SIXTH BIENNIAL REPORT | 2021

HEALTH ISSUES FOR THE STATE OF NORTH DAKOTA

School of Medicine & Health Sciences
Advisory Council

Center for Rural Health
The University of North Dakota
School of Medicine & Health Sciences

UND School of Medicine & Health Sciences
University of North Dakota

SCHOOL OF MEDICINE & HEALTH SCIENCES

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Disclaimer

This *Biennial Report* represents the good-faith effort of the UND School of Medicine and Health Sciences and its Advisory Council to provide current and accurate information about the state of healthcare in North Dakota. Numerous sources were used in gathering the information found in this *Report*. We welcome corrections, which we will incorporate in subsequent editions of the *Biennial Report*.

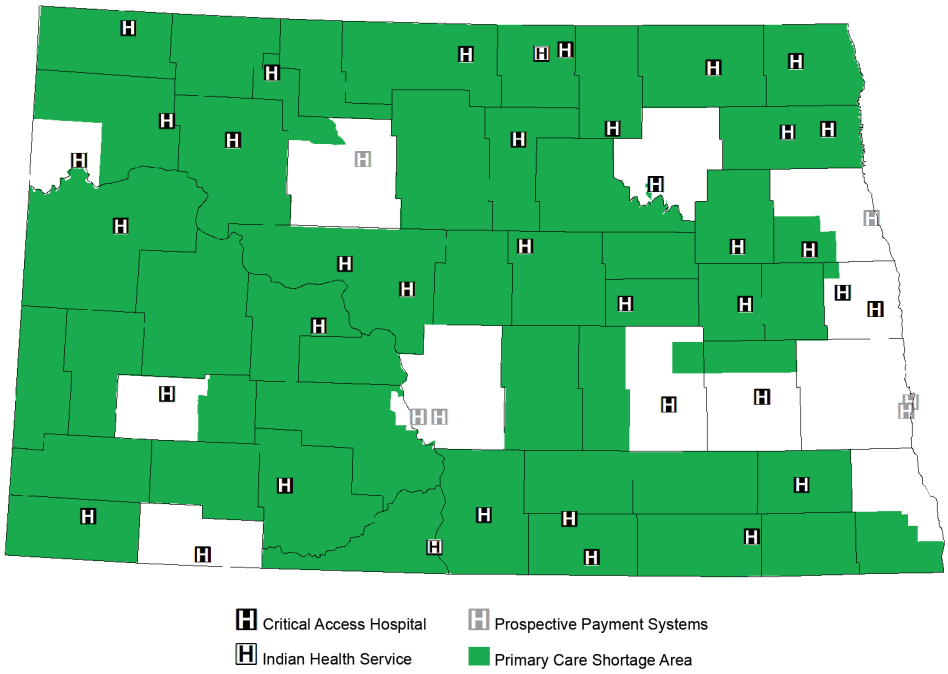
Acknowledgement

We acknowledge the exceptional contributions of the following individuals in the preparation of the *Report*: Mandi-Leigh Peterson, Karen Vanderzanden, Kristen Leighton, Jon Starkweather, Sonja Bauman, Blake Greiner, and Shane Knutson of the North Dakota Healthcare Workforce Group; Dr. Joshua Wynne, UND Vice President for Health Affairs and Dean, School of Medicine & Health Sciences; Dr. Tom Mohr, Associate Dean for Health Sciences; Dr. Jana Zwilling and Dr. Rhoda Owens of the College of Nursing and Professional Disciplines; Brian Schill of the Office of Alumni and Community Relations; and Laura Stutrud of Information Resources.

Cover photo courtesy of North Dakota Tourism.

EXECUTIVE SUMMARY*

Preface – This Executive Summary *and the full* Biennial Report *are based on data largely collected before the SARS-CoV-2 (COVID-19) pandemic emerged in the United States. As such, the data represented here reflect what one would consider a "normal" biennium for the state of North Dakota and do not reflect changes that are a result of the public health crisis. The resulting effect that may be seen likely will be fully represented in the data over at least the next biennium and will require careful consideration. The current information represents a good-faith effort of the contributors to provide the most representative data at the time collected.*



Hospitals in North Dakota compared to primary care health professional shortage areas.

