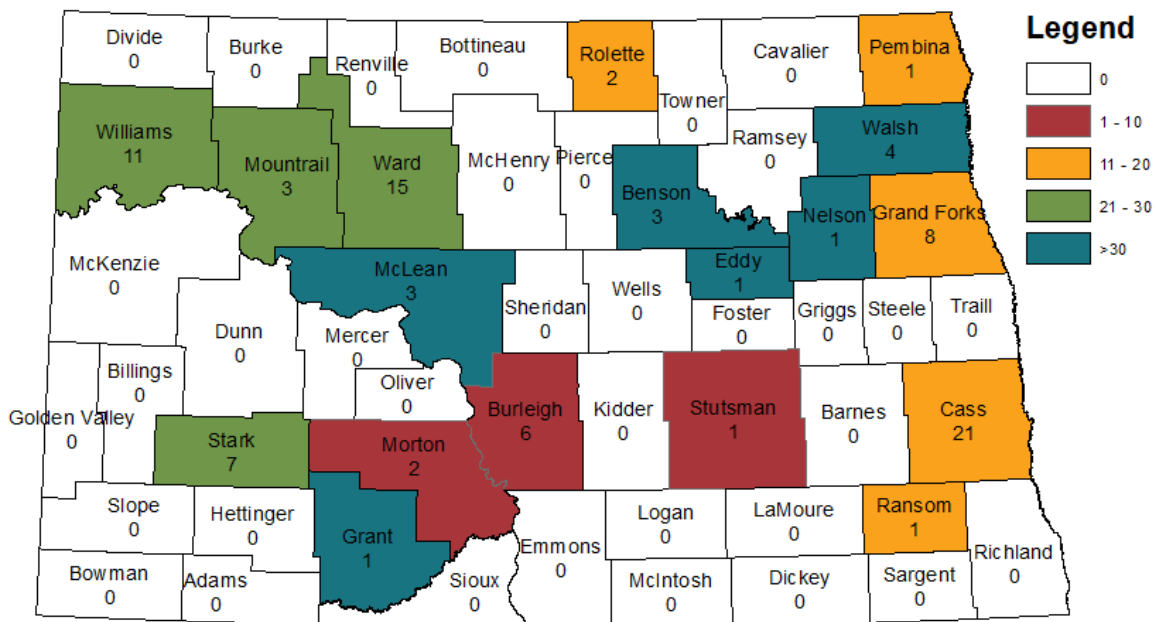
Figure 64. Rates of all stages of syphilis by race in ND, 2016-2020



## Geography

Syphilis cases were reported in 18 counties across the state. Counts by county ranged from one case to 21. The map below lists the number of reported cases by county. The shading indicates the syphilis rate per 100,000 persons by county.

