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Nebraska Rural Health Works Health Economic Profile for Boyd County, Nebraska

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Executive Summary on the Economic Impact of Health Care Sector

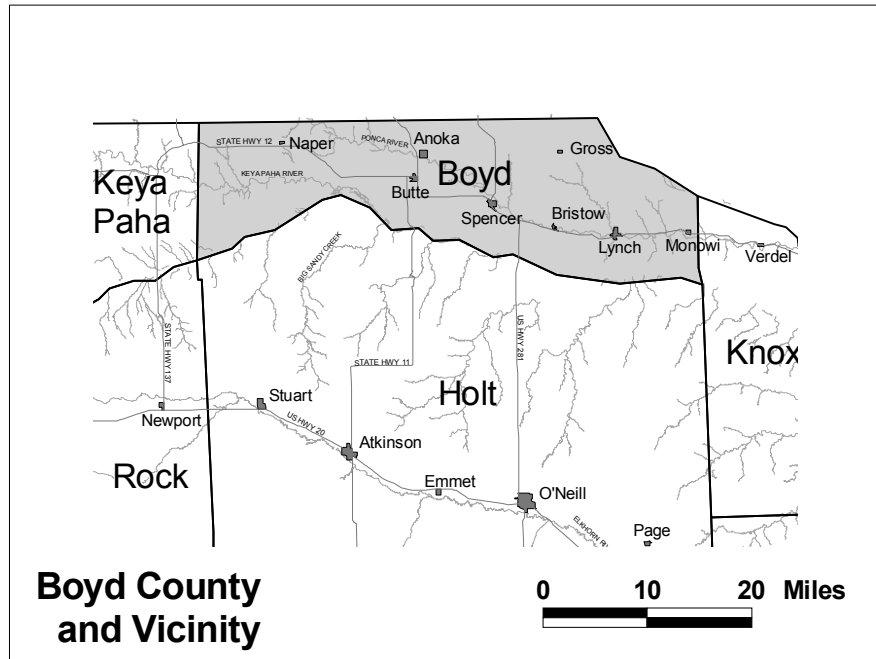
- ◆ One job created in the health care sector of Boyd County would lead to the creation of another 0.33 job in other sectors of the County's economy.
- ◆ One dollar of income earned in the health care sector of Boyd County would lead to another \$0.35 of income earned in other sectors of the County's economy.
- ◆ One dollar spent in the health care sector of Boyd County would lead to another \$0.54 spent in other sectors of the County's economy.
- ◆ The overall job creation due to health care (directly and indirectly) in Boyd County is estimated at 288 jobs, which accounts for 18.4% of the County's total employment.
- ◆ The overall income earned due to health care (directly and indirectly) in Boyd County is estimated at \$4.78 million, which accounts for 14.7% of the County's total income.
- ◆ The overall spending due to health care (directly and indirectly) in Boyd County is estimated at \$10.32 million, which accounts for 9.4% of the County's total economic output.

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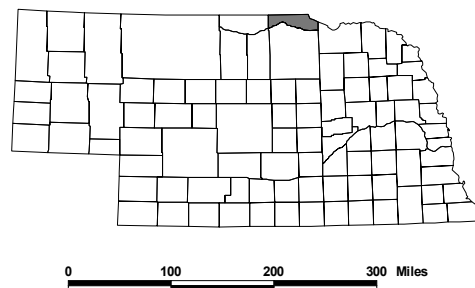
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Nebraska Center for Rural Health Research
in partnership with
Nebraska Office of Rural Health
and
Nebraska Hospital Association

I. GEOGRAPHY

Boyd County is located in the north-central region of Nebraska. The County has a total of 540 square miles with a population density of 4.5 people per square mile (Nebraska: 22.3 per square mile). The County seat of Boyd County is Butte, Nebraska.



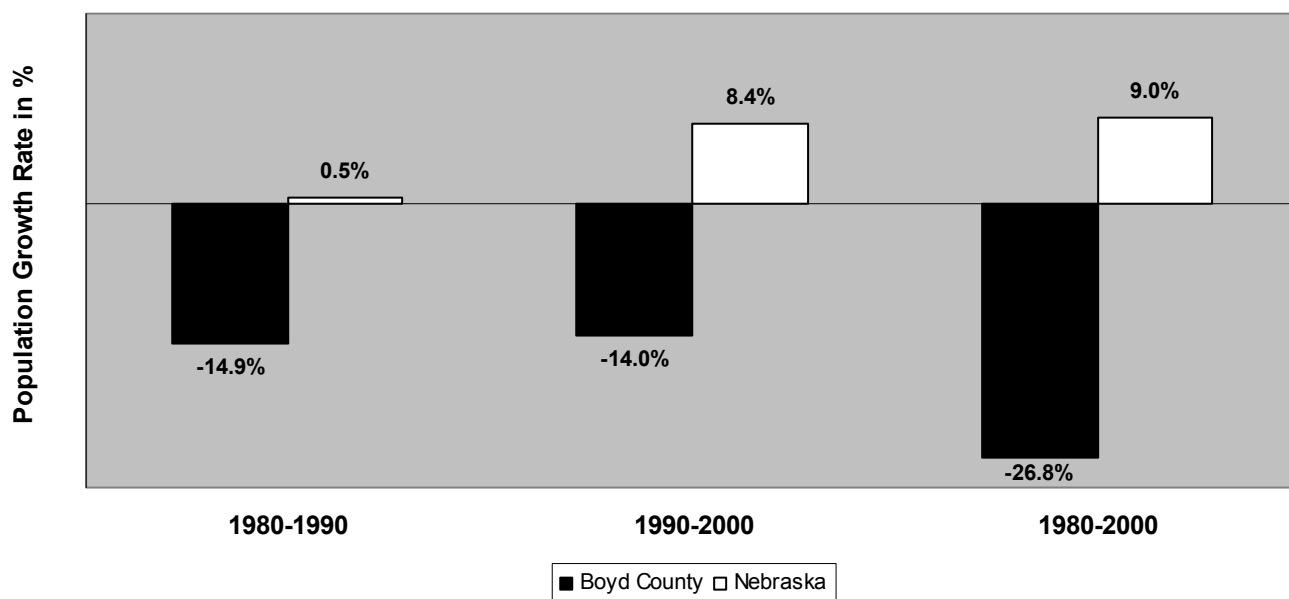
Boyd County, Nebraska



II. POPULATION

The population for Boyd County was 2,438 in 2000. The County has experienced a negative population growth of -26.8% (compared to +9.0% statewide) during 1980-2000 (Figure 1). White (non-Hispanic) people still represented the great majority of County population in 2000 (98.9%, Table 1). In addition, the County's population is slightly older than the State's, with the elderly (aged 65+) representing 24.3% (compared to 13.6% statewide) of the population in 2000 (Table 2).