North Dakota, like the rest of the country, is facing a major healthcare delivery challenge—how to meet a burgeoning need for healthcare services now and especially in the future with a supply of physicians and other healthcare providers that has not always kept pace with the growing demand. The problem is particularly important in rural and western parts of North Dakota, where there has been a chronic shortage especially of primary care providers dating back many decades. The data reviewed for this report illustrate two major problems in North Dakota. One problem is an inadequate number of healthcare providers. The second and larger problem, however, is a maldistribution of providers. The data show that healthcare providers are disproportionately located in the larger urbanized areas of the state, leaving many rural areas with a healthcare workforce shortage. Without direct intervention, the difficulty of providing adequate healthcare in North Dakota will worsen over the coming decades, due primarily to the aging of the population (including aging and eventual retirement of the healthcare workforce), which will increase the demand for healthcare services.

However, unlike much of the rest of the country, North Dakota is directly addressing its healthcare delivery challenges through the implementation of a well-vetted plan for healthcare workforce development and improved healthcare delivery. That plan, the Healthcare Workforce Initiative (HWI), was an outgrowth of the *First* and *Second Biennial Report on Health Issues for the State of North Dakota*. The HWI, which began by increasing medical and health sciences class sizes along with increasing residency (post-MD degree training) slots, has been fully implemented. The HWI should, in the future, decrease North Dakota's healthcare delivery challenges through attainment of its four goals: 1) reducing disease burden, 2) retaining more healthcare provider graduates for care delivery within the state, 3) training more healthcare providers, and

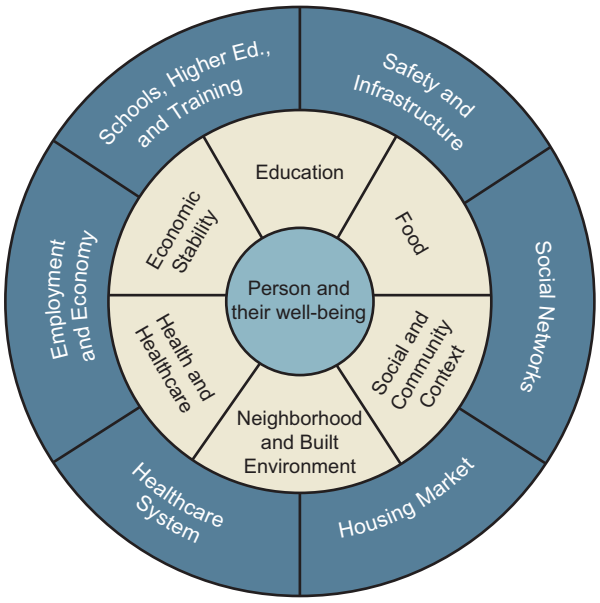
* The full *Report*, along with all supporting data, is available at med.UND.edu/publications/biennial-report.

4) improving the efficiency of the state's healthcare delivery system through an emphasis on team-based care delivery approaches. To accommodate the substantial class size expansions associated with the HWI, a new University of North Dakota (UND) School of Medicine and Health Sciences (SMHS) facility was completed in 2016 and is fully functional on UND's Grand Forks campus. The largest government-funded building construction project in the state's history, it was completed on time and on budget.

In accordance with the expectations specified in the North Dakota Century Code (NDCC 15-52-04), this *Sixth Biennial Report on Health Issues for the State of North Dakota* (Report) updates the first five Reports with an assessment of the current state of health of North Dakotans and their healthcare delivery system, along with an analysis of the steps that need to be taken to ensure that all North Dakotans have access to high-quality healthcare at an affordable cost now and in the future.

The Population of North Dakota: The Report begins with an updated analysis of the population demographics in North Dakota, utilizing the most recently available data. Standardized definitions are used to define the state's population—**metropolitan** to denote areas with a core population of 50,000 or more; **micropolitan** (or large rural) to denote areas with core populations of 10,000 to 49,999; and **rural** to denote areas with a population of less than 10,000. Half of North Dakota's current population resides in metropolitan areas, with a little more than a quarter (26%) located in rural areas. This represents a dramatic change compared with a few decades ago when more than half of the state's population was located in rural areas. North Dakota is one of the least densely populated states in the country, ranking 48th in population density and tied for fourth in the country in the percentage of its state population that is 85 years of age or older. Because demand for healthcare increases proportionally with age, demand for healthcare services is especially pronounced in North Dakota. Such needs will only increase as the state's citizens grow older. People in rural regions of North Dakota are generally older, poorer, and have less or no insurance coverage than people in non-rural areas, all of which are challenges to providing adequate healthcare. Rural regions continue to experience depopulation, which will only exacerbate the current problem of healthcare access and delivery.

