

Health Professional Shortage Areas Nebraska - 1999

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Purpose

To describe Nebraska's Health Professional Shortage Areas (HPSAs) in 1999 as defined by federal and state criteria.

Introduction

This *Nebraska Health Data Reporter* presents data about Nebraska's Health Professional Shortage Areas and examines ways in which the Nebraska and U.S. Departments of Health and Human Services (HHS) define areas where barriers exist to obtaining adequate health care. Federally-designated areas include Health Professional Shortage Areas (HPSAs), Medically Underserved Areas (MUAs), and Medically Underserved Populations (MUPs). In 1999, over half (50/93) of Nebraska's counties have been designated, either in full or in part, as primary care HPSAs (see page 3). These shortage areas potentially affect more than 25 percent of Nebraska's population. Based on 1998 Census estimates, more than 12 percent of the state's population of 1,662,719 live directly within a HPSA. In addition, 73 of Nebraska's 93 counties have been designated, in full or in part, as containing MUAs or MUPs. Over 22 percent of the state's population live within these designated areas and are potentially affected by a shortage of health services.

Within state-designated HPSAs, a high degree of shortage exists in each of the defined health specializations. Two-thirds of Nebraska's counties currently have a shortage of family practice physicians (62/93), 78 percent have a shortage of general surgeons (73/93), 92 percent have a shortage of internal medicine physicians (86/93), 94 percent have a shortage of psychiatrists (88/93), 95 percent have a shortage of pediatricians (89/93) and 91 percent have a shortage of OB/GYNs (85/93).



Nebraska Center for Rural Health Research at the
University of Nebraska Medical Center

in partnership with
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Federal Health Professional Shortage Area (HPSA) Designation

At the federal level, HPSAs are designated for three major health professional types:

- Primary Medical Care,
- Mental Health Care, and
- Dental Health Care.

Service programs based on HPSA designation involve these three health areas.

HPSAs may be defined within:

- urban and rural geographic areas,
- population groups, and/or
- facilities recognized as having acute shortages of health professionals.

Geographically, HPSAs can be defined by county, township, town, census tract (CT), minor civil division (MCD), or other definable geographic divisions as recognized by the U.S. Census Bureau. Special populations that meet specific criteria are also included. All of these designations are rated according to degree of shortage.

The U.S. Department of Health and Human Services (HHS) reviews designated HPSAs annually and revises them on an ongoing basis. Specific emphasis is given to updating designations that are over three years old or where significant and relevant changes in the designation criteria have occurred. The Nebraska Health and Human Services System submits changes in HPSA designation in Nebraska to the federal office of HHS every year. The opinions of the governor, appropriate state medical societies, and other interested organizations or individuals are considered in determining qualifying areas. A more specific description of HPSA determination can be found in the May 30, 1997, *Federal Register*, Vol. 62, and a copy of proposed changes can be found at <http://www.bphc.hrsa.dhhs.gov/dsd/methodtxt.htm>.

Once an area is designated as a HPSA, it qualifies for varying degrees of federal assistance. This assistance may include:

- National Health Service Corps (NHSC) personnel to provide primary health services in the HPSA,
- Public Health Service (PHS) scholarships and training programs,
- grant assistance eligibility,
- supplemental Medicaid and Medicare cost-based reimbursement for qualifying facilities in HPSAs, and/or
- education loan repayment for qualifying practitioners.

For additional information on primary care HPSA designation, visit the Bureau of Primary Health Care website at: http://www.bphc.hrsa.dhhs.gov/dsd/hpsa_fr.htm, or review the February, 1999 GAO Physician Shortage Areas report, HEHS-99-36, at <http://www.gao.gov/monthly.list/feb99/rptndx.htm>.

Primary Care Health Professional Shortage Areas

Primary Care practitioners are defined as all non-federal doctors of medicine (M.D.) and doctors of osteopathy (D.O.) who provide direct patient care in general or family practice, general internal medicine, pediatrics, or obstetrics and gynecology.

Qualification as a Primary Care HPSA is based on three criteria, including:

- 1) The location is determined to be a rational area for the delivery of primary medical care services, including:
 - county or group of counties whose population centers are within 30 minutes travel time,
 - portion of a county whose population has limited access to contiguous area resources, as measured by a travel time of greater than 30 minutes; and/or
 - established neighborhoods or communities within metropolitan areas that display strong homogeneity, have limited interaction with contiguous areas, and have a minimum population of 20,000.
- 2) The area has a population to full-time-equivalent (FTE) *primary care physician* ratio of 3,500:1, or between 3,000:1 and 3,500:1 with an unusually high need for primary care services, or an insufficient capacity of existing primary care providers.

Unusually high need is defined as:

- more than 100 births per year per 1,000 women age 15-44,
- more than 20 infant deaths per 1,000 live births, and/or
- more than 20 percent of the population have incomes below the poverty level.

Insufficient capacity of primary care providers includes:

- more than 8,000 office or outpatient visits per year per FTE primary care physician,
- unusually long waits for appointments for routine services (more than 7 days),
- excessive average waiting time at primary care providers (longer than one hour),
- excessive use of emergency room facilities for primary care,
- substantial proportion (2/3 or more) of physicians who do not accept new patients,
- abnormally low utilization of health services (avg. 2 or less visits per year) per person.

- 3) Primary medical care professionals in contiguous areas are over-utilized, excessively distant, or inaccessible to the population of the area. This is defined by:
 - more than 30 minutes travel time from population centers,
 - contiguous area physician to population ratio in excess of 2,000:1,
 - existence of significant demographic barriers, such as language differences;
 - incomes below poverty level in more than 20 percent of the population, and/or
 - lack of availability of Medicaid-covered or public primary care services.

Table 1 lists Nebraska's Primary Care HPSAs in detail by county and HPSA, and Figure 1 illustrates their locations within the state. The data are current as of May, 1999.

