



UNMC COLLEGE OF PUBLIC HEALTH CENTER FOR HEALTH POLICY

The Financial Impact of the Nebraska Loan Repayment Program, Fiscal Years 1994-2019

Thomas Rauner, MCRP
David Palm, PhD
Valerie Pacino, MPH

March 2020

SUMMARY

- A total of 510 physicians, advanced practice registered nurses, physician assistants, dentists, pharmacists, occupational therapists, and physical therapists participated in the Nebraska Loan Repayment Program from FY 1994 to 2019.
- The total financial impact on the local economy of the participants enrolled in the program was almost \$1.2 billion, as compared to the state cost of about \$16 million.
- Physicians were the largest economic contributors (\$686 million or 59 percent) due to the relative large number of participants (36 percent), the number of jobs created in the community (e.g., nurses and lab technicians), and new spending (e.g., new hospital admissions) that was generated.
- Advanced practice registered nurses and physician assistants also had a relatively large number of participants and accounted for over \$355 million or slightly less than 31 percent of the total financial impact on the local economy.
- The remaining health professions (dentists, pharmacists, occupational therapists, and physical therapists) also made significant contributions, accounting for \$124 million or nearly 11 percent of the total financial impact.
- Financial data were not available for licensed behavioral health professionals who have participated in the program, so they were not included in the study. When these data become available, the current study will be updated.
- This analysis clearly indicates that the placement of health professionals under the Nebraska Loan Repayment Program has made a significant contribution to the local economy and policymakers should consider expanding the scope and breadth of this program.



INTRODUCTION

Historically, the availability of health professionals in rural areas has been insufficient to meet the needs of rural populations. The challenges of recruiting and retaining nearly all types of health professionals, including physicians, dentists, pharmacists, and nurses, have reduced access to health care services and resulted in many avoidable deaths in rural areas. For example, a recent study from the Centers for Disease Control and Prevention (CDC) concluded that nonmetropolitan counties had a higher percentage of excess deaths from the five leading causes of death from 2010-2017 (Macarena Garcia, et al., 2019). Another study found that about 43 percent of deaths in rural areas are potentially avoidable as compared to 37 percent in urban areas with an adequate local primary care workforce (Mark Holmes, et al., 2019). Many factors have contributed to the shortage of health professionals in rural areas, including lower salaries, higher workload and longer hours, and lack of job opportunities for their spouse.

To overcome these workforce shortages, several strategies have been implemented at both the state and federal levels with various degrees of success. One of the most successful strategies adopted at the federal level and in many states are health professional incentive programs. In Nebraska, these programs include the Rural Health Student Loan Program and the Nebraska Loan Repayment Program. The purpose of this report is to examine the economic impact of the Nebraska Loan Repayment Program and the estimated economic value of this program relative to its cost.

BACKGROUND & HISTORY

The Rural Health Systems and Professional Incentive Act was passed in 1991. RHSPIA created the Rural Health Advisory Commission, the Nebraska Rural Health Student Loan Program, and the Nebraska Loan Repayment Program. The purpose of these programs is to encourage eligible health professionals to practice in state designated shortage areas by assisting them in paying off their student debt obligations. In 2018, the average student debt obligation of the applicants who applied was \$229,140 (Nebraska Rural Health Advisory Commission, 2018).

To participate in the program, eligible health professionals must fill out an application and be selected by the Rural Health Advisory Commission. The Nebraska Rural Health Student Loan Program provides funds directly to health professionals in medical school to pay for their student loans if they agree to practice in a state designated shortage area for up to four years. Eligible health professionals, which include medical, dental, physician assistants, and graduate level mental health students, receive a forgivable educational loan while they are in training in exchange for an agreement to practice in a state designated shortage area for each year of the loan. The amount of these loans is \$20,000 per year for doctorate-level students and \$10,000 for full-time master level students.

