Fourth Biennial Report

Health Issues for the State of North Dakota

2017

Photo by North Dakota Tourism/Jim Gallop

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

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This *Report* was prepared by the UND School of Medicine and Health Sciences Advisory Council

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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*: Brad Gibbens, Mandi-Leigh Peterson, and Dr. Gary Hart of the Center for Rural Health; Jessica Sobolik and Denis MacLeod of the Office of Alumni and Community Relations; and Laura Cory of Information Resources. In addition, we thank Abdi Ahmed, Patrick Bright, Nate Fix, Dr. Shawnda Schroeder, and Lynette Dickson of the Center for Rural Health; Dr. Rashid Ahmed, associate dean of research, of the College of Nursing and Professional Disciplines; and Shelly Peterson, president, North Dakota Long Term Care Association for their contributions.

EXECUTIVE SUMMARY*

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 providers that has not always kept pace with the growing demand. The problem is particularly acute in rural and western parts of North Dakota, where there has been a chronic shortage especially of primary care providers dating back for many decades and probably since the start of statehood. Part of the problem in North Dakota is an inadequate number of providers, but a larger portion of the problem is a maldistribution of providers who are disproportionately located in the larger urbanized areas of the state. Without direct intervention, the difficulty of providing adequate healthcare in North Dakota will worsen over the coming decades from the combination of aging of the population (including aging and eventual retirement of the healthcare workforce) along with localized population growth in the Oil Patch and the cities, both of which will increase the demand for healthcare services.

However, unlike most of the rest of the country, North Dakota is directly addressing its healthcare delivery challenges through its 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 both the *First* and *Second Biennial Reports on Health Issues for the State of North Dakota*. Phase I of the HWI, which began by increasing medical and health sciences class sizes along with increasing residency slots, has already been fully implemented. Phase II of the plan is being implemented at present. When fully implemented, the HWI should decrease North Dakota's healthcare delivery challenges through attainment of its four goals: reducing disease burden, retaining more healthcare provider graduates for care delivery within the state, training more healthcare providers, and improving the efficiency of the state's healthcare delivery system. 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 has been completed on UND's Grand Forks campus, and is now up and running. It was completed on time and on budget.

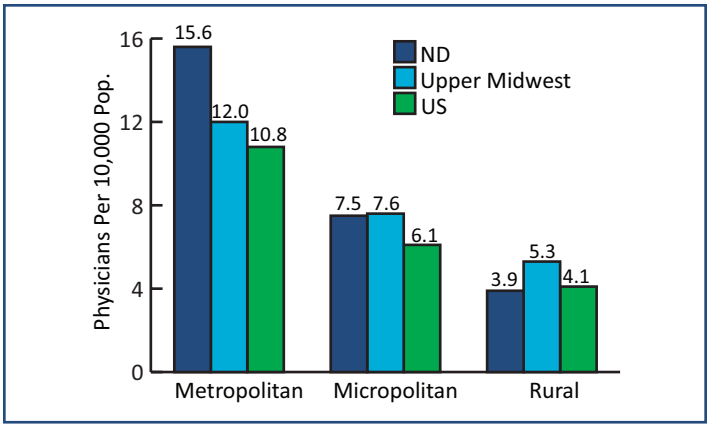
In accordance with the expectations specified in the North Dakota Century Code (NDCC 15-52-04), this *Fourth Biennial Report on Health Issues for the State of North Dakota (Report)* updates the first three *Reports* with an assessment of the current state of health of North Dakotans and their healthcare 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 *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

* The full *Report*, along with all supporting data, is available at www.med.und.edu_files/docs/fouth-biennial-report.pdf.

areas with core populations of 10,000 to 49,999; and *rural* to denote areas with less than 10,000. About half (49%) of North Dakota's current population reside in metropolitan areas, with a little more than a quarter (26%) located in rural areas. This represents a dramatic change, since only a few decades ago, 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 49th in population density. Also unlike the rest of the country, we have more males than females (51% versus 49%), and we are older on average; North Dakota, for example, is 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. That demand 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, except for significant population growth in those western regions associated with the recent oil boom; the cities continue to grow and prosper. Predictions for population growth in the future are controversial and are tempered by the knowledge that another "boom-and-bust" cycle that has been seen before has occurred again. But even conservative estimates predict a population of about 800,000 by 2040 (a nearly 20% increase compared with 2010), with a further reduction in the rural portion of the population by about one-third.