**Figure 1. Population Growth Rate,
Boyd County and Nebraska, 1980-2000**



Sources: U.S. Bureau of the Census. Census 1990 and Census 2000, Summary Tape File 1. <http://factfinder.census.gov>.
Nebraska Department of Health and Human Services Vital Statistics. Population by County, 1960-2001. <http://www.hhs.state.ne.us/ced/tbl2.htm>.

Table 1. Population by Race for Boyd County and Nebraska, 1990 and 2000

	Boyd County 1990	Nebraska 1990	Boyd County 2000	Nebraska 2000
White	99.1% (2,810)	93.8% (1,480,558)	98.9% (2,411)	89.6% (1,533,261)
Black	0.0% (0)	3.6% (57,404)	0.0% (0)	4.0% (68,541)
Asian or Pacific Islander	<0.1% (1)	0.8% (12,422)	0.2% (4)	1.3% (22,767)
American Indian or Alaska Native	0.8% (22)	0.8% (12,410)	0.6% (14)	0.8% (14,896)
Other Race	0.1% (2)	1.0% (15,591)	0.0% (0)	2.8% (47,845)
Hispanic*	0.2% (6)	2.3% (36,969)	0.1% (2)	5.5% (94,425)

* Hispanic individuals were allowed to identify race alone or in combination with one or more other races, therefore totals will be more than 100%.
Sources: U.S. Bureau of the Census, 1990 and 2000 Census of Population and Housing, Summary Tape File 1. <http://factfinder.census.gov>.

Table 2. Population by Age for Boyd County and Nebraska, 1990 and 2000

Age	Boyd County 1990	Nebraska 1990	Boyd County 2000	Nebraska 2000
0-4	6.2% (175)	7.6% (119,606)	5.0% (123)	6.8% (117,048)
5-24	24.3% (690)	29.5% (465,293)	21.8% (617)	29.7% (507,619)
25-64	44.3% (1,257)	48.8% (770,418)	45.4% (1,106)	49.9% (854,401)
65-84	21.1% (597)	12.3% (193,866)	19.8% (482)	11.6% (198,242)
85+	4.1% (116)	1.9% (29,202)	4.5% (110)	2.0% (33,953)
TOTAL	100% (2,835)	100% (1,578,385)	100% (2,438)	100% (1,711,263)

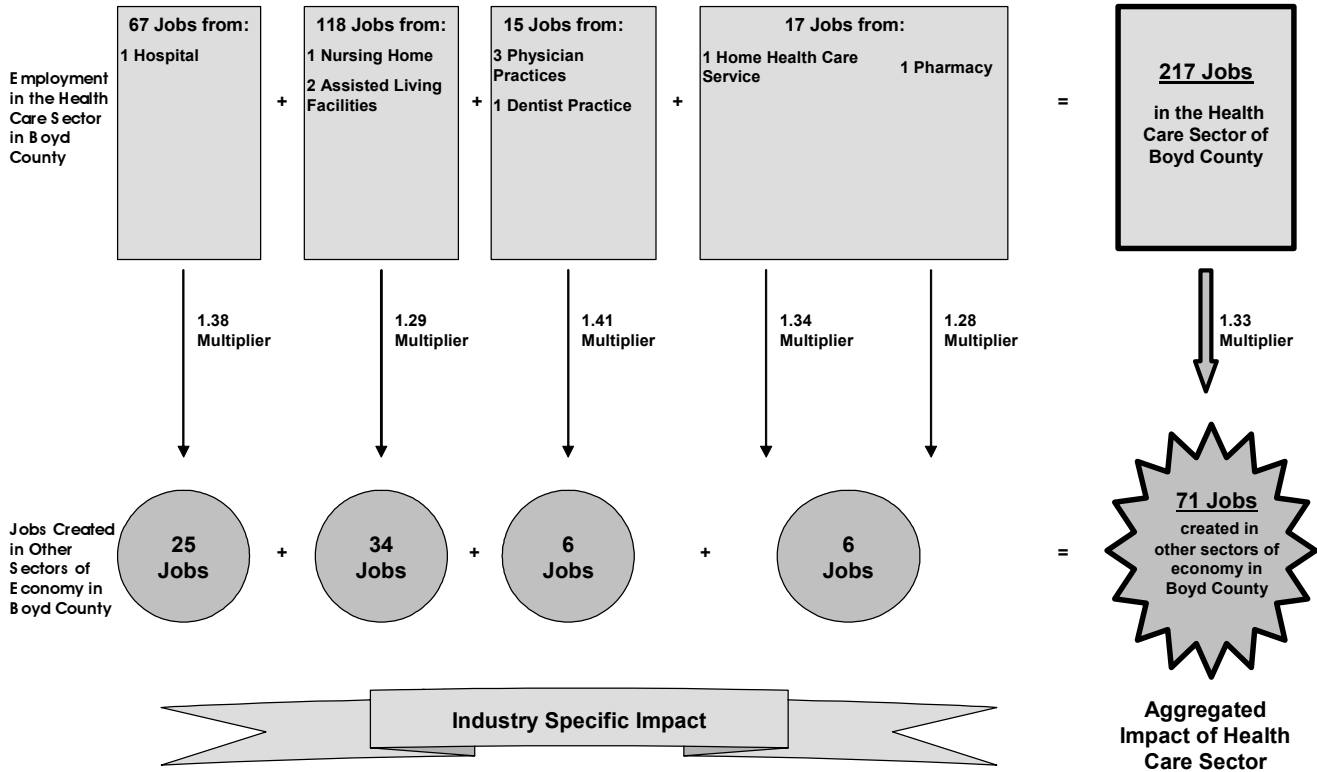
Sources: U.S. Bureau of the Census, Census 1990 and Census 2000, Summary Tape File 1. <http://factfinder.census.gov>.

III. ECONOMIC IMPACT OF THE HEALTH CARE SECTOR

The Agricultural Industry is the largest employer within Boyd County, followed by Health Care, State and Local Government, Retail Trade, and Construction. The Health Care sector of Boyd County includes one hospital, one nursing home, two assisted living facilities, three physician practices, one dentist practice, one home health care agency, and one pharmacy.