The Nebraska Loan Repayment Program also provides funds to health professionals who agree to practice in a state designated shortage area. Under this program, the funds are not provided until after the health professional is practicing in a state designated shortage area. This program requires communities to provide half of the funds so there is a fifty-fifty match. These matching funds provide additional local funding support and the involvement of the



community. The health professionals who are eligible to participate in the program are shown below.

- Physicians with a specialty in Family Practice, General Internal Medicine, General Pediatrics, General Obstetrics and Gynecology, and General Surgery
- Advanced Practice Registered Nurses and Physician Assistants with a specialty in primary care and psychiatry
- Dentists with a specialty in General Dentistry, Pediatric Dentistry, and Oral Surgery
- Mental Health professionals which include Clinical Psychologists, Licensed Mental Health Practitioners, Masters Level Alcohol and Drug Abuse Practitioners, and specialists in Child and Adolescent Psychiatry and General Psychiatry
- Allied Health professionals, including Pharmacists, Occupational Therapists, and Physical Therapists

If a health professional is selected for the Nebraska Loan Repayment Program, they receive payments for three years if they agree to practice in a state designated shortage area. The maximum amount of the loan repayment is \$180,000 for physicians, psychologists, and dentists, and \$90,000 for all other professionals. There is also a required community match, which ranges from \$30,000 per year for physicians, psychologists, and dentists, and \$15,000 for

the other health professionals. Since there is a fifty/fifty match, the amount of state funds used is based on the eligible student loan amount and agreed upon match from the local entity. The health professional is paid directly on a quarterly basis, and the funds for these types of qualifying programs are not taxable (Public Law 111-148, Section 10908, Patient Protection and Affordable Care Act).

This program evaluation focuses exclusively on the Nebraska Loan Repayment Program for two reasons. First, the Nebraska Rural Health Student Loan program has been less effective in placing health professionals in state designated shortage areas. Since the inception of the program in 1994, less than 20 percent of the total participants have been awarded student loans, and no student loan new awards have been made since 2017. Second, the default rate is considerably higher in Nebraska Rural Health Student Loan Program as compared to the Nebraska Loan Repayment Program (50 percent versus 8 percent). Because of its success, the Nebraska Loan Repayment Program is most likely to receive a greater emphasis in future years (Nebraska Rural Health Advisory Commission, 2018).

METHODS

Data from the Nebraska Office of Rural Health at the Department of Health and Human Services and the Health Professions Tracking Service at the University of Nebraska Medical Center was used to determine the economic value of the Nebraska Loan Repayment Program. The first step was to examine the data from the Nebraska Office of Rural Health to identify the number of participants who have been approved since 1994. The second step was to determine the number of years that each applicant has practiced in a state designated shortage area. The Health



Professions Tracking Service surveys several health professions, including physicians, advanced practice registered nurses, physician assistants, dentists, pharmacists, occupational therapists, and physical therapists, on an annual basis, and physician practice locations on a semi-annual basis. The combined physician and practice location responses allow them to link physician and practice location. It also enables the Health Professions Tracking Service to identify practicing physicians, practice locations (primary and satellite), and reported average work hours (Soumitra Bhuyan, 2012).

The third step was to estimate the total state cost of the Nebraska Loan Repayment Program using data from the Nebraska Office of Rural Health at the Department of Health and Human Services. The final step was to examine the financial impact of the program based on the methodology and data from the National Center for Rural Health Works. Using this methodology, we determined the economic impact for the following health professionals: physicians, advanced practice registered nurses, physician assistants, dentists, pharmacists, occupational therapists, and physical therapists. However, 33 behavioral health professionals who have participated in the program were excluded from the financial analysis because there was no credible resource to estimate their financial impact.

In addition to the behavioral health professionals, there were 21 providers who were not included in the analysis because their primary practice location could not be verified. Of these 21 providers, 5 were physicians, 1 was a nurse practitioner, 1 was a behavioral health professional, and 14 were either occupational and/or physical therapists. Most of the missing occupational and physical therapists could not be located because the Health professions Tracking Service did not begin surveying them until

2012. Finally, the 8% of health professionals who defaulted and did not complete their obligation were also not included in the study.

