Nebraska Department of Health & Human Services
Nebraska Preventive Health Advisory Committee
Minutes of Meeting
May 15, 2018, 10:00 a.m. – 12:00 p.m.
Nebraska State Office Building (NSOB), Conference Room Lower Level C

Call to order

Judy Martin called the meeting to order at 10:05 a.m.

Roll call of members

Judy thanked everyone for coming. For roll call, committee members present introduced themselves and noted their affiliation. **Committee member affiliations appear at the end of these minutes.** Attendance was as follows:

Members present: Janelle Ali-Dinar, Teresa Anderson, Elizabeth Chentland (teleconference), Holly Dingman, Kristen Larsen, Judy Martin, Dave Palm, Peggy Reisher, Lori Seibel, Fred Zwonechek

Members excused: Lynne Lange, Josie Rodriguez

Members absent: Alex Gray, Kerry Kernen

DHHS Staff present: Gwen Hurst, Sue Medinger, Peg Ogea-Ginsburg, Syd Reinarz, Anthony Zhang

Public: John Marteney

Quorum: Met
Notes:

- *Committee bylaws define a quorum as a simple majority (half plus one) of the total number of voting members, which would be six voting members at this time. A quorum was present for today's meeting.*
- *Nebraska Department of Health & Human Services Chief Medical Officer and Director of the Division of Public Health Dr. Tom Williams appointed Deputy Director Judy Martin to serve as chairperson of the Nebraska Preventive Health Advisory Committee.*

Approval of agenda

Judy asked everyone to review the Agenda and entertained a motion to approve.
Fred moved and Dave seconded the motion to approve the agenda as presented. ***Motion carried. Agenda approved.***

Approval of minutes of previous meeting

Judy asked the group to review the meeting minutes from the March 7, 2018, Advisory Committee meeting.
Fred moved that the minutes be approved as presented; Janelle seconded the motion. ***Motion carried. Meeting minutes approved.***

Program Report: Older Adult Falls Prevention

Peg Ogea-Ginsburg, Program Manager with the DHHS Injury Prevention program, provided an overview of Tai Chi and Stepping On classes provided in local communities utilizing PHHS block

grant funding. Recipients of funding include primarily local health departments and one area agency on aging. Tai Chi and Stepping On are evidence-based programs that Nebraska subrecipients implement to fidelity. Peg's PowerPoint presentation is included with the minutes.

FY2018 Work Plan discussion and recommendations
Gwen first noted that the Centers for Disease Control and Prevention (CDC) has not yet notified states, territories and tribes of FY18 allocations (for funding to be used October 1, 2017 through September 30, 2019). She noted that Nebraska's Project Officer reported that the CDC hopes to have allocation amounts to recipients by June 15. On advice of CDC, DHHS has prepared the work plan assuming level funding of $2,568,276. The work plan was made available to members prior to and at the meeting and is available on the DHHS website.

Gwen described how the work plan gets to this point and what the PHAC's responsibility is. The process begins with internal requests from DHHS programs. They are reviewed to make sure they meet criteria of federal law or the Centers for Disease Control and Prevention (CDC). After internal review, programs make changes, and the final work plan is approved by DPH senior leadership. The result is the work plan in its present form.

Gwen noted that the role of the Advisory Committee is to:

- Offer opportunity for public comment (occurring today)
- Review the work plan project by project
- Make recommendations to accept the work plan as is, accept with revisions, or request revisions that will be reviewed at a later meeting of the Advisory Committee

Note: Since this work plan is based on an assumed rather than confirmed allocation, today's meeting will result in a tentative recommendation that will be confirmed at the June 12 PHAC meeting, unless we still do not have confirmation of allocation.

Working line-by-line through the work plan, Gwen and others provided information about projects, and committee members offered questions, comments and suggestions as follows.

ADMINISTRATIVE COSTS – Costs primarily encompass a portion of the Block Grant Coordinator's salary, indirect costs for other salaries included in the work plan and various costs such as travel to the Annual Coordinators' meeting, Advisory Committee travel and expenses, training and memberships.

There were no questions or comments regarding the administrative costs.

EMERGENCY HEALTH SYSTEMS – Support three Health People 2020 Objectives. Objectives include providing stroke system of care training, STEMI system of care training and analyzing trauma data. One partial salary is included in the request. In addition to training, funds will provide education materials and support collaboration with hospitals, EMS agencies and other health care providers.

- *Janelle asked about the use of telehealth for trainings. Sue responded that telehealth might be an option for hospitals and others with access. Sue further noted that part of the overall program is to direct patients to the hospital that can provide the most appropriate care for heart attack.*
- *Lori asked if the training and information is available to volunteer EMS services, and Sue responded that it is. She noted that Project Lead Tim Wilson is himself the head of his local volunteer EMS service, so he brings an "inside" understanding to the need for providing education and supports.*

- *Lori asked if assistance is available to EMS providers for critical incident stress debriefing. Sue noted that it is. It is funded through another source.*

There were no additional comments or recommendations regarding the EHS work plan.

INFECTIOUS DISEASE – Funds cover testing for four infectious diseases: hepatitis, chlamydia, gonorrhea and HIV. Testing covers the lab analysis performed on various tests with referral to a disease intervention specialist if there results are positive for the identified infectious diseases. Disease intervention specialists work with persons who test positive to change behaviors and prevention additional transmission of the infection. The increased amount (about $30K extra) for this year's block grant is for hepatitis testing. It has been included some other years, but not for the past three years.

There were no questions or comments regarding the Infectious Disease work plan.

INJURY PREVENTION – Funds are used for several major activities, including subawards to local Safe Kids coalitions to administer injury prevention programs aimed at reducing traumatic brain injuries in adolescents and youth, support for the Concussion Coalition, preventing poisoning deaths by encouraging proper medication disposal, providing child passenger safety programs and preventing death from falls. Sex offense set-aside funds and additional sexual violence prevention activities also fall within the Injury Prevention work plan.

There was robust discussion related to poison prevention.

- *Teresa asked whether opioid disposal is part of the medication education. Judy noted that it is a part of the overall education and that other areas in DHHS Public Health and Behavioral Health are addressing opioids specifically.*
- *Lori noted that use of medications by older adults is often overlooked. She said often the reason older adults are no longer able to live independently relates to prescription medications. She noted that medication regulation and education of physicians is needed. She said she would "love to see the State take a role" in addressing.*
- *Peggy noted that the STEADI evaluation that Peg Ogea-Ginsburg described during her program report is a CDC resource meant for medical providers to help evaluate for over-medication and medication interactions.*
- *Janelle provided information about two programs that address medication management—CPC and ACO. Efforts are in place to help medical providers and pharmacists to work together.*
- *Dave said that a key is changing deliver/care models and noted that work at the federal is important.*
- *Lori said that often older adult lose independence as a result of prescription/use of sleeping pills.*
- *Dave suggested a paradigm shift: focusing on patient outcomes such as "what leads to health/longevity?"*
- *Elizabeth stated that medication management and prescription sleeping aids constitute a hugely overlooked public health issue. She said often loss of independence for older adults is not about just one health condition; collaboration with physicians and the medical community is a problem. She said often people with dementia are not told of their diagnosis, which is a complicating factor. She expressed a desire for future education to include medication management and that it fits well with Nebraska' State Health priorities of integrated health systems and health care utilization and access.*
- *The committee also noted that suicide prevention and awareness is an important Injury Prevention topic. Judy noted that suicide prevention used to be one of the*

priority areas required within the Injury Prevention "Core" grant and that as far as federal funding is concerned, that now goes primarily to behavioral health.

Kristen mentioned that while she was still working with a local developmental disabilities council in Kearney, they worked on establishing an inclusive playground. She said the local Safe Kids coalition helped to raise awareness and funds. They found that inclusive playgrounds also address safety needs.

There were no additional comments or recommendations regarding the Injury Prevention work plan.

MINORITY HEALTH – Anthony described the work plan for the Office of Health Disparities and Health Equity (OHDHE). He said the majority of funding is used to provide Cultural and Linguistic Appropriate Services (CLAS) and Social Determinant of Health (SDOH) training and to support data collection, analysis and dissemination regarding minority health in Nebraska. PHHS funds are braided with other funds to support Native American Health Act (NAPHA) activities. New to the current year's block grant, and continued in this work plan, is a refugee needs assessment with Nebraska's top five refugee groups. The OHDHE is heavily involved in the State Health Improvement Plan, so many of the OHDHE's activities inform and flow from SHIP work.

- *Gwen noted that a major reason for the success in working with refugees and refugee communities for the needs assessment is Anthony and his ability to think creatively about how to appropriately collect information. He has developed relationships with refugee groups, finding out what will be beneficial to them once data is collected. Groups have developed trust with Anthony and are looking forward to receiving results and working with the State to improve health and health outcomes for refugees.*
- *Janelle, who serves on the Minority Health Advisory Board, remarked that Anthony has worked diligently and successfully at earning the trust of the refugee communities.*
- *Judy noted that the work of the OHDHE translates across DHHS. Sue drew attention to the minority health data and reports that are available on the DHHS website.*
- *Lori recommended that the results of the refugee surveys inform decisions, including funding decisions.*

There were no additional comments or recommendations regarding the Minority Health work plan.

ORAL HEALTH – Funding supports dental activities on two ends of the lifespan—children and older adults—and the continuation of data collection and evaluation. For children, funding supports local programs that provide sealants and fluoride varnish for children. For older adults, funding supports registered dental hygienists with a public health authorization to provide education to staff in long-term care and assisted living facilities regarding dental care. A HRSA grant has provided support to begin the development of an oral health surveillance system. This year's block grant would allow continued collection, analysis and interpretation of data. Nebraska will conduct and oral health survey of older adults in 2018-2019 as well.