Social Determinants of Health in North Dakota: Various external factors, referred to as social determinants of health (SDOH), can affect health status and explain why some Americans are generally healthier than others are. SDOH include conditions where people live, work, learn, and socialize. SDOH consider the various circumstances in which people are born, live, learn, work, socialize, play, and age that affect a range of health outcomes. 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,

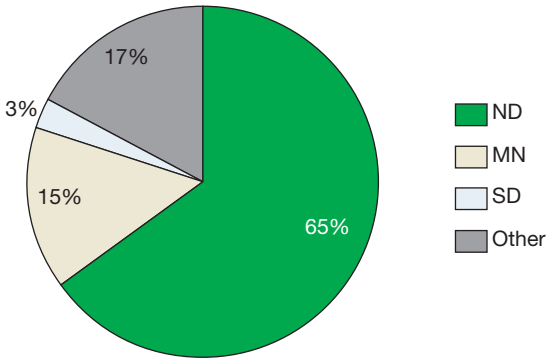


Social determinants of health. The inner circle represents the individual, the middle ring represents an individual's immediate environment, and the outer ring represents other outside influences on an individual's immediate environment.

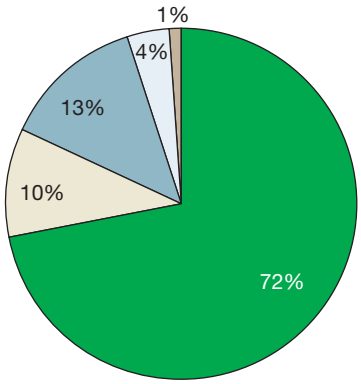
school, workplace, neighborhood, city, and other community settings where a person spends a significant amount of time. Resources that contribute to an enhanced quality of life for a given population are likely to have a significant influence on positive health outcomes of that population. Examples of quality of life enhancing resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local health services, and environments free from life-threatening toxins. 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 healthcare.

The Health of North Dakota: The health of North Dakotans, in comparison with the rest of the United States, is good in general. North Dakotans have a slightly lower prevalence of diabetes than the rest of the United States and are less likely to report fair or poor health. However, North Dakotans tend to have a higher risk of some types of cancer and a mortality rate that exceeds the national average. Behavioral risks tend to increase as population density decreases; rural areas have the worst behavioral risk, with an increased frequency of obesity, smoking, and drinking, especially in males.

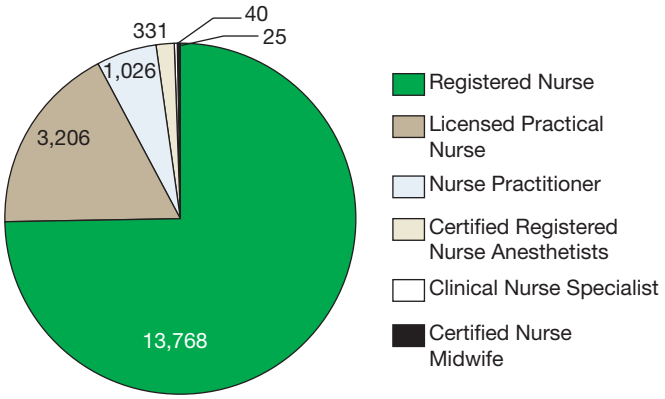
Physician Workforce: The physician workforce in North Dakota has fewer physicians per 10,000 population than the United States as a whole or the Midwest comparison group. Although the gap had narrowed over the past three decades, it has widened again recently. Our physicians are older and more likely to be male than elsewhere in the United States. About one-fourth of the physician



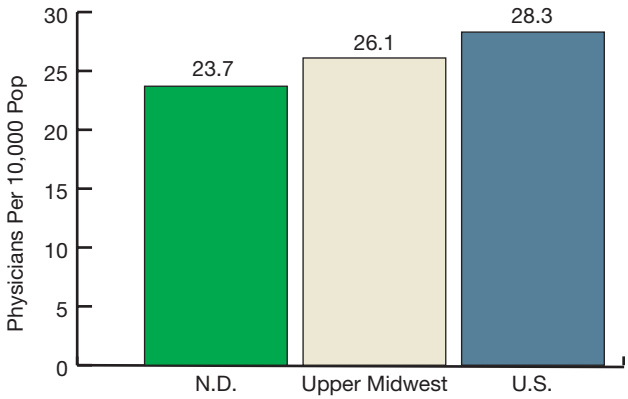
States where nurse practitioners were educated.



Employment status totals for all nursing roles.



Total number of licensed nurses in North Dakota by role.

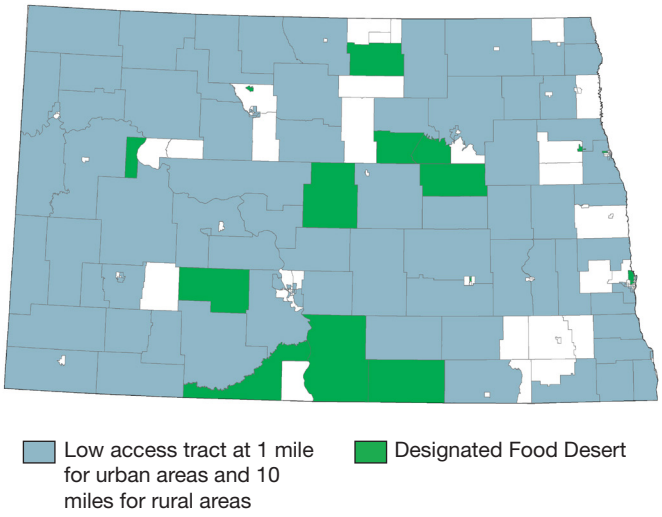


Number of physicians per 10,000 population for North Dakota, the Upper Midwest, and the United States (excludes resident physicians), 2017.

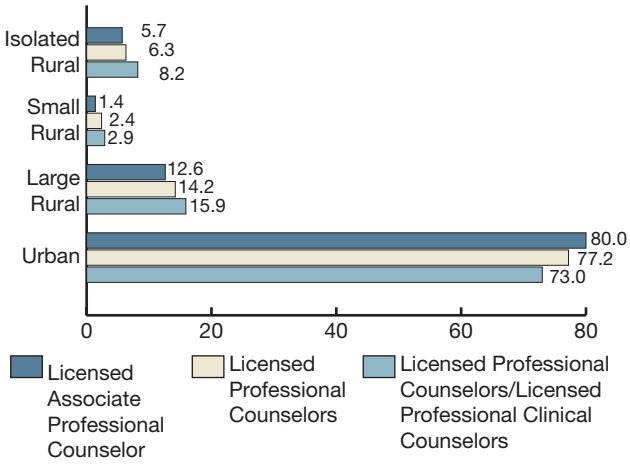
workforce is made up of international medical graduates, a little higher than the rest of the country. The UND SMHS is an important source of physicians for the state, accounting for 47% of the more than 1,000 physicians practicing in North Dakota who graduated from a U.S. medical school. The Rural Opportunities in Medical Education (ROME) Program has had 144 participants, of which 88 currently are practicing medicine. Of those, 66% are practicing in primary care, and 29% are practicing in rural areas. About 45% of the physicians in North Dakota received some or all of their medical training (medical school or residency or both) in-state. The patient-to-physician ratio is not equally distributed across the state. Micropolitan areas have about twice as many patients per physician as metropolitan areas, while rural areas have about five times as many. Predictions of an inadequate future physician supply has helped garner support for the HWI. Without the effects of the HWI, estimates indicate a shortage of some 260 to 360 physicians by 2025, the consequence of a heightened need for healthcare services as the Baby Boomer generation ages but also from retirements in the physician workforce (one-third of physicians in North Dakota are 55 years of age or older).

Primary Care Workforce: The state's primary care physicians include family medicine, general internal medicine, and general pediatrics. Compared with the rest of the country, North Dakota has more primary care physicians when normalized to the population size. Their density is significantly higher than either comparison group in metropolitan regions; it is only in rural areas where North Dakota significantly lags the Midwest comparison group. Although primary care physicians in North Dakota are more likely to practice in rural areas compared with specialist physicians, they still are twice as likely to be found in urban regions rather than rural areas. Residency training in North Dakota is an especially important conduit of primary care physicians, since nearly half (45%) of them have completed a residency within the state; almost three-quarters of family medicine physicians went to medical school at UND, completed an in-state residency, or did both.

North Dakota has relatively fewer specialists than the Midwest or the rest of the United States in certain specialties, including obstetrics-gynecology. We have about the same relative number of psychiatrists as other Midwest states, although two-thirds of them work in the eastern part of the state, leaving the western parts of North Dakota with a relative shortage.



Low food access and food desert designated census tracts in North Dakota, 2015. Low food access is defined as 500 people and/or 33% of the population of a census tract living more the 1 mile from a grocery store in urban areas and more than 10 miles from a grocery store in rural areas. Food deserts are census tracts designated as low access and low income.



Rural-urban designation for counselors in North Dakota, 2019.

Nursing Workforce: A majority of hospital nurses are licensed practical nurses (LPNs) or registered nurses (RNs). A majority of RNs and LPNs were trained in-state, with a majority working in an in-patient setting. A majority of nurse practitioners were trained in North Dakota with a majority working in primary care.

Behavioral Health and Non-Physician Healthcare Workforce in North Dakota: Most behavioral health professionals are found in urban areas. This includes psychiatrists, psychologists, counselors, licensed addiction counselors, and social workers. More than half of all social workers were trained in North Dakota. Almost three-quarters of the state's physical therapists and physical therapist assistants trained in North Dakota, with half receiving training at UND. Of the physician assistants trained in North Dakota, half practice in rural areas and almost half (46%) practice in rural primary care.

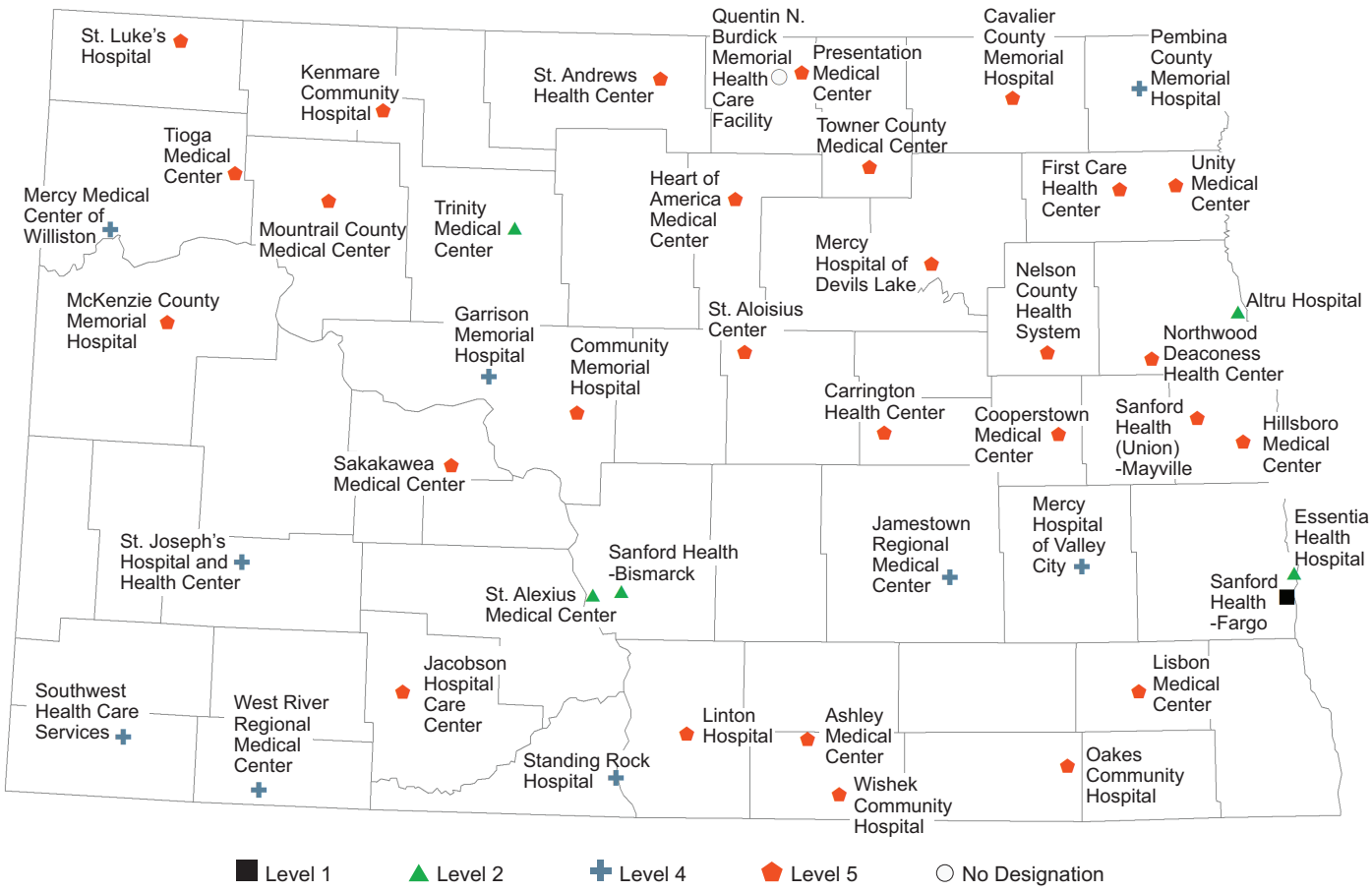
Healthcare Facility Workforce: Nursing facilities and hospitals typically rely on external contract employees, with physical therapists, occupational therapists, and speech therapists as the most common external contract employees. The highest turnover rate was found with nurse assistants, which are the most difficult positions to fill.

Healthcare Organization and Infrastructure: Healthcare in North Dakota is delivered through more than 300 ambulatory care clinics, 52 hospitals, 80 skilled-nursing facilities, 68 basic-care facilities, and 72 assisted-living facilities, supported by an array of emergency medical services (EMS) providers, trauma centers, 28 public health units, oral health providers, behavioral health providers, and pharmacies. Generally, the further a facility is from a metropolitan area, the more its operation is threatened by financial and other pressures, including staff recruitment and retention. Rural health organizations tend to be small in size but have a significant impact on both the health of individuals and the economic base of the community in which they are situated.

Healthcare Policy: Nationally, the health delivery system is going through profound change. Improvements in population health and a realignment of provider payments to incorporate those improvements is a new and fundamental reality. The quality and safety of care delivered in a healthcare system is directly associated with improving and maintaining overall health status. In a complex healthcare system, there are a number of concerns, such as the availability of providers; access to care and health services, technology, and treatment advancement; and the financial dimensions of affordability and payment. Each of these is a contributing factor in the overall strategy to be considered when reforming or redesigning the health system. In addition, the quality of care provided to the population and the patient outcomes produced are equally important facets of reform.

The statewide problem of unmet mental and behavioral health needs, especially related to the ongoing opioid abuse issue, is highlighted in the current Report. One approach already implemented through the HWI is to bring the often rural patient to the provider through the use of telepsychiatry. The UND Department of Psychiatry and Behavioral Science has implemented training in telepsychiatry for all of its residents so they will be able to utilize this technology effectively in clinical practice.

The quality of healthcare delivered in North Dakota is as good as or better than much of the United States, but there appears to have been a decline in several measures in the past few years, particularly in the delivery of certain acute-care services. North Dakota (along with other upper-Midwest states) generally provides high-quality care at relatively lower cost than other states in the U.S. North Dakota ranked 22nd in the country in a recent assessment of healthcare quality undertaken by the Commonwealth Fund (down from 9th in 2009).



Adult trauma centers and designated levels in North Dakota. There is a Level 3 trauma center designation; however, North Dakota does not have any trauma centers that are designated as Level 3.

The Report concludes with a strong ongoing endorsement of the HWI and a recommendation to continue its funding by the 67th Legislative Assembly. One component of the HWI—the RuralMed medical school scholarship program—is cited in particular for its positive results in rural physician recruitment. An important issue for consideration by the 67th Legislative Assembly is the effect of the state's current financial status on funding for the HWI. The budget submitted by the UND SMHS for the 2021–2023 biennium and endorsed by both UND and the State Board of Higher Education has been structured to permit full funding of the HWI and a continuation of the various vital healthcare educational programs of the UND SMHS. Thus, it will be up to the 67th Legislative Assembly to weigh the merits of full funding of the HWI in relation to the other funding priorities. The UND SMHS Advisory Council strongly supports continuing funding of the HWI as detailed in the budget request.

An important additional consideration for the 67th Legislative Assembly will be the Strategic Plan for Health that has been developed by the Health Strategies Planning Group with extensive input from thought leaders from both within and outside of the state. The aspirational goal of the Plan is to make North Dakota the healthiest state in the country by improving the health and well-being of all North Dakotans. It is based on three foundational goals:

- To support state and local data-driven health-conscious policy and decision-making
- To develop public health expertise and leadership statewide
- To enhance cross-sector collaboration and integration

The Plan is to be finalized in time for review and consideration by the 67th Legislative Assembly that convenes in January 2021. Legislative support for and initial implementation of the Plan during the 2021-2023 biennium, along with continued funding for the HWI, will be essential to address the health challenges that lie ahead. Taken together, the Plan and the HWI form an exciting framework for improving health and well-being statewide and ensuring an adequate healthcare delivery workforce for the citizens of North Dakota for years to come, eventuating in the citizens of North Dakota becoming the healthiest people in the country.

AN ELECTRONIC VERSION OF THE COMPLETE REPORT IS AVAILABLE AT
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