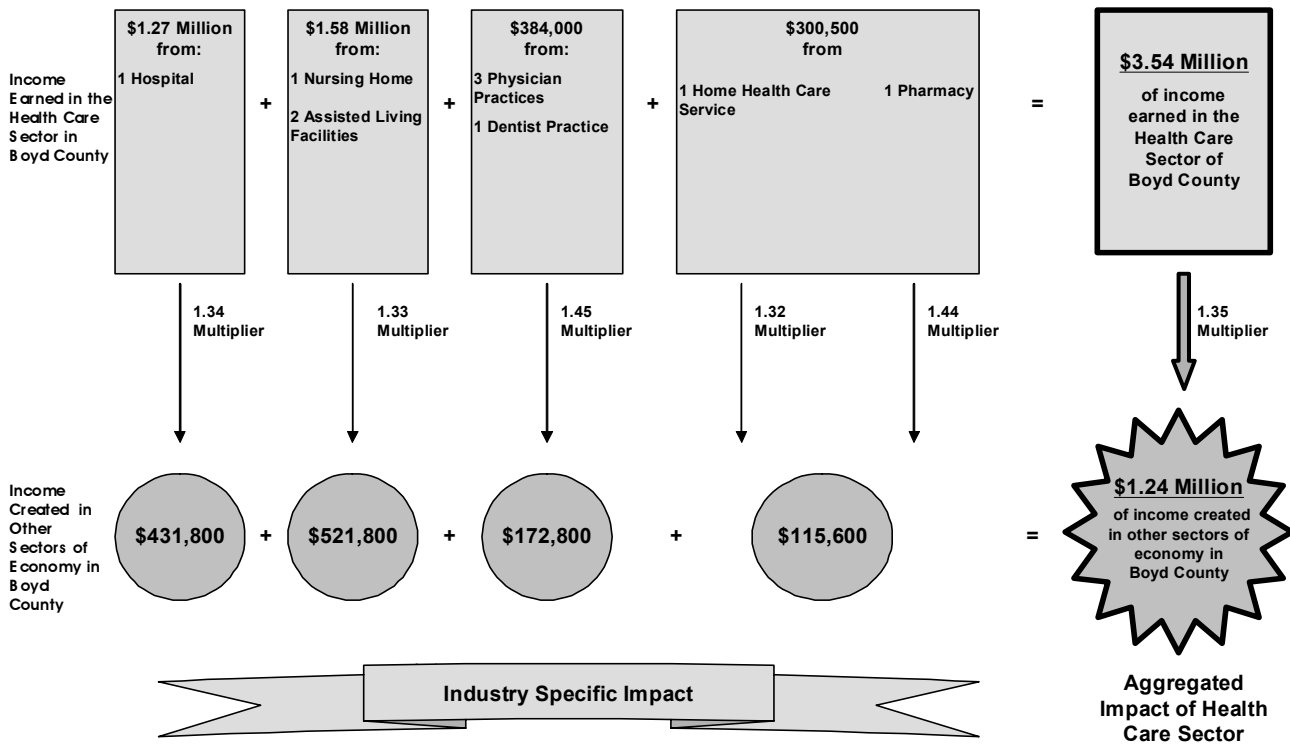
- ◆ The estimated 217 jobs in the health care sector of Boyd County have created (through a 1.33 multiplier) another 71 jobs in other sectors of the County's economy (Figure 2). Therefore, the combined effect represents an estimated 18.4% of the County's total employment (i.e. 288 out of 1,564 jobs).
- ◆ The estimated \$3.54 million of labor income earned in the health care sector of Boyd County has created (through a 1.35 multiplier) another \$1.24 million of income in other sectors of the County's economy (Figure 3). Therefore, the combined effect represents an estimated 14.7% of the County's total labor income (i.e. \$4.78 million out of \$32.48 million).
- ◆ The estimated \$6.69 million spent in the health care sector of Boyd County has created (through a 1.54 multiplier) another \$3.63 million of spending in other sectors of the County's economy (Figure 4). Therefore, the combined effect represents an estimated 9.4% of the County's total economic output (i.e. \$10.32 million out of \$109.22 million).

Figure 2. The Economic Impact of the Health Care Sector on Employment in Boyd County, Nebraska



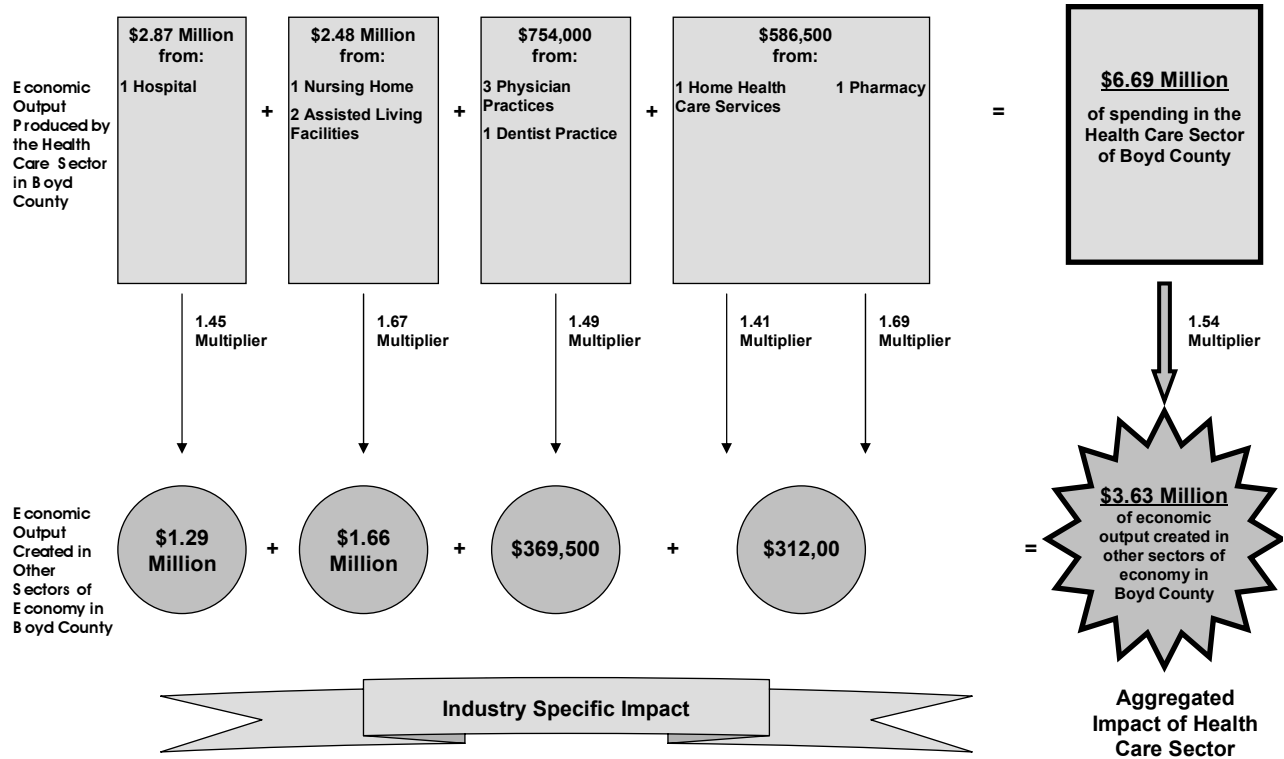
Sources: IMPLAN Data 2000. Minnesota IMPLAN Group, Inc. 2003. U.S. Census Bureau County Business Patterns, 2000. <http://www.census.gov/prod/www/abs/cbptotal.html>.