Table 1 - Federally Designated Primary Care HPSAs, Nebraska 1999

County	Affected Population	HPSA Area	County	Affected Population	HPSA Area	County	Affected Population	HPSA Area
Adams	Medicaid population		Dixon (cont)	Ponca City	Cedar/Dixon	Logan	Gandy Prec	Arnold
Antelope	Entire county	Antelope		Ponca Twp	Cedar/Dixon		Logan Prec	Arnold
Arthur	Entire county	Arthur		Silver Creek Twp	Cedar/Dixon		Stapleton No. 1 Prec	Stapleton No. 1
Banner	None			Spring Bank Twp	Cedar/Dixon		Stapleton No. 2 Prec	Arnold
Blaine	Entire county	Blaine	Dodge	Cuming Twp	West Point	Loup	None	
Boone	Entire county	Albion		Pebble Twp	West Point	Madison	Jefferson Prec	Antelope
Box Butte	Low Income Pop	Low Inc./Box Butte		Scribner City	West Point		Newman Grove City	Albion
Boyd	None			Webster Twp	West Point		Shell Creek Prec	Albion
Brown	Entire county	North Central	Douglas*	None			Tilden City	Antelope
Buffalo	None		Dundy	Entire county	Dundy	McPherson	Entire county	McPherson
Burt	Arizona Twp	Oakland	Fillmore	None		Merrick	Entire county	Merrick
	Bell Creek Twp	Oakland	Franklin	None		Morrill	Entire county	Morrill
	Craig Twp	Oakland	Frontier	Allen Prec	Curtis	Nance	Entire county	Nance
	Decatur Twp	Onawa (IA)		Clearwater Prec	Curtis	Nemaha	None	
	Everett Twp	Oakland		Curtis City	Curtis	Nuckolls	None	
	Logan Twp	Oakland		Curtis Prec	Curtis	Otoe	None	
	Oakland Twp	Oakland		Earl Prec	Curtis	Pawnee	None	
	Oakland City	Oakland		Fairview Prec	Curtis	Perkins	None	
	Pershing Twp	Oakland		Garfield Prec	Cambridge	Phelps	None	
	Quinnenbaugh Twp	Onawa (IA)		Grant Prec	Cambridge	Pierce	None	
	Riverside Twp	Onawa (IA)		Harrison Prec	Curtis	Platte	St. Bernard Twp	Albion
	Silver Creek Twp	Onawa (IA)		Horrell Prec	Curtis		Walker Twp	Albion
	Summit Twp	Oakland		Knowles Prec	Cambridge	Polk	None	
	Tekamah City	Oakland		Laird Prec	Curtis	Red Willow	Alliance Prec	Cambridge
Butler	None			Laws Prec	Curtis		Beaver Prec	Cambridge
Cass	Entire county	Cass		Lincoln Prec	Curtis		East Valley Prec	Cambridge
Cedar	Entire county	Cedar/Dixon		Logan Prec	Curtis		Indianola Prec	Cambridge
Chase	None			Moorefield Prec	Curtis		Lebanon Prec	Cambridge
Cherry	Entire county	Cherry		Muddy Prec	Curtis		Missouri Ridge Prec	Cambridge
Cheyenne	None			North Star Prec	Curtis		North Valley Prec	Cambridge
Clay	None			Oralino Prec	Curtis		Tyrone Prec	Cambridge
Colfax	None			Osborn Prec	Curtis	Richardson	Low Income Pop	Low Inc./Richardson
Cuming	Beemer Twp	West Point		Plum Creek Prec	Curtis	Rock	Entire county	North Central
	Bismarck Twp	West Point		Russell Prec	Curtis	Saline	None	
	Blaine Twp	West Point		Sheridan Prec	Curtis	Sarpy*	None	
	Cuming Twp	West Point		Sherman Prec	Curtis	Saunders	Ashland Twp	Wahoo
	Elkhorn Twp	West Point		Stockville Prec	Curtis		Center Twp	Wahoo
	Garfield Twp	West Point		Weaver Prec	Curtis		Chapman Twp	Wahoo
	Grant Twp	West Point		Zimmer Prec	Curtis		Chester Twp	Wahoo
	Lincoln Twp	West Point	Furnas	Entire county	Cambridge		Clear Creek Twp	Wahoo
	Logan Twp	West Point	Gage	None			Douglas Twp	Wahoo
	Monterey Twp	West Point	Garden	Entire county	Garden		Elk Twp	Wahoo
	Neligh Twp	West Point	Garfield	None			Green Twp	Wahoo
	Sherman Twp	West Point	Gosper	Elk Creek Prec	Cambridge		Marble Twp	Wahoo
	St. Charles Twp	West Point		Highland Prec	Cambridge		Marietta Twp	Wahoo
	West Point City	West Point		Union Prec	Cambridge		Mariposa Twp	Wahoo
	Wisner City	West Point		West Muddy Prec	Cambridge		Newman Twp	Wahoo
	Wisner Twp	West Point	Grant	None			Oak Creek Twp	Wahoo
Custer	Arnold Twp	Arnold	Greeley	Greeley Prec	Howard/St. Paul		Richland Twp	Wahoo
	Cliff Twp	Arnold		Scotia Prec	Howard/St. Paul		Rock Creek Twp	Wahoo
	Custer Twp	Arnold		Spalding Prec	Albion		South Cedar Twp	Wahoo
	Delight Twp	Arnold		Wolbach No. 1 Prec	Howard/St. Paul		Stocking Twp	Wahoo
	Elim Twp	Arnold		Wolbach No. 2 Prec	Howard/St. Paul		Union Twp	Wahoo
	Grant Twp	Arnold	Hall	None			Wahoo City	Wahoo
	Hayes Twp	Arnold	Hamilton	None			Wahoo Twp	Wahoo
	Triumph Twp	Arnold	Harlan	Entire county	Harlan	Scotts Bluff	Medicaid Pop	Medicaid/Scotts Bluff
	Wayne Twp	Arnold	Hayes	Entire county	Hayes/Hitchcock	Seward	None	
	Wood River Twp	Arnold	Hitchcock	Entire county	Hayes/Hitchcock	Sheridan	Entire county	Sheridan
Dakota*	None		Holt	None		Sherman	Entire county	Sherman
Dawes	Precinct No. 11	Crawford	Hooker	None		Sioux	Entire county	Crawford
	Precinct No. 7	Crawford	Howard	Entire county	Howard/St. Paul	Stanton	Entire county	Stanton
	Precinct No. 10	Crawford	Jefferson	None		Thayer	Entire county	Thayer
	Precinct No. 9	Crawford	Johnson	Entire county	Johnson	Thomas	Entire county	Thomas
Dawson	None		Kearney	Entire county	Kearney	Thurston	Omaha Indian Pop	Winnebago Ind. Res.
Deuel	Entire county	Julesburg (CO)	Keith	None			Winnebago Ind. Pop	Winnebago Ind. Res.
Dixon	Clark Twp	Cedar/Dixon	Keya Paha	Entire county	North Central	Valley	None	
	Concord Twp	Cedar/Dixon	Kimball	Entire county	Kimball	Washington*	None	
	Daily Twp	Cedar/Dixon	Knox	None		Wayne	None	
	Galena Twp	Cedar/Dixon	Lancaster*	Dept. of Corrections	Lancaster	Webster	None	
	Hooker Twp	Cedar/Dixon	Lincoln	Antelope Prec	Arnold	Wheeler	None	
	Newcastle Twp	Cedar/Dixon		Garfield Prec	Arnold	York	None	
	Otter Creek Twp	Cedar/Dixon						

