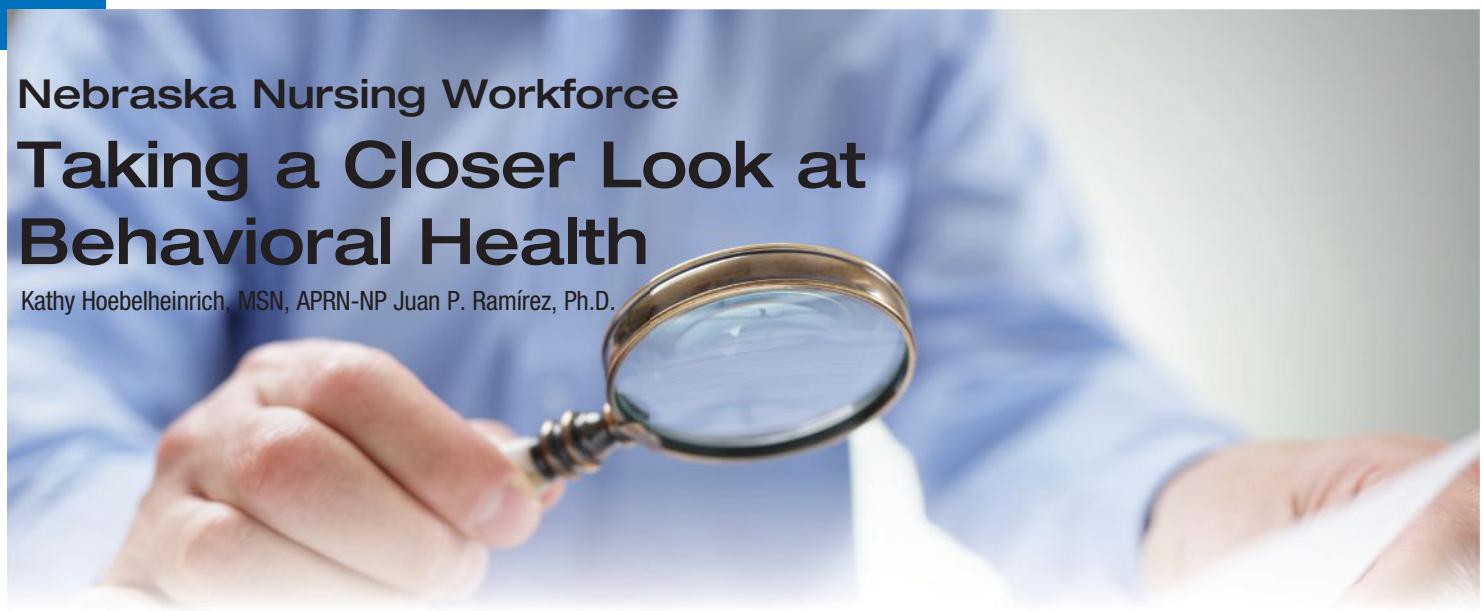


Nebraska Nursing Workforce

Taking a Closer Look at Behavioral Health

Kathy Hoebelheinrich, MSN, APRN-NP Juan P. Ramírez, Ph.D.

Eighty-eight (88) of Nebraska's 93 counties are in mental Health Professional Shortage Areas (HPSAs) designated by the U.S. Health Resources and Services Administration (HRSA) (2019). These counties are all outside of Omaha and Lincoln metro areas. State mental HPSAs are based on the ratio of psychiatrists to the population. An area is regarded as underserved if there is less than one psychiatrist for every 30,000 people (HRSA, 2019). The number of Practitioners Needed to Remove HPSA Designation, estimates that 26 additional psychiatrists are required to remove the HPSA designation in all areas of the state (HRSA, 2019). Limiting the characterization of mental HPSAs to the supply of psychiatrists overlooks the availability of services by other core mental health providers.