Figure 3. The Economic Impact of the Health Care Sector on Income in Boyd County, Nebraska



Sources: IMPLAN Data 2000. Minnesota IMPLAN Group, Inc. 2003. U.S. Census Bureau County Business Patterns, 2000. <http://www.census.gov/prod/www/abs/cbptotal.html>.

Figure 4. The Impact of the Health Care Sector on Economic Output in Boyd County, Nebraska

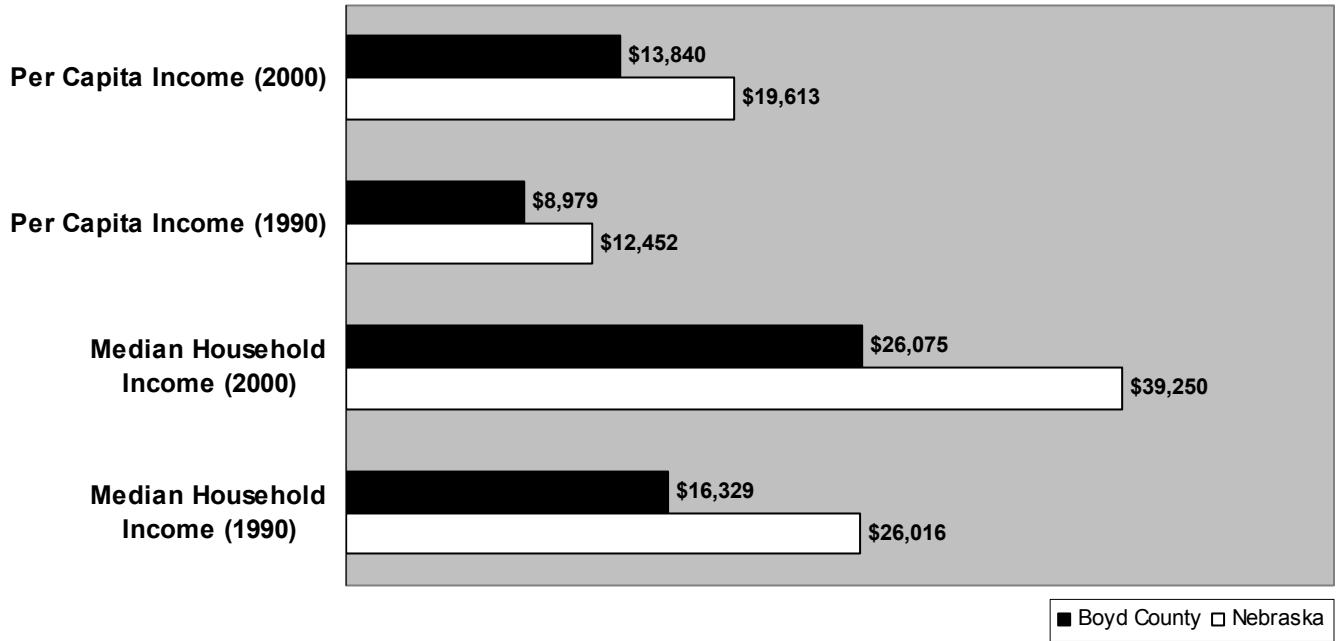


Sources: IMPLAN Data 2000. Minnesota IMPLAN Group, Inc. 2003. U.S. Census Bureau County Business Patterns, 2000. <http://www.census.gov/prod/www/abs/cbptotal.html>.