Sources: Bureau of Primary Health Care - Division of Shortage Designation, and the Nebraska Health and Human Services System, Office of Rural Health & Primary Care, April 27, 1999.

* See metropolitan county definition, page 18.

Federally Designated Mental Health Professional Shortage Areas

Mental health professionals include licensed psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists.

To qualify as a federally designated mental healthcare HPSA, the area must:

- 1) Be determined to be a rational area for the delivery of mental health services.
This includes:
 - establishment as a mental health catchment area, as designated by the *Community Mental Health Centers Act* criteria;
 - a portion of a mental health catchment area whose population has limited access to area resources, as measured by a travel time of greater than 40 minutes; and/or
 - a county or metropolitan area which contains more than one mental health catchment area or where data are unavailable by individual catchment area.
- 2) Have a specific population to core mental health professional ratio, including:
 - a population to mental health professional ratio greater than or equal to 6,000:1 and a population to psychiatrist ratio greater than or equal to 20,000:1, or
 - a population to core professional ratio greater than or equal to 9,000:1, or
 - a population to psychiatrist ratio greater than or equal to 30,000:1.
- 3) Have an unusually high need for mental health services and:
 - a population to core mental health professional ratio greater than or equal to 4,500:1 and a population to psychiatrist ratio greater than or equal to 15,000:1 and/or
 - a population to core professional ratio greater than or equal to 6,000:1, or
 - a population to psychiatrist ratio greater than or equal to 20,000:1.
- 4) Have mental health professionals in contiguous areas who are over-utilized, excessively distant, or inaccessible to residents of the area.

In 1999, the federal office of HHS designated a majority of Nebraska's counties (66/93) as Mental Health Care HPSAs. Two facilities, the Douglas Co. Hospital in Omaha and the Norfolk Regional Center, have also been included. Based on 1998 census estimates, the population represented within these shortage areas (800,108) exceeds 48 percent of the state's total population. Table 2 lists the federally-designated mental care HPSAs in Nebraska, and Figure 2 illustrates their locations in the state.

Further information on mental care HPSA designation can be found at:
http://www.bphc.hrsa.dhhs.gov/dsd/mh_guide.htm.

Table 2 - Federally Designated Mental Health Care HPSAs, Nebraska ,1999

County	Affected Service Area(s)/Population
Adams	None - Catchment Area 3
Antelope	Service Area: Catchment Area 4
Arthur	Service Area: Catchment Area 2
Banner	Service Area: Catchment Area 1
Blaine	None - Catchment Area 3
Boone	Service Area: Catchment Area 4
Box Butte	Service Area: Catchment Area 1
Boyd	Service Area: Catchment Area 4
Brown	Service Area: Catchment Area 4
Buffalo	None - Catchment Area 3
Burt	Service Area: Catchment Area 4
Butler	Service Area: Catchment Area 5
Cass*	None - Catchment Area 6
Cedar	Service Area: Catchment Area 4
Chase	Service Area: Catchment Area 2
Cherry	Service Area: Catchment Area 4
Cheyenne	Service Area: Catchment Area 1
Clay	None - Catchment Area 3
Colfax	Service Area: Catchment Area 4
Cuming	Service Area: Catchment Area 4
Custer	None - Catchment Area 3
Dakota*	Service Area: Catchment Area 4
Dawes	Service Area: Catchment Area 1
Dawson	Service Area: Catchment Area 2
Deuel	Service Area: Catchment Area 1
Dixon	Service Area: Catchment Area 4
Dodge	None - Catchment Area 6
Douglas*	Population: Medicaid--Eastern Omaha City (1) Facility: Douglas County Hosp (MHC) - Area 6
Dundy	Service Area: Catchment Area 2
Fillmore	Service Area: Catchment Area 5
Franklin	None - Catchment Area 3
Frontier	Service Area: Catchment Area 2
Furnas	None - Catchment Area 3
Gage	Service Area: Catchment Area 5
Garden	Service Area: Catchment Area 1
Garfield	None - Catchment Area 3
Gosper	Service Area: Catchment Area 2
Grant	Service Area: Catchment Area 2
Greeley	None - Catchment Area 3
Hall	None - Catchment Area 3
Hamilton	None - Catchment Area 3
Harlan	None - Catchment Area 3
Hayes	Service Area: Catchment Area 2
Hitchcock	Service Area: Catchment Area 2
Holt	Service Area: Catchment Area 4
Hooker	Service Area: Catchment Area 2