The *Report* next considers the health of North Dakotans, which in comparison with the rest of the United States is generally good. North Dakotans have a slightly lower problem with 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 cancer and a mortality rate that exceeds the national average. Across North Dakota, behavioral risks tend to increase as population density decreases; thus rural areas have the worst behavioral risk, with an increased frequency of obesity, smoking, and drinking, especially in males.



Primary-care physicians per 10,000 population in North Dakota, the Upper Midwest, and the United States by the three metropolitan/nonmetropolitan categories, 2013

The physician workforce is considered next in the *Report*, which finds that North Dakota has somewhat fewer physicians per 10,000 population than the United States as a whole or the Midwest comparison group, and although the gap had narrowed over the past three decades, it recently has widened. Our physicians are older and more likely to be male than elsewhere in the United States. About one-fourth of the physician 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 45% of the more than 1,000 physicians practicing in North Dakota who graduated from a U.S. medical school.

Of all the physicians in the state, about 44% received some or all of their medical training (medical school or residency or both) in-state. As is the rule for the rest of the United States, there is a striking gradient of patients per physician depending on geographic region; micropolitan areas (large rural) have about twice as many patients per physician as metropolitan areas, while rural areas have about five times as many. Predictions of an inadequate physician supply leading to further increases in the number of patients per provider, especially in rural areas, have helped buttress support for the HWI that is intended to address those concerns. Without the effects of the HWI, current estimates indicate a shortage of some 260 to 360 physicians by 2025, primarily the consequence of the heightened need for healthcare services as the Baby

Boom generation ages but also from retirements in the similarly aging physician workforce (one-third of the physicians in North Dakota are 55 years of age or older). Even more physicians will be needed if the population grows as recently predicted. If the population of North Dakota increases to 800,000 people, around 500 additional physicians will be needed.

The state's primary care physicians (family medicine, general internal medicine, and general pediatrics) are considered next in the *Report*. 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 that North Dakota significantly lags the Midwest comparison group (see figure). Primary care physicians in North Dakota are more likely to practice in rural areas compared with specialist physicians, but they still are twice as likely to be found in urban regions rather than rural areas after correcting for population. 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; more than half 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 shortage.

Similar trends are found with other nonphysician providers. While nurse practitioners (NPs) and physician assistants (PAs) are much more likely to be female than their physician counterparts, they, too, are distributed more in the metropolitan than rural areas in a proportion similar to primary care physicians. This is particularly true for NPs; PAs are the most evenly distributed across North Dakota of any healthcare provider group. Compared with U.S. figures, North Dakota has about 7% fewer NPs but 37% more PAs. North Dakota has significantly more licensed practical nurses (LPNs), registered nurses, and pharmacists than the national average, and they, too, are distributed particularly in the metropolitan areas. In the case of pharmacists, their relative scarcity in rural areas is balanced by pharmacy techs and by a robust telepharmacy program spearheaded by North Dakota State University. North Dakota has fewer dentists than the United States as a whole, but more physical therapists. When looking at the entire North Dakota healthcare provider workforce, there is a consistent finding of a relative shortage of providers especially in rural and micropolitan (large rural) areas compared with metropolitan regions, but with important variations across the state depending on the particular provider type.