Health Resources and Services and Administration (HRSA) has generated state-level projections of supply and demand for behavioral health occupations including not only psychiatrists, but psychiatric nurse practitioners (NPs), psychiatric physician assistants (PAs), psychologists, addiction counselors, mental health counselors, school counselors, social workers, and marriage and family therapists. The HRSA model is limited by the assumptions that demand equals supply in the base year (2016) and that over the period studied (through 2030), current national patterns of labor supply and service will remain unchanged. Advances in medicine and technology and shifts in health care delivery models may affect the efficiency of service delivery, and consequently, how provider supply is best assessed. Projections also do not account for the geographic distribution of providers, which can impact access to care (U.S. Department of Health and Human Services, 2018).

Like other states, Nebraska has reformed its behavioral health system. In 2004, Legislative Bill (LB) 1083 shifted care provided at three state Regional Centers towards a community-based approach focused on maintaining wellness and recovery by providing resources in the home and community (Behavioral Health Education Center of Nebraska [BHECN], 2019). Community-based behavioral health care moves patients away from institutions and psychiatric hospitals and focuses on keeping them in the community closer to family and friends.

Community-based care not only requires access to providers with prescriptive authority, but the services of dedicated interprofessional health care teams. Innovative models of care and technological advancements make it possible to provide behavioral health services to patient populations in the state that might not otherwise have access to these services. See insets.

A Psychiatric-Mental Health (PMH) NP in a neighboring state contracts with an Independent Mental Health Practitioner in a Nebraska Panhandle community for the medication management of pediatric patients.

A previous report by the Nebraska Center for Nursing (CFN) (Hoebelheinrich & Ramirez, 2019) showed that the number of NPs in the state increased an unprecedented 43% between 2014 and 2018 on the heels of the removal of the Integrated Practice Agreement requirement between NPs and physicians in 2015. First-time data collected by the CFN in the 2018 RN renewal survey regarding APRN practice specialization yielded surprising findings. Nurse practitioners in Nebraska reported Psychiatric Mental Health (PMH) certification at a rate 2.8 times higher than the national average. Of the 72 NP practice owners in the state, the largest group 40.0% (N = 29) reported PMH as their clinical practice focus. In 2010, there were approximately 30 NP practice owners in the state (Nebraska Nurse Practitioners [NNP], 2012). Six (6) practice owners at that time were known to be providing PMH services (S. Gossman, Past President NNP, personal communication, July 21, 2019).

Patients travel to a clinic within 30-60 minutes of their homes in central Nebraska for follow-up appointments via telehealth with a PMH NP in an urban location.

Optimism regarding the potential for Advanced Practice Registered Nurses (APRNs) to improve access to PMH services is warranted. In an early analysis of the Advanced Practice Psychiatric Nurse (APPN) workforce in the U.S., Hanrahan & Hartley (2008) recognized that while APPNs were a relatively small portion of the behavioral health care workforce, they were nearly twice (13%) as likely to live in rural areas as psychiatrists (7%). The largest group of APPNs were "Clinical Specialists" (50%) compared to 14% NPs. The authors concluded that the disparity in access to mental health providers in rural communities could potentially

continued on page 20

continued from page 18

A private nonprofit behavioral health organization provides mental health and substance abuse services by licensed mental health care professionals in multiple rural southeastern Nebraska locations.

be addressed by not only increasing the supply of advanced practice nurses, but the removal of barriers to full scope of practice.

Fast forward to 2019, (Alexander & Schnell) demonstrated that states where NPs prescribe medication without physician supervision or collaboration showed improvements in measures of population mental health. Investigators recognized the well-documented complementarity between psychotherapy and psychotropic medications, and that in most cases, it is recommended that a patient receive both. They also cited self-reported data from primary care NPs that at least two-thirds of them diagnose and treat anxiety and depression on a regular basis. They used complementary measures of self-reported mental health and mental health-related mortality to demonstrate how independent prescriptive authority for NPs impacted both the local population as a whole and disadvantaged subpopulations, both of whom may have difficulty accessing physician-provided care.