County	Affected Service Area(s)/Population
Howard	None - Catchment Area 3
Jefferson	Service Area: Catchment Area 5
Johnson	Service Area: Catchment Area 5
Kearney	None - Catchment Area 3
Keith	Service Area: Catchment Area 2
Keya Paha	Service Area: Catchment Area 4
Kimball	Service Area: Catchment Area 1
Knox	Service Area: Catchment Area 4
Lancaster*	Service Area: Catchment Area 5
Lincoln	Service Area: Catchment Area 2
Logan	Service Area: Catchment Area 2
Loup	None - Catchment Area 3
Madison	Service Area: Catchment Area 4 Facility: Norfolk Regional Center
McPherson	Service Area: Catchment Area 2
Merrick	None - Catchment Area 3
Morrill	Service Area: Catchment Area 1
Nance	Service Area: Catchment Area 4
Nemaha	Service Area: Catchment Area 5
Nuckolls	None - Catchment Area 3
Otoe	Service Area: Catchment Area 5
Pawnee	Service Area: Catchment Area 5
Perkins	Service Area: Catchment Area 2
Phelps	None - Catchment Area 3
Pierce	Service Area: Catchment Area 4
Platte	Service Area: Catchment Area 4
Polk	Service Area: Catchment Area 5
Red Willow	Service Area: Catchment Area 2
Richardson	Service Area: Catchment Area 5
Rock	Service Area: Catchment Area 4
Saline	Service Area: Catchment Area 5
Sarpy*	None - Catchment Area 6
Saunders	Service Area: Catchment Area 5
Scotts Bluff	Service Area: Catchment Area 1
Seward	Service Area: Catchment Area 5
Sheridan	Service Area: Catchment Area 1
Sherman	None - Catchment Area 3
Sioux	Service Area: Catchment Area 1
Stanton	Service Area: Catchment Area 4
Thayer	Service Area: Catchment Area 5
Thomas	Service Area: Catchment Area 2
Thurston	Service Area: Catchment Area 4
Valley	None - Catchment Area 3
Washington*	None - Catchment Area 6
Wayne	Service Area: Catchment Area 4
Webster	None - Catchment Area 3
Wheeler	None - Catchment Area 3
York	Service Area: Catchment Area 5

Source: [Federal Register](#), May 30, 1997. Vol. 62, No. 104

Source: Nebraska Health and Human Services System, Office of Rural Health, May 1999.

* Metropolitan counties - See definition on page 18.

Federally Designated Dental Health Professional Shortage Areas

To qualify as a federally designated dental HPSA, the area must:

1) Be determined to be a rational area for the delivery of dental health services, including:

- establishment as a county or group of contiguous counties whose population centers are within 40 minutes travel time of each other;
- a portion of the county's population has limited access to area resources, as measured by a travel time of greater than 40 minutes; and/or
- establishment as a neighborhood or community within a metropolitan area which displays a strong homogeneity and has a limited interaction with contiguous areas, and which, in general, has a minimum population of 20,000.

2) Have a population to full-time-equivalent (FTE) *dentist* ratio of at least 5,000:1, or a population to FTE dentist ratio of between 4,000:1 and 5,000:1, but with an unusually high need for dental services or an insufficient capacity of existing dental providers.

Unusually high need is defined as:

- more than 20 percent of the population have incomes below the poverty level, and/or
- the majority of the area's population does not have a fluoridated water supply.

Insufficient capacity of existing dental care providers includes:

- more than 5,000 visits per year per FTE dentist serving the area,
- unusually long waits for appointments for routine services (6 weeks or more), and/or
- a substantial proportion (2/3 or more) of the area's dentists who do not accept new patients.

3) Have dentists in contiguous areas who are over-utilized, excessively distant, or inaccessible to the population of the area. This is the case if:

- they are more than 40 minutes travel time from population centers;
- the contiguous area dentist to population ratio is in excess of 3,000:1;
- significant demographic barriers, such as language differences, exist;
- more than 20 percent of the population have incomes below poverty level; and/or
- Medicaid-covered or public primary care services are not available.

In 1999, populations within 17 counties in Nebraska were affected, to some extent, by a shortage of dental health care in their areas. According to HHS, about one-third of the state's population live in counties containing a designated dental health HPSA. Table 3 lists the federally designated dental HPSAs in Nebraska, and Figure 3 illustrates their locations in the state.

Further information on dental care HPSA designation can be found at:
http://www.bphc.hrsa.dhhs.gov/dsd/hpsa_fr3.htm.

Table 3 - Federally Designated Dental Care HPSAs, Nebraska ,1999

County	Affected Service Area(s)/Population	County	Affected Service Area(s)/Population
Adams	None	Jefferson	None
Antelope	None	Johnson	None
Arthur	Service Area: Arthur/Grant	Kearney	None
Banner	None	Keith	None
Blaine	Entire County Designation	Keya Paha	None
Boone	None	Kimball	None
Box Butte	None	Knox	None
Boyd	None	Lancaster*	None
Brown	None	Lincoln	None
Buffalo	None	Logan	Service Area: Logan/McPherson
Burt	None	Loup	None
Butler	None	Madison	None
Cass*	None	McPherson	Service Area: Logan/McPherson
Cedar	None	Merrick	None
Chase	None	Morrill	Entire County Designation
Cherry	None	Nance	None
Cheyenne	None	Nemaha	None
Clay	None	Nuckolls	None
Colfax	None	Otoe	None
Cuming	Population: Am In--Winnebago/Omaha (Service Area: Om In--Bancroft Twp; Om In--Cleveland Twp)	Pawnee	None
Custer	None	Perkins	None
Dakota*	None	Phelps	None
Dawes	None	Pierce	None
Dawson	None	Platte	None
Deuel	None	Polk	None
Dixon	None	Red Willow	None
Dodge	None	Richardson	None
Douglas*	Special Population (1)	Rock	None
Dundy	None	Saline	None
Fillmore	None	Sarpy*	None
Franklin	None	Saunders	None
Frontier	Entire County Designation	Scotts Bluff	None
Furnas	Entire County Designation	Seward	None
Gage	None	Sheridan	None
Garden	None	Sherman	None
Garfield	None	Sioux	None
Gosper	None	Stanton	None
Grant	Service Area: Arthur/Grant	Thayer	None
Greeley	Service Area: Greeley/Wheeler	Thomas	Service Area: Mullen
Hall	None	Thurston	Population: Am In--Winnebago/Omaha
Hamilton	None	Valley	None
Harlan	None	Washington*	None
Hayes	Service Area: Hayes/Hitchcock	Wayne	None
Hitchcock	Service Area: Hayes/Hitchcock	Webster	None
Holt	None	Wheeler	Service Area: Greeley/Wheeler
Hooker	Service Area: Mullen	York	None
Howard	None		

Source: Federal Register, May 30, 1997. Vol. 62, No. 104.