Figure 65. Syphilis case counts and rates per 100,000 persons by ND county, 2020

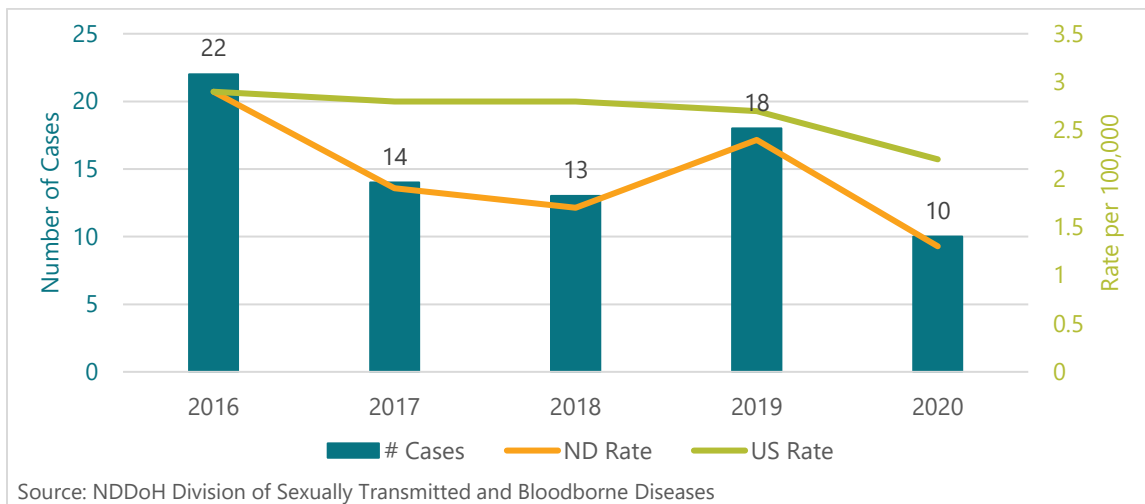


# Tuberculosis

## Tuberculosis Disease

Ten cases of active tuberculosis (TB) were reported to the NDDoH in 2020, decreasing from 18 in the previous year. A total of 7,163 cases of active TB were reported in the United States. This count represents the lowest number of United States TB cases on record (CDC, 2020). TB incidence in the United States has steadily declined since 1993, but the pace of decline has slowed in recent years. The U.S. TB rate of 2.2 cases per 100,000 is higher than the North Dakota rate of 1.3 per 100,000 persons.

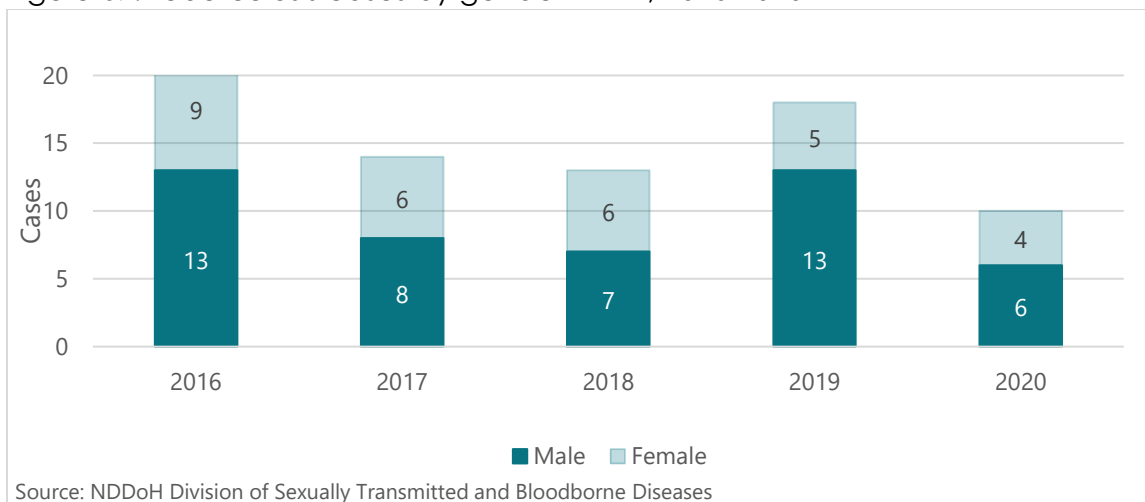
Figure 66. Active tuberculosis cases and incident rate per 100,000 persons in ND, 2016-2020



## Gender

In 2020, six cases of active TB were identified in males and four cases in females.