Higher self-reported poor mental health days are correlated with a lower ratio of mental health providers in Nebraska counties. The Behavioral Risk Factor Surveillance System (BRFSS) is a health-related survey that collects state data from residents regarding health-related risk behaviors, chronic health conditions, and the use of preventive services (Centers for Disease Control [CDC], 2019). Poor mental health days are the average number of self-reported mentally unhealthy days in the past 30 days and is

A PMH NP specializing in geriatric care travels to long-term care facilities in rural counties surrounding her employer home base to evaluate and monitor residents who have been prescribed psychotropic medications.

one of several variables collected through the BRFSS.

Of the 31 Nebraska counties with the highest reports of mentally unhealthy days (state average = 3.2 unhealthy days), 25 report a ratio a of mental health providers (psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists, and mental health providers that treat alcohol and other drug abuse, as well as advanced practice nurses specializing in mental health care) below the state average. Six (6) of these counties did not have any mental health providers. In a separate analysis by the Nebraska Center for Nursing (2018), 18 of these 31 counties did not have any nurses that reported a practice focus in PMH in 2018. See **Table 1**. Z-scores indicate values (standard deviations) above the mean state average of mentally unhealthy days. Reliability for the healthy day measures in the BRFSS is high (Andresen et al., 2003). "Counties with more unhealthy days were likely to have higher unemployment, poverty, percentage of adults who did not complete high school, mortality rates, and prevalence of disability than counties with fewer unhealthy days" (Jia et al., 2004).

This report takes an in-depth look at the RN and APRN behavioral health workforce based on 2018 RN licensure renewal data collected by the CFN. One of the objectives for revisions in the 2018 survey questions was better characterization of key variables for behavioral health nurses, including the number that identify a primary practice focus in PMH, as well as practice settings and practice locations in the state. We also report

Table 1: Z-scores above the mean of mentally unhealthy days and ratio of Mental Health Providers (MHP)

Rank	County	Z-score mentally unhealthy days	Ratio MHP	Rank	County	Z-score mentally unhealthy days	Ratio MHP
1	Nuckolls*	0.03	1,425:1	16	Madison	0.58	202:1
2	Butler*	0.05	8,053:1	17	Dawes*	0.69	523:1
3	Lancaster	0.07	280:1	18	Nemaha*	0.70	3,475:1
4	Nance*	0.10	0	19	Richardson*	0.76	1,328:1
5	Franklin*	0.14	1,495:1	20	Lincoln*	0.88	420:1
6	Otoe*	0.14	1,603:1	21	Harlan*	0.88	0
7	Washington*	0.19	2,960:1	22	Hitchcock*	0.89	0
8	Clay*	0.21	6,205:1	23	Douglas	1.17	264:1
9	Wayne*	0.27	2,330:1	24	Valley*	1.19	601:1
10	Brown*	0.27	3,014:1	25	Pawnee*	1.27	2,641:1
11	Box Butte*	0.29	605:1	26	Kimball*	1.27	0
12	Webster*	0.30	1,762:1	27	Dodge*	1.46	765:1
13	Gage*	0.34	697:1	28	Furnas*	1.54	0
14	Adams	0.48	273:1	29	Sheridan	1.84	353:1
15	Morrill*	0.53	0	30	Scottsbluff*	1.92	409:1
				31	Thurston	3.00	301:1
		3.2				3.2	

*County has a Z-score above the mean of mentally unhealthy days and a ratio of mental health providers lower than the State level (n = 25). County Health Rankings (University of Wisconsin Population Health Institute. Robert Wood Johnson Foundation, 2019).

the percentage of nurses that identify a primary practice focus PMH that use telehealth as an indirect measure for the accessibility of behavioral health services across county and state lines.

Our analysis answers the following questions:

1. How many RNs and APRNs report PMH as a primary practice focus?
2. What percentage of APRNs that report PMH as a primary practice focus hold certification in PMH?
3. What are the practice settings for RNs and APRNs that report PMH as a primary practice focus?
4. What are the practice locations in the state for RNs and APRNs that report PMH as primary practice focus?
5. What percentage of RNs and APRNs report utilizing telehealth in their practice for the delivery of PMH services?