Source: Nebraska Health and Human Services System, Office of Rural Health, May 1999.

(1) Designation currently under review.

* Metropolitan counties - See definition on page 18.

Federal Medically Underserved Areas/Populations (MUAs/MUPs) Designation

Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) are also federally designated health professional shortage areas. MUAs represent geographical areas, and MUPs define specific populations within defined geographic areas. MUPs include those populations where unusual local conditions may place a barrier to the access or availability of health services. MUP determination can also be applied by the recommendation of the governor and/or other state official. Examples of MUPs in Nebraska include the Medicaid population in Adams County and the Hispanic population in Scotts Bluff County.

Determination of MUA/MUPs is based on the Index of Medical Underservice (IMU), which assesses an overall score based on several specific data elements. Relevant factors include:

- the percentage of the population with incomes below the poverty line,
- the number of residents age 65 and older,
- specific infant mortality rates, and/or
- the number of full-time primary care physicians per thousand people serving within the defined area.

The IMU scale ranges from 0 to 100, where 0 represents a completely underserved area and 100 represents a best-served or least underserved area. Under the established criteria, each service area found to have an IMU of 62.0 or less qualifies for designation as a MUA. Detailed information on MUA/MUP designation can be obtained from the Bureau of Primary Health Care online at: <http://www.bphc.hrsa.dhhs.gov/dsd/muaguidelines.html>.

Geographic areas for MUA/MUPs include whole counties or groups of contiguous counties, minor civil divisions (MCDs), or census county divisions (CCDs) in non-metropolitan areas with population centers within 30 minutes travel time of each other. Metropolitan areas include groups of census tracts (CTs) which represent a homogeneous neighborhood based on demographic or socioeconomic characteristics.

MUAs and MUPs also qualify for several federally-supported primary health care programs, including special programs for migrant health centers, community health centers, programs for the homeless, health department clinics, and rural health clinics. Detailed determination criteria can be found in the October 15, 1976, *Federal Register*.

In 1998, the Office of Rural Health reported that 73 of Nebraska's 93 counties either qualify as MUA/MUP shortage areas or contain a MUA/MUP within them. When combined, 22.4 percent (372,987) of the state's total population (1,662,719) live within these health shortage areas. Table 4 lists the 1999 federally designated MUA/MUPs in Nebraska, and Figure 4 illustrates their locations in the state.

Table 4 - Federally Designated MUA/MUPs - Nebraska, 1999

County	Affected Population
Adams	Medicaid Population
Antelope	Entire county
Arthur	Entire county
Banner	Entire county
Blaine	Entire county
Boone	Entire county
Box Butte	None
Boyd	Entire county
Brown	Entire county
Buffalo	Ravenna City
Burt	Decatur Twp Everett Twp Oakland City Tekamah City
Butler	David City Twp Oak Creek Twp
Cass*	Avoca Prec Center Prec Elimwood Prec Liberty Prec Mount Pleasant Prec Stove Creek Prec Weeping Water City Weeping Water Prec
Cedar	Entire county
Chase	Entire county
Cherry	None
Cheyenne	None
Clay	Entire county
Colfax	Adams Prec Lincoln Prec Schuyler City
Cuming	Wisner City
Custer	Arnold Twp Delight Twp Kilfoil Twp Sargent Twp
Dakota*	Census Tracts 101.00, 104.00
Dawes	None
Dawson	None
Deuel	Entire county
Dixon	Entire county
Dodge	Hooper Twp Scribner Twp Webster Twp