The methodology used by the National Center for Rural Health Works estimates the direct and indirect economic impact on the community. For example, the direct economic impact of hiring a physician is based on the number of additional employees hired (e.g., nurse, administrative staff, and lab technician) and their income at the clinic and the proportionate share of hospital employees and their income. To estimate the secondary impact, the National Center for Rural Health Works used data from the Department of Health and Human Services, Centers for Medicare and Medicaid Services, U.S. Department of Labor, Bureau of Labor Statistics, IMPLAN. When a new physician is hired, additional jobs and income are created at both the clinic and hospital (e.g., inpatient admissions and outpatient referrals). The secondary impact occurs when the clinic and hospital and the individuals working at the clinic and hospitals purchase goods and services in the local economy. A similar methodology from the National Center for Rural Health Works was used to compute the total financial impact for advanced practice registered nurses, physician assistants, dentists, pharmacists, occupational therapists, and physical therapists (Gerald Doeksen, et al., 2015).

ECONOMIC IMPACT OF THE NEBRASKA LOAN REPAYMENT PROGRAM

The financial impact of each health profession to the local economy was based on the methods used by the National Center for Rural Health Works and conversations with the Center Director (Ann Peton, November 2018). The financial estimates from the National Center for Rural Health



Works seemed to be applicable to Nebraska because they were based on surveys and data from rural health care providers who worked in similar settings. For example, most physicians, advanced practice nurses, and physician assistants who participated in the Nebraska Loan Repayment Program practiced in rural settings and had very similar work patterns as those in the Center studies (e.g., primarily working in an out-patient clinic and providing some nursing home and/or hospital coverage) (Fred Eilrich, et al., 2016). The general and pediatric dentists also had very similar practice patterns as those included in the Center's analysis (Gerald Doeksen, et al., 2014). Most of the dentists in the program tended to work in very small one- or two-person owner-operated practices in rural areas. The pharmacists, occupational therapists and physical therapists also worked in similar rural practice settings (Fred Eilrich, et al., 2014 and Ann Peton, 2018).

Based on data from the Nebraska Center for Rural Health Works, the estimated financial/economic impact per year was \$1,400,000 for physicians; \$700,000 for

advanced practice nurses and physician assistants; \$400,000 for dentists; \$400,000 for pharmacists; and \$270,000 for both occupational therapists and physical therapists. The total financial impact was determined by multiplying the number of years by the annual financial impact for each profession. The state fiscal year (July 1-June 30) was used to match the state funding which have been provided for the program.

RESULTS

Table 1 shows the number of participants by profession, the total number of years that all participants in that health profession worked, and the annual and total financial impact. This table reveals that between 1994 and 2019, a total of 510 health professionals participated in the Nebraska Loan Repayment Program, and these health professionals worked a total of 1,456 years. As shown in Table 1, the estimated average financial impact (i.e., the amount these health professionals contributed to the local economy) during this period was \$800,470, and the total financial impact was \$1,165,304,395. This table also shows the

Table 1 – Annual and total financial impact for the Nebraska Loan Repayment Program, FY 1994-2019.