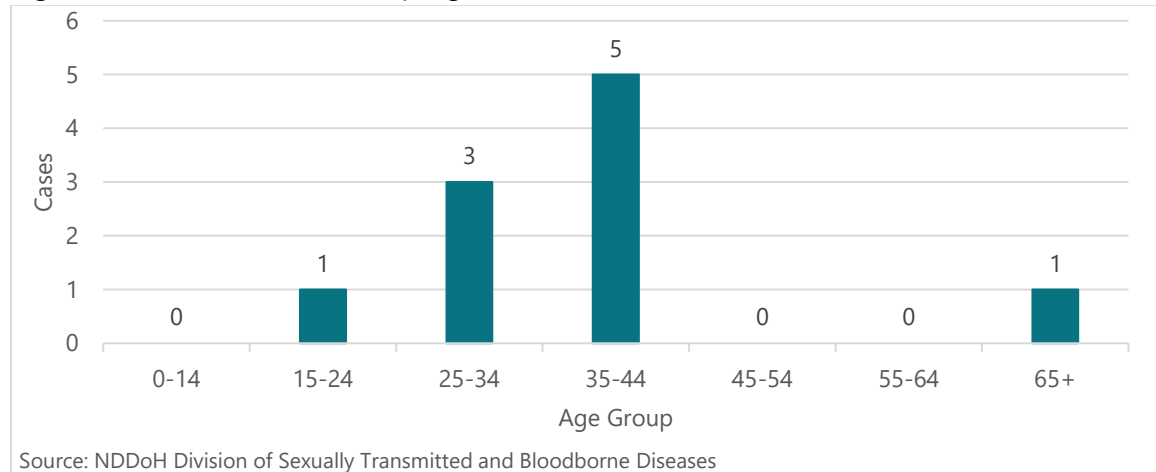
Figure 67. Tuberculosis cases by gender in ND, 2016-2020



## Age

The age span of active TB cases in North Dakota ranged from 24-68, with the average age of diagnosis being 38.4 years old in 2020.

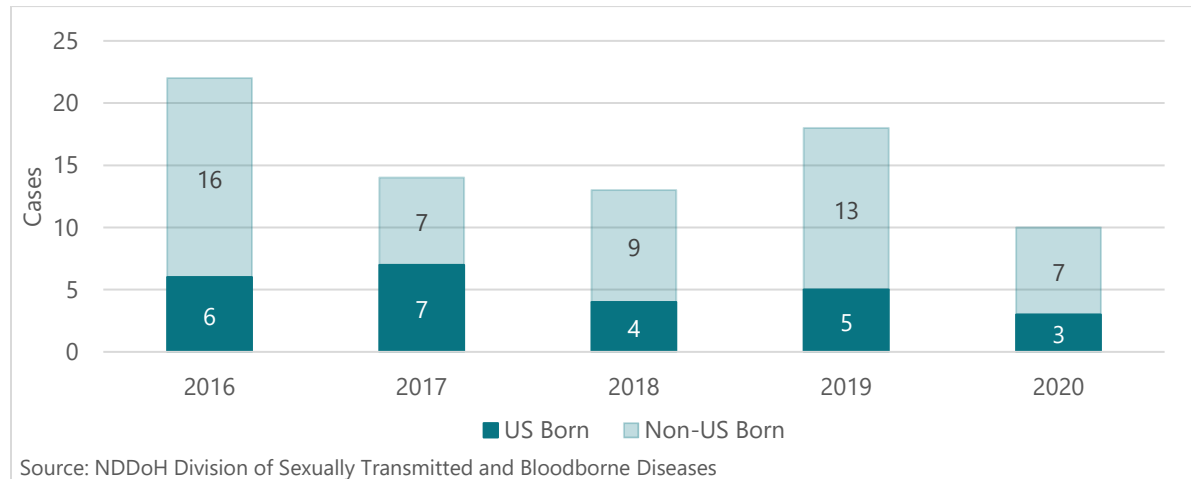
Figure 68. Active TB cases by age in ND, 2020



## Race

Active TB in the United States is found most among people who travel to or who were born in countries with high TB rates. In 2020, 30% of cases reported to NDDoH were U.S. born and 70% of cases were non-U.S. born.