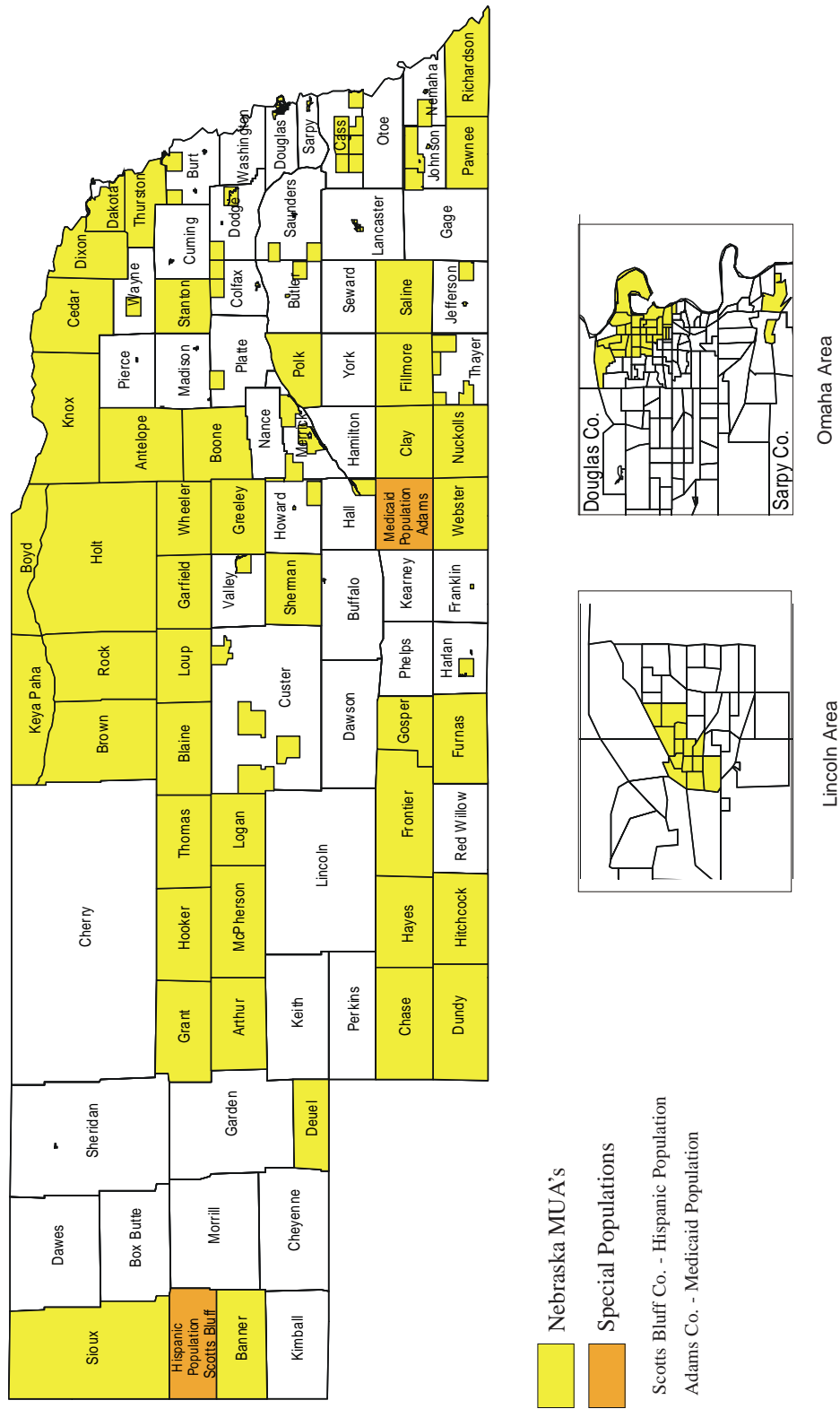
County	Affected Population
Douglas*	Census Tracts 3-12, 16, 18-19, 22, 40-41 51-54, 59.01, 59.02, 60 61.01,61.02, 62.02, 73.04
Dundy	Entire county
Fillmore	Entire county
Franklin	Franklin City
Frontier	Entire county
Furnas	Entire county
Gage	None
Garden	None
Garfield	Entire county
Gosper	Entire county
Grant	Entire county
Greeley	Entire county
Hall	Doniphan Twp
Hamilton	None
Harlan	Alma City Orleans Twp
Hayes	Entire county
Hitchcock	Entire county
Holt	Entire county
Hooker	Entire county
Howard	St. Libory Prec St. Paul City
Jefferson	Fairbury City Pleasant Prec
Johnson	Spring Creek Prec Sterling Prec Tecumseh City
Kearney	None
Keith	None
Keya Paha	Entire county
Kimball	None
Knox	Entire county
Lancaster*	Census Tracts 3-9, 17-22
Lincoln	None
Logan	Entire county
Loup	Entire county
Madison	Madison City Newman Grove City(Part) Tilden City(Part)

County	Affected Population
McPherson	Entire county
Merrick	Clarksville Twp Lone Tree Twp Loup Twp
Morrill	None
Nance	Genoa Twp
Nemaha	Auburn City Washington Prec
Nuckolls	Entire county
Otoe	None
Pawnee	Entire county
Perkins	None
PHELPS	None
Pierce	Pierce City
Platte	St. Bernard Twp
Polk	Entire county
Red Willow	None
Richardson	Entire county
Rock	Entire county
Saline	Entire county
Sarpy*	Census Tracts 103.02, 103.04
Saunders	Chester Twp Oak Creek Twp Wahoo City
Scotts Bluff	Hispanic Population
Seward	None
Sheridan	Rushville City
Sherman	Entire county
Sioux	Entire county
Stanton	Entire county
Thayer	Bruning Prec Davenport Prec Deshler Prec Highland-Alexandria Prec
Thomas	Entire county
Thurston	Entire county
Valley	North Loup Twp
Washington*	None
Wayne	Chapin Prec
Webster	Entire county
Wheeler	Entire county
York	None

Source: Nebraska Health and Human Services System, Office of Rural Health, March, 1999.

* Metropolitan counties. See definition on page 18.

Figure 4
Federally-Designated Medically Underserved Areas (MUAs)
and Medically Underserved Populations - Nebraska, 1999



Data Source: Nebraska Health and Human Services System,
 Office of Rural Health - March, 1999.

Cartography: Russ Wetzel
 Nebraska Center for Rural Health Research

State Designated Health Professional Shortage Areas (HPSAs)

For state health shortage designation purposes, primary care physicians are broadly defined as medical doctors who specialize in general family practice, general surgery, internal medicine, pediatrics, psychiatry, or obstetrics/gynecology. Service areas for these may include a single county or a group of contiguous counties. Family practice service areas may also include an identified population group within a defined area.

Service areas are designated as shortage areas if there is no physician coverage or if the population-to-physician ratio equals or exceeds the following:

- Family Practice 2,000:1;
- General Surgery 10,000:1;
- Internal Medicine 3,250:1;
- Obstetrics/Gynecology 10,000:1;
- Pediatrics 9,300:1;
- Psychiatry 10,000:1.

Service areas with a population-to-physician ratio at or between 1,500:1 to 1,999:1 are designated as shortage areas if at least one of the following high need indicators is present:

- the proportion of population above age 65 ranks in the highest quartile of the state,
- the proportion of the population below the poverty line ranks in the highest quartile,
- the infant mortality rate ranks in the highest quartile of the state,
- the low birth weight rate ranks in the highest quartile of the state,
- more than half of the area's physicians are over 60 years of age,
- the area is designated as a frontier area (fewer than six persons per square mile).

The population to physician ratio is based on practice on a full-time-equivalent basis. Physicians will not be counted if they are practicing under Medicare, Medicaid or licensure sanction, or if they have documented plans to discontinue practice within one year. Psychiatrists working exclusively in an inpatient setting are not included.

In all cases, cities larger than 15,000 are not designated as shortage areas. Special populations and/or facilities within these cities may be designated. Rural areas in counties containing these cities may be designated as partial-county service areas. Areas within a 25-mile radius of Lincoln and Omaha are not designated as shortage areas. In addition, the designation of a shortage area will not be withdrawn if the area has been chosen as a future practice site by a scholarship recipient or loan repayment applicant.