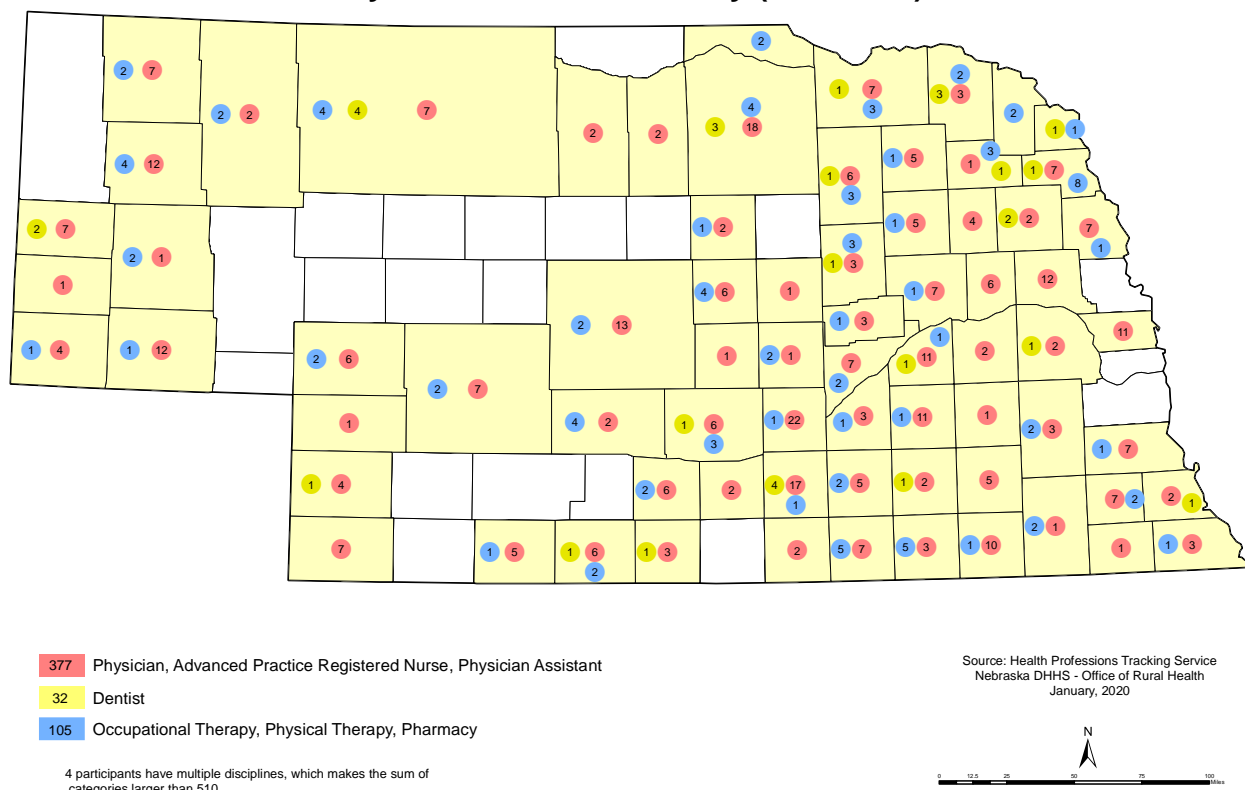
Profession/Discipline	Number of Participants	Number of Years	Annual Financial Impact	Total Financial Impact
TOTAL	510	1456	\$800,470*	\$1,165,304,395
<i>Physician</i>	186	490	\$1,400,000	\$686,194,374
<i>Physician Assistant</i>	131	351	\$700,000	\$245,849,470
<i>Nurse Practitioner</i>	58	157	\$700,000	\$109,559,158
<i>Dentist</i>	32	88	\$400,000	\$35,117,342
<i>Licensed Mental Health</i>	Not Included	Not Included	Not Available	Not Available
<i>Pharmacist</i>	38	106	\$400,000	\$42,248,302
<i>Occupational Therapy</i>	38	97	\$270,000	\$26,142,750
<i>Physical Therapy</i>	27	75	\$270,000	\$20,193,000

* Represents the average annual financial impact for all health professions.

Sources: The number of participants and years served were obtained from the Office of Rural Health in the Nebraska Department of Health and Human Services; the annual financial impact calculations were based on the estimates from the National Center for Rural Health Works.



Figure 1
Total 1994-2019 Nebraska Loan Repayment Program Participants
by Profession and County (510 Total)



total financial impact for each profession. The physicians had greatest financial impact because they had the largest number of participants in the program (186), served the most months, created the largest number of new jobs (e.g., nurses, and laboratory technicians) in both the clinic and hospital, and generated the most additional services (e.g., hospital admissions).