IV. SOCIO-ECONOMIC INDICATORS

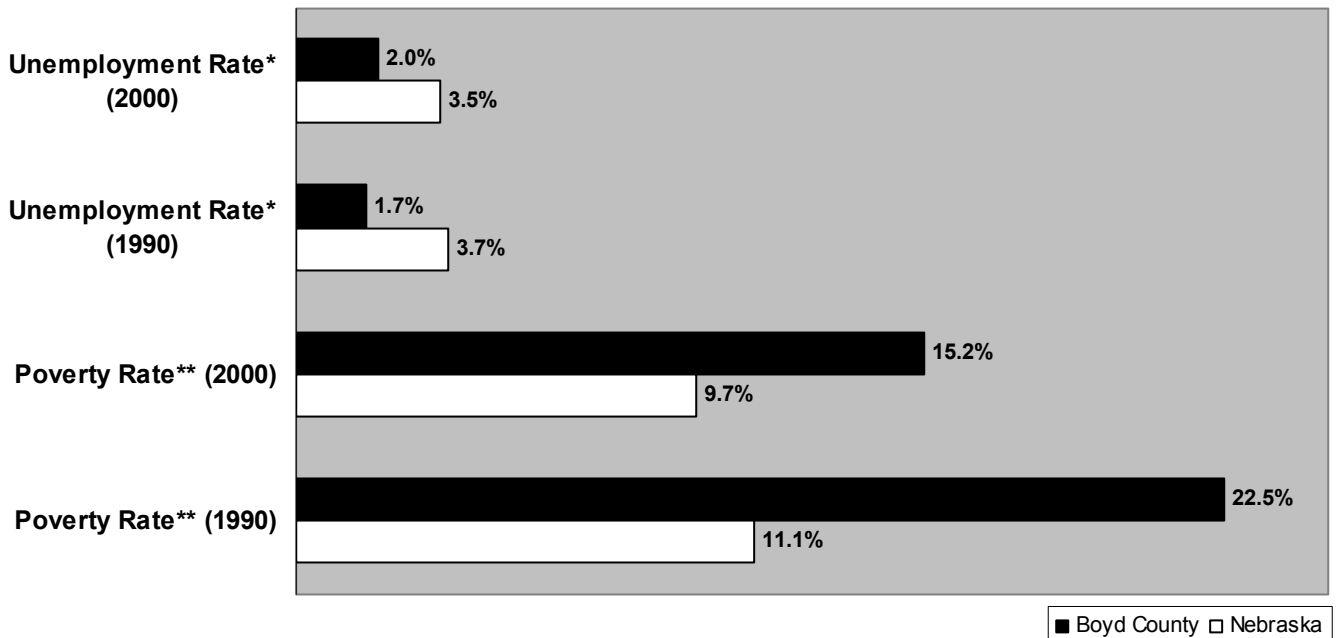
The per capita income of the County has increased since 1990 by 54.1% to \$13,840 in 2000 (compared to \$19,613 statewide), and the median household income of the County has increased since 1990 by 59.7% to \$26,075 in 2000 (compared to \$39,250 statewide) (Figure 5). Boyd County experienced a lower unemployment rate (2.0% vs. 3.5% statewide), and a higher poverty rate (15.2% vs. 9.7% statewide) than the State in 2000 (Figure 6). Moreover, the County out-performed the State in all of the social indicators shown in Table 3, except for the percentage of residents aged 25 and older who did not graduate from high school.

Figure 5. Income for Boyd County and Nebraska, 1990 and 2000



Sources: U.S. Census Bureau, Census 1990 and Census 2000, Summary File 3. <http://factfinder.census.gov>.

Figure 6. Economic Indicators for Boyd County and Nebraska, 1990 and 2000



* Percent of residents aged 16 and older in the labor force that are unemployed.

** Percent of total population living below 100% of the Federal poverty threshold.

Sources: U.S. Census Bureau, Census 1990 and Census 2000, Summary File 3. <http://factfinder.census.gov>.

Table 3. Selected Social Indicators for Boyd County and Nebraska

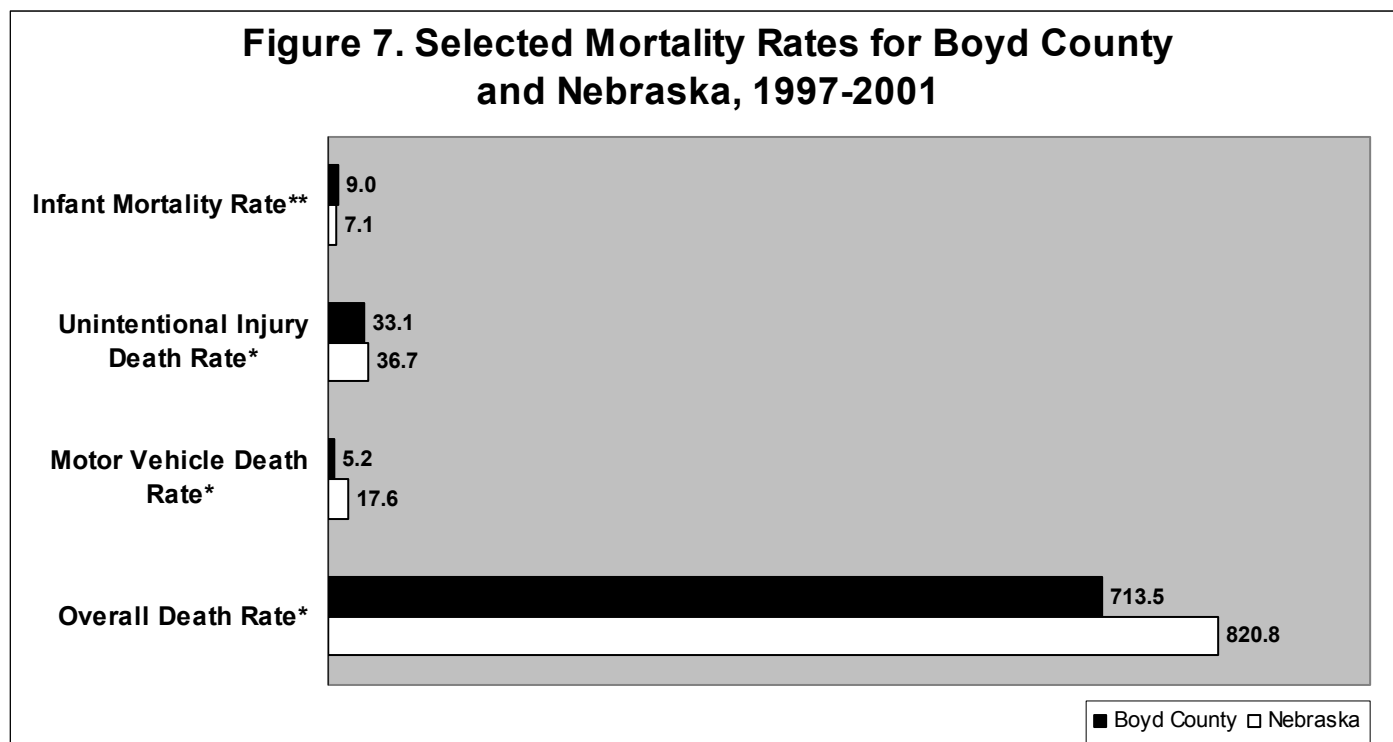
	Boyd County	Nebraska
Percent of residents aged 25 and older who did not graduate from high school (2000)	16.9%	13.4%
Percent of 7-12th graders who dropped out of school (2000-2001)	0.0%	2.5%
Percent of first births born to unmarried women, younger than 20, with less than a high school education (1997-2001)	3.3%	10.1%
Crime arrest rate per 1,000 population (1999)	6.2	59.2

Sources: U.S. Census Bureau, Census 2000. <http://factfinder.census.gov>. Nebraska Health and Human Services County Profiles. <http://www.hhs.state.ne.us/profiles0802/Boyd/profiles.htm>

V. HEALTH STATUS INDICATORS

The residents of Boyd County had a lower overall death rate, unintentional injury death rate, and motor vehicle death rate compared to the State between 1997-2001 (Figure 7). Boyd County outperformed the State in all of the maternal and child health related indicators, shown in Figure 8. The County had a lower mortality rate than the State for the top 5 leading causes of death of Boyd County residents during 1997-2001, (Figure 9). For each of the top 5 leading causes of hospitalization of Boyd County's residents between 1999-2000, the County had a lower hospitalization rate than the State (Figure 10).