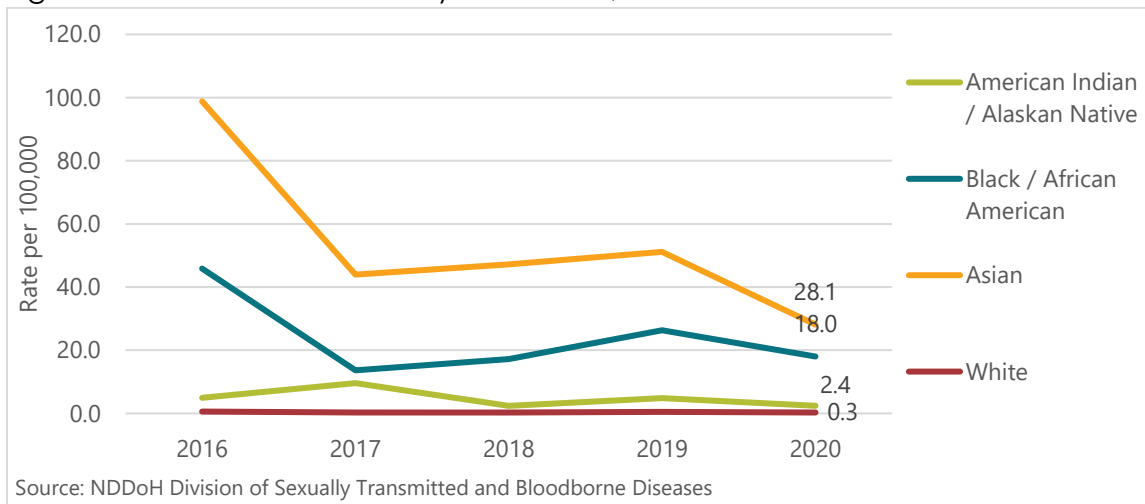
Figure 69. Number of active TB cases in ND born in the U.S. and non-U.S. countries, 2016-2020



Although the incidence of TB in North Dakota is low, cases that are reported demonstrate a racial disparity. Among all North Dakota cases, the highest TB incidence rate was among Asians (28.1 cases per 100,000 persons) followed by Black/African Americans (18.0 cases per 100,000 persons).



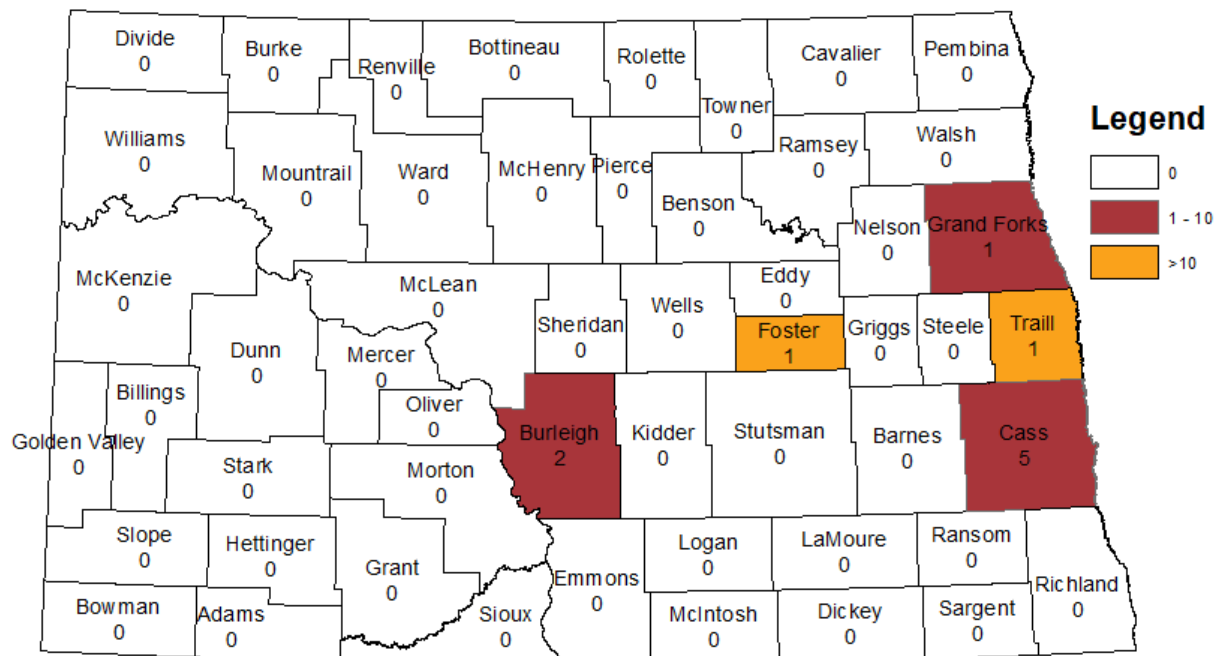
Figure 70. TB incidence rates by race in ND, 2016-2020



## Geography

In 2020, the 10 TB cases were reported from five counties. The map below lists the number of reported cases by county. The shading indicates the rate of TB per 100,000 persons by county.