The total financial impact on the local economy by physicians was about \$686 million. Physician assistants had the second largest financial impact at about \$246 million followed by nurse practitioners (\$100 million), pharmacists (\$42 million), and dentists (\$35 million).

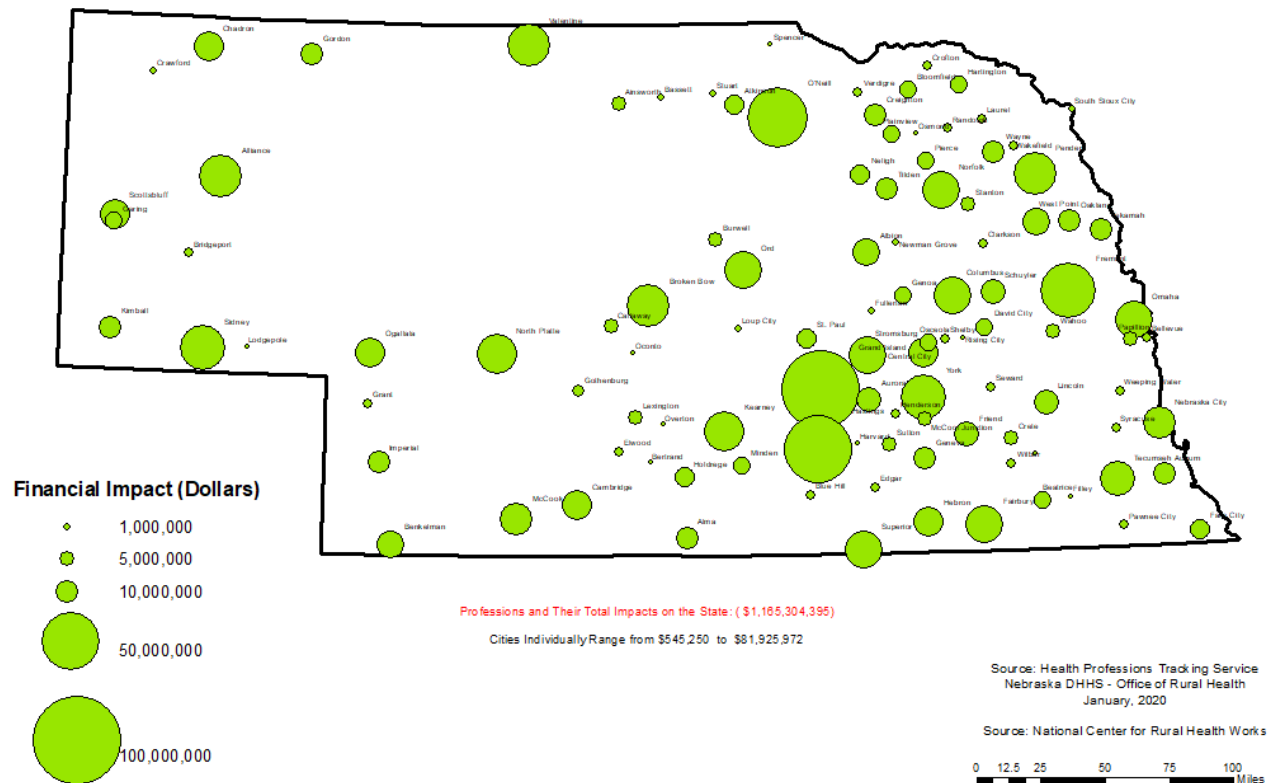
These estimates do not include any additional incomes generated for the pharmacy, nursing homes, or any other health services. The estimates are also limited to the time of the obligation although many health professionals continue to generate additional income for several years.

In Figure 1, the distribution of the various professionals is displayed by the county in which they served their obligation. The distribution clearly shows the broad statewide impact of the program. Participants have not been confined to a few areas and have practiced in many communities and state designated shortage areas. There is some overlap in state and federal shortage areas and health



Figure 2

Financial Impact of Nebraska Loan Repayment Program Participants By Community for Fiscal Years 1994 - 2019



professionals in family practice and general dentistry are allowed to serve in federal safety net sites such as Community Health Centers and Tribal Facilities.