Figure 7. Selected Mortality Rates for Boyd County and Nebraska, 1997-2001

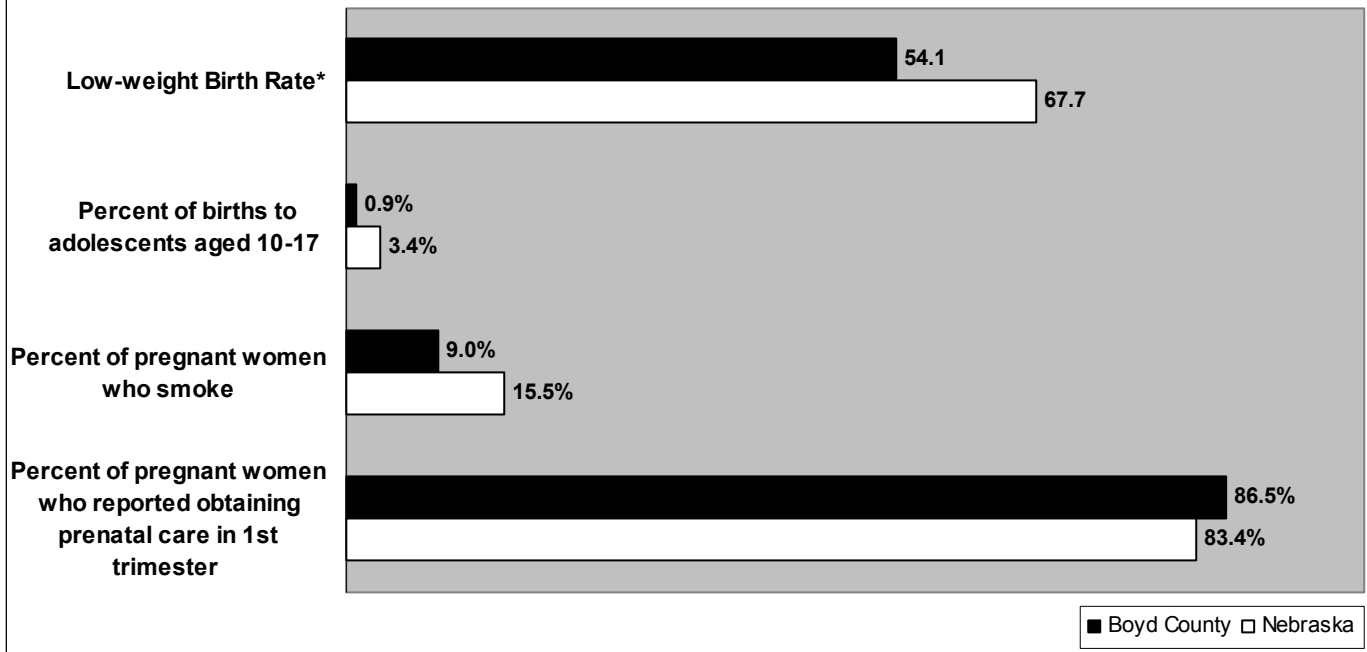


* Number of deaths per 100,000 population (age adjusted).

** Number of deaths per 1,000 live births.

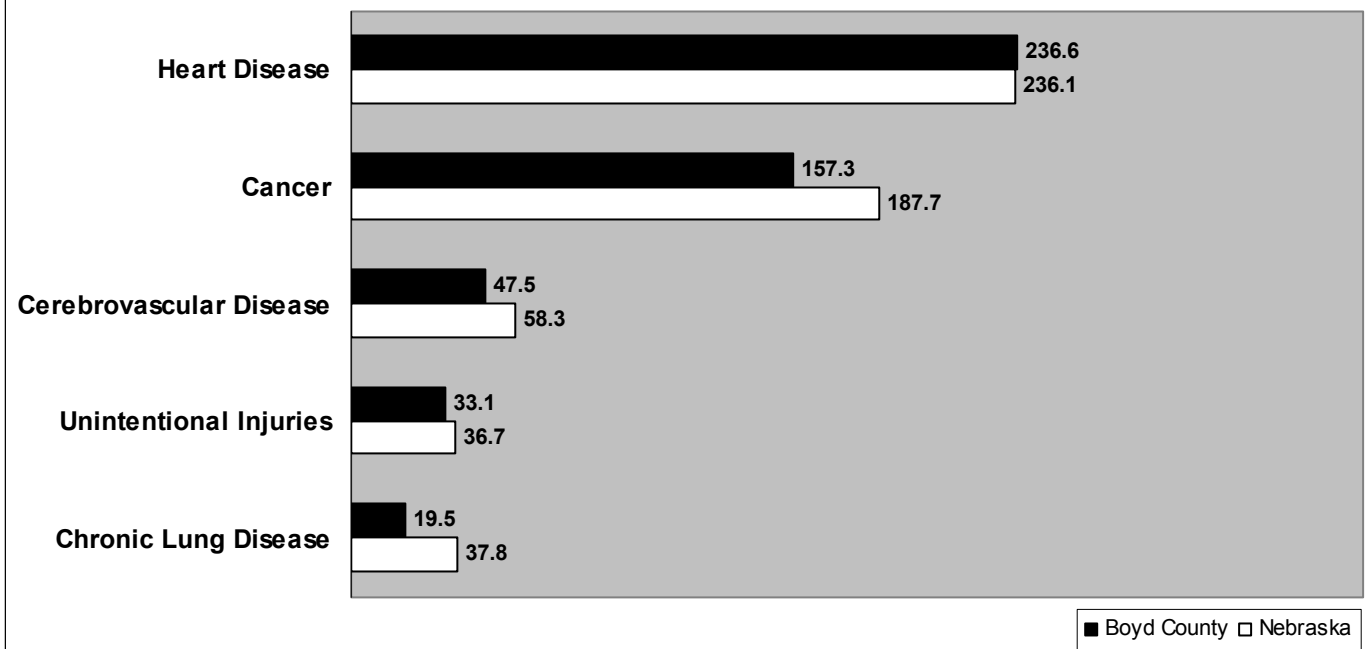
Source: Nebraska Health and Human Services County Profiles. <http://www.hhs.state.ne.us/profiles0802/Boyd/profiles.htm>.