Major points follow from discussion regarding oral health care in Nebraska:

- *In Nebraska's surveillance, are we capturing data about use of emergency departments (EDs) for oral health care? (Lori) Dave is just beginning evaluation work and he says that part of the evaluation is tracking ED data in areas of the state. Lori noted that CHI Health has reported seeing 5-6 people per day in the ED for oral health needs.*

- *Teresa noted the high need for dental care for children with no one available to treat them. Lori used the word "crisis" to describe the situation. Judy and Lori noted that dentists willing to accept Medicaid is an issue. There is an active representative from Medicaid on the Oral Health Advisory Panel (OHAP). Kristen encouraged Lori to consider attending or being part of the OHAP. Janelle encouraged a paradigm shift to include oral health/dentistry as a part of primary care.*
- *Dave and Lori noted that the school screenings are a start but that follow up care is often not a priority. Insurance (lack of it or high deductibles) can be a barrier.*
- *Dave asked the question: "How can we better coordinate systems of care?" He proposed that the block grant could help move us toward that goal.*

In the interest of full disclosure, Judy told the committee that a portion of the State Dental Director's salary is paid through the block grant. Nebraska's Legislature created the office and provided funding for a director for a couple of years. In subsequent years, that amount has decreased to less than a full-time Director's salary. The State Health Department sees a full-time Director as important so has made the decision to supplement State funding with funds from PHHS. The split is 31% PHHS and 69% State Funds.

Lori moved and Fred seconded a motion: "The committee expresses concern that PHHS funds have replaced State funds for supporting salaries. The committee highly discourages this practice." ***The roll call vote resulted in 9 yes votes, with Judy Martin abstaining. Motion to express concern about PHHS funds replacing State funds to support salaries and highly discouraging the practice carried.*** *Ayes: Ali-Dinar, Anderson, Chentland, Dingman, Larsen, Palm, Reisher, Seibel and Zwonechek.*

The Committee had no additional recommendations or comments regarding the Oral Health work plan.

An article regarding use of ED for oral health care, co-written by Rajvi Wani who is working with the DHHS Office of Oral Health and Dentistry, is attached to the minutes. It details a study of ED visits with dental conditions from 2011 to 2013. The first page summarizes the study and conclusion.

PUBLIC HEARING
Judy opened the public hearing at 11:00 a.m. John Marteney was the only member of the public present, and he said that he was present just to listen. No one provided public comment either in person or in writing. **Judy closed the public hearing at 11:30 a.m.**

Kristen needed to leave early. Before leaving she reported that the Division of Developmental Disabilities has made the move to implement and track National Core Indicators, a voluntary effort by public developmental disabilities agencies to measure and track their own performance. She said she would share information at the June meeting about progress and findings. Kristen and Gwen described a different but current year PHHSBG project that trains and pays self-advocates to participate in surveys of individuals regarding their services and service providers. The surveys are based on the National Core Indicators.

PUBLIC HEALTH INFRASTRUCTURE – Encompasses numerous programs. Programs and discussion follow.

Cancer Control – provides funding for competitive subawards for entities utilizing evidence-based strategies to address specific items in the State Cancer Plan.

Data-related projects

Chronic Renal Data & Surveillance –in the past has provided funding to convert paper records to electronic. Now the program utilizes PHHS funding for technical assistance regarding medications and the program. Judy noted that State Funds pay for medications for people with chronic renal disease.

GIS Services – provides funding for a portion of a person's salary to provide Geographic Information Software services, providing visual data representation.

Data Center – provides continuing funding to the UNMC Joint Data Center to help with data linkage and integration activities and to conduct demonstration projects. Data is made available to the public (in aggregate).

Informatics – The Epidemiology and Informatics Unit continues to try to establish a permanent Informatician position within the Division of Public Health for this position, but this year has written into the work plan a concurrent plan to fill the position utilizing a contract through another State entity (UNL, UNO, UNMC, for instance). The Informatician would optimize current National Electronic Disease Surveillance System (NEDSS) and update the state public health informatics plan and conduct studies on the effectiveness of public health informatics.

State Data Support for Community Health Planning in Nebraska – Supports part of a salary for epidemiology and informatics. The data support aids the state in development the State Health Assessment and implementing the State Health Improvement Plan.

Data Governance – supports efforts to advance the Division of Public Health on the Gartner Business Intelligence and Performance Management Maturity Model from level 2 to level 3. Activities will stabilize the newly developed infrastructure and support the Data Warehouse project.

Discussion regarding the various data projects included recognition that the greatest increase in funding came as a result of including $200,000 for data governance. The Division has noted the need for a strategic and consistent plan regarding the collection and sharing of data, especially with an eye to sharing with local health departments and others.

- *Sue described the current effort to obtain a comprehensive data system that would provide dashboards, data analysis and public access. The effort is currently working through the DHHS Procurement process. Judy noted this effort has been in high demand for several years. Funding has been available piecemeal; the data governance project would help provide a comprehensive strategy and electronic infrastructure to support the public need.*
- *Dave asked about the number of databases currently in use. Sue responded that there are over 90 being utilized by the State. She noted the need for at least one full-time person to devote attention to the data needs and to connect with other Divisions as able/allowable.*
- *Holly asked about sharing data with other Departments. Judy noted that would be a long-term goal; the first priority will be DHHS, then branching out to others (i.e. Department of Education).*
- *Sue and Judy assured attention to protecting information as required and prudent and that work would include Legal.*

There were no additional comments or recommendations regarding the data funding within the Public Health Infrastructure program.

PHI – All Else

Public Health Infrastructure Maintenance and Development – provides salary support for the Office of Community and Rural Health Planning that has oversight of the State Health Improvement Plan, houses the Local Health Department Liaison and works Division-wide to support the implementation of public health priorities.

Accreditation Support for Local Health Departments – provides funding for local health departments to apply for and work toward or maintain accreditation. The State Health Department provides technical assistance and support for LHDs and tribes working on accreditation.

Implement State Health Improvement Plan (SHIP) and Division Strategic Plan – provides funding to support activities related to the SHIP and the Strategic Plan.

Nebraska DHHS Accreditation Efforts – supports the State's efforts to maintain accreditation and to continually work toward being a high-performing organization.

Worksite Wellness Program – provides funding for two worksite wellness councils to provide wellness activities for area employers. Funding also supports the Governor's Awards, recognizing worksites that meet various criteria for wellness activities and achievements.

There were no additional comments or recommendations regarding "all else" within the Public Health Infrastructure program.

Motion to advance work plan as presented
Dave moved, and Janelle seconded the motion to advance the draft as presented and to recommend it to Dr. Williams for his approval. Roll call vote resulted in aye votes from Ali-Dinar, Anderson, Chentland, Dingman, Martin, Palm and Reisher. ***Motion carried to advance to Dr. Williams the work plan as presented.*** Judy Martin will present the work plan to Dr. Williams as presented to the Advisory Committee.

Nomination of board members to replace term-limited board members
Action was delayed until the next meeting in the interest of time. Gwen will double-check term dates prior to that meeting.

Confirm June meeting date and agenda
Judy announced the next meeting date of June 12, 2018, from 10:00 a.m. – 12:00 p.m. at the Nebraska State Office Building, Conference Room Lower Level B. We will hope to have confirmation of the FY18 allocation from the CDC and make a final recommendation regarding the work plan. Program presentation will be Greg Moser about the statutory local health department liaison functions he oversees.

Reimbursement for travel to this meeting
Syd provided forms for those needing reimbursement for travel expenses.

Other business
There was no other business.

Adjournment
Judy adjourned the meeting at 12:00 p.m.

Information for Committee Members
Some resources mentioned curing the meeting are attached. They include a call for applications to the Great Plains Leadership Institute and the 2017 Rural Health Report Card for Nebraska, Iowa, Missouri and Kansas.

NPHAC Members and affiliations
Judy Martin, Deputy Director, Nebraska Dept. of Health & Human Services (NPHAC Chairperson)
Janelle Ali-Dinar, Vice President Rural Health, MyGenetx
Teresa Anderson, Health Director, Central District Health Department
Elizabeth Chentland, Associate Program Director, Alzheimer's Association, Nebraska Chapter
Holly Dingman, Manager Center for the Child and Community, Children's Hospital
Alex Gray, Clinical Director, Inroads to Recovery, Inc.
Kerry Kernen, Division Chief Community Health and Nutrition Services, Douglas County Health Department
Lynne Lange, Executive Director, Nebraska Coalition to End Sexual and Domestic Violence
Kristen Larsen, Director, Nebraska Planning Council on Developmental Disabilities
Dave Palm, Associate Professor Department of Health Services Research and Administration, UNMC College of Public Health
Peggy Reisher, Executive Director, Brain Injury Association of Nebraska
Josie Rodriquez, Administrator, Office of Health Disparities and Health Equity, NDHHS
Lori Seibel, President/CEO, Community Health Endowment
Fred Zwonechek, Administrator, Nebraska Department of Transportation Highway Safety Office

DHHS staff
Gwen Hurst, Program Manager, PHHSBG Coordinator, Division of Public Health, PHHS Block Grant, NDHHS
Sue Medinger, Administrator, Community and Rural Health Planning Unit, NDHHS
Syd Reinarz, Administrative Assistant, Division of Public Health, NDHHS
Kay Wenzl, Administrator, Health Promotion Unit, Division of Public Health, NDHHS

Prepared by Gwen Hurst. Reviewed by Judy Martin.
Approved by PHAC June 12, 2018

Public Health & Human Services Block Grant

Older Adult Falls Prevention

Peg Ogea-Ginsburg
Injury Prevention Program

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Helping People Live Better Lives.