The *Report* then analyzes the findings of two surveys conducted by UND's Center for Rural Health that collated the number of unfilled hospital-based nonphysician healthcare worker positions ("vacancies") across the state. The *North Dakota Hospital Workforce Study* looked at a wide spectrum of 25 different categories of healthcare workers (from nurses to lab technicians to dietitians to business personnel) and found, perhaps somewhat surprisingly, that hospitals are reporting significant worker shortages in only three of the 25 categories (12%), and even in those areas, the vacancy rates are not much above national norms. The *North Dakota Nursing Facility Workforce Study* assessed the nonphysician healthcare workforce status of 24 employee categories in 81 rural and urban nursing facilities. The survey, performed in September 2016, found that vacancy rates were not excessively high for most employee categories, although rates tended to be higher in rural compared with urban institutions. The highest vacancy rates were found for PAs and NPs, followed by registered nurses, LPNs, and certified nursing assistants. However, there were significant regional differences across North Dakota in vacancy rates. Barriers to successful recruitment of needed employees included the rural location of facilities, a small pool of candidates, and salary limitations.

The *Report* next analyzes the healthcare delivery system in North Dakota, which consists of hospitals—36 smaller critical access hospitals (CAHs) with 25 or fewer acute-care beds, six larger general acute-

care hospitals located in the four largest cities, three psychiatric hospitals, two long-term acute-care hospitals, two Indian Health Service hospitals, one Veterans Affairs hospital and one rehabilitation hospital—and about 300 ambulatory care clinics. Although their financial performance has improved since the *Third Biennial Report*, they still struggle to make ends meet so that they can provide needed care in their communities. Outpatient care is augmented by 52 federally certified rural health clinics and five federally qualified health centers. There are 43 trauma centers across the state, with each of the "Big Six" hospitals home to a Level II trauma center. Most emergency medical service support in the state is ground-based and provides basic services; it is under duress because of its dependence on volunteers and a problematic funding stream. There has been an expansion across the state in the deployment and use of electronic health records, but financial and other barriers to full implementation remain. Long-term care in the state is provided by 80 skilled nursing, 68 basic-care, and 72 assisted-living facilities. There are 28 independent local public health units. There are 25 facilities or programs statewide that provide mental health services, but there are ongoing challenges to providing adequate services especially in the more rural regions of the state.