Figure 8. Selected Maternal and Child Health Indicators, Boyd County and Nebraska, 1997-2001



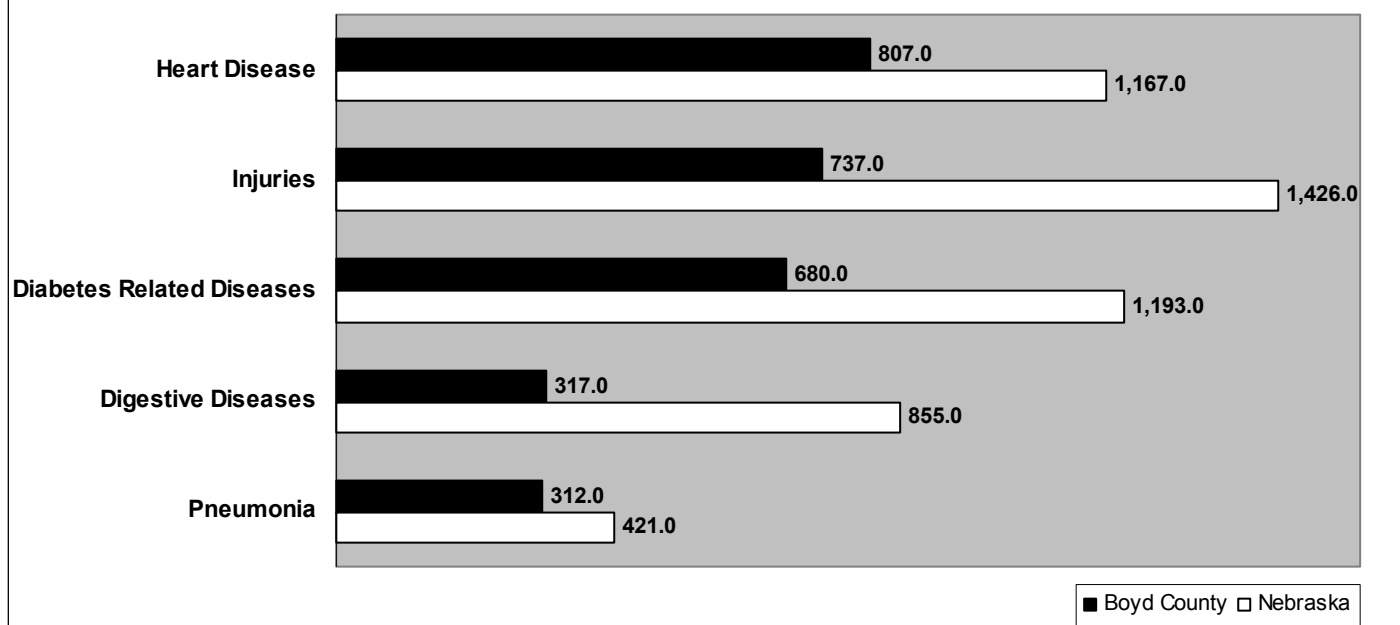
* Number of babies born weighing less than 2500 grams (per 1,000 births).
 Source: Nebraska Health and Human Services County Profiles. <http://www.hhs.state.ne.us/profile0802/Boyd/profile.htm>.

Figure 9. Top 5 Leading Causes of Death for Boyd County and the Corresponding Mortality Rates* for the County and Nebraska, 1997-2001



* Number of deaths per 100,000 population (age adjusted).
 Source: Nebraska Health and Human Services County Profiles. <http://www.hhs.state.ne.us/profile0802/Boyd/profile.htm>.

Figure 10. Top 5 Leading Causes of Hospitalization* for Boyd County and the Corresponding Hospitalization Rates for the County and Nebraska, 1999-2000**



* Hospitalizations for pregnancy and childbirth were excluded from this analysis.

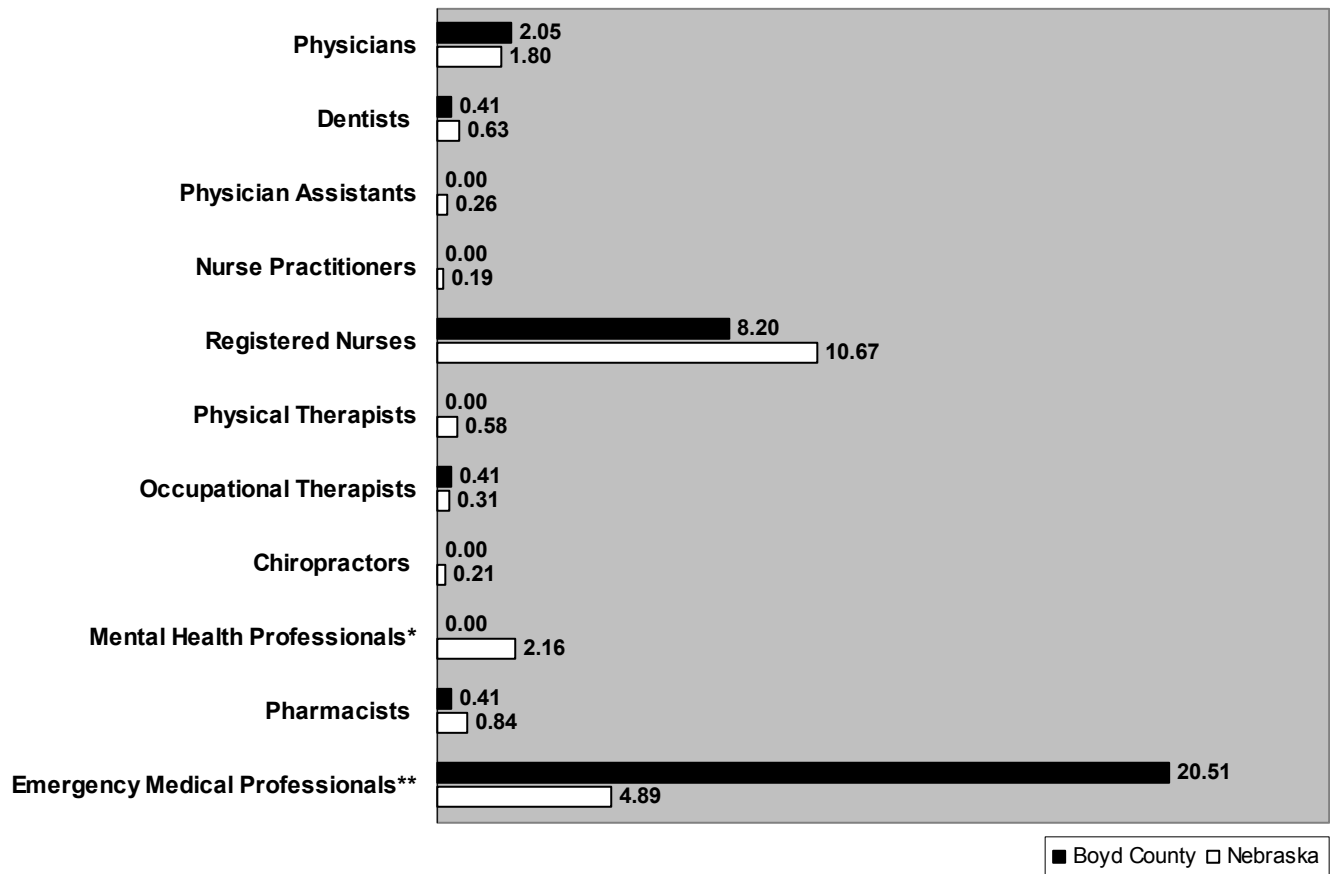
**Defined as the proportion of inpatient hospital discharges to a population within clearly specified geographic boundaries, age adjusted per 100,000 population. Source: Nebraska Health and Human Services County Profiles. <http://www.hhs.state.ne.us/profile0802/Boyd/profile.htm>.