DATA ANALYSIS

1. PMH as a Primary Practice Focus

According to the 2018 RN Renewal Survey, there are 641 nurses (RNs and APRNs combined) who identify PMH as a primary practice focus, which represents 2.7% of the total number of nurses practicing in Nebraska. See **Table 2**. Nurses who identified PMH as a primary practice focus work in 26 counties in the state (14 counties were classified as rural and 12 counties were classified as urban based on the 2010 U.S. Census).

Table 2: Number and percentage of PMH nurses by geographic location in Nebraska

All RNs and APRNs	RN and APRNs URBAN counties (n = 12)	RNs and APRNs RURAL Counties (n =14)
641 (2.7%)	613 (95.6%)	28 (4.4%)

Sources: 1) Nebraska Center for Nursing (2018). Nebraska RN Renewal Survey. 2) U.S. Census data (2018 population estimates) by county.

The majority (79.6%) of nurses that identify PMH as a primary practice are RNs. Nearly two out of 10 nurses are APRNs (n = 114, 17.8%), either NPs (15.9%) or Clinical Nurse Specialists (CNSs) (1.9%). See **Table 3**.

Table 3: Licensure type for PMH nurses

Type of Nurse	Number of nurses	Percentage
Registered Nurse (RN)	510	79.6%
Nurse Practitioner (NP)	102	15.9%
Clinical Nurse Specialist (CNS)	12	1.9%
Unknown	17	2.7%
TOTAL	641	100%

Source: 2018 Nebraska RN Renewal Survey.

2. APRN Certification

Of the 114 APRNs that reported a primary practice focus in PMH, 95.1 % (97 out of 102) of NPs and 91.2% (11 out of 12) of CNSs hold certification in PMH. Overall, 94.7% of APRNs reported certification in PMH.

3. Practice Settings

Table 4 depicts practice settings for RNs and APRN. The majority of RNs (50.7%) that identified a primary practice focus in PMH reported practicing in psychiatric facilities, followed by hospitals (31.3%), and then clinics (3.2%). Comparatively, nearly the same percentage of APRNs identified their practice settings as psychiatric facilities (51.8%), followed by clinics (28.1%), and then hospitals (8.8%)

Table 4. RN and APRN Practice Settings

RN - PMH	Number	Percentage	APRN - PMH	Number	Percentage
Psychiatric Facilities	267	50.7%	Psychiatric Facilities	59	51.8%
Hospital	165	31.3%	Clinic	32	28.1%
Clinic	17	3.2%	Hospital	10	8.8%
University/Academic	16	3.0%	University/Academic	5	4.4%
Nursing Home (SNF/NF)	12	2.3%	Correctional/Prison	2	1.8%
VA Facility	9	1.7%	Rural Health Clinic	2	1.8%
Developmental Disability	7	1.3%	Developmental Disability	1	0.9%
Other	7	1.3%	Federally Qualified Health Center (FQHC)	1	0.9%
Home Health	6	1.1%	Unknown	1	0.9%
Correctional/Prison	5	0.9%	Other	1	0.9%
Insurance	5	0.9%			
Emergency Department	4	0.8%			
Unknown	3	0.6%			
Assisted Living	2	0.4%			
College Health	1	0.2%			
Military /DoD	1	0.2%			
Total	**527**	**100%**	**Total**	**114**	**100%**

Source: 2018 Nebraska RN Renewal Survey.

Practice Owners

Of the 38 practice owners that report a primary practice focus in PMH, all but 4 were APRNs. Three out of 10 APRNs (29.8%) who reported a primary practice focus in PMH in the state are practice owners. See **Table 5.**

Table 5: PMH Practice Owners

	Total PMH	Number of PMH Practice owners	Percentage
APRN-NP	102	29	28.4%
APRN-CNS	12	5	41.7%
All APRN	114	34	29.8%
All RN	527	4	0.8%
All RNs and APRNs	641	38	5.9%

Source: 2018 Nebraska RN Renewal Survey.