Funded sites:

- Aging Partners – Lincoln
- Four Corners Health Department
- Elkhorn Logan Valley Public Health Department
- Public Health Solutions
- Scotts Bluff County Health Department
- South Heartland District Health Department

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Stepping On

- Developed in Australia; adapted by the University of Wisconsin
- Proven to reduce falls and build confidence in older adults.
- Participants meet for two hours/week for seven weeks.
  - Simple and fun strength and balance exercises
  - The role vision plays in keeping your balance
  - How medications can contribute to falls
  - Ways to stay safe when out and about in your community
  - What to look for in safe footwear
  - How to check your home for safety hazards

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- Master trainers were trained by staff from the Wisconsin Institute for Healthy Aging.
- Provide training and support to local sites.
- Programs use community partners including physical therapists, hospitals.

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Tai Chi Moving for Better Balance

- Developed by Dr. Fuzhong Li, Oregon Research Institute
- Focuses on improving functional ability, such as balance and physical function.
- 8 forms that have been derived from the traditional 24-form Yang style Tai Chi that progress from easy to difficult
- Evidence-based for preventing falls in community dwelling older adults.

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DHHS Support

- Instructor training
- Resources including DVDs and posters
- Site visits/technical assistance
- Evaluation assistance
- Fidelity checklist

Program Requirements

- Identify community partners
- Identify experienced ‘mentors’ to work with new instructors
- Provide classes
- Quarterly reports

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- At various times during the year, there are approximately 30 – 40 Tai Chi classes going on around the state.
- Results have been very positive.
- Quotes from a few participants:
  - *"At the beginning of the class, I had to come in with and walked with a cane. Now I don't need assistance."*
  - *"Allows me to work in my flower garden and stand while I am doing my hair."*
  - *"I have always been afraid of escalators. I have never had enough balance to get on one by myself. After Tai Chi, I was able to step on an escalator! My daughter stood behind me just in case but she didn't have to help me."*
  - *"The instructor and the other participants. We became a "real" community. The instructor really cared about us learning and went over everything that anyone needed. Fantastic as an instructor."*

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STEADI

- Sites are also encouraged to utilize materials from the STEADI program from CDC
  - Stopping Elderly Accidents, Deaths & Injuries
  - A tool kit to help health care providers:
    - Identify patients at low, moderate, and high risk for a fall
    - Identify modifiable risk factors
    - Offer effective interventions

Nebraska Department of Health & Human Services
Preventive Health & Health Services Block Grant
***Budget for Public Comment May 15, 2018**
Grant Period: October 1, 2017 through September 30, 2019

Project Title	FY17 Amount	FY18 Request	FY18 External	DHHS Unit / Program	HP2020	Project Description
ADMINISTRATIVE COSTS	$ 252,744	$ 73,940	$ -	Division of Public Health	NA	Maximum 10% allowed for costs related to administering the block grant
EMERGENCY HEALTH SYSTEMS	$ 82,500	$ 90,000	$ -	Community & Rural Health Planning / Emergency Health Systems	HDS-3 HDS-19.2 IVP-1.1	Provide stroke system of care training, public awareness, subject matter expertise and data collection; STEMI system of care training and expertise; review trauma-related death data and provide training
INFECTIOUS DISEASE	$ 110,962	$ 150,068	$ -	Health Promotion / Infectious Disease Prevention	HIV-13 IID-26 IID-27 STD-1 STD-6	Provide confidential Hepatitis, HIV and STD lab testing at no cost to the client and facilitate follow-up with Disease Intervention Specialists at selected clinics to change risk behaviors and prevent additional transmission of infection.
INJURY PREVENTION	$ 320,207	$ 321,969	$ 163,000	Health Promotion / Injury Prevention	IVP-1 IVP-9 IVP-16 IVP-23 IVP-40	Support Safe Kids activities (child passenger safety instruction) and car seat checks; traumatic brain injury and concussion awareness; medication disposal; older adult falls (through Tai Chi and Stepping On) and rape prevention education
Sex offense set-aside	$ 40,835	$ 40,835	$ 40,835	Health Promotion / Injury Prevention	IVP-40	Required set-aside to address sexual offense; pass-through funds to the Nebraska Coalition to End Sexual and Domestic Violence
MINORITY HEALTH	$ 269,659	$ 284,850	$ -	Community & Rural Health Planning / Office of Health Disparities & Health Equity	ECBP-11	Gather, organize, collect and make available data related to minority health and health disparities; identify health status and needs for refugees in Nebraska; training workforce in CLAS; perform surveillance, surveys and needs assessments
ORAL HEALTH	$ 187,000	$ 228,416	$ 75,000	Health Promotion / Office of Oral Health & Dentistry	OH-4 OH-7 OH-8 OH-16	Provide subawards for Oral Health Access for Young Children; continue and expand Enduring Smiles; support health promotion and dental educational activities

Project Title	FY17 Amount	FY18 Request	FY18 External	DHHS Unit / Program	HP2020	Project Description
PUBLIC HEALTH INFRASTRUCTURE	$ 348,504	$ 601,935	$ 120,000	Community & Rural Health Planning / Office of Community Health & Performance Management	C-1 PHI-7 PHI-17	Support the Division of Public Health and local health departments to build and maintain public health infrastructure, promote and institutionalize performance management and support the provision of the 10 Essential Public Health Services
LHD accreditation support	$ 250,000	$ 210,000	$ 210,000	Community & Rural Health / Office of Community Health & Performance Management	PHI-17	Support for local health department accreditation and community health improvement planning
Chronic renal disease data collection and analysis	$ 10,700	$ 6,000	$ -	Health Promotion / Chronic Renal Disease Program	PHI-7	Data collection and reporting regarding Nebraska low-income and under/uninsured residents diagnosed with End-Stage Renal Disease (ESRD)
Cancer-related evidence-based projects	$ 100,000	$ 60,000	$ 60,000	Health Promotion / Comprehensive Cancer Control	C-1	Provide competitive subawards to entities to implement evidence-based strategies to reduce cancer utilizing the 2017-2021 Nebraska State Cancer Plan as a guide; provide subject matter expertise
Data availability in Nebraska	$ 39,500	$ 42,314	$ -	Health Licensure & Health Data / Epidemiology & Informatics	PHI-7	Continually increase availability of public health statistical indicators
Environmental Health	$40,000	$ 40,111	$ -	Health Licensure & Investigations / Environmental Health	PHI-7	
GIS services	$ 17,500	$ 17,500	$ -	Health Licensure & Health Data / Epidemiology & Informatics	PHI-7	Coordinate GIS activities by providing technical support, mapping and geocoding
Informatics data center	$ 125,275	$ 125,275	$ -	Health Licensure & Health Data / Epidemiology & Informatics	PHI-7	Contract with UNMC College of Public Health to continue to enhance data quality, utilization and integration and improve data utilization to support public health practices
Informatics development	$ 125,505	$ 115,505	$ -	Health Licensure & Health Data / Epidemiology & Informatics	PHI-17	Update health informatics development plan; address the resources for concurrent public health informatics; recommend training and education for public health workforce in informatics
WORKSITE WELLNESS	$ 80,000	$ 90,000	$ -	Community & Rural Health Planning / Office of Community Health & Performance Management	ECBP-8	Build capacity , plan for sustainability and conduct evidence-based health promotion activities for workers, documenting improvement in their health status; support Governor's Awards
TEMPORARILY UNALLOCATED		$ 69,558	$ -			Hold for rapid response projects
TOTALS	**$ 1,136,984**	**$ 2,568,276**	**$ 390,000**			

*** This budget is based on estimated level funding. Adjustments may be needed after notification of allocation from the Centers for Disease Control and Prevention.**

FEATURE ARTICLE

EMERGENCY DEPARTMENT UTILIZATION RELATED TO DENTAL CONDITIONS AND DISTRIBUTION OF DENTISTS, NEBRASKA 2011-2013

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ABSTRACT

Purpose

This study aims to provide estimates of hospital-based emergency department (ED) visits due to dental conditions in Nebraska and to examine patient-related characteristics associated with ED charges. In addition, this study provides dental-related ED visits and distribution of dentists by county.

Methods

For the study, we used the State Emergency Department Database for Nebraska for the years 2011 through 2013 and the Health Resources and Services Administration's Area Health Resource File. All ED visits with dental conditions in Nebraska were selected. The primary outcome variable was hospital-based ED charges. Multivariable linear regression model was used to examine the effects of patient-related factors on ED charges.

Results

During the study period, a total of 9943 dental-related ED visits occurred. Of these, 55.5% patients aged between 25 and 44 years. Thirty-nine percent of all dental ED visits had patients who were self-financed or uninsured. Twenty counties in Nebraska do not have a dentist, and nine counties had more than 50 ED visits per 10,000 population. Patients residing in urban areas paid significantly higher charges than those living in rural towns, small rural towns, or isolated rural areas. The mean and total ED charges attributed to dental conditions for the entire study period were $934 and $9.3 million, respectively.

Conclusion

Patients who are uninsured, aged 25-44 years, covered by private insurance, and residing in urban areas are identified to be at high risk. There is a need to develop health policies and programs to improve access to dental care in rural states.

INTRODUCTION

The use of the emergency department (ED) for dental-related problems has increased over the past decade.[1-3] This rise is more prevalent among adults aged between 18 to 44 years, uninsured, and low-income individuals. According to one study, the number of patient visits to hospital EDs for dental problems

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KEYWORDS
Emergency departments, Dental conditions, Dental emergencies, Dental care

Conflict of Interest: The authors have no actual or potential conflicts of interest.