VI. HEALTH CARE PROFESSIONALS

In 2003, Boyd County was federally designated as a medically underserved area and mental health professional shortage area. The State government, in 2003, designated Boyd County as a health professional shortage area in the specialties of: internal medicine, pediatrics, obstetrics/gynecology, psychiatry, general dentistry and oral surgery, pharmacy, occupational therapy and physical therapy.

Boyd County had a higher professional-to-population ratio than the State for physicians and emergency medical professionals in 2003, but a lower ratio for other health professionals shown in Figure 11. The professional to population ratio for some of these professions may not be comparable to the State's figures due to extremely small numbers, i.e. there is one occupational therapist in Boyd County, but it will result in a 0.41 per 1,000 population ratio, which is higher than the State's ratio for this profession.

Figure 11. Number of Practicing Health Professionals Per 1,000 Population, Boyd County and Nebraska, 2003



* Mental Health Professionals include: Psychiatrists, Licensed Psychologists, Master Social Workers, Certified Professional Counselors, and Licensed Mental Health Practitioners, and Marriage and Family Therapists.

** Actively Licensed Emergency Medical Professionals include: Emergency Medical Technician (EMT) Paramedics, EMT-Intermediate, EMT-Basic, and First Responders.

Source: *The Nebraska Health Information Project: 2003 Databook*. (2003) Nebraska Center for Rural Health Research, University of Nebraska Medical Center.

VII. HOSPITAL AND LONG-TERM CARE BEDS

Table 4. shows that Boyd County's hospitals and long-term care industry have an overall higher bed-to-population ratio than the State. As a result, the need for hospital inpatient care (for the general public), and long-term care for the elderly, may be well met within the County.

Table 4. Selected Health Care Facility Beds-to-Population Ratios for Boyd County and Nebraska

	Boyd County	Nebraska
Number of hospital beds per 1,000 population	8.2**	5.1*
Number of Long Term Care beds per 1,000 elderly population (65+)	83.3*	76.3*

* Source: *The Nebraska Health Information Project: 2003 Databook*. (2003) Nebraska Center for Rural Health Research, University of Nebraska Medical Center.

** Source: Hospital Roster (4/11/2004), Nebraska Department of Health and Human Services.

Data Notes

The economic impact results presented in this report were obtained from a compilation of secondary data derived from the IMPLAN database, the U.S. Census Bureau's, *County Business Patterns 2000*, and other various sources. The IMPLAN software analyzes county level data using an economic input-output model. However, certain information required for reporting health sector impact (e.g., total payroll for employees in a county owned nursing home) cannot be obtained from the IMPLAN database. When this happened, we used the information from the U.S. Census Bureau's, *County Business Patterns 2000*, and the American Hospital Association's, *Annual Report 2000*, to calculate estimates and used them to report county specific health sector data.

Acknowledgments

We would like to thank Dennis Berens, at the Nebraska Office of Rural Health, for his enthusiastic support to the Nebraska Rural Health Works Project. Finally, we would like to thank Michael Shambaugh-Miller, Ph.D. and Brian Hesford, at the Nebraska Center for Rural Health Research, for his help with making the maps, and to the members of this project's advisory committee for their insightful comments on this report.

About the Nebraska Rural Health Works Project

The Nebraska Rural Health Works Project is a partnership made possible with the financial support of the Nebraska Office of Rural Health, the Nebraska Hospital Association, and through additional personnel and resources provided by the University of Nebraska Medical Center. The brief reports are designed to inform opinion leaders (from general business, health care, and government) in rural communities about the contribution health care makes to the local economy, both directly and indirectly. We used the IMPLAN software, which uses an economic input-output model, to predict changes in overall economic activity as a result of change in the health care sector. In addition to the analysis of the economic impact of the health sector on a specific community, other information such as: demographics, socio-economic and health status indicators, health care professionals and facility bed capacity are reported for a community. The Nebraska Rural Health Works website is: <http://www.unmc.edu/rural/NeRHW>.

If you would like additional information regarding Nebraska's health care financing, health professionals, health status and health care delivery systems, visit the Nebraska Health Information Project website: <http://www.unmc.edu/nebraska>.

Community Health Economic Profiles will be prepared upon request. Those communities interested in this project can request a profile by contacting the Project Director, Li-Wu Chen, Ph.D. (liwuchen@unmc.edu), or Roslyn Fraser-Maginn (rfraser@unmc.edu) at the Nebraska Center for Rural Health Research, University of Nebraska Medical Center, (402) 559-5260.

The Nebraska Center for Rural Health Research

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