In 1999, the Office of Rural Health reported that of Nebraska's 93 counties, 62 experienced a shortage of family practice physicians, 73 a shortage of general surgery specialists, 86 a shortage of internal medicine physicians, 89 a shortage of pediatricians, 88 a shortage of psychiatrists, and 85 a shortage of obstetricians/gynecologists. Table 5 lists the state designated professional shortage areas in Nebraska, and Figure 5 illustrates their locations in the state, by specialty type.

Table 5 - State Designated Professional Shortage Areas - Nebraska, 1999

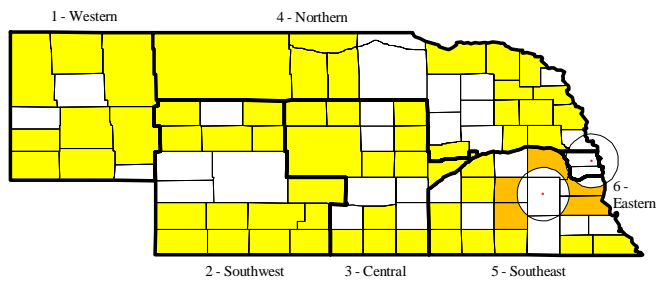
County	Area	Family Practice	General Surgery	Internal Medicine	Pediatric	Obstetrics / Gynecology	Psychiatric
Adams	3				X		X
Antelope	4		X	X	X		X
Arthur	2	X	X	X	X		X
Banner	1	X	X	X	X		X
Blaine	3	X	X	X	X		X
Boone	4	X	X	X	X		X
Box Butte	1			X	X		X
Boyd	4		X	X	X		X
Brown	4	X		X	X		X
Buffalo	3		X	X	X		X
Burt	4	X	X	X	X		X
Butler	5	X	X	X	X		X
Cass*	5	X	0	0	0	0	0
Cedar	4	X	X	X	X		X
Chase	2	X	X	X	X		X
Cherry	4	X	X	X	X		X
Cheyenne	1	X	X	X	X		X
Clay	3	X	X	X	X		X
Colfax	4	X	X	X	X		X
Cuming	4	X	X	X	X		X
Custer	3	X	X	X	X		X
Dakota*	4						
Dawes	1		X	X	X		X
Dawson	2	X	X	X	X		X
Deuel	1		X	X	X		X
Dixon	4	X	X	X	X		X
Dodge	4	X	X	X	X		X
Douglas*	6						
Dundy	2		X	X	X		X
Fillmore	5		X	X	X		X
Franklin	3	X	X	X	X		X
Frontier	2	X	X	X	X		X
Furnas	2	X	X	X	X		X
Gage	5		0	0	0	0	0
Garden	1	X	X	X	X		X
Garfield	3		X	X	X		X
Gosper	2	X	X	X	X		X
Grant	2	X	X	X	X		X
Greeley	3	X	X	X	X		X
Hall	3		X	X	X		X
Hamilton	3		X	X	X		X
Harlan	3	X	X	X	X		X
Hayes	2	X	X	X	X		X
Hitchcock	2	X	X	X	X		X
Holt	4		X	X	X		X
Hooker	2		X	X	X		X
Howard	3	X	X	X	X		X
Jefferson	5	X	X	X	X		X
Johnson	5		X	X	X		X
Kearney	3		X	X	X		X
Keith	2		X	X	X		X
Keya Paha	4	X	X	X	X		X
Kimball	1	X	X	X	X		X
Knox	4	X	X	X	X		X
Lancaster*	5						
Lincoln	2		X	X	X		X
Logan	2	X	X	X	X		X
Loup	3	X	X	X	X		X
Madison	4		X	X	X		X
McPherson	2	X	X	X	X		X
Merrick	3	X	X	X	X		X
Morrill	1	X	X	X	X		X
Nance	4	X	X	X	X		X
Nemaha	5	X	X	X	X		X
Nuckolls	3	X	X	X	X		X
Otoe	5	X	0	0	0	0	0
Pawnee	5	X	X	X	X		X
Perkins	2		X	X	X		X
Phelps	3		X	X	X		X
Pierce	4		X	X	X		X
Platte	4		X	X	X		X
Polk	5		X	X	X		X
Red Willow	2	X	X	X	X		X
Richardson	5	X	X	X	X		X
Rock	4	X	X	X	X		X
Saline	5	00	0	0	0	0	0
Sarpy*	6						
Saunders	5	00	0	0	0	0	0
Scotts Bluff	1	0	X	X	X		X
Seward	5	00	0	0	0	0	0
Sheridan	1	X	X	X	X		X
Sherman	3	X	X	X	X		X
Sioux	1	X	X	X	X		X
Stanton	4	X	X	X	X		X
Thayer	5	X	X	X	X		X
Thomas	2	X	X	X	X		X
Thurston	4	X	X	X	X		X
Valley	3		X	X	X		X
Washington*	4		0	0	0	0	0
Wayne	4	X	X	X	X		X
Webster	3	X	X	X	X		X
Wheeler	3	X	X	X	X		X
York	5		X	X	X		X
Total Nebraska Counties with State Designated Shortage Area - 1999		59	74	84	89	85	87

Source: Nebraska Health and Human Services System, Office of Rural Health - May 6, 1999.

* Metropolitan counties. See definition on page 18.

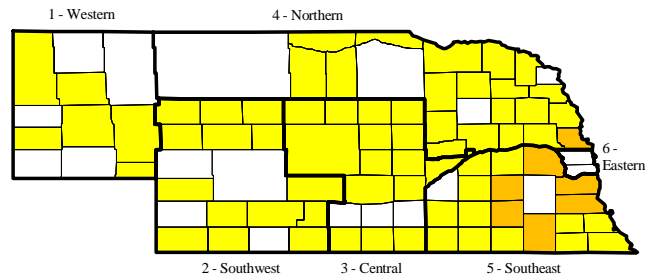
0 - As per guidelines, cities larger than 15,000 and areas within a 25-mile radius of Lincoln and Omaha are not designated. This means that only parts of these counties are designated as shortage areas.