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nearly doubled over the past decade, increasing from 1.1 million in 2000 to 2.1 million in 2010.[3] Furthermore, the proportion of all ED visits that are dental related is increasing.[3] In a separate study conducted by Allareddy et al.[4] using a nationwide ED sample, total ED charges were estimated to be around $2.7 billion from 2008 to 2010. Much of these ED charges may have been avoided with periodic preventative oral health care.

Previous literature suggests that general systemic health and oral health are closely interlinked to each other and untreated dental conditions exert a substantial adverse impact on individuals' systemic health, quality of life, and work productivity.[5-7] In 2009, it was reported that approximately 164 million hours of work were lost annually due to dental disease and dental visits.[8]

According to a Health Resources and Services Administration report, the United States is acutely short of dental health care professionals.[9] A net increase of approximately 7300 providers is required to address the unmet dental needs of the US population.[9] The uneven distribution of dentists throughout the country has led to regional shortages of dentists. In the state of Nebraska, 44 of 93 counties are considered as shortage areas for general dentistry.[10] A large portion of dentists prefer not to practice in inner cities and rural areas.[11] As a result, people residing in rural areas and inner cities may have difficulty in finding access to dentists and dental care. The underlying primary cause for dental problems and unmet dental care may be lack of access to timely dental care in many areas.[4,12] With timely preventive oral health treatment, many conditions can be easily avoided or minimized.[4] If dental conditions are not treated in a timely manner, they could pose severe problems at a later stage and may necessitate visits to hospital-based EDs and even subsequent hospitalizations.[4]

The purpose of the present study is to provide estimates of hospital-based ED visits for dental conditions in the state of Nebraska. There are 3 objectives for the present study. First, we will provide characteristics of dental-related hospital-based ED visits in Nebraska for the years 2011-2013. Second, we will map the number of dental-related ED visits with the distribution of dentists in Nebraska for each individual county. Finally, we will examine hospital ED charges for dental-related visits and the effect of patient-related factors (age, sex, insurance status, patient location, income level, and comorbid conditions) on these charges. The findings from the present study would have important implications for policymakers and dental care providers. They would aid in developing, tailoring, and implementing preventive oral health programs in areas that are identified as having access to care issues.

METHODS

Data source

The Nebraska State Emergency Department Database (SEDD) for the years 2011-2013 was used for the present study. SEDD is a component of the Healthcare Cost and Utilization Project family of databases sponsored by the Agency for Healthcare Research and Quality.[13] SEDD databases provide information on more than 100 patient- and hospital-related variables including age, sex, insurance status, presence of comorbid conditions, charges, disposition status, patient location, and income level. This database captures an only emergency visit that has not resulted in hospitalization. According to the Healthcare Cost and Utilization Project-Agency for Healthcare Research and Quality data user agreement, individual cell counts less than or equal to 10 were blinded so as to preserve patient confidentiality and were denoted by "DS" (discharge suppressed). For this study, we also used the Health Resources and Services Administration's Area Health Resource File (AHRF), which includes detailed health professions data reported by the American Dental Association, the American Medical Association, and other organizations.[14] AHRF is a county-level database providing detailed demographic, economic, environmental, and health services information for every county in the United States.

Measures

For this study, all hospital-based ED visits in patients with dental conditions in the State of Nebraska in 2011-2013 were selected. Dental conditions were identified on the basis of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes. The ICD-9-CM codes used were dental caries (ICD-9-CM codes 521.00, 521.01, 521.02, 521.03, 521.04, 521.05, 521.06, 521.07, 521.08, and 521.09), pulpal or periapical lesions (ICD-9-CM codes 522.0, 522.1, 522.2, 522.3, 522.4, 522.5, 522.6, 522.7, 522.8, and 522.9), gingival or periodontal conditions (ICD-9-CM codes 523.00, 523.01, 523.10, 523.11, 523.20, 523.21, 523.22, 523.23, 523.24, 523.25, 523.3, 523.30, 523.31, 523.32, 523.33, 523.40, 523.41, 523.42, 523.5, 523.6, 523.8, and 523.9), and mouth cellulitis or abscess (ICD-9-CM code 528.3). Patient demographic characteristics such as age, sex, insurance status, patient location, income level, and co-morbid conditions were examined.

Outcomes

The number of dental-related ED visits, the number of dental-related ED visits per 10,000 population, and hospital ED charges (in dollars) are the main outcome variables of interest. Hospital charges refer to the charges that the hospital levied to patients and not the cost of care provided to patients or the amount of reimbursement for services rendered. Hospital charges were adjusted to 2013 US

Table 1. Number of dental-related ED visits per 10,000 population in Nebraska: SEDD 2011-2013.

Characteristics	2011	2012	2013
Total ED visits related to dental conditions	3243	3205	3495
Population estimates	1,842,383	1,855,973	1,869,300
Dental-related ED visits per 10,000 population	17.6	17.3	18.7

ED, emergency department; SEDD, State Emergency Department Database.

Table 2. Number and percent of ED visits stratified by clinically diagnosed dental condition, SEDD 2011-2013.

Types of dental conditions	Number (%)
Dental caries	4927 (45)
Pulp and periapical lesions	4778 (44)
Gingival	498 (4)
Periodontal	390 (4)
Mouth cellulitis	333 (3)

ED, emergency department; SEDD, State Emergency Department Database.

dollars for inflation using the Bureau of Labor Statistics Consumer Price Index.

Analytical Approach

An individual ED visit was the unit of analysis. Descriptive statistics were used to summarize the data. US census 2013 population estimates were used to compute population-based incidence rates of ED visits related to dental conditions per 10,000 population for each county. Population-based incidence rates of dental-related ED visits were stratified by Nebraska patient county code of residence (Federal Information Processing Standard [FIPS]). The AHRF was used to estimate the distribution of dentists in Nebraska. Total numbers of professionally active nonfederal dentists per 10,000 population for the year 2013 (includes total full-time and total part-time private practice; dental school faculty; hospital staff dentist; graduate student/resident; other health/dental organization staff; and part-time faculty/part-time practice) were stratified by FIPS county codes. The comorbid burden was computed using the Charlson comorbidity severity index.[15] A comorbidity severity index score of 0 indicates absence of comorbid conditions. Multivariable linear regression analysis was used to examine the effects of patient-related factors on ED charges. All the statistical analyses were conducted using SAS 9.3 (SAS Institute, Cary, NC). For mapping purposes, ArcGIS software was used.

RESULTS

Patient characteristics

A total of 9943 dental-related ED visits were reported in the state of Nebraska during 2011-2013. The number of dental-related ED visits per 10,000 population in Nebraska increased from 17.6 in the year 2011 to 18.7 in 2013 (Table 1). Table 2 presents the summary of prevalence of different dental conditions. Dental caries and pulpal lesions were the conditions most frequently identified followed by gingival disease, periodontal conditions, and mouth cellulitis. Dental-related ED visits stratified by patient characteristics are presented in Table 3. Close to half of all dental-related ED visits were made by females. The average age was 34.2 years. Those aged between 25 and 44 years constituted a predominant proportion of all dental-related ED visits (55.5%), and those aged 45 years and 64 years comprised 18.2% of all dental-related ED visits. Two-thirds of ED visits occurred during weekdays. Private insurance was listed as the primary payer for 35.8% of all dental ED visits. Self-pay/uninsured comprised about 39% of all dental ED visits. With regard to disposition of patient following an ED visit, 99.1% were discharged routinely. About 79% of all dental ED visits occurred in the geographical areas where the median household income was below the second quartile. The average charge for each dental-related ED visit was $934. The total ED charges attributed to dental conditions across the entire Nebraska state over the study period (years 2011-2012) was $9.3 million. Dental-related ED visits stratified by patient location are summarized in Table 3. Overall, close to 64% of all dental ED visits occurred in urban areas, followed by large rural town (21.5%), small rural town (7.8%), and isolated rural (6.5%). Based on the Charlson comorbidity severity index, about 94% of hospital-based ED visits related to dental conditions did not involve a comorbid condition.

Geographic information system

The distribution of population-based estimates of dental ED visit and dentist in Nebraska by county are presented in Figures 1 and 2, respectively. Total number of active dentists in Nebraska in the year 2013 was 1205. Of these, 1161 were active nonfederal dentists. Counties that do not have a dentist include Arthur, Banner, Blaine, Brown, Frontier,

Table 3. Dental-related ED visits in Nebraska stratified by patient characteristics, SEDD 2011-2013.[a]

Characteristics	Number (%)
Sex	
Male	4850 (48.8)
Female	5083 (51.2)
Age group (in y)	
Upto 17	611 (6.2)
18-24	1663 (16.7)
25-44	5520 (55.5)
45-64	1809 (18.2)
65 and over	340 (3.4)
Mean age (y)	34.2
Primary payer	
Medicare	831 (8.4)
Medicaid	1519 (15.3)
Private insurance	3557 (35.8)
Other insurance	162 (1.6)
Uninsured	3874 (39.0)
Admission day	
Weekday	6545 (65.8)
Weekend	3398 (34.2)
Disposition status	
Routine	9417 (99.1)
Transfer to short-term hospital	51 (0.5)
Transfer other: includes SNF, ICF, another type of facility	14 (0.2)
Home health care (HHC)	DS
Against medical advice (AMA)	21 (0.2)

(*continued*)