4. Practice Locations

Geographic Distribution by County

There are an average of 43.8 PMH nurses (RNs and APRNs combined) per 100,000 population in 26 counties of Nebraska, with a population ratio of 2,378:1 PMH nurse. As expected, PMH nurse rates and ratios are higher in urban counties than in rural counties. See **Table 6.**

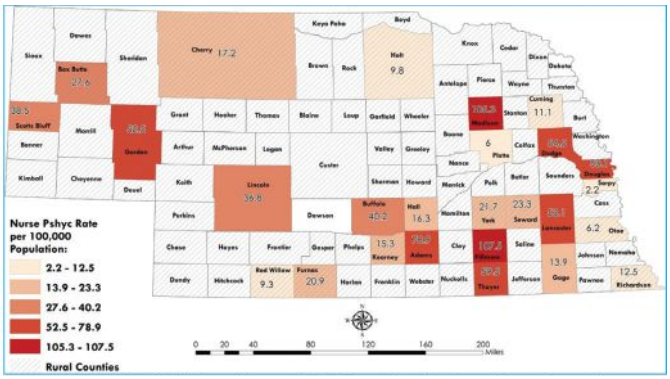
Table 6: Nebraska (26 counties) PMH nurses per 100,000 population and ratio

PMH Nurses Rate per 100,000 population (26 counties)	PMH Nurses Rate per 100,000 population Urban vs. Rural	PMH Nurses Ratio (26 counties)	PMH Nurses Ratio Urban vs. Rural Counties
43.8	43.8 vs. 22.3	2,378:1	2,282:1 vs. 4,482:1

Source: 2018 Nebraska RN Renewal Survey.

The rate of PMH nurses to state rural population ranged from 6.2 per 100,000 population in Otoe County to 107.5 per 100,000 population in Fillmore County. The rate of PMH nurses to state urban population ranged from 2.2 per 100,000 population in Sarpy County to 105.3 per 100,000 population in Madison County. See **Figure 1. Table** 7 depicts PMH nurse rates and ratios by urban and rural counties in Nebraska.

Figure 1: Nebraska PMH nurses per 100,000 population



Sources: 1) Nebraska Center for Nursing (2018). Nebraska RN Renewal Survey. 2) U.S. Census data (2018 population estimates) by county.

Table 7. Number of PMH nurses, rates (per 100,000 population) and ratios by urban and rural counties in Nebraska

URBAN County	PMH Nurses	PMH Nurses Rate	PHM Nurses Ratio	RURAL County	PMH Nurses	PMH Nurses Rate	PMH Nurses Ratio
Adams	25	78.9	1,267:1	Box Butte	3	27.6	3,629:1
Buffalo	20	40.2	2,487:1	Cherry	1	17.2	5,818:1
Dodge	20	54.5	1,835:1	Cuming	1	11.1	9,042:1
Douglas	298	53.1	1,885:1	Fillmore	6	107.5	930:1
Gage	3	13.9	7,200:1	Furnas	1	20.9	4,780:1
Hall	10	16.3	6,152:1	Garden	1	52.5	1,906:1
Lancaster	167	53.1	1,882:1	Holt	1	9.8	10,202:1
Lincoln	13	36.8	2,714:1	Kearney	1	15.3	6,530:1
Madison	37	105.3	950:1	Otoe	1	6.2	16,027:1
Platte	2	6.0	16,588:1	Red Willow	1	9.3	10,728:1
Sarpy	4	2.2	45,360:1	Richardson	1	12.5	7,969:1
Scotts Bluff	14	38.5	2,597:1	Seward	4	23.3	4,290:1
				Thayer	3	59.5	1,682:1
				York	3	21.7	4,602:1
Total	**613**	**43.8**	**2,282:1**	**Total**	**28**	**22.3**	**4,482:1**

Sources: 1) Nebraska Center for Nursing (2018). Nebraska RN Renewal Survey. 2) U.S. Census data (2018 population estimates) by county.

Geographic Distribution PMH Nurses Based on Type of City

The U.S. Census Bureau (2018) classifies cities in three categories, mostly based on population size: 1) Urbanized Areas (UAs) of 50,000 or more people; Urban Clusters (UCs) of at least 2,500 and less than 50,000 people; and, 3) Rural encompasses all populations, housing, and territories not included within an urban area. Based on these classifications, PMH nurses are geographically distributed as follows: 1) Urbanized areas: 71%; 2) Urban Clusters: 25%; and, 3) Rural: 4%.

5.Telehealth

Twelve (12) percent (n = 75) of nurses who report a primary practice focus in PMH utilize telehealth in their practice, compared to 10% for all other nurses in Nebraska. For PHM nurses who use telehealth in their practice, 12% (n = 9) practice in rural counties, and 88% (n = 66) practice in urban counties. **Table 8** depicts number and percentage of PMH nurses who use telehealth in their practice by county.

Table 8. Telehealth usage by PMH nurses by county (rural vs. urban)

Rural County	Number PMH Nurses	Percentage PMH Nurses	Urban County	Number PMH Nurses	Percentage PMH Nurses
Box Butte	3	4%	Adams	6	8.0%
Cherry	1	1%	Buffalo	7	9.3%
Fillmore	2	3%	Douglas	20	26.7%
Furnas	1	1%	Hall	6	8.0%
Kearney	1	1%	Lancaster	17	22.7%
Thayer	1	1%	Lincoln	2	2.7%
			Madison	2	2.7%
			Platte	1	1.3%
			Scottsbluff	5	6.7%
Total Rural	**9**	**12%**	Total Urban	**66**	**88.0%**

Source: 2018 Nebraska RN Renewal Survey.

SUMMARY

The overwhelming majority of RNs and APRNs who report a primary practice focus in PMH are located in urban counties 613 (95.6%). Registered Nurses are 79.6% of the nurses that identified PMH as a primary practice focus. Nurse practitioners made up 89.5% of the APRN group.

The majority (94.7%) of APRNs who report a primary practice focus in PMH reported certification in PMH.

The majority of both RNs (50.7%) and APRNs (51.7%) practice in psychiatric facilities followed by hospitals (31.3%) and clinics (3.2%) for RNs, and clinics (28.1%) and then, hospitals (8.8%) for APRNs. Five (47.1%) of the (n =12) PMH CNS reported practice ownership.

The number of PMH nurses per 100,000 people in the 26 Nebraska counties where they practice was 2x higher in urban than rural counties (43.8 vs. 22.3 PMH nurses per 100,000 people, for urban and rural counties respectively). The number and ratio of PMH nurses in counties varied widely within the groups of urban and rural counties.

Telehealth utilization by PMH nurses was reported by 12% compared to 10% of nurses in other practice areas. The majority of telehealth utilization was reported in urban counties (88%). Reported telehealth utilization by nurses in Nebraska is well below the national rate (54.1%), with 20% of Nebraska nurses reporting the provision of services across state borders, compared to 45.7% at the national level (National Council of State Boards of Nursing [NCSBN], 2017). No distinction was made between sender and receiver locations for services in this Nebraska workforce analysis.

CONCLUSIONS/RECOMMENDATIONS

This analysis affirms the acknowledgement by HRSA that workforce forecasting is limited by the inequities in the geographic distribution of providers. Nurses who identify a primary practice focus in PMH are disproportionately located in urban counties. Further analysis is needed to confirm a presumed correlation between the RN and APRN PMH workforce and their residences in those counties that are in proximity to primary employers, including psychiatric facilities, hospital-based services and clinics. Analysis of the geographic locations for other health care professionals providing behavioral services would facilitate discussion regarding opportunities for team-based behavioral services that may or may not require nursing support.

The number of PMH-certified NPs in the state and growth of PMH NPs NP practice owners over the last 8 years, although the latter is based on anecdotal evidence, bears watching for future trends. Nurse practitioners, having licensure authority to prescribe psychotropic medications, are a logical pairing with telehealth technology and licensed providers offering psychotherapy and counseling services to patients in more remote counties.

An unexpected finding is the relatively high percentage of CNS practice owners that identify PMH as a primary practice focus. Certifications in adult and child/adolescent psychiatric mental health for CNSs are retired examinations. The credentials are valid, however, as long as the CNS credential-holder maintains competency requirements for renewal. Unlike 20 other states. CNSs do not have independent prescriptive authority in Nebraska (NCSBN, 2019b).

The rate of telehealth utilization by nurses reported nationally is over 4x that reported in Nebraska and implicates further inquiry. Telehealth services and workforce mobility across state lines are also reliant upon multistate licensure privileges for health care professionals. Nebraska is one of 34 states with Compact licensure privileges for RNs, including all neighboring states with contiguous borders (NCSBN, 2019a). The APRN Compact will be implemented when seven more states have enacted legislation (in addition to Idaho, Wyoming and North Dakota). Further analysis of the practice settings and locations for nurses holding multiple or multistate licenses would provide information to employers about commute and practice patterns across state lines.

More information is needed regarding opportunities to optimize early diagnosis and treatment of behavioral health conditions by nursing and medical primary care providers. Primary care is typically the first touch for patients within the health care system. Primary care providers can effectively provide behavioral screening, first-line intervention and referral to higher levels of care when needed.

REFERENCES:

Alexander, D. & Schnell, M. (2019). Just what the nurse practitioner ordered: Independent prescriptive authority and population mental health. Journal of Health Economics, 66, 145-162.

Andresen, E. M., Catlin, T. K., Wyrwich, K. W., & Jackson-Thompson, J. (2003). Retest reliability of surveillance questions on health related quality of life. Journal of Epidemiology & Community Health, 57(5), 339-343.

BHECN. (2019). Retrieved from https://www.unmc.edu/bhecn/about/index.html.

Hanrahan, N.P. & Hartley, D. (2008). Employment of advanced-practice psychiatric nurses to stem rural mental health workforce shortages. Psychiatric Services, 99(1), 109-111.

Hoebelheinrich, K., & Ramírez, J. (Summer 2019). Nurse Practitioner Practice in Nebraska. Nursing News, 36 (1):16-20.

HRSA. (2019). Data Warehouse. Retrieved from https://data.hrsa.gov/hdw/Tools/MapTool Quick. aspx?mapName=HPSAMH.

Jia, H., Muennig, P., Lubetkin, E. I., & Gold, M. R. (2004). Predicting geographical variations in behavioural risk factors: an analysis of physical and mental healthy days. Journal of Epidemiology & Community Health, 58(2), 150-155.

NCSBN. (2019a). APRN Compact. Retrieved from https://www.ncsbn.org/aprn-compact.htm.

NCSBN. (2019b). Consensus Model Implementation Status. Retrieved from https://ncsbn.org/5397.htm.

NCSBN. (2017). National Nursing Workforce Study. Retrieved from https://www.ncsbn.org/workforce.htm.

Nebraska Center for Nursing (2018). RN Renewal Survey. Nebraska Department of Health and Human Services.

Nebraska Nurse Practitioners. (2012). NNP Credentialing Review Application. Retrieved from https://nebraskanp.com/legislation/credentialing-review-nnp-2012-2013.html.

University of Wisconsin Population Health Institute. (2019). County Health Rankings State Report 2019. Retrieved from https://www.countyhealthrankings.org/app/nebraska/2019/overview.

U.S. Census Bureau (2010). Urban and rural counties of Nebraska. Map developed by Nebraska Department of Health and Human Services.

U.S. Census Bureau (2018). Urban and Rural Classification. Retrieved from https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html.

U.S. Census Bureau. Population estimates by county (Nebraska). July 2018. Table PEPANNRES. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2018_PEPANNRES&prodType=table.

U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. (2018). State-Level Projections of Supply and Demand for Behavioral Health Occupations: 2016-2030. Retrieved from https://bhw.hrsa.gov/health-workforce-analysis/research/projections/behavioral-health-projections