Figure 2 illustrates the financial impact on each community where an obligated health professional served between 1994 and 2019. The total financial impact ranged from \$545,250 in Bertrand to \$81,925,972 in Grand Island. This figure illustrates that the financial impact of the Nebraska Loan Repayment Program was widespread and involved over 115 communities in Nebraska.

COMPARISON OF THE COST AND TOTAL FINANCIAL IMPACT

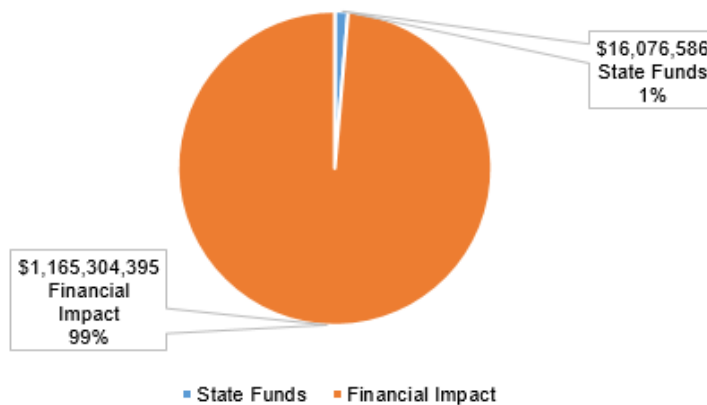
In Figure 3, the amount invested in the Nebraska Loan Repayment Program by the State of Nebraska is compared with the total financial impact.

This figure shows that a total of \$16,076,586 was invested in the program from 1994 -2019, and the total financial impact that was generated by those participating providers was \$1,165,304,395 billion. The total state cost of the program was only 1.4 percent of the total financial impact. For each \$1 invested in the program by state government, it contributed \$72



dollars to the local economy. The overall fiscal impact on communities was 72 times the state loan repayment funds invested.

Figure 3 – Financial Impact, FY 1994-2019



LIMITATIONS

The financial impact estimates were based on the methods and data from the National Center for Rural Health Works. Although the data were collected from health professionals in similar practice settings, the salaries and other costs may not reflect those in Nebraska. As a result, the financial impact totals should be considered good estimates. However, the number of participants in the program, the number of years worked by the participants, and the state cost of the program are accurate. The financial impacts are likely to vary over this length of time period involved, but they are also conservative estimates because they only include the economic impact on the physician clinics and hospitals and do not include other health services such as pharmacies and nursing homes.

Unfortunately, it was not possible to include the financial impact of behavioral health professionals. When these estimates become available, the study will be updated to reflect these values.

This study focused exclusively on the financial impact in local communities, but it did not include the impact on health outcomes. Future studies should also consider the impact on health outcomes, and the additional services that reduced the access to care barriers.

CONCLUSION

The primary focus of the Nebraska Loan Repayment Program is to provide an economic incentive for health professionals to practice in counties with less than 15,000 people that are designated as shortage areas. This study has demonstrated that the investment in the program by the State of Nebraska has produced a very high economic benefit relative to the amount invested. In addition, this program has improved access to health care services and very likely resulted in better health outcomes. Policymakers should consider expanding both the scope and breadth of this program so that a greater number of health professionals will have incentives to practice in rural designated shortage areas.

REFERENCES

Soumitra Bhuyan, Marlene Deras, and Jim Stimpson, "Active Primary Care Physicians in Nebraska: Data Comparison, Supply, and Characteristics," UNMC Center for Health Policy, August 2012.