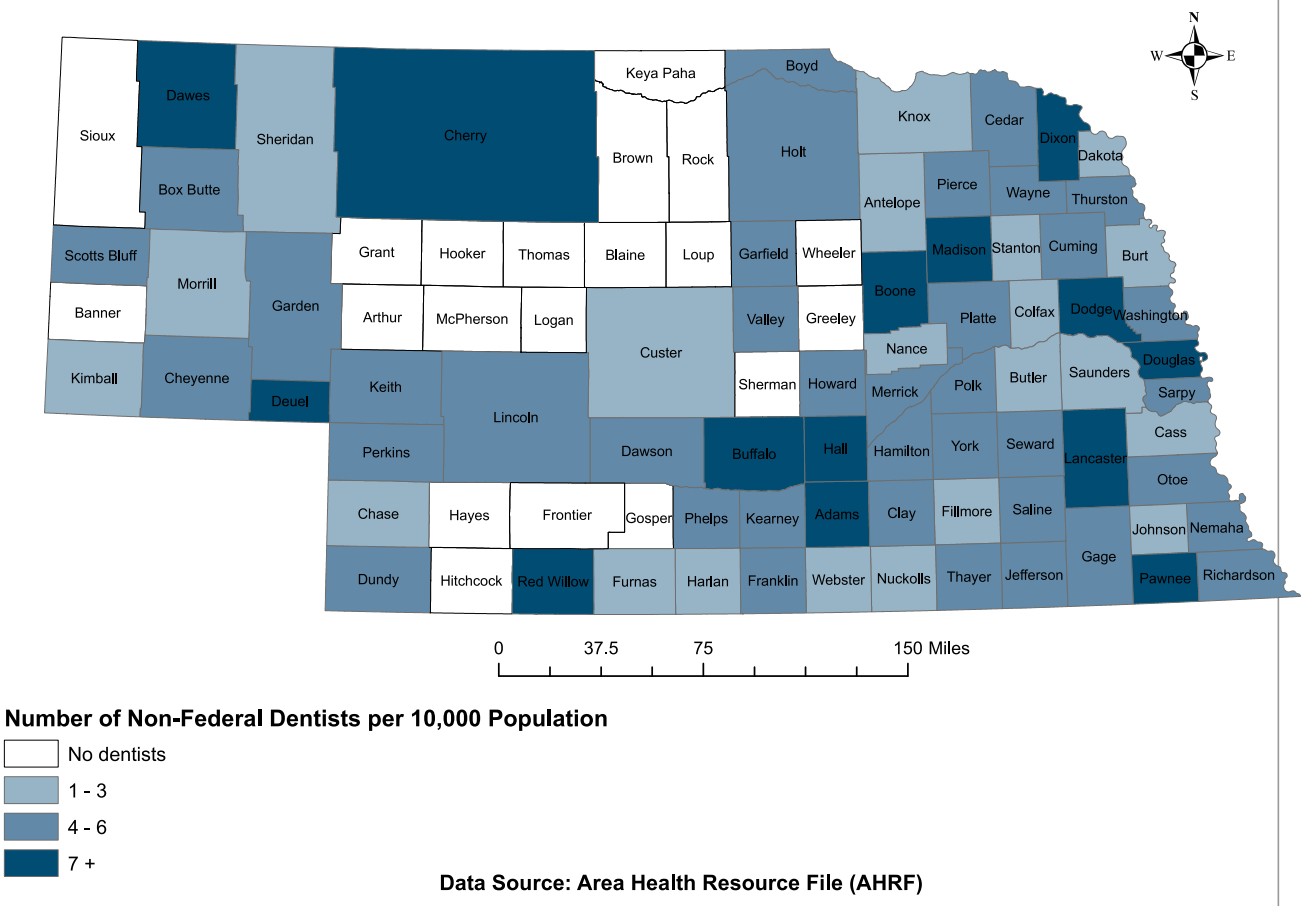
Table 3. Continued

Characteristics	Number (%)
Patient location	
Urban	6310 (64.2)
Large rural town	2109 (21.5)
Small rural town	765 (7.8)
Isolated rural	643 (6.5)
Median household income national quartile for patient ZIP code[b]	
First quartile	3613 (36.7)
Second quartile	4112 (41.8)
Third quartile	1491 (15.2)
Fourth quartile	616 (6.3)
Patient's Charlson comorbidity severity index score	
0	9376 (94.3)
1	504 (5.1)
2	48 (0.5)
≥3	15 (0.1)
Hospital ED charges (inflation adjusted to 2013 US dollar value)	
Mean charges	$ 934.0
Total charges	$ 9,280,075.8

ED, emergency department; SEDD, State Emergency Department Database; SNF, Skilled Nursing Facility; ICF, Intermediate Care Facility..
DS, HCUP-AHRQ data user agreement precludes reporting individual cell counts ≤ 10 to preserve patient confidentiality. These numbers were denoted by "DS" (Discharge Suppressed).

[a] The sum of individual counts may not add up to the total number of visits because of missing information for certain variables.
[b] Median household income quartiles of residents in the patient's ZIP code vary by year. For 2011, the levels were $1-$38,999 (quartile 1), $39,000-$47,999 (quartile 2), $48,000-$63,999 (quartile 3), and $64,000 or higher (quartile 4). For 2012, the levels were $1-$38,999 (quartile 1), $39,000-$47,999 (quartile 2), $48,000-$62,999 (quartile 3), and $63,000 or higher (quartile 4). For 2013, the levels were $1-$37,999 (quartile 1), $38,000-$47,999 (quartile 2), $48,000-$63,999 (quartile 3), and $64,000 or higher (quartile 4).

Figure 1. Distribution of nonfederal dentists in Nebraska by county: 2013.



Gosper, Grant, Greeley, Hayes, Hitchcock, Hooker, Keya Paha, Logan, Loup, McPherson, Rock, Sherman, Sioux, Thomas, and Wheeler (Figure 1). Arthur, Banner, Keya Paha, Perkins, Thomas, and Wheeler counties had no dental ED visits (Figure 2). Adams, Box Butte, Dodge, Douglas, Gage, Lincoln, Red Willow, Scotts Bluff, and York counties had more than 50 ED visits per 10,000 population.

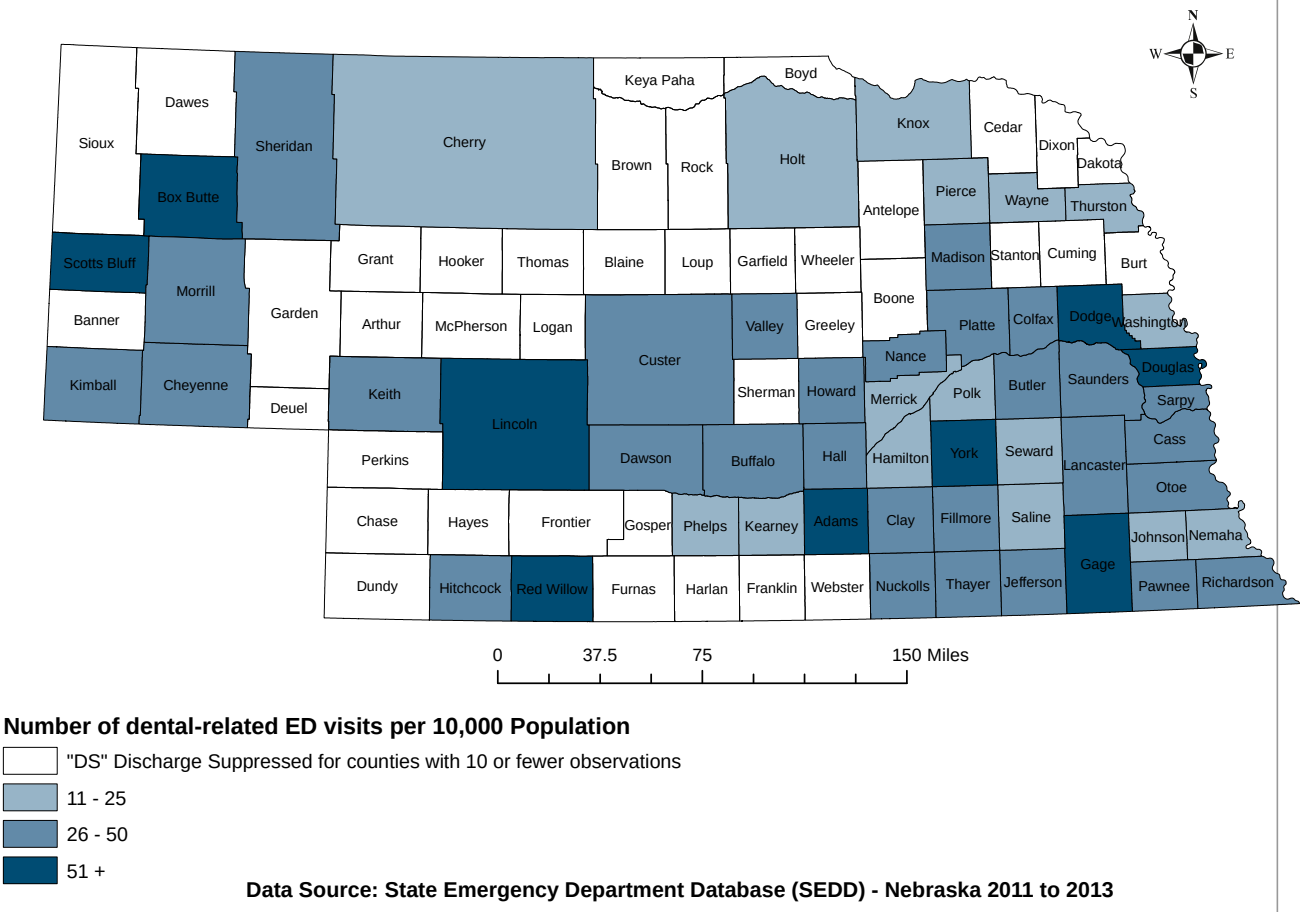
Dental ED visits charges and patient factors

Results from the multivariable linear regression analysis examining the effect of patient-related factors on hospital-based ED charges are summarized in Table 4. Those aged 25-44 years ($203.9, $P < .01$), 45-64 years ($560.1, $P < .0001$), and 65 and older (1316.2, $P < .0001$) were significantly associated with higher charges than those aged up to 17 years. Those covered by Medicare, Medicaid, and uninsured patients had $224.7 ($P < .01$), $226.4 ($P < .0001$), and $170.3 ($P < .001$) lower ED charges, respectively, than those covered by private insurance. Those residing in large rural towns, small rural towns, or isolated rural areas had $229.1 ($P < .0001$), $402.1 ($P < .0001$), and $220.4 ($P < .001$) lower ED charges, respectively, than those residing in urban areas. An increase in Charlson comorbidity severity index score was associated with an increase in ED charges.