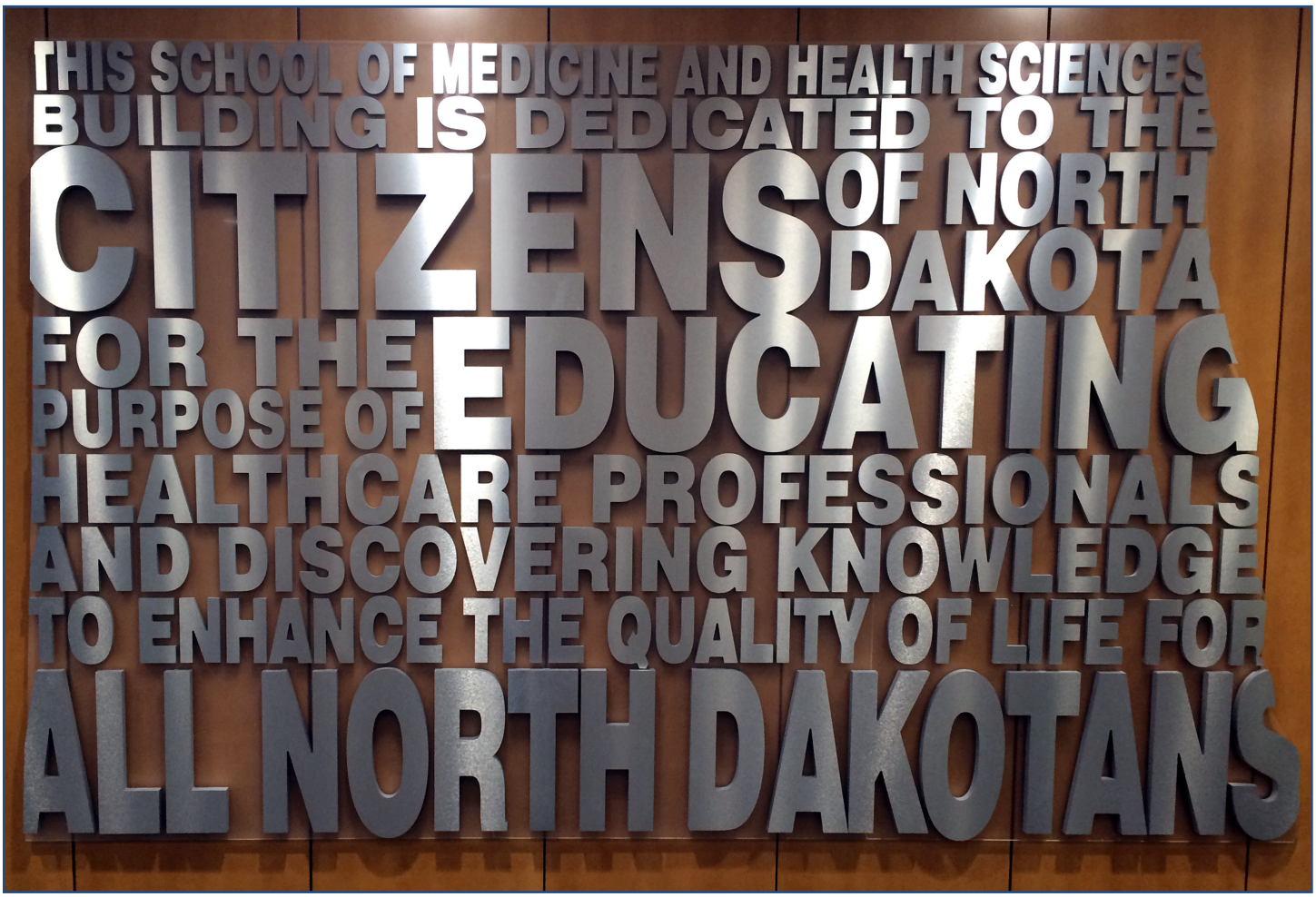
The statewide problem of unmet mental and behavioral health needs, especially related to the burgeoning opioid abuse issue, is highlighted in the current *Report*. One approach already implemented through the HWI is to bring the often rural patient to the provider (rather than the other way around) through the use of telepsychiatry. The UND Department of Psychiatry and Behavioral Science has implemented training in telepsychiatry for all of its residents so that they will be able to utilize this effective modality once they get out into clinical practice.

Another problem area for the state is oral health. The *Report* summarizes the results of an extensive study undertaken by UND's Center for Rural Health in 2014 of North Dakota's oral health needs and attendant policy implications. That study promulgated five policy recommendations for decision-makers to consider to address the substantial oral health needs of the state that are particularly pronounced in rural areas and in Indian Country.

The *Report* then analyzes the quality of healthcare delivered in North Dakota and found in general that it 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 United States; North Dakota ranked 26th in the country in one recent assessment undertaken by the Commonwealth Fund (but down from 9th in 2009).

The *Report* concludes with a strong ongoing endorsement of the HWI and a recommendation to continue its funding by the 65th 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 65th Legislative Assembly is the effect of the state's current financial status on funding for the HWI. Because of the required budget allotment process during the 2015–2017 biennium that amounted effectively to more than a 10% budget reduction, 19 approved residency slots (post-MD degree training) could not be funded. The budget submitted by the UND SMHS for the 2017–2019 biennium, while conforming to the required 90% budget request model required by the governor, has been structured to permit full funding of the HWI (including the currently approved but unfunded 19 residency slots). Thus, it will be up to the 65th Legislative Assembly to weigh the merits of full funding of the HWI in relation to the other funding priorities in the state. The UND SMHS Advisory Council strongly supports full funding of the HWI if at all feasible.

An electronic version of the complete *Report* is available at www.med.UND.edu/about-us/_files/docs/fourth-biennial-report.pdf.



Dedication plaque at the entrance of the new UND School of Medicine and Health Sciences building.