Gerald A. Doeksen, Fred C. Eilrich and Cheryl F. St. Clair, "The Economic Impact of a Rural Dentist," National Center for Rural Health Works, Research Study, August 2014. Retrieved from <http://ruralhealthworks.org/wp-content/uploads/2018/04/Economic-Impact-Rural-Dentist.pdf>
<http://ruralhealthworks.org/wp-content/uploads/2018/04/Dentist-Impact-2page-Summary.pdf>



Gerald A. Doeksen, Cheryl F. St.Clair, and Fred C. Eilrich, "Economic Impact of Rural Health Care," National Center for Rural Health Works, August 2015. Retrieved from <http://ruralhealthworks.org/wp-content/uploads/2019/03/Economic-Contributions-of-Rural-Health-Care-Aug-2015-UPDATED.pdf>

Fred C. Eilrich, Gerald A. Doeksen, and Cheryl F. St. Clair, "Estimate the Economic Impact of a Rural Primary Care Physician," National Center for Rural Health Works, October 2016 Research Study. Retrieved from <http://ruralhealthworks.org/wp-content/uploads/2018/04/Physician-Impact-Study-Final-100416.pdf>

Fred C. Eilrich, Gerald A. Doeksen, and Cheryl F. St. Clair, "Models to Estimate the Economic Impact of a Rural Nurse Practitioner or Physician Assistant," National Center for Rural Health Works, Research Study, August 2014. Retrieved from <http://ruralhealthworks.org/wp-content/uploads/2018/04/NPPA-Impact-Study-091014.pdf>

Macarena Garcia, Lauren Rossen, Brigham Bastian, mark Faul, Nicole Dowling, Cheryl Thomas, Linda Schieb, Yuling Hong, Paula Yoon, and Michael Iademarco, "Potentially Excess Deaths from the Five Leading Causes of Death in Metropolitan and Nonmetropolitan Counties – United States, 2010-2017," MMWR, Vol 68, No 10, November 8, 2019.

Mark Holmes and Kristi Thompson, "Risk Factors and Potentially Preventable Deaths in Rural Communities," Findings Brief, North Carolina Rural Health Research Program, October 2019.

Nebraska Rural Health Advisory Commission, "Annual Report," Office of Rural Health, Nebraska Department of

health and Human Services, December 2018.

Ann Peton, the Director of the National Center for Rural Health Works provided financial estimates on Occupational Therapists and Physical Therapists in a personal emails and telephone conversations on November 27-28, 2018.

ACKNOWLEDGEMENTS

The authors would like to thank Rachael Wolfe and Chanhuyun Park from the Office of Rural Health in the Nebraska Department of Health and Human Services for their valuable assistance in helping to prepare this report.

AUTHOR INFORMATION

Thomas Rauner, MCRP is the Primary Care Office Director in the Office of Rural Health in the Nebraska Department of Health and Human Services.

David Palm, PhD is an Associate Professor in the Department of Health Services Research and Administration in the UNMC College of Public Health and the Director of the UNMC Center for Health Policy.

Valerie Pacino, MPH is a PhD student in the Department of Health Services Research and Administration at the University of Nebraska Medical Center.

FUNDING INFORMATION

Not applicable.

SUGGESTED CITATION

Rauner T, et al. *The Financial Impact of the Nebraska Loan Repayment Program, Fiscal Years 1994-2019*. Omaha, NE: UNMC Center for Health Policy; 2020.



CONFLICT OF INTERESTS

None

DISCLAIMER

The views expressed herein are those of the authors and do not necessarily reflect the views of collaborating organizations or funders, or of the Regents of the University of Nebraska.

CONTACT INFORMATION

David Palm, PhD
Director
UNMC Center for Health Policy
984350 Nebraska Medical Center
Omaha, NE 68198-4350
david.palm@unmc.edu
<http://www.unmc.edu/publichealth/chp/>

Center for Health Policy

Mission: The Center for Health Policy evaluates policies and conducts research to improve population health and the efficiency and effectiveness of the healthcare system in Nebraska and the United States.

UNMC Center of Health Policy
984350 Nebraska Medical Center
Omaha, NE 68198-4350
<http://www.unmc.edu/publichealth/chp/>