DISCUSSION

To our knowledge, the present study is the first study to examine hospital-based ED visits for dental conditions in Nebraska. Although prior studies have examined dental-related ED visits in urban states such as California, there are no data documenting the burden of dental-related ED visits in Nebraska, which is a predominantly rural state.[16,17]

Figure 2. Number of dental-related emergency department (ED) visits in Nebraska by county: 2011-2013.



Such data would pave the way for developing health policies and interventions to improve access to dental care in rural states. The present study results indicate that a total 9267 ED visits were attributed to dental conditions resulting in total ED charges of close to $9.28 million during the study period (from 2011 to 2013). These numbers are high considering the fact that dental conditions are typically treated in dental clinics and ideally patients should not be visiting hospitals on an emergency basis for these conditions. Hospital-based EDs are not the best places to treat dental conditions as EDs may be ill equipped to provide adequate care, and most hospital EDs do not have a dentist on call.[18] This is particularly true in rural states where the number of dentists is fewer. Our study results show that the mean charge for each dental-related ED visit was $934. This average charge is high considering the fact that most patients are typically just given prescription medicines in the EDs instead of any definitive treatment for the condition that led to the ED visit. The same dental condition could have been treated more effectively and efficiently in a dental clinic setting as opposed to in a hospital-based ED. Hospital-based EDs are not equipped with the necessary support systems and personnel to treat dental conditions. Despite this, the charges in hospital EDs are higher because the ED visit charges include fees for emergency physician, pharmacy, laboratory, or radiology and other miscellaneous fees. Our study findings further illustrate the point that dental ED visits should be treated in dental clinics as opposed to in hospital-based EDs. The present study findings showed that those covered by Medicare and Medicaid and the uninsured had significantly lower ED charges than those covered by private insurance plans after adjusting for several other potential confounders. We speculate that the lower ED charges for these (Medicare, Medicaid, and

Table 4. Multivariable linear regression analysis for hospital-based emergency department charges.

Predictor variables	Estimate	95% CI	*P* value
Sex			
Male	Reference		
Female	−4.929	(−77.901 to 68.044)	.895
Age group			
0-17	Reference		
18-24	101.694	(−68.223 to 271.612)	.241
25-44	203.906	(49.581 to 358.232)	<.01
45-64	560.148	(390.719 to 729.577)	<.001
65 and over	1316.175	(1043.276 to 1589.073)	<.001
Primary payer			
Private insurance	Reference		
Medicare	−224.746	(−382.436 to −67.056)	<.01
Medicaid	−226.441	(−336.456 to −116.425)	<.001
Other insurance	−55.017	(−340.815 to 230.781)	.706
Uninsured	−170.302	(−256.381 to −84.223)	<.001
Patient location			
Urban	Reference		
Large rural town	−229.070	(−332.992 to −125.148)	<.001
Small rural town	−402.088	(−542.149 to −262.028)	<.001
Isolated rural	−220.357	(−370.219 to −70.496)	<.01
Median household income national quartile for patient ZIP code[a]			
Fourth quartile	Reference		
First quartile	23.637	(−132.169 to 179.443)	.766
Second quartile	−85.000	(−248.177 to 78.177)	.307
Third quartile	−48.184	(−218.219 to 121.850)	.579
Patient's Charlson comorbidity severity index score			
0	Reference		
1	919.220	(754.854 to 1083.587)	<.001
2	1518.139	(1001.712 to 2034.566)	<.001
≥3	1936.103	(994.192 to 2878.014)	<.001
ED visit year			
2011	Reference		
2012	−24.156	(−112.539 to 64.226)	.592
2013	73.140	(−13.771 to 160.051)	.099

CI, confidence interval.
[a] Median household income quartiles of residents in the patient's ZIP code vary by year. For 2011, the levels were $1-$38,999 (quartile 1), $39,000-$47,999 (quartile 2), $48,000-$63,999 (quartile 3), and $64,000 or higher (quartile 4). For 2012, the levels were $1-$38,999 (quartile 1), $39,000-$47,999 (quartile 2), $48,000-$62,999 (quartile 3), and $63,000 or higher (quartile 4). For 2013, the levels were $1-$37,999 (quartile 1), $38,000-$47,999 (quartile 2), $48,000-$63,999 (quartile 3), and $64,000 or higher (quartile 4).

uninsured) cohorts could be due to lesser services delivered to them in the ED settings compared with the private insurance cohort. For example, those covered by private insurance plans could have had more diagnostic tests or more definitive treatments, whereas the rest could have just been prescribed a pain killer and discharged from the ED. Those residing in rural towns (large, small, or isolated rural towns) had significantly lower charges than those residing in urban areas. It is likely that the rural populace visited hospital-based EDs close to their residence (rural hospitals), and the urban populace visited hospital-based EDs in urban areas. It is likely that the hospital-based EDs in urban areas provided more services and hence levied higher charges to their patients when compared with hospital-based EDs in rural areas. This needs to be explored further in future studies as it may have important policy implications.

Consistent with previous research, our study also documented dental caries and pulp and periapical lesions to be the most frequently reported dental conditions for visiting EDs.[4,12]

Our study showed that higher percentages of dental-related ED visits were made by those who are uninsured, aged 25-44 years, covered by private insurance, and residing in urban areas. This suggests that these groups may be at high risk, and future intervention programs should be earmarked for these cohorts. The present study determined that 39% of hospital-based dental ED visits were constituted by the uninsured. This percentage is not surprising because the likelihood of having dental insurance coverage is substantially lower than the lack of medical insurance in the United States.[11,19] Multiple studies have shown that the lack of private insurance, Medicaid insurance, and age are associated with a high risk of visiting the ED for dental conditions.[4,5,12] Usually, people without any dental insurance are less likely to seek dental care at the dentist office, and thus may visit the ED for dental-related conditions as a consequence. An important finding is that those living in low-income quartile ZIP codes (quartile 1) had higher charges than those living in high-income quartile areas (quartile 4). The reason may be because unmet needs and lack of routine dental care are more prevalent among the low-income groups than among the high-income groups.[20-22]

From Figures 1 and 2, there is clear evidence that dental-related ED visits are more common in counties where the numbers of dentists per population are higher. The reason could be due to a higher number of low-income and uninsured persons in these counties. However, this needs further empirical support. Maps were used to present differences in usage patterns of EDs for dental care across geographic areas in Nebraska. These results highlighted the consequences of unmet dental needs among these largely rural populations. Periodic preventive oral health programs and educational interventions targeting high-risk cohorts (such as those identified in the present study) should be implemented in rural states especially in counties that have been identified as having higher numbers of ED visits. During the 3-year study period, around 64% of dental-related ED visits occurred in urban areas. Our study highlighted more ED visits in urban areas. This could be due to a multitude of factors including lack of understanding and awareness of the importance of oral health in the urban populace despite relatively better access to dental care in urban settings,[23] drug (opioid)-seeking behavior among ED patients, and so forth. It is very crucial that awareness should be created among the general population concerning dental care and related outcomes. More programs that are modeled to propagate good oral health and awareness should be implemented.

The present study has certain limitations, and the findings of our study should be interpreted while keeping these limitations in perspective. A cause-and-effect relationship for outcomes cannot be established in retrospective studies such as the present one. Nebraska state ED database does not have information on dental insurance status, ED admission time, and patients' education. Consequently, the effect of these potential confounders cannot be addressed. The present study estimated dental-related emergency visits only in hospital-based settings. Consequently, the true burden of emergency visits (which occur in private practice dental clinics, community centers, and so forth) was not determined.

CONCLUSION

The results from the present study suggest that those aged 25-44 years and uninsured are the high-risk groups who visit the ED for dental-related problems. In addition, the findings emphasize more dental problems exist in urban areas, although the dentist population is greater in these areas. Future studies should focus on identifying barriers to accessing routine dental care in these high-risk cohorts.

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IOWA

Along with Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota, The Hawkeye State is a member of the West North Central division of the Midwest U.S. Census region. With the exception of the two southernmost states in the division, most members of the West North Central division rank near the top of the nation for rural health. Iowa (9) outperforms North Dakota (10), South Dakota (11), Kansas (24) and Missouri (35), but falls behind Minnesota (5) and Nebraska (8) in the final rankings.

A-

9/47

IOWA ranks ninth in the nation for rural health out of 47 states with rural counties.

Iowa is one of three states receiving a grade of "A-"

IOWA RECEIVED A GRADE OF "A-" BECAUSE:

Iowa ranked in the second quintile of states for its rates of mortality in rural counties.

Iowa ranked in the first quintile of states for measures of daily health and quality of life in rural counties.

Iowa ranked in the first quintile of states for health care access in rural counties.

Iowa scores particularly well on quality-of-life measures in this year's RHQ Rural Health Report Card, and the state ranks in the top 10 states for rural health nationwide.