Figure 71. Active TB case counts and rate per 100,000 persons by ND county, 2020



## Tuberculosis Infection

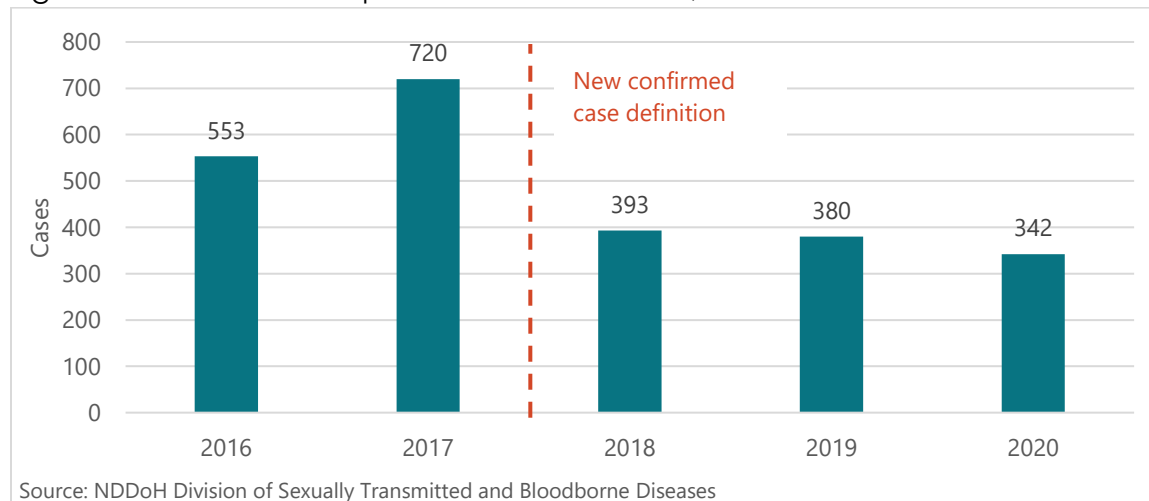
People can be infected with the bacteria that causes tuberculosis without causing disease. This is called TB infection. In most people who breathe in TB bacteria and become infected the body can contain the bacteria and prevent it from spreading.

Many people who have TB infection never develop TB disease. In these individuals, the TB bacteria remains inactive for a lifetime without causing disease. However, in others, especially those with a weak immune system or those who have a change in their health, the bacteria become activated multiply and cause TB disease. The identification and treatment of TB infection is an essential component towards controlling and eliminating TB in the United States.

While many providers have reported TB infections to NDDoH for many years, latent TB infection (LTBI) officially became a reportable disease in North Dakota in 2018. The case definition used by NDDoH follows the guidance of CSTE and CDC. For cases to meet the CSTE case definition, providers must report the laboratory, clinical and radiologic findings as part of the assessment to rule out active TB disease. The TB Program does not perform chart reviews on electronically reported positive TB tests to obtain missing data elements to confirm TB infection. The data below shows reports of laboratory evidence of TB infection for 2016-2020 and only cases that meet the confirmed case definition starting in 2018.

In 2020, 342 cases of TB infection were reported to NDDoH. Of those, 182 persons (53.2%) are known to have treatment prescribed and medication provided through the state-supplied medication program.

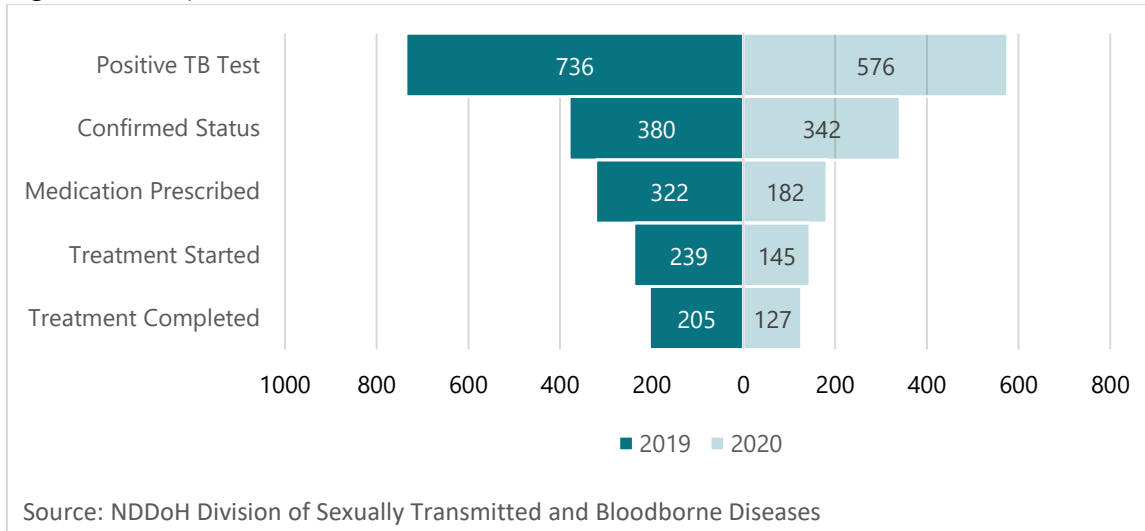
Figure 72. TB infections reported in North Dakota, 2016-2020



In 2020, among those confirmed positive for LTBI in North Dakota, over one-third (37%) completed treatment. Of the confirmed LTBI who were prescribed medication, about 80% started treatment. For those that started treatment, 87% completed treatment. Reasons for not completing treatment include adverse reactions to the medication or lost to follow-up. This review of steps from initial LTBI test through treatment is called the latent tuberculosis cascade

of care. The rates for North Dakota's LTBI cascade of care changed significantly between 2019 and 2020. The cascade can help identify significant losses where a targeted approach may be needed to address each step in the cascade.

Figure 73. Reported Latent TB treatment cascade in North Dakota, 2019-2020



# Appendices

## Appendix A

Chlamydia counts and rates by county, North Dakota, 2016-2020

COUNTY	Chlamydia, counts					Chlamydia, rates per 100,000				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Adams	2	4	1	2	2	86.8	172.6	43.9	90.3	90.3
Barnes	21	29	22	40	38	192.2	270.2	209.0	384.1	364.9
Benson	129	91	98	96	96	1914.2	1312.0	1408.5	1405.2	1405.2
Billings	0	0	2	0	1	0.0	0.0	217.9	0.0	107.8
Bottineau	7	8	13	22	15	106.4	122.5	203.2	350.2	238.8
Bowman	12	5	5	1	3	370.3	157.9	163.0	33.1	99.2
Burke	4	1	2	2	1	182.0	46.9	95.5	94.6	47.3
Burleigh	405	425	465	446	404	428.6	447.2	488.1	466.4	422.5
Cass	869	853	882	1024	893	495.9	479.8	489.2	562.9	490.9
Cavalier	4	6	2	5	3	104.5	159.5	52.5	132.9	79.7
Dickey	4	3	4	1	8	79.0	61.7	81.1	20.5	164.2
Divide	7	6	2	3	4	290.1	262.2	88.3	132.5	176.7
Dunn	16	9	8	8	10	366.5	209.8	184.8	180.8	226.0
Eddy	2	8	5	3	6	84.8	345.4	216.5	131.2	262.4
Emmons	4	2	5	1	1	119.5	60.6	152.5	30.9	30.9
Foster	3	4	1	4	2	90.8	122.8	31.2	124.6	62.3
Golden Valley	14	10	8	8	7	770.5	559.0	453.8	454.3	397.5
Grand Forks	360	383	421	448	397	506.5	541.0	598.4	645.1	571.6
Grant	4	3	4	3	4	168.3	126.3	169.9	131.9	175.9
Griggs	0	2	7	2	0	0.0	88.6	314.2	89.6	0.0
Hettinger	19	33	15	14	12	722.7	1329.0	599.3	560.2	480.2
Kidder	2	3	4	0	2	82.9	120.9	163.1	0.0	80.6
LaMoure	6	2	11	3	9	145.9	48.9	269.9	74.1	222.4
Logan	1	1	2	1	1	51.5	52.1	106.0	54.1	54.1
McHenry	10	13	8	11	7	167.7	220.3	137.7	191.5	121.8
McIntosh	1	0	0	1	2	37.7	0.0	0.0	40.0	80.1
McKenzie	37	44	42	67	55	293.2	345.8	309.0	446.0	366.1
McLean	20	15	21	22	26	205.6	154.9	220.4	232.8	275.1
Mercer	16	19	12	15	10	184.0	224.5	145.2	183.2	122.1
Morton	135	146	144	147	143	438.2	474.1	463.6	468.7	455.9
Mountrail	66	79	77	83	104	644.4	769.6	752.0	787.1	986.2
Nelson	4	2	4	7	2	135.1	68.1	138.6	243.1	69.5
Oliver	2	3	0	2	1	107.0	154.6	0.0	102.1	51.0
Pembina	5	10	3	13	11	70.7	143.4	43.5	191.1	161.7
Pierce	6	6	6	5	5	140.6	146.4	147.4	125.8	125.8
Ramsey	102	57	46	57	58	883.3	494.8	397.2	494.8	503.5
Ransom	13	14	13	13	5	240.6	264.3	248.9	249.1	95.8
Renville	2	1	3	7	1	78.4	40.6	127.2	300.8	43.0
Richland	47	45	60	63	47	287.4	275.2	369.7	389.4	290.5
Rolette	155	155	160	170	206	1057.4	1066.7	1115.1	1199.2	1453.2
Sargent	15	7	3	6	8	385.6	181.4	77.9	153.9	205.2
Sheridan	1	1	0	2	3	75.6	73.9	0.0	152.1	228.1
Sioux	91	87	100	89	72	2036.2	1988.1	2284.7	2104.0	1702.1
Slope	0	1	0	1	0	0.0	129.7	0.0	133.3	0.0
Stark	127	115	146	125	104	407.1	380.7	472.6	397.0	330.3
Steele	1	5	1	3	0	51.0	260.8	52.9	158.7	0.0
Stutsman	65	61	72	77	80	307.6	289.3	344.9	371.9	386.4
Towner	7	4	6	4	7	309.3	177.5	274.6	182.7	319.8
Trail	23	32	27	30	21	286.4	399.4	336.7	373.3	261.3
Walsh	11	13	20	16	34	100.9	119.8	187.9	150.4	319.5
Ward	448	298	355	547	418	638.1	432.2	524.3	808.7	618.0
Wells	6	3	3	1	6	146.4	74.6	76.8	26.1	156.5
Williams	152	153	207	243	188	442.7	458.8	583.6	646.5	500.1

## Appendix B

Gonorrhea counts and rates by county, North Dakota, 2016-2020

COUNTY	Gonorrhea, counts					Gonorrhea, rates per 100,000				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Adams	4	0	0	0	0	173.5	0.0	0.0	0.0	0.0
Barnes	1	2	6	10	13	9.2	18.6	55.9	96.0	124.8
Benson	90	44	54	60	67	1335.5	634.4	778.5	878.2	980.7
Billings	0	1	0	0	0	0.0	106.4	0.0	0.0	0.0
Bottineau	1	2	4	2	2	15.2	30.6	61.3	31.8	31.8
Bowman	0	1	2	0	1	0.0	31.6	63.2	0.0	33.1
Burke	1	0	0	1	1	45.5	0.0	0.0	47.3	47.3
Burleigh	130	224	249	238	220	137.6	235.7	262.0	248.9	230.1
Cass	223	199	278	322	363	127.2	111.9	156.4	177.0	199.5
Cavalier	1	0	1	2	0	26.1	0.0	26.6	53.2	0.0
Dickey	1	0	0	2	2	19.7	0.0	0.0	41.1	41.1
Divide	1	0	1	0	4	41.4	0.0	43.7	0.0	176.7
Dunn	2	0	1	0	5	45.8	0.0	23.3	0.0	113.0
Eddy	2	3	1	1	2	84.8	129.5	43.2	43.7	87.5
Emmons	2	0	4	0	0	59.8	0.0	121.2	0.0	0.0
Foster	0	0	1	2	1	0.0	0.0	30.7	62.3	31.2
Golden Valley	1	5	2	0	2	55.0	279.5	111.8	0.0	113.6
Grand Forks	59	67	93	127	173	83.0	94.6	131.4	182.9	249.1
Grant	1	0	1	0	1	42.1	0.0	42.1	0.0	44.0
Griggs	0	1	2	1	1	0.0	44.3	88.6	44.8	44.8
Hettinger	15	16	10	8	5	570.6	644.4	402.7	320.1	200.1
Kidder	1	0	0	1	0	41.4	0.0	0.0	40.3	0.0
LaMoure	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Logan	0	0	0	0	1	0.0	0.0	0.0	0.0	54.1
McHenry	1	0	2	2	2	16.8	0.0	33.9	34.8	34.8
McIntosh	0	0	0	1	0	0.0	0.0	0.0	40.0	0.0
McKenzie	7	11	13	20	26	55.5	86.5	102.2	133.1	173.1
McLean	8	6	13	1	10	82.2	62.0	134.2	10.6	105.8
Mercer	3	5	8	5	4	34.5	59.1	94.5	61.1	48.9
Morton	40	45	77	82	80	129.8	146.1	250.0	261.4	255.1
Mountrail	31	32	39	53	55	302.7	311.7	379.9	502.6	521.6
Nelson	0	0	1	1	0	0.0	0.0	34.0	34.7	0.0
Oliver	2	0	0	3	2	107.0	0.0	0.0	153.1	102.1
Pembina	1	2	1	1	3	14.1	28.7	14.3	14.7	44.1
Pierce	4	3	7	6	3	93.7	73.2	170.8	150.9	75.5
Ramsey	32	15	35	41	36	277.1	130.2	303.8	355.9	312.5
Ransom	4	1	3	0	0	74.0	18.9	56.6	0.0	0.0
Renville	0	0	1	1	2	0.0	0.0	40.6	43.0	85.9
Richland	11	14	9	22	18	67.3	85.6	55.0	136.0	111.3
Rolette	143	107	168	156	191	975.5	736.4	1156.1	1100.5	1347.3
Sargent	1	2	3	1	1	25.7	51.8	77.8	25.7	25.7
Sheridan	0	0	0	2	1	0.0	0.0	0.0	152.1	76.0
Sioux	25	37	62	50	59	559.4	845.5	1416.8	1182.0	1394.8
Slope	0	0	1	0	0	0.0	0.0	129.7	0.0	0.0
Stark	10	13	15	21	22	32.1	43.0	49.7	66.7	69.9
Steele	1	0	1	0	0	51.0	0.0	52.2	0.0	0.0
Stutsman	10	5	10	12	24	47.3	23.7	47.4	58.0	115.9
Towner	6	3	2	3	4	265.1	133.2	88.8	137.0	182.7
Traill	2	3	7	3	6	24.9	37.4	87.4	37.3	74.7
Walsh	1	5	5	2	6	9.2	46.1	46.1	18.8	56.4
Ward	102	70	122	185	173	145.3	101.5	177.0	273.5	255.8
Wells	1	0	0	0	5	24.4	0.0	0.0	0.0	130.4
Williams	23	23	56	57	51	67.0	69.0	167.9	151.6	135.7