**Figure 5 - State Designated Professional Shortage Areas by Type of Shortage
By County and Health Service Area - Nebraska, 1999**

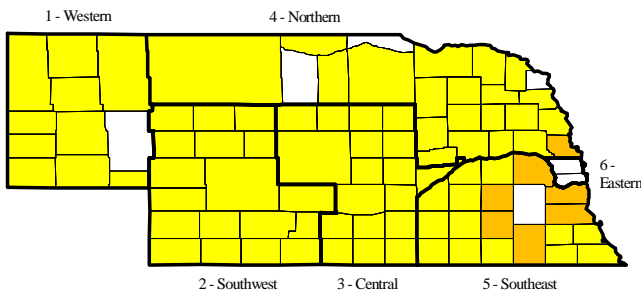


Family Practice Shortage Areas

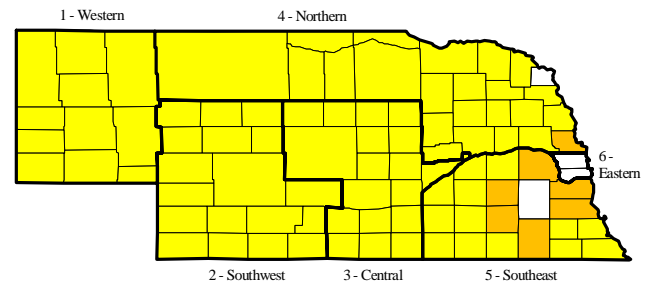
*A 25-mile radius around Omaha and Lincoln are not designated as shortage areas.



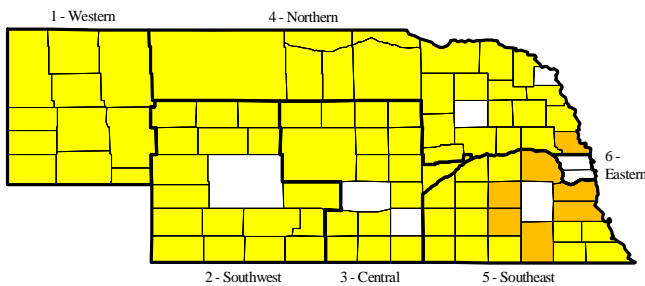
General Surgery Shortage Areas



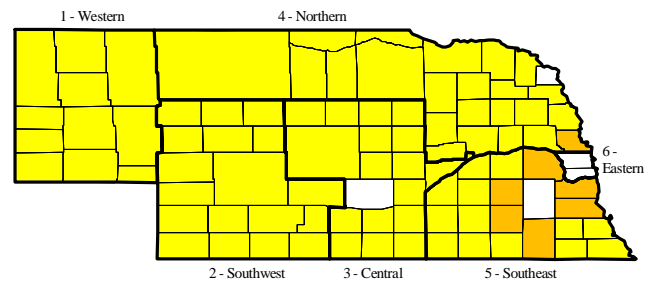
Internal Medicine Shortage Areas



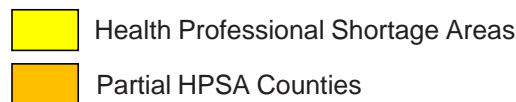
Pediatric Care Shortage Areas



Obstetrics/Gynecology Shortage Areas



Mental Care Shortage Areas



Source: Nebraska Health and Human Services System,
Office of Rural Health - May 5, 1999.

Cartography: Russ Wetzel
Nebraska Center for Rural Health Research

Definitions

CCD (Census County Division) - A subdivision of a county that is a relatively permanent statistical area established cooperatively by the Census Bureau and local government authorities. Used for presenting census statistics in 21 states that do not have well-defined MCD's (Minor Civil Divisions) that serve as local governments. Nebraska does have defined MCD's.

CT (Census Tract) - A small, relatively permanent statistical subdivision of metropolitan areas and selected non-metropolitan counties, delineated for the purpose of presenting census data. CTs usually have between 2,500 and 8,000 persons and, when first delineated, are designed to be homogeneous with respect to population characteristics, economic status, and living conditions. Census tracts do not cross county boundaries.

MCD (Minor Civil Division) - The primary political or administrative divisions of a county. MCDs represent many different kinds of legal entities with a wide variety of governmental and/or administrative functions. MCDs are variously designated as American Indian reservations, assessment districts, boroughs, election districts, grants, magisterial districts, parish governing authority districts, plantations, precincts, purchases, supervisors' districts, towns, and townships.

MENTAL HEALTH PROVIDER - Mental health professionals include licensed psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists.

METROPOLITAN AREAS - Metropolitan area boundaries and names are those defined by the Federal Office of Management and Budget on June 30, 1993. In Nebraska, metropolitan boundaries correspond with county boundaries. Metropolitan counties include Cass, Dakota, Douglas, Lancaster, Sarpy, and Washington. Non-metropolitan counties are defined as all other counties not otherwise defined as metropolitan.

PRIMARY CARE PHYSICIAN - Primary care physicians are defined as all non-federal doctors of medicine (M.D.) and doctors of osteopathy (D.O.) who provide direct patient care in general or family practice, general internal medicine, pediatrics, or obstetrics and gynecology.

Sources

(Note: Internet sources are subject to periodic updates).

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<http://www.census.gov/population/estimates/state/st-98-1.txt>

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Additional MCD Population data: Population Estimates Program, November 18, 1997:
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About the Nebraska Health Information Project

The Nebraska Health Information Project is a partnership project made possible with the financial support of the State of Nebraska and through additional personal and other resources provided by the University of Nebraska Medical Center. While initiated by the Nebraska Unicameral, the ongoing success of the project results from cooperation and collaboration among a number of organizations and individuals, particularly those involved in delivering health care services, financing health care and analyzing health related data.

Other reports have been published by the Nebraska Health Information Project including annual databooks which present Nebraska health and demographic data at the county, area and state levels. To find out more about these reports and future reports visit our homepage at: <http://www.unmc.edu/nebraska/>

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