There are a number of positive signs that Iowa is moving in the right direction. The Centers for Disease Control and Prevention (CDC) released a report indicating that after decades of decline, progress in preventing stroke deaths has slowed across the nation. Only 13 states saw stroke death rates continue to decrease steadily from 2000 to 2015, and Iowa is one of those states.

The Iowa Rural Health Association (IRHA) is continuing to push for improvements, however. The IRHA is currently advocating for the successful implementation of Medicaid Modernization.

RURAL HEALTH CARE FACILITIES

The Rural Health Information Hub, an organization funded by the Federal Office of Rural Health Policy, reports that there are 82 Critical Access Hospitals in the state, as well as 170 Rural Health Clinics and 14 Federally Qualified Health Centers providing services at 60 sites.

URBAN-RURAL DIVIDE

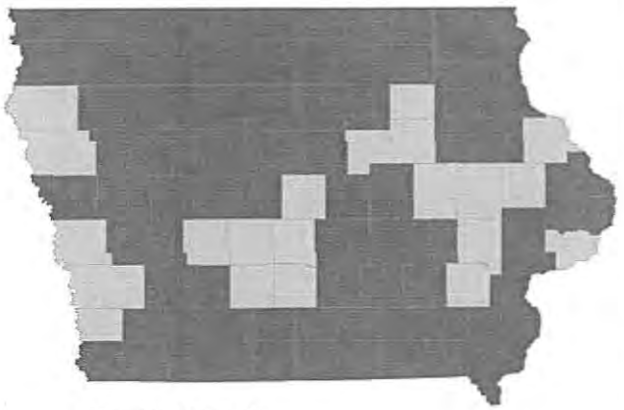
Most U.S. states report a marked difference in health outcomes between rural and urban counties. Iowa shows a 5.6 percent increase in rural mortality as compared to urban counties. The state ranks 16th for rural/urban difference in mortality.

RURAL RESOURCES

Rural health resource organizations in Iowa include:

- Iowa State Office of Rural Health
  idph.iowa.gov/ohds/rural-health-primary-care/rural-health
- Iowa Rural Health Association
  www.iaruralhealth.org
- Great Plains Telehealth Resource Center
  www.gptrac.org
- Iowa Association of Rural Health Clinics
  iarhc.org

For more information about the data sources used and methodology employed in RHQ's 2017 Rural Health Report Card, visit www.RuralHealthQuarterly.com.



RURAL COUNTIES
URBAN COUNTIES

IOWA BY THE NUMBERS

Iowa has an estimated population of 3,134,693 people, and 40.7 percent live in one of Iowa's 78 rural counties.

The poverty rate in rural Iowa is 23 percent, compared with 17.1 percent in urban areas of the state.

9.6 percent of the rural population has not completed high school, while 7.7 percent of the urban population lacks a high school diploma.

9.7 percent of rural Iowa residents are U.S. military veterans, and 8.6 percent of the rural population under age 65 lives with a disability.

91.1 percent of the state's rural population is Non-Hispanic White, 1.3 percent is Black/African-American, 5.1 percent is Hispanic/Latino, 0.3 percent is American Indian/Alaska Native and 0.9 percent is Asian.

MORTALITY

Heart Disease: *C*

Heart disease is the leading cause of death in Iowa, and the state is ranked 24th in the U.S. for the number of deaths by heart disease among rural residents. The age-adjusted rate for heart disease in rural counties is 178.1 per 100,000. The national average is 168.5 per 100,000.

Cancer: *C*

Cancer is the second leading cause of death in Iowa, and the state is ranked 24th in the U.S. for deaths by cancer among rural residents. The age-adjusted rate for cancer in rural counties is 169.2 per 100,000. The national average is 158.5 per 100,000.

CLRD: *B-*

Chronic lower respiratory disease (CLRD) is the third leading cause of death in Iowa, and the state is ranked 18 in the U.S. for deaths by CLRD among rural residents. The age-adjusted rate for CLRD in rural counties is 48.5 per 100,000. The national average is 41.6 per 100,000.

QUALITY OF LIFE

Fair/Poor Health: *A*

The percentage of Iowans reporting poor general health is among the lowest in the nation. The state ranked 4th for rural counties (12.2 percent) and 7/51 for urban counties (12 percent).

Mental Health: *A*

Rural residents of Iowa reported an average of 3.2 mentally unhealthy days in the past 30 days. The national average is 3.7 days. The state ranked 6th for self-reported mental health in rural counties.

Physical Health: *A*

The number of physically unhealthy days reported in rural Iowa is 3.1 in 30 days, and urban residents also report 3.1 days. The national average is 3.9. Rural Iowa ranks 4th.

Low Birth Weight: *A-*

The percentage of live births with low birth weight (< 5 pounds, 8 ounces) in rural Iowa is 6.4 percent. The national average is 8 percent. Iowa ranks 9th in the category.

ACCESS TO CARE

Primary Care: *B*

Iowa ranks 17th in the U.S. for the number of primary care physicians practicing in rural counties (60.4 per 100,000). The national average for rural counties is 54.5 per 100,000.

Mental Care: *C+*

Iowa ranks 21st in the U.S. for the number of psychiatrists practicing in rural counties. Iowa has 3 per 100,000 residents. The U.S. rural average is 3.4.

Dental Care: *C*

Iowa ranks 24th in the nation for rural access to dental care with 48.9 dentists per 100,000 rural residents. The national rural average is 42.8.

Uninsured Rate: *A*

9.5 percent of Iowa's rural population under age 65 is uninsured. The average uninsured rate for urban residents of Iowa is 7.9 percent. Iowa is one of 31 states that adopted Medicaid expansion as offered under the Affordable Care Act. ■

KANSAS

Along with Iowa, Minnesota, Missouri, Nebraska, North Dakota and South Dakota, Kansas is a member of the West North Central division of the Midwest U.S. Census region. Most members of the West North Central division rank near the top of the nation for rural health, but Kansas and Missouri underperform. Kansas (24) ranks higher than Missouri (35), but the Sunflower State falls far behind Nebraska (8), Iowa (9), North Dakota (10) and South Dakota (11) in the final rankings.

24/47

KANSAS ranks 24th in the nation for rural health out of 47 states with rural counties.

Kansas is one of three states receiving a grade of "C"

KANSAS RECEIVED A GRADE OF "C" BECAUSE:

Kansas ranked in the third quintile of states for its rates of mortality in rural counties.

Kansas ranked in the second quintile of states for measures of daily health and quality of life in rural counties.

Kansas ranked in the third quintile of states for health care access in rural counties.

Kansas currently has an average rural health grade when compared to all other states, but it underperforms it's neighbors to the north and faces some daunting challenges in the near future.

Kansas has been experiencing a continued shift of its younger population away from rural counties. As a result, 40 counties have over 29 percent of residents age 65 and older, and 26 counties have aged more than 4 years on average since the 2000 census. 76 Kansas counties have lost population since 2000, and all but one is rural.

In addition, 69 percent of rural hospitals in the state are operating at negative Medicare margins, and rural Kansas has seen Medicare cuts of $196M over 10 years, according to the Kansas Hospital Association.

RURAL HEALTH CARE FACILITIES

The Rural Health Information Hub, an organization funded by the Federal Office of Rural Health Policy, reports that there are 84 Critical Access Hospitals in the state, as well as 170 Rural Health Clinics in Kansas and 19 Federally Qualified Health Centers providing services at 56 sites.

URBAN-RURAL DIVIDE

Most U.S. states report a marked difference in health outcomes between rural and urban counties. Kansas shows an 8.4 increase in rural mortality as compared to urban counties. The state ranks 23rd for rural/urban difference in mortality.

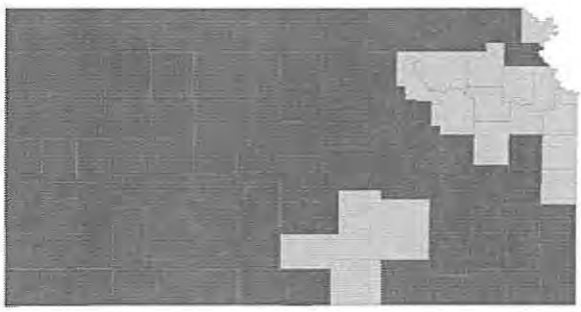
RURAL RESOURCES

Rural resource organizations in Kansas include:

- Kansas Office of Primary Care & Rural Health
  www.kdheks.gov/olrh/rural.html
- Kansas Rural Health Association
  www.ksrha.org
- Heartland Telehealth Resource Center
  heartlandtrc.org
- Kansas Rural Health Education and Services
  http://www.kumc.edu/community-engagement/rural-health.html
- Kansas Rural Health Works
  krhw.net

For more information about the data sources used and methodology employed in RHQ's 2017 Rural Health Report Card, visit www.RuralHealthQuarterly.com.

KANSAS BY THE NUMBERS



RURAL COUNTIES
URBAN COUNTIES

Kansas has an estimated population of 2,907,289 people, and 32.1 percent live in one of Kansas's 86 rural counties.

The poverty rate in rural Kansas is 23 percent, compared with 17.1 percent in urban areas of the state.

12.3 percent of the rural population has not completed high school, while 8.5 percent of the urban population lacks a high school diploma.

9.4 percent of rural Kansas residents are U.S. military veterans, and 9.7 percent of the rural population under age 65 lives with a disability.

80.9 percent of the state's rural population is Non-Hispanic White, 2.4 percent is Black/African-American, 12.4 percent is Hispanic/ Latino, 1.1 percent is Asian and 0.8 percent is American Indian/ Alaska Native.

MORTALITY

Heart Disease: *C+*

Heart disease is the leading cause of death in Kansas, and the state is ranked 23rd in the U.S. for the number of deaths by heart disease among rural residents. The age-adjusted rate for heart disease in rural counties is 173 per 100,000. The national average is 168.5 per 100,000.

Cancer: *C*

Cancer is the second leading cause of death in Kansas, and the state is ranked 25th in the U.S. for deaths by cancer among rural residents. The age-adjusted rate for cancer in rural counties is 171.2 per 100,000. The national average is 158.5 per 100,000.

CLRD: *D+*

Chronic lower respiratory disease (CLRD) is the third leading cause of death in Kansas, and the state is ranked 30 in the U.S. for deaths by CLRD among rural residents. The age-adjusted rate for CLRD in rural counties is 54.2 per 100,000. The national average is 41.6 per 100,000.

QUALITY OF LIFE

Fair/Poor Health: *C*

The percentage of Kansans reporting poor general health is close to the national average. The state ranked 28th for rural counties (16.2 percent) and 17/51 for urban counties (13.1 percent).

Mental Health: *A*

Rural residents of Kansas reported an average of 3.2 mentally unhealthy days in the past 30 days. The national average is 3.7 days. The state ranked 7th for self-reported mental health in rural counties.

Physical Health: *B+*

The number of physically unhealthy days reported in rural Kansas is 3.4 in 30 days, while urban residents report 2.9 days. The national average is 3.9. Rural Kansas ranks 11th.

Low Birth Weight: *B*

The percentage of live births with low birth weight (< 5 pounds, 8 ounces) in rural Kansas is 7 percent. The national average is 8 percent. Kansas ranks 17th in the category.

ACCESS TO CARE

Primary Care: *C+*

Kansas ranks 23rd in the U.S. for the number of primary care physicians practicing in rural counties (57.4 per 100,000). The national average for rural counties is 54.5 per 100,000.

Mental Care: *F*

Kansas ranks 41st in the U.S. for the number of psychiatrists practicing in rural counties. Kansas has 1.8 per 100,000 residents. The U.S. rural average is 3.4.

Dental Care: *C*

Kansas ranks 25th in the nation for rural access to dental care with 4806 dentists per 100,000 rural residents. The national rural average is 42.8.

Uninsured Rate: *B-*

14.1 percent of Kansas's rural population under age 65 is uninsured. The average uninsured rate for urban residents of Kansas is 12.3 percent. Kansas is one of 19 states that did not adopt Medicaid expansion as offered under the Affordable Care Act. ■

MISSOURI

Along with Iowa, Kansas, Minnesota, Nebraska, North Dakota and South Dakota, Missouri is a member of the West North Central division of the Midwest U.S. Census region. Most members of the West North Central division rank near the top of the nation for rural health, but the Show-Me State underperforms and ranks last in the division. Missouri (35) falls behind Nebraska (8), Iowa (9), North Dakota (10), South Dakota (11) and Kansas (24) in the final rankings.

35/47

MISSOURI ranks 35th in the nation for rural health out of 47 states with rural counties.

Missouri is one of three states receiving a grade of "D"

MISSOURI RECEIVED A FAILING GRADE BECAUSE:

Missouri ranked in the fourth quintile of states for its rates of mortality in rural counties.

Missouri ranked in the fourth quintile of states for measures of daily health and quality of life in rural counties.

Missouri ranked in the fourth quintile of states for health care access in rural counties.

Missouri is the low performer among Midwestern states, and the state's rural health outcome and access scores more closely resemble those of its southern neighbors than those of states to the north.

The most recent Biennial Report published by the Missouri Department of Health and Senior Services Office of Primary Care and Rural Health reveals that rural Missourians are overall less healthy than their urban counterparts and more likely to die at an earlier age.

For all of the 10 leading causes of death, rural rates are higher than urban rates. The 2004-2012 average life expectancy for rural areas was 76.8 years compared to 77.8 years for urban areas. Emergency room visit rates were also 7.7 percent higher for rural residents than urban residents.

RURAL HEALTH CARE FACILITIES

The Rural Health Information Hub, an organization funded by the Federal Office of Rural Health Policy, reports that there are 36 Critical Access Hospitals in the state, as well as 367 Rural Health Clinics and 29 Federally Qualified Health Centers providing services at 215 sites.

URBAN-RURAL DIVIDE

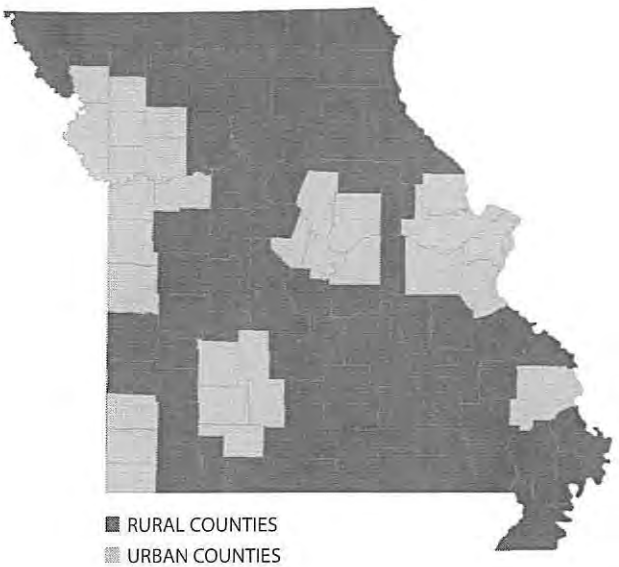
Most U.S. states report a marked difference in health outcomes between rural and urban counties. Missouri shows a 13.6 percent increase in rural mortality as compared to urban counties. The state ranks 32nd for rural/urban difference in mortality.

RURAL RESOURCES

Rural health resource organizations in Missouri include:

- Office of Primary Care and Rural Health health.mo.gov/living/families/rural-health
- Missouri Rural Health Association www.morha.org
- Heartland Telehealth Resource Center heartlandtrc.org
- Missouri Association of Rural Health Clinics www.marhc.org

For more information about the data sources used and methodology employed in RHQ's 2017 Rural Health Report Card, visit www.RuralHealthQuarterly.com.



MISSOURI BY THE NUMBERS

Missouri has an estimated population of 6,093,000 people, and 25.4 percent live in one of Missouri's 81 rural counties.

The poverty rate in rural Missouri is 23 percent, compared with 17.1 percent in urban areas of the state.

16.4 percent of the rural population has not completed high school, while 9.9 percent of the urban population lacks a high school diploma.

11.7 percent of rural Missouri residents are U.S. military veterans, and 13.9 percent of the rural population under age 65 lives with a disability.

90.7 percent of the state's rural population is Non-Hispanic White, 3.3 percent is Black/African-American, 2.9 percent is Hispanic/Latino, 0.5 percent is American Indian/Alaska Native and 0.6 percent is Asian.

MORTALITY

Heart Disease: *F*

Heart disease is the leading cause of death in Missouri, and the state is ranked 41st in the U.S. for the number of deaths by heart disease among rural residents. The age-adjusted rate for heart disease in rural counties is 235.3 per 100,000. The national average is 168.5 per 100,000.

Cancer: *D-*

Cancer is the second leading cause of death in Missouri, and the state is ranked 37th in the U.S. for deaths by cancer among rural residents. The age-adjusted rate for cancer in rural counties is 183.7 per 100,000. The national average is 158.5 per 100,000.

CLRD: *F*

Chronic lower respiratory disease (CLRD) is the third leading cause of death in Missouri, and the state is ranked 41st in the U.S. for deaths by CLRD among rural residents. The age-adjusted rate for CLRD in rural counties is 64.4 per 100,000. The national average is 41.6 per 100,000.

QUALITY OF LIFE

Fair/Poor Health: *D*

The percentage of Missourians reporting poor general health is among the highest in the nation. The state ranked 33rd for rural counties (19.2 percent) and 34/51 for urban counties (16.1 percent).

Mental Health: *F*

Rural residents of Missouri reported an average of 4.4 mentally unhealthy days in the past 30 days. The national average is 3.7 days. The state ranked 40th for self-reported mental health in rural counties.

Physical Health: *F*

The number of physically unhealthy days reported in rural Missouri is 4.6 in 30 days, while urban residents report 4 days. The national average is 3.9. Rural Missouri ranks 39th.

Low Birth Weight: *C-*

The percentage of live births with low birth weight (< 5 pounds, 8 ounces) in rural Missouri is 7.9 percent. The national average is 8 percent. Missouri ranks 29th in the category.

ACCESS TO CARE

Primary Care: *D+*

Missouri ranks 30th in the U.S. for the number of primary care physicians practicing in rural counties (51 per 100,000). The national average for rural counties is 54.5 per 100,000.

Mental Care: *D*

Missouri ranks 34th in the U.S. for the number of psychiatrists practicing in rural counties. Missouri has 2.4 per 100,000 residents. The U.S. rural average is 3.4.

Dental Care: *F*

Missouri ranks 39th in the nation for rural access to dental care with 34.8 dentists per 100,000 rural residents. The national rural average is 42.8.

Uninsured Rate: *D+*

17.7 percent of Missouri's rural population under age 65 is uninsured. The average uninsured rate for urban residents of Missouri is 13.2 percent. Missouri is one of 19 states that did not adopt Medicaid expansion as offered under the Affordable Care Act. ■

RHQ
Rural Health Quarterly

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SPECIAL DOUBLE ISSUE

2017 RURAL HEALTH REPORT CARD

A Publication of the F. Marie Hall Institute *for* Rural and Community Health

NEBRASKA

Along with Iowa, Kansas, Minnesota, Missