# North Dakota
# Primary Care Office Needs Assessment

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## Executive Summary

The objective of the Primary Care Office (PCO) needs assessment is to identify communities with the greatest unmet health care needs, disparities, and health workforce shortages, and identify the key barriers to accessing health care for these communities. The North Dakota Primary Care Office (ND PCO) is located within the North Dakota Department of Health which contracts with the Center for Rural Health, located at the University of North Dakota School of Medicine & Health Sciences, and the North Dakota Healthcare Workforce Group for work on key components of the grant including administering the National Health Service Corps Program, administering the J-1 Visa Waiver Program, assisting in educational programs, and shortage designations activities. The program is funded by a cooperative agreement with the Health Resources and Services Administration.

Ensuring that healthcare facilities and agencies have an accessible and qualified workforce to effectively provide essential health services is a state and national priority. The ND PCO goals seek to improve primary care service delivery and workforce availability to meet the needs of underserved populations in the state. To accomplish our goals, the ND PCO will complete a statewide primary care needs assessment, conduct shortage area designation analysis, assist in efforts focused on recruitment and retention of health professionals, and provide technical assistance to the state's healthcare facilities.

The purpose of the Non-Competing Continuation U68 program authorized by Title III of the Public Health Service Act as amended, section 330(l), 330(m),333(d) is to improve primary care services, delivery and the availability of public healthcare providers in the 54 states and territories to meet the needs of underserved populations and areas. The program has operated and been funded under cooperative agreements for more than 25 years. Assessment of needs and sharing data is one of the program requirements of the PCO Cooperative Agreement. A needs assessment identifies the target populations and/or areas and their unmet health needs for shortage designation and recruitment and retention of primary care needs.

## Introduction

The North Dakota Primary Care Office (ND PCO) is responsible for shortage area designation analysis and coordination, providing technical assistance to healthcare providers and communities, and working collaboratively to expand access to primary care. The ND PCO works with the National Health Service Corps (NHSC) providing recruitment and retention activities, administers the state loan repayment programs, the Conrad 30 J-1 Visa Waiver Program (hereinafter referred to as the Conrad Program) and works with a variety of other national, state, and local partners to assess health center development and expansion. The work is accomplished by collaborating with rural health clinics, urban/rural hospitals (including Critical Access Hospitals), the Indian Health Service, behavioral health and oral health facilities, private and/or non-profit healthcare practices and the state's Primary Care Association. See Table 1 for major components of the ND PCO grant program. The ND PCO is also involved in providing expert policy recommendations to state and national legislative and/or congressional officials as well as state coalitions in an effort to recruit and retain healthcare providers for the state's communities most in need.

**Table 1. Core Components of the Primary Care Office Grant**

| Shortage Area Designation | Technical Assistance | Collaboration |
|---|---|---|
| • Identify provider shortages and barriers to accessing services<br>• Work in Shortage Designation Management System to review, update, and create new designations<br>• Collection of data on:<br>  ○ Population with fluoridated water<br>  ○ Severity of alcohol misuse<br>  ○ Severity of substance misuse | • Provide TA on the shortage designations process<br>• Assess health care demand<br>• Assist with the National Health Service Corps loan and scholarship programs in North Dakota<br>• Administer the state loan repayment program<br>• Administer the federal/state loan repayment program<br>• Administer the J-1 Visa Waiver program | • Assist the Community HealthCare Association of the Dakotas and communities in health center planning<br>• Support partners and organizations in accessing primary care services<br>• Policy recommendations |

The Institute of Medicine (IOM), in 1996, defined primary care as "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community."[1] In addition to the goals of Healthy People 2020, this provision also lays the ground work for the ND PCO's workforce planning efforts that are directed towards the delivery of primary care. Both the IOM and the NHSC define primary care as physicians practicing in the specialties of family practice, general practice, general internal medicine, general pediatrics, and obstetrics and gynecology. The NHSC also includes psychiatry in the broader definition of mental and behavioral health primary care providers. The importance of non-physician providers cannot be understated. An article by Friedberg, Hussey and Schneider, *Primary Care: A Critical Review of the Evidence on Quality and Costs of Health Care (2010),* references roles that specialists serve are also an essential part of primary care services which addresses the need for integration of primary care services to provide optimal outcomes for patients. Achieving health equity must include addressing the social determinants of health and providing a quality primary care workforce for the state's population, especially for the most vulnerable residents.[2]

## Population of North Dakota

North Dakota is a unique state in many ways but some of the most distinctive features is its relatively small population in comparison to other states and large amount of rural area. It is important to understand the unique aspects of North Dakota in order to fully understand the barriers to accessing care that some North Dakota residents face. This section will examine the characteristics of the population, the geography of North Dakota, and relevant economic factors that may affect access to care.

### *Population Characteristics*

The population estimate for North Dakota as of July 1, 2019 was 762,062 residents. This would be a 13.3% increase from April of 2010. Based on the overall U.S. population estimate, the

population of North Dakota accounts for a mere 0.23% of the overall U.S. population. When breaking down North Dakota's population by age, it's found that about 23.5% of population is under 18 years of age while 15.3% is 65 years or older.[3] Since 2010, the population aged 65 years and older has increased in North Dakota from 14.5%[4] to the current estimate of 15.3%[3] indicating an aging population. Around 48.8% of the population is female. The U.S Census Bureau 2019 population estimates show that about 86.9% of the North Dakota population is Caucasian compared to 76.3% nationally. American Indian is the next largest grouping at 5.6% of the North Dakota population followed by Hispanic or Latino (4.1%), Black or African American (3.4%), Asian (1.7%), and then Native Hawaiian and other Pacific Islander (0.1%). Roughly 2.3% of the North Dakota population is reported to be two or more races.[3]

### *Geography*

North Dakota, located in the central plains region of the U.S. sharing its northern border with Canada, is the 19th largest state by geographic size (70,704 square miles) and is divided into 53 counties.[5,6] North Dakota is a largely rural state with 38 out of 53 counties (roughly 72%) designated as frontier. Frontier indicates that the population is equal to less than 7 people per square mile in the county (Figure 1). The overall population density in the state is estimated to be 10.7 people per square mile based on the 2019 population estimate and is ranked 48th in population density when compared to other states.[7] Based on RUCC codes, North Dakota has only 6 urban counties, 10 semi-rural counties, and 37 rural counties (Figure 2).

**Figure 1. North Dakota Frontier Counties**

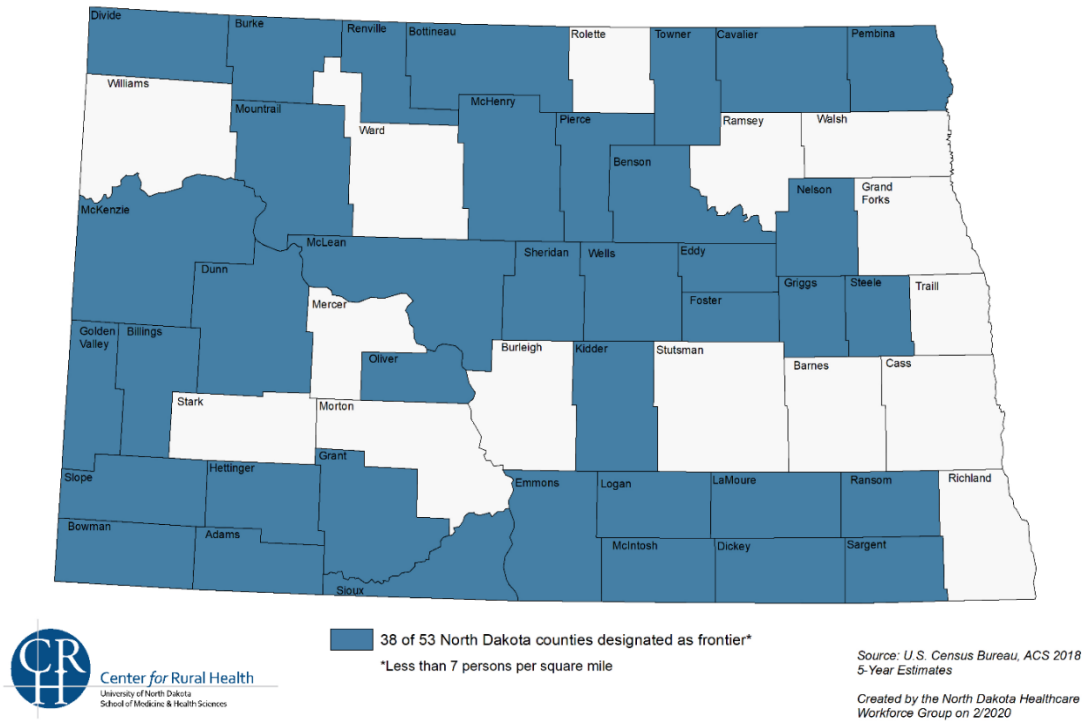
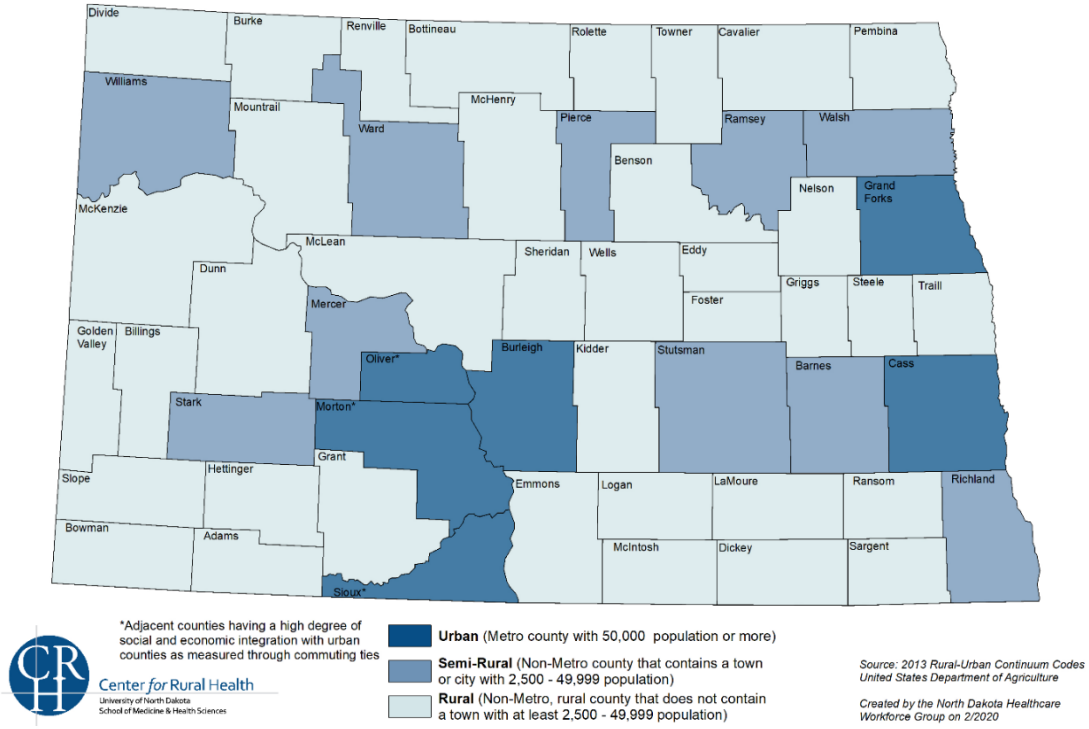


**Figure 2. North Dakota County Classification**




North Dakota is one of the least densely populated states in the country, ranking 48th in population density.[7] Based on the 2010 U.S Census the state's population density was 9.7 persons per square mile.[3] As stated earlier, North Dakota's population accounts for a mere 0.23% of the total population of the U.S.[3] but is ranked 19th out of 50 states for size with 70,704 square miles of total area.[5,6] Since North Dakota is such a large state with a relatively small population it is not surprising to find that 49.5% of the North Dakota population is living in a rural area.[8] Roughly 89.1% of the total land area in North Dakota is occupied by farms which is equal to about 39.3 million acres of land.[9] There are four major cities in North Dakota including Bismarck (the capital), Fargo, Grand Forks, and Minot. Out of these four cities, Fargo has the largest population with the 2019 population estimated to be 124,662; this city is located on the far eastern side of the state on the border with Minnesota.[10]

North Dakota shares its northern border with Canada and is located within the Midwest region of the U.S. The state experiences a full range of weather patterns throughout the year and has been known to have some very intense winter seasons with temperatures dipping as low as -30 degrees Fahrenheit or lower. When there are snow storms during the winter months the relatively flat landscape can make it easier for ground blizzards to develop making travel incredibly difficult and dangerous, in some cases even impossible. Weather conditions like these are an important consideration when examining access to healthcare services for those who live in rural areas.

### *Income and Poverty*

In North Dakota, the 2019 median household income was $64,894, which was higher than the national median household income of $62,843. Yet, it is estimated that about 10.6% of the population of North Dakota is living in poverty.[3] There are three counties in North Dakota with over 20% of the population indicated as living in poverty including Sioux County at 32.9%,

Benson County at 30.8%, and Rolette County at 24.7%.[11] These three counties contain three of the tribal nations in North Dakota, including the Standing Rock Reservation (Sioux County), Turtle Mountain Reservation, (Rolette County), and Spirit Lake Reservation (Benson County). Children in the state are considered a vulnerable population and a group that can be affected by economic concerns. About 10% of North Dakota children are estimated to be living in poverty while about 6% of children do not have health insurance coverage. Also, in North Dakota it is estimated that 18% of children are living in households with a high housing cost burden and 17% of children are living with parents who lack secure employment.[12]

## Health Indicators

There are a wide variety of health measures that could be examined to determine the health of the North Dakota population. Some of the most common health measures include health behaviors and general health outcomes. Two measures that have been a continued concern for North Dakota is the high rate of excessive drinking among the population (23.3%) and the high occupational fatality rate (7.5 per 100,000 workers), when compared to other states North Dakota is ranked 49$^{th}$ for excessive drinking and 45$^{th}$ for the occupational fatality rate. Tobacco use among the population is also another concern in North Dakota with 17% of adults estimated to smoke and 6.4% estimated to be using e-cigarettes.[13] However, strides toward smoking cessation have been made in the state. Tobacco use among the population is also another concern in North Dakota with 17% of adults estimated to smoke and 22.1% estimated to be using e-cigarettes.[13] However, strides toward smoking cessation have been made in the state. North Dakota has implemented a comprehensive statewide Tobacco Prevention and Control program. The North Dakota Department of Health (ND DoH) Tobacco Prevention and Control Program provide the funding and activities for this program. The ND DoH implements state and community interventions, cessation interventions, and health communication interventions to achieve the program goals of preventing initiation of tobacco use, promoting cessation, eliminating exposure to tobacco products and to secondhand smoke, and building infrastructure and capacity.[14] In 2012, the state of North Dakota issued a statewide comprehensive smoke-free air law.

Chronic diseases are other health indicators that are often examined when looking at the health of a population. North Dakota is currently ranked 8$^{th}$ for asthma and chronic obstructive pulmonary disease (COPD), and 11$^{th}$ in cardiovascular disease and diabetes. All four of these are common chronic diseases that are tracked through aggregate health records data and reported on by entities including departments of health in individual states and various departments at the federal level.[13]

According to the Health Disparities Report from 2017, the top 10 causes of death in North Dakota include diseases of the heart, all cancers, Alzheimer's, chronic lung disease, accidental deaths, strokes, diabetes, influenza/pneumonia, suicide, and high blood pressure. The report also examined the groups most affected by certain diseases and potential causes of the diseases. The report found that the American Indian population is disproportionately affected by diabetes-related deaths at 57.5 per 100,000. White residents have the highest rate of death due to lung cancer at 44.9 per 100,000 followed by American Indians at 33.6 per 100,000. White residents also have the highest rate of deaths due to chronic lung disease at 51.8 per 100,000. It was also found that 45.1% of heart disease deaths are tobacco related. Suicide continues to be a concern in North Dakota and throughout the U.S. and the report did look into this issue as well. It was found that in 2017, 80.4% of suicides occurred among males and individuals

between the ages of 20 and 40 account for 47.3% of suicide deaths in the state.[15] For individuals between the ages of 5 and 44, unintentional injury and suicide were the 1st and 2nd leading causes of death respectively between 2012 and 2016 according to North Dakota vital statistics data.[16]

Accidental deaths and unintentional injury continue to be an area of concern given the major industries in the state including farming and oil and gas production, both of which require the use of heavy machinery. It was found that males accounted for 69.1% of accidental deaths in the state in 2017.[15] In North Dakota there are two areas related to health that are current or emerging areas of focus within the state including social determinants of health, and maternal and child health. These topics will be discussed in the following sections.

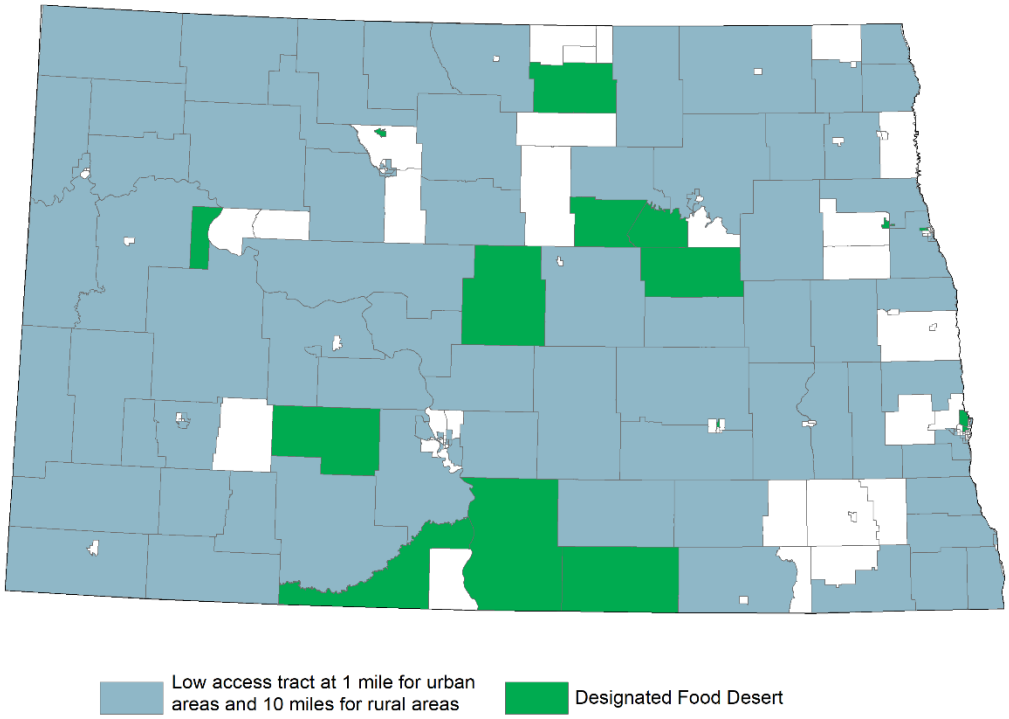
***Social Determinants of Health***

Social determinants of health (SDOH) has become a growing area of interest in North Dakota and throughout the nation within the last decade. This area of research examines how various external factors, referred to as SDOHs, can affect health status and explain why some Americans are generally healthier than others. SDOH include conditions where people live, work, learn, and socialize. Circumstances that may affect health outcomes of individuals include the current social structure, economic factors, and physical aspects of a person's environment. Environments include home, school, workplace, neighborhood, city, and other community settings where a person spends a significant amount of time. Six factors are recognized as core social determinants of health. They are individuals' economic circumstances, their education, food access, the physical infrastructure of their environment, the social and community context in which they live, and their overall health and access to health care.[17]

One factor of social determinants of health that was previously addressed in this assessment is related to economic situations in an individual's life such as income and poverty. While there is a total of six factors recognized within social determinants of health the following data will focus on two factors that are particularly relevant in North Dakota, education and food access. North Dakota has a solid public education network within the state and there are a variety of higher education opportunities as well. High school cohort graduation rates in North Dakota have continued to exceed the national rates for a number of years.[18] Public school enrollment in the state has increased by 19.1% from the 2010-2011 school year through the 2019-2020 school year.[19] North Dakota has a number of institutions of higher education that offer a variety of degrees and programs. There are five 2-year public colleges, four 4-year private colleges, five tribal colleges, four 4-year public colleges, and two research universities.[20]

Food access is another important social determinant of health as access to healthy food can influence an individual's diet and overall health. One way to examine food access is through areas designated as having low food access and areas that are defined as food deserts. In North Dakota there are 112 census tracts where residents have low access to retail outlets selling health foods and 17 of those census tracts are considered food deserts. About 56,724 North Dakota residents live in a census tract that is considered a food desert (Figure 3).[21]

**Figure 3. Low Food Access and Food Desert Designated Census Tracts in North Dakota[17]**




***Maternal and Child Health***

The topic of maternal and child health is an important one, and one that the state of North Dakota continues to address as there are improvements that can be made in this area. North Dakota does have some identified strengths in the area of maternal and child health including low prevalence of low birthweight births, low prevalence of 2+ ACEs, low drug death rate among women, decrease in teen suicide, decrease in child mortality rate, and decrease in tobacco use during pregnancy. However, the state does have some identified weaknesses in this area including the continued high prevalence of overweight or obese children, low prevalence of children with adequate health insurance, and a high prevalence of excessive drinking among women. Maternal mortality in the state was 18.9 per 100,000 live births in 2018 leaving some room for improvement as the state ranks 26$^{th}$ on this measure nationally.[22]

The American Health Rankings also identified other measures within maternal and child health where North Dakota does well and where there is room for improvement when compared to other states. North Dakota is ranked 49$^{th}$ for percent of children age 0-17 with adequate health insurance coverage at 57.1%, 49$^{th}$ for excessive drinking among women at 25.7%, and 42$^{nd}$ for teen suicide with 18.2 per 100,000 deaths among adolescents aged 15-19. These are some of the measures where North Dakota ranks lower in the nation, and where work to improve these measures continues at the state level. There are other areas where North Dakota is one of the most highly ranked states. Currently the state is ranked 1$^{st}$ for air and water quality, 2$^{nd}$ for children in poverty at 9.9% of the population, and 2$^{nd}$ for low birthweight births at 6.6%.[13] Another area where North Dakota has made improvements is in the teen birth rate. In 2018 there were about 16 teen births per 1,000 which is a drop from 29 teen births per 1,000 in 2010. There has also been a drop in the rate of child and teen deaths from 34 per 100,000 in 2010 to 19 per 100,000 in 2018. An additional area of improvement was seen in the percent of children and teens who are overweight or obese. About 27% of children and teens were overweight or

obese in 2018 which is a drop from 30% in 2017; however, there is still room for improvement on this measure as the rate of children and teens who are overweight or obese continues to be high.[12]

In 2018, the North Dakota Department of Health's Maternal Child Health (ND MCH) Program and Prevent Child Abuse North Dakota received grant mandates that required a comprehensive needs assessment. They reached out to partners who also had needs assessment requirements to begin exploring the possibility of collaborating and streamlining needs assessments in the state. With state partners, a "Work-As -One Needs Assessment Integration" group was created that was able to share data, assist each other with the needs assessment process, and provide for networking. This group of statewide partners contributed to the MCH prioritization process. ND MCH Priorities for 2021-2025 include well-woman care with an emphasis on minority and low-income women; breastfeeding with priority among American Indian women; physical activity, nutrition, and overall obesity prevention; adolescent well visit with an emphasis on overall health, including depression screening, obesity prevention and immunization; transitions for children with special needs from pediatric to adult health care; eliminate fatalities and serious injuries caused from motor vehicle crashes ; development of the MCH workforce; and implementing North Dakota state mandates for the MCH population (e.g., Newborn Screening).

## North Dakota Healthcare Workforce

The health status of a population is an important starting point in understanding the health care needs for the population. Key components to addressing the health needs in a state include the healthcare workforce and the healthcare infrastructure such as availability of hospitals and clinics. The following sections will address the healthcare workforce and healthcare infrastructure that is available in North Dakota to address the health status and health concerns of the population as indicated above.

### *Primary Care Providers*

As primary care shortages are based on the number of primary care physicians including family medicine, general internal medicine, general pediatrics, and obstetrics/gynecology, it is important to examine the state's supply of these specialties. Of the 627 licensed primary care physicians (excluding those licensed but living out of state), 30% (188) are located in rural North Dakota. Of importance is also the aging of the physician workforce. North Dakota primary care physicians are older than physicians in the upper Midwest and the U.S. and primarily located in rural areas. Nurse practitioners and physician assistants have had a significant impact on providing primary care services in rural areas many of whom are practicing in areas where recruitment of physicians is quite challenging. There are 1,026 licensed nurse practitioners and 357 physician assistants working across the state. In 2019, approximately 33% of the nurse practitioners and 34.2% of the physician assistants practiced in rural areas of the state.[17]

North Dakota does have one medical school in the state located in Grand Forks at the University of North Dakota (UND). The UND School of Medicine and Health Sciences (SMHS) has been working to increase medical and health sciences class sizes and increasing residency slots since 2011. This was accomplished through the Healthcare Workforce Initiative (HWI) which was implemented by the state of North Dakota in order to address the need for more healthcare professionals in the state, in particular fully trained medical doctors. The medical school has a variety of classes and a robust training program that also offers opportunities for rural experiences. Currently, UND SMHS has 64 residency slots for family medicine and 25 for

internal medicine. Although there has been growth in training opportunities for primary care physicians in the state, North Dakota has the lowest number of residency slots per medical school student in the country.[17]

### *Mental Health Providers*

Mental health shortage areas in the state are based on the ratio of psychiatrists to the population. In 2019, there were 114 licensed psychiatrists practicing in North Dakota which is equal to about 1.5 psychiatrists per 10,000 North Dakota residents. Of these, 98 have practices located in urban areas of the state. The other sixteen were located in rural counties. Eighty-three percent of the counties (44/53) have no practicing psychiatrists. In addition to private mental health agencies and one State Hospital, North Dakota's mental health services are provided through eight regional human services centers and are an important part of the state's safety-net.[17] Each center serves a designated multi-county area and each center provides counseling and mental health services, substance abuse treatment, disability services, and other human services. The NDPCO works with the regional centers providing shortage designation analysis and recruitment and retention services.

There are a variety of educational and training opportunities for mental health professionals in North Dakota. There are more limited training opportunities in state for psychiatrists. The UND SMHS does offer a psychiatry residency program that has gained residency slots through the HWI. However, there are only 23 residency slots currently available in the program.[17]

### *Dental Health Providers*

Dental professionals such as dentists, dental hygienists, and dental assistants are important healthcare providers in North Dakota. According to licensure data from 2020, there are 410 licensed dentists in North Dakota, which amounts to about 5.4 dentists per 10,000 North Dakota residents. Licensed dentists have been practicing, on average, for 16 years and 9 months (SD = 13 yrs, 9 mo). About 19% of the dentists in North Dakota reported working in specialty areas, 22 (5.4%) reported oral and maxillofacial surgery, 18 (4.4%) reported orthodontics, 16 (3.9%) reported pediatric dentistry, 13 (3.2%) reported endodontics, 5 (1.2%) reported periodontics, and four (1.0%) reported prosthodontics. Most licensed dentists working in North Dakota work in urban areas (n = 247, 60.2%), followed by large rural areas (n = 93, 22.7%), isolated rural areas (n = 50, 12.2%), and small rural areas (n = 20, 4.9%). Overall, 163 (39.8%) of the dentists working in North Dakota work in rural areas. The data also indicated that 21 out of North Dakota 53 counties have no dentists in practice in those counties.[17]

North Dakota does not host a dental school in state. There are opportunities for individuals interested in becoming dentists to begin their education in North Dakota by completing an undergraduate degree in an appropriate field but to complete their education and training they must go out of state. In order recruit dental professionals to North Dakota, the state offers various incentives including the North Dakota Dentist Loan Repayment Program.

## North Dakota Healthcare Delivery System

### *Hospitals*

Hospital infrastructure in North Dakota was analyzed in *The Sixth Biennial Report: Health Issues for the State of North Dakota, 2021*.[17] The hospital infrastructure in the state consists of 56 hospitals including 36 Critical Access Hospitals (CAHs), nine general acute Prospective Payment System (PPS; tertiary), three psychiatric, two Indian Health Service (IHS), two long-term acute care, two transplant, one specialty, and one rehabilitative. There is a total of 43 designated trauma centers in North Dakota demonstrating that not all hospitals in the state have

a designated trauma center. There is only one Level 1 trauma center in the state at a hospital in Fargo which is on the eastern border of the state. Another 5 trauma centers are designated as a Level 2, nine trauma centers are designated as a Level 4, and the remaining 28 are designated as Level 5 trauma center. The state does not have any Level 3 designated trauma centers. Only one IHS hospital has a designated trauma center (Figure 4). Outpatient care is carried out through roughly 300 ambulatory care clinics and safety-net facilities including rural health clinics (RHCs) and federally qualified health centers (FQHCs) (Figure 5).[17]

**Figure 4. Trauma Centers and Designated Levels in North Dakota[17]**

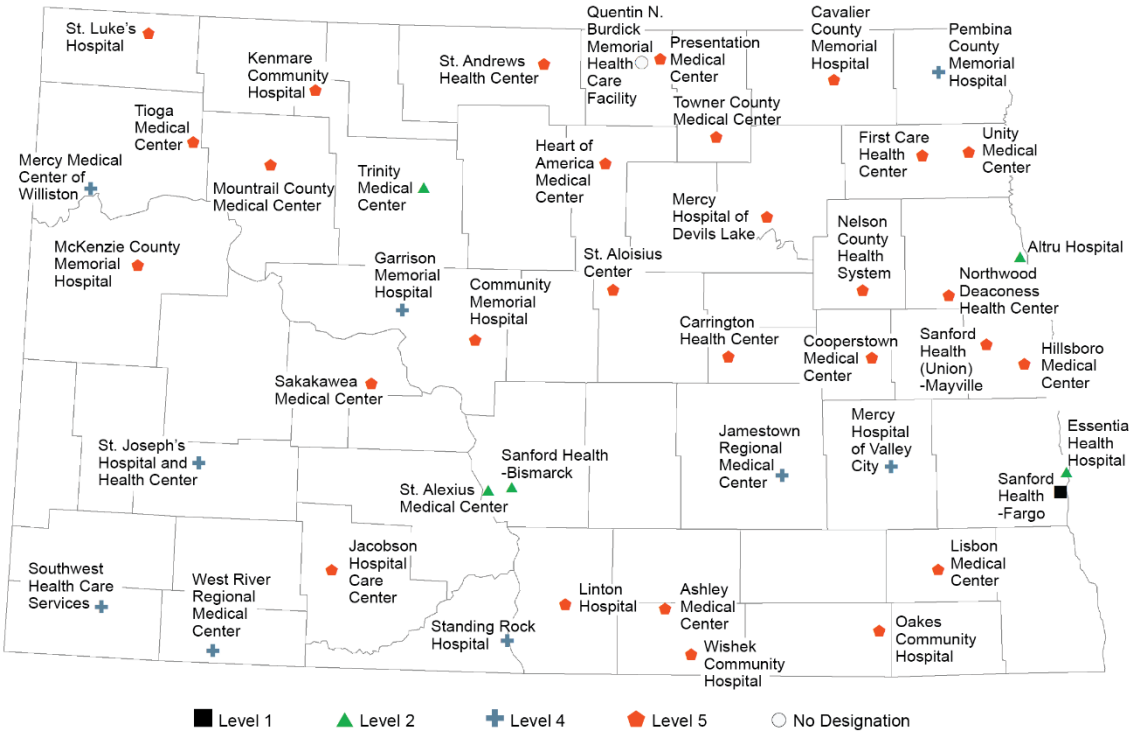
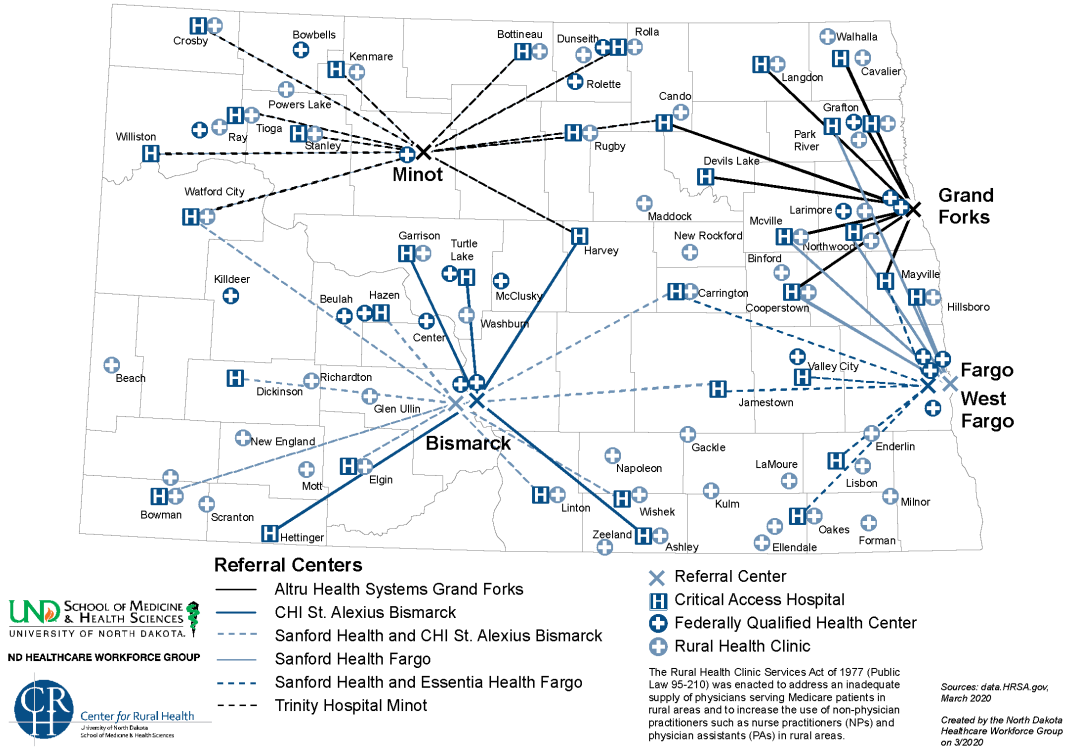


**Figure 5. Critical Access Hospitals and Tertiary Care Network Service Areas**




### *Safety-Net Facilities*

Federally Qualified Health Centers (FQHCs) are important safety-net providers that qualify for enhanced reimbursement from Centers for Medicare and Medicaid Services to serve the underserved populations in their service areas. They offer services to their clients/patients on a Sliding Fee Scale and can be key to providing healthcare services in rural areas. Comprehensive services have quality assurance programs to ensure patient outcomes are met and are governed by a community representative board of directors. There are Federally Qualified Health Center (FQHC) Look-Alikes, organizations that meet the PHS Section 330 eligibility requirements but do not receive federal grant funding. There are no FQHC Look-Alikes in North Dakota.

There are 5 federally qualified health center organizations that operate in North Dakota, 4 of which are centrally based in the state, the other is centrally based in Minnesota but operates one location in North Dakota that is a Migrant Health Center in Grafton. There is a total of 21 FQHC sites in North Dakota that operate as clinics, 15 of which are located in a rural area.[23]

The FQHCs have served 40,460 individuals in 2019 which is an increase from 31,608 individuals in 2015 as reported by the Community HealthCare Association of the Dakotas. This is a 28% increase in the number of individuals served between 2015 and 2019.[24] In addition to the healthcare facilities listed above, the state has 54 certified rural health clinics (RHCs) that also serve as safety-net facilities.[25]

### *Long-term Care Facilities*

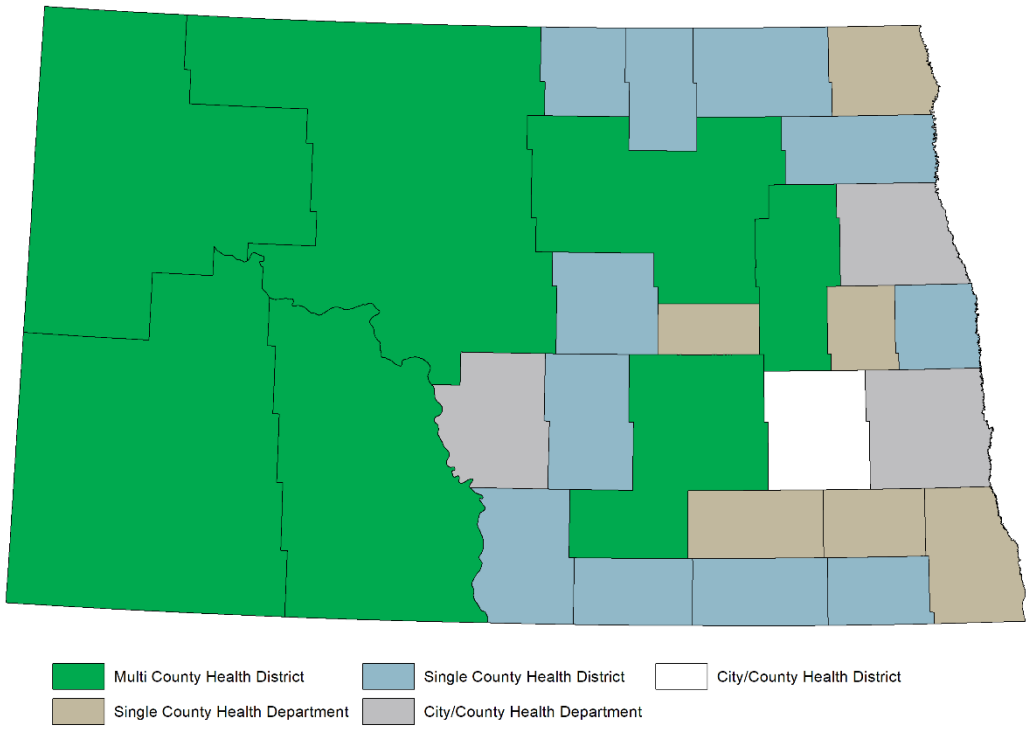
Skilled nursing facilities in North Dakota are licensed by the state and certified by the Centers for Medicare and Medicaid Services (CMS) to participate in the Medicare and Medicaid programs. The North Dakota Department of Health's Division of Health Facilities has the

contract for conducting the Medicare and Medicaid certification survey for CMS. There are 79 skilled nursing facilities in the state with a total of 5,636 beds.[26] There are also 64 basic care facilities in North Dakota with 2,054 beds but these facilities are not certified to participate in the Medicare/Medicaid programs.[27]

### *Public Health*

When examining public health infrastructure in North Dakota, the system is decentralized with 28 local public health units organized into single or multicounty health districts, city/county health departments, or city/county health districts. Twenty-five percent of the local public health units serve multi-county jurisdictions, while the other 75% serve single county, city or combined city/county jurisdictions. The majority of the multi-county jurisdictions serve the western part of the state (Figure 6). The public health units provide personal and population-based health services and most commonly provide childhood immunizations, adult immunizations, tobacco use prevention, high blood pressure screening, injury prevention screening, blood lead screening and early and periodic screening diagnosis and treatment. While these are important functions, our public health units do not provide primary healthcare services such as one would find in a clinic-based system of care.[28]

**Figure 6. Local Public Health Units in North Dakota[17]**




## Shortage Designation Development

### *Health Professional Shortage Areas*

The Health Professional Shortage Area (HPSA) designation is used to identify areas and population groups within the U.S. that are experiencing a shortage of health professionals in the disciplines of primary care, dental health and mental health. The HPSA designation was originally developed for the NHSC to prioritize their resources although more than 34 federal programs rely on HPSA designations to determine program eligibility for federal resources. The

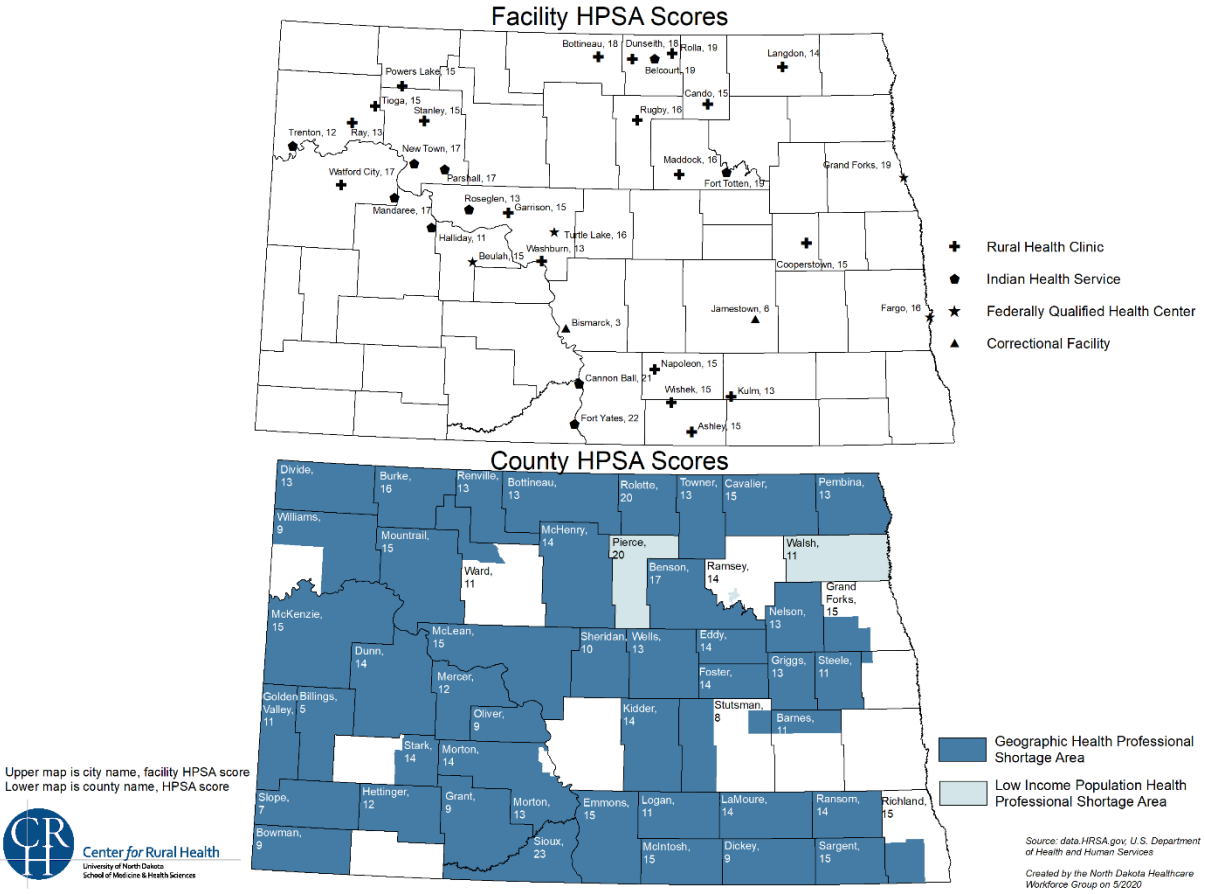
primary factor used to determine a HPSA designation is the number of health professionals relative to the population with consideration of high need. In addition, contiguous area analysis must indicate that health professional services are over utilized, excessively distant, or inaccessible to the population under consideration. HPSA designations are required to be updated on a regular basis and a new system has been implemented within recent years to assist in that goal. It is anticipated that under the new Shortage Designation Management System (SDMS), designations will be more accurate and updated yearly. Designations are a primary function of the ND PCO to determine shortages in primary care, mental health, and dental health. HSPAs can be geographic areas, population groups (low-income, Medicaid, etc.), or facility designations (automatically designated safety-net facilities, correctional facilities, state or county mental hospitals, or public or nonprofit private facilities).

North Dakota has seen many of the state's counties move in and out of HPSA designation, however, this is not necessarily a clear picture of the need for providers in a given area. Several HPSAs have been withdrawn due to decreases in the county populations which is partially caused by the population moving to urban locations where they could more easily access health care and employment. In many of these locations, being unable to attract primary care physicians, the healthcare facilities have secured the services of nurse practitioners and/or physician assistants, who are not currently counted in the HPSA methodology. This methodology brings forth another challenge for rural and frontier states like North Dakota. The HPSA scores are associated with the need for healthcare providers and range from 0-26. Many of the rural counties in North Dakota have very low HPSA scores which makes accessing federal programs more difficult, such as the NHSC which aids in the recruitment and retention of vital healthcare providers through scholarship and loan repayment programs. The information below provides more detailed information on the state's HPSAs.

***Primary Care HPSAs***

As of November 2020, there are 48 unique geographic or population primary care HPSA designations in North Dakota that are equal to about 94% of North Dakota counties being designated fully or partially for primary care (Figure 7). Of the 48 designations, 12 are new since 2016 and 31 (65%) of these designations are persistent shortage areas having a designation status for at least the past ten years.

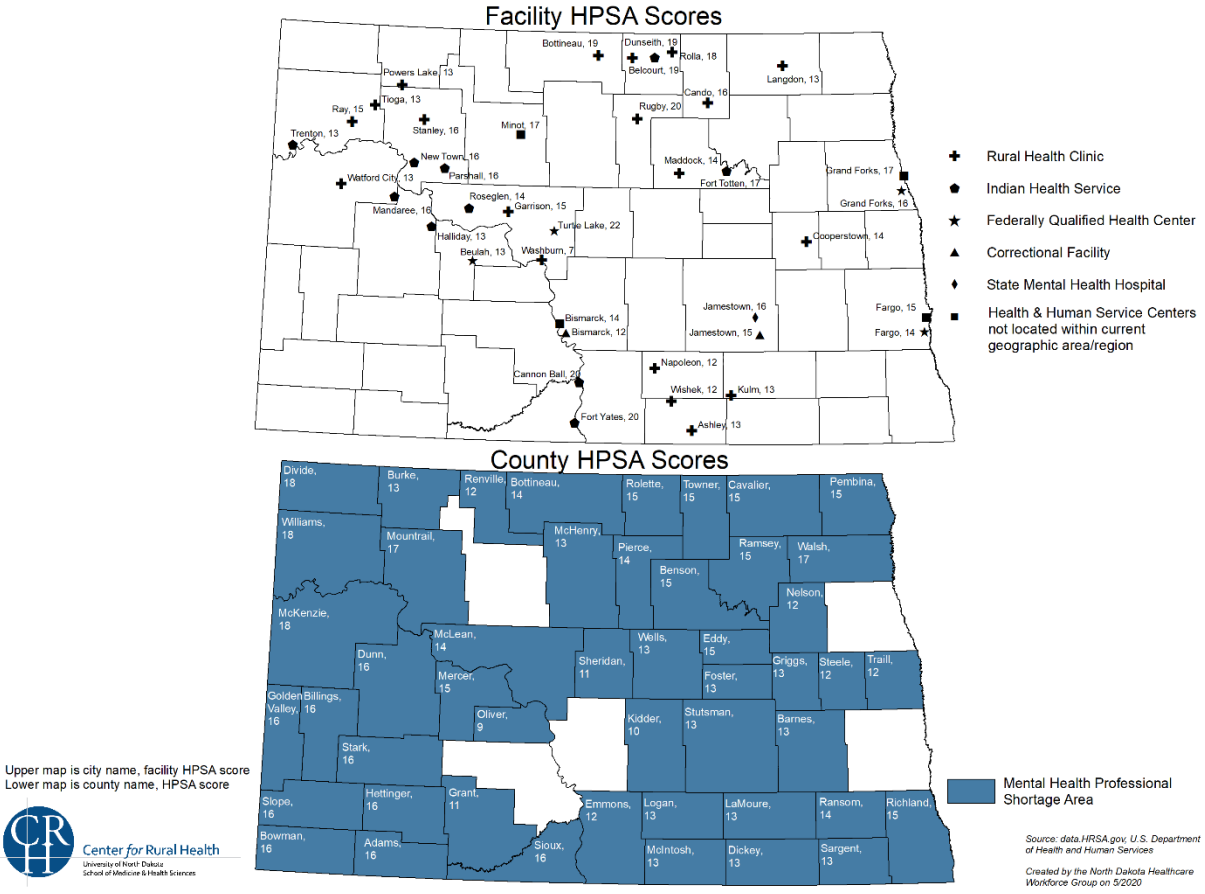
**Figure 7. North Dakota Health Professional Shortages Areas: Primary Care**




### *Mental Health HPSAs*

As of June 2020, there are 26 unique geographic mental health HPSA designations in North Dakota that are equal to about 91% of North Dakota counties being designated fully or partially for mental health (Figure 8). Many of the mental health designations are multi-county designations and 23 out of the 26 geographic mental health HPSAs are high-needs designations.

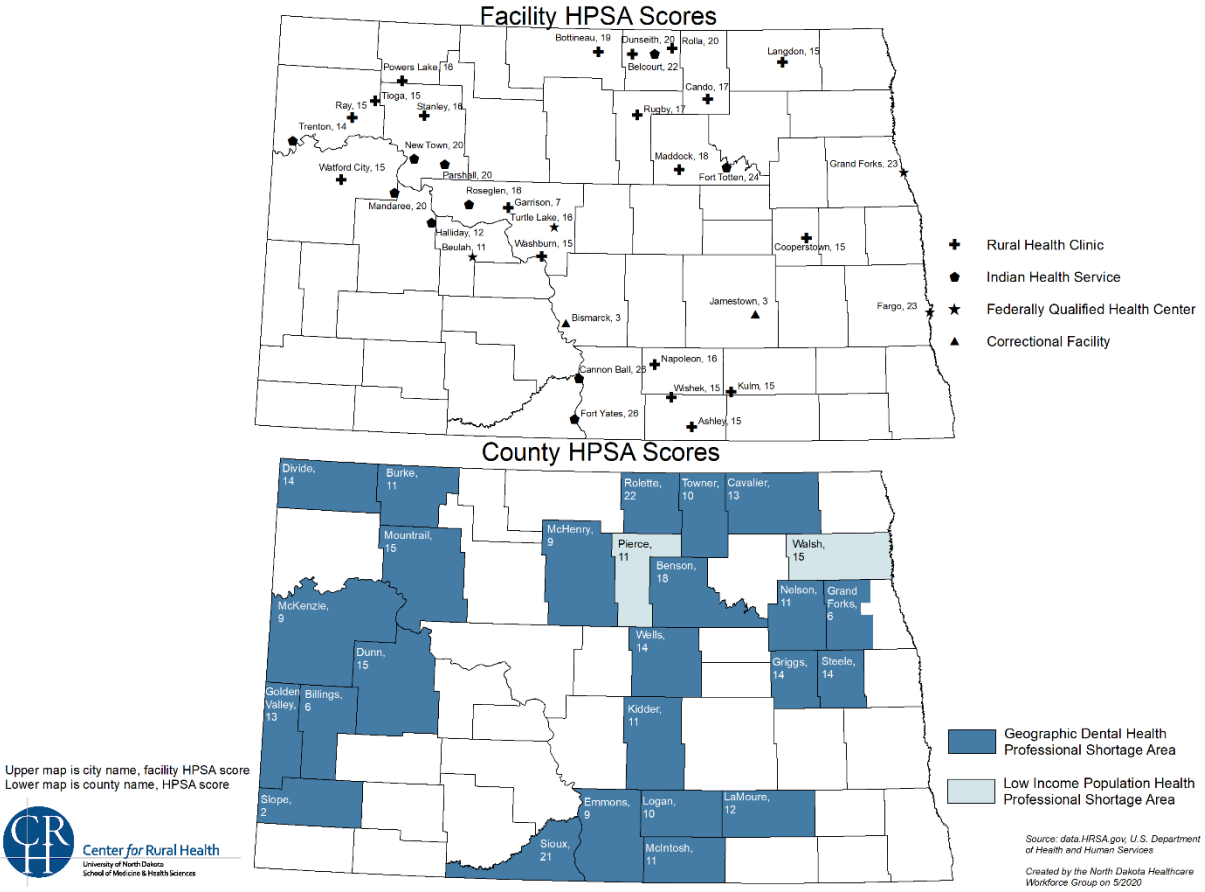
**Figure 8. North Dakota Health Professional Shortage Areas: Mental Health**




### *Dental Health HPSAs*

As of June 2020, there are 25 unique geographic dental health HPSA designations in North Dakota and 49% of North Dakota counties are designated fully or partially for dental health (Figure 9). The majority of North Dakota counties are not currently designated for dental health. Since 2016 there has been an increase in the number of dental health designations in North Dakota.

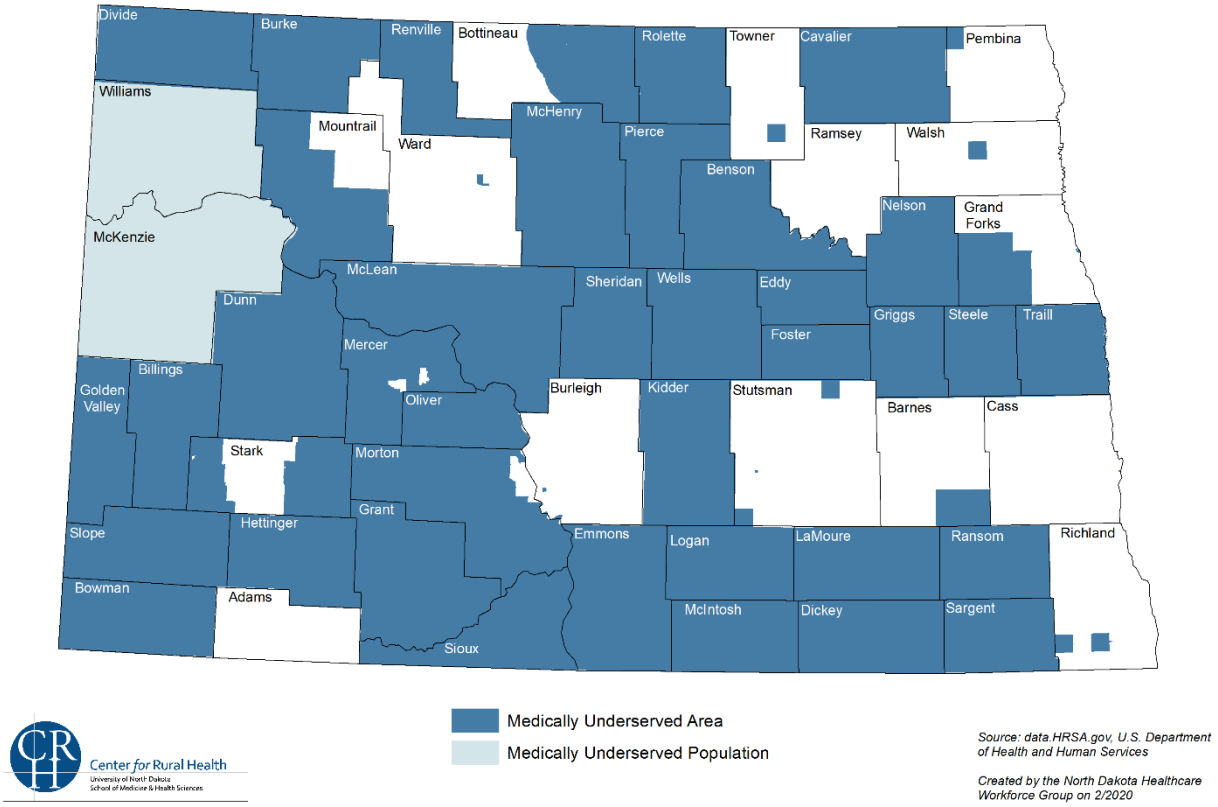
**Figure 9. North Dakota Health Professional Shortage Areas: Dental Health**




***Medically Underserved Areas/Populations***

Another indicator of underservice are Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) designations that are federally designated locations or population groups with a shortage of primary care resources. For some, access is reduced because they reside in a remote location while others may have a low number of primary care physicians in their area. Medically Underserved Area or Population (MUA/P) designations were initially developed as a prerequisite to requesting grant awards to plan, develop and operate a community health center. These designations measure degree of underservice and are designated as having too few primary care providers, high infant mortality, high poverty and/or high elderly population. MUA/P designations do not require updates. The MUA/P designations were established as one of several criteria for the development of community health centers with the original legislation enacted under Section 332 of the Public Health Service Act and under Section 330 of the Public Service Act respectively in the 1970s. Additionally, in 2002 the Health Care Safety Net Amendments authorized the automatic facility designation for Federally Qualified Health Centers and a simple application process for Rural Health Clinics to be designated. Currently, as illustrated in Figure 10, 96% of the state's counties have full or partial designations as MUA/Ps. Medically Underserved Areas may be represented by a whole county, group of contiguous counties, a group of urban census tracts, or a group of county or civil divisions while MUPs may include groups or persons who face economic, cultural, or linguistic barriers to health care.

**Figure 10. North Dakota Medically Underserved Areas/Populations (MUAs/MUPs)**




### *HPSA Summary*

As of December 2020, there were a total of 225 HPSA designations in North Dakota. Table 2 shows the designations by type, number of designations representing the percent of need, and the number of practitioners needed to remove the HPSA designation.[29]

**Table 2. North Dakota HPSA Summary[29]**

| Type | Total HPSA Designations | Percent of Need Met | Number of Providers Needed |
|---|---|---|---|
| Primary Care | 88 | 29.61% | 39 |
| Dental Health | 66 | 41.52% | 14 |
| Mental Health | 71 | 19.00% | 22 |

Several programs utilize HPSA and/or MUA/P designations in their program criteria. These programs include:

- Medicare Incentive Programs which provide bonus payments to physicians on Medicare Part B;
- Certified Rural Health Clinic Programs which provide cost-based reimbursement;
- FQHCs/Community Health Centers which provide federal funding for serving underserved populations and receive cost-based reimbursement;
- Conrad Program that allows the recruitment of foreign physicians willing to serve in underserved areas; and
- Consideration given for participating in the state administered loan repayment programs.

North Dakota utilizes a variety of recruitment and retention strategies to address shortage designations in North Dakota. These strategies include loan repayment programs and will be discussed in the following section.

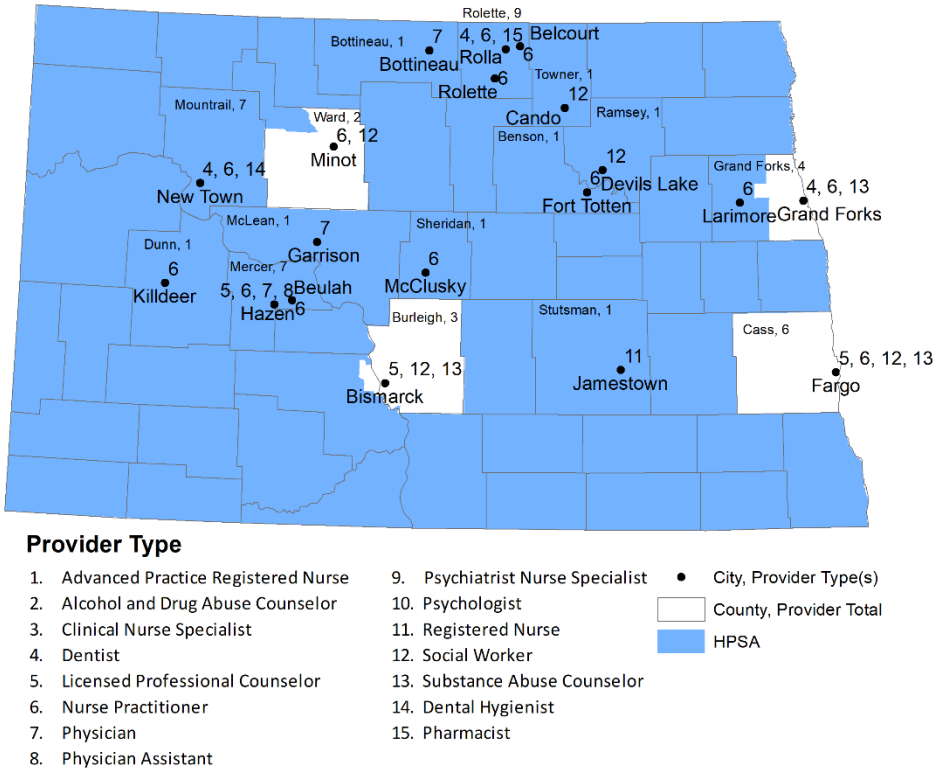
## Provider Recruitment and Retention Programs

### *National Health Service Corps*

The NHSC is part of the Bureau of Health Workforce, U.S. Department of Health and Human Services. The NHSC offers tax-free loan repayment assistance to support qualified healthcare providers (primary care, dental health, and mental health professionals) who choose to practice in underserved areas. The NHSC programs include scholarship and federally administered loan repayment programs. In exchange for at least two years of service in a HPSA, NHSC loan repayment recipients can receive up to $50,000 per year to repay student loans. As of July of 2020, there were 45 loan repayment recipients practicing in 27 sites in the state of North Dakota as shown in Figure 11 and include:

- Three physicians, 16 nurse practitioners, three physician assistants;
- Four dentists, one registered dental hygienist; and
- 14 substance use disorder professionals, and four mental health providers.

**Figure 11. National Health Service Corps Participants, 2021**




*Includes providers recieving funding starting on or continuing through January 1, 2021

*Source: HRSA, ND PCO*
*Created on 2/17/2021*

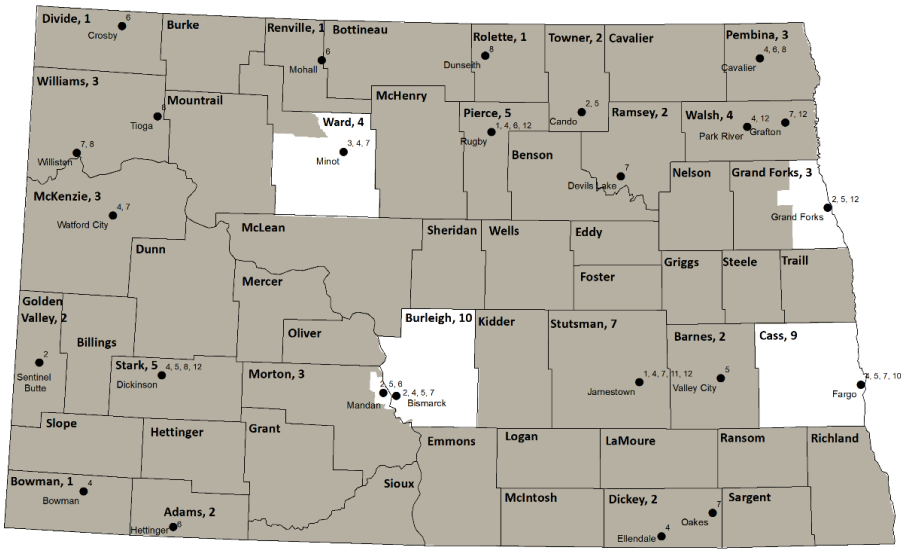
***Loan Repayment Programs***

The state also participates in the federal State Loan Repayment Program (SLRP), which provides 1:1 matching funds for eligible sites that are located in HPSAs. This program, which began in 2013, mirrors the NHSC loan repayment; however, unlike the NHSC program, the SLRP does not award loan repayment awards based on HPSA scores. While these scores are a measure of need, the state also has their own definition of critical shortage areas; areas that may not have high HPSA scores and areas that would not benefit from the NHSC program. As of January of 2021, there were 37 loan repayment recipients practicing in 16 sites in the state of North Dakota and include:

- Three physicians, ten nurse practitioners, three physician assistants;
- Two pharmacists;
- Nine registered nurses (RN's);
- One dentist; and
- Nine mental health providers.

North Dakota's Legislative Assembly enacted loan repayment programs for physicians, nurse practitioners, physician assistants, and certified nurse midwives in 1993-94 and a dental program in 2004. This program is called the North Dakota Healthcare Professionals Loan Repayment Program. Additional behavioral health professions were added in 2016, including clinical psychologists, licensed addiction counselors, licensed professional counselors, licensed social workers, registered nurses (RNs) in a behavioral health capacity, and specialty practice RNs. Behavioral Health Analysts have been proposed during the 2021 legislative session as an additional profession. Between 2011 and 2020, there were 160 providers awarded for loan repayment through the state program (Table 3). There is a 66% retention rate for physicians, an 87% retention rate for dentists, a 71% retention rate for Physician Assistant's, and a 67% retention rate for Nurse Practitioners. Figure 12 and Figure 13 shows the distribution of the current state loan repayment recipients.

## Figure 12. North Dakota Healthcare Professional Loan Repayment Program Participants, 2020




**Provider Type**

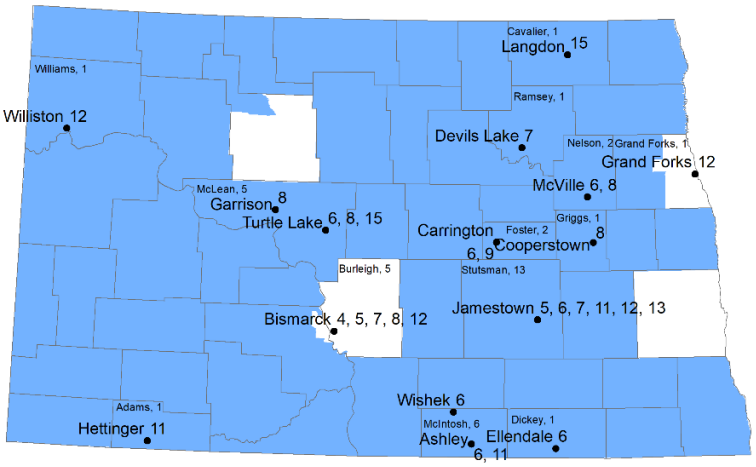
1 Advanced Practice Registered Nurse
2 Alcohol & Drug Abuse Counselor
3 Clinical Nurse Specialist
4 Dentist
5 Licensed Professional Counselor
6 Nurse Practitioner
7 Physician
8 Physician Assistant
9 Psychiatric Nurse Specialist
10 Psychologist
11 Registered Nurse
12 Social Worker
13 Substance Abuse Counselor

City
HPSA
County, Provider Count

*Includes providers receiving funding starting on or continuing through January 1, 2020.

*Source: HRSA, ND PCO*
*Created on 2/11/2020*

## Figure 13. North Dakota Federal State Loan Repayment Program Participants, 2021




**Provider Type**

1. Advanced Practice Registered Nurse
2. Alcohol and Drug Abuse Counselor
3. Clinical Nurse Specialist
4. Dentist
5. Licensed Professional Counselor
6. Nurse Practitioner
7. Physician
8. Physician Assistant
9. Psychiatrist Nurse Specialist
10. Psychologist
11. Registered Nurse
12. Social Worker
13. Substance Abuse Counselor
14. Dental Hygienist
15. Pharmacist

City, Provider Type(s)
County, Provider Total
HPSA

*Includes providers recieving funding starting on or continuing through January 1, 2021

*Source: HRSA, ND PCO*
*Created on 2/17/2021*

**Table 3. North Dakota Loan Repayment Recipients 2011-2020**

| Discipline | Number of Providers |
|---|---|
| Physicians | 38 |
| Nurse Practitioners/PA's | 33 |
| Dentists | 37 |
| Psychology & Behavioral Health | 52* |
| **TOTAL** | **160** |

Source: ND PCO Tracking Program
*Program included these professions starting in 2016

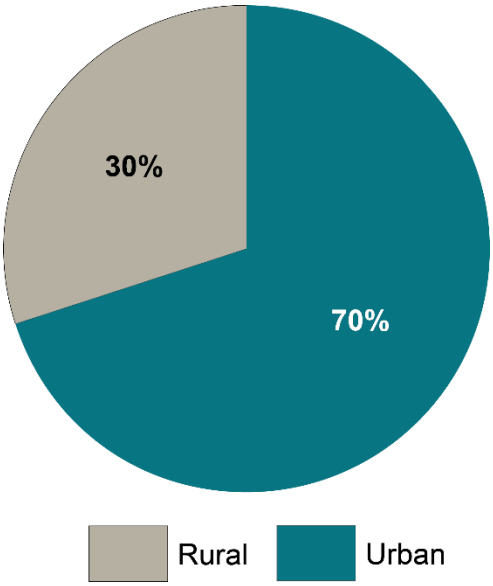
***J-1 Visa Waiver Program***

Federal legislation introduced by Senator Kent Conrad of North Dakota in 1994 created what is now known as the Conrad 30 J-1 Visa Waiver Program (Conrad Program). Since its inception, the program expanded into all 50 states, accounting for the recruitment of 16,207 physicians nation-wide from 2001-2019 (3RNet.org data, 2019). Through 2020, 260 J-1 physicians have participated in the Conrad Program in North Dakota, including 12 participants during the last 2020 cycle. As shown in Figure 14, only around 30% (77/260) of the J-1 physicians utilizing the Conrad Program in North Dakota have been placed in underserved areas since 2001, demonstrating the continued need for further rural recruitment efforts.

It is important to note that North Dakota has not exhausted its allowed waiver slots since prior to 2001, and the current average waiver usage since 2001 has been 13 slots. North Dakota's usage of the program had a sharp decline in the early 2000's and remains low for a number of reasons, including the decrease in the number of J-1 physicians available and increase in usage of the program in all 50 states making it challenging for states like North Dakota to compete with more urban underserved areas. Additionally, the program provides flexibility for states to use 10 of the 30 slots, also known as "flex" slots, for facilities located in non-HPSA/MUA/MUP areas, but who are providing services to patients from HPSA/MUA/MUP areas. In North Dakota, the flex slots are used quickly, while the remaining slots reserved for underserved areas go largely untouched.

While usage of the Conrad Program is low in North Dakota, it is still an incredibly important program to the state. As mentioned above, North Dakota was able to recruit 260 physicians over the past two decades using this program. Each physician is required to serve for 3 years under the Conrad Program, and therefore a collective 780 years of medical services have been provided to our state because of this program. With as many as 70% of physicians across all specialties changing jobs within their first two years,[30] the Conrad Program requiring 3 years of initial service helps fill the workforce needs possibly left by other departing physicians.

**Figure 14. Percent of J-1 Physicians Rural vs. Urban 2001-2020**




## Conclusion

The North Dakota PCO receives federal funding through a Primary Care Services Resource Coordination and Development Program authorized by Title III of the Public Health Service Act. The program is administered through the Health Resources and Services Administration, Bureau of Clinician Recruitment and Service and the Bureau of Primary Health Care. This funding is "intended to facilitate the coordination of activities within a state that relate to the delivery of primary care services and the recruitment and retention of critical health care providers." This goal is met by conducting a statewide primary care needs assessment and shortage area designation analysis, assisting in efforts focused on recruitment and retention of health professionals, and providing technical assistance to the state's healthcare facilities.

To assist in building healthcare workforce to meet the needs of North Dakota citizens, the ND PCO administers and coordinates numerous programs focused on recruitment and retention of healthcare providers, particularly in rural areas. Some of these programs include the North Dakota Healthcare Professionals Loan Repayment Program (LRP, the federal state loan repayment program (SLRP), National Health Services, and J-1 Visa Waiver Program. The review, updating, and creation of health professional shortage areas by the ND PCO allows state and federal officials to determine targeted areas of need within the state. At this time there is wide spread need for almost all types of healthcare professionals within North Dakota but in particular there is increasing need for behavioral health professionals. Healthcare providers focused on maternal and child health is another area where the state is looking to grow the healthcare workforce.

The ND PCO will continue to utilize the available recruitment and retention programs and strategies to assist in building-up the healthcare workforce in North Dakota, with particular focus in the areas previously indicated where there is growing demand for services. The ND PCO is committed to assisting communities with the greatest unmet health care needs, disparities, and health workforce shortages and to continue to identify key barriers to accessing health care for

these communities. Ensuring that North Dakota has a capable and qualified workforce to effectively provide health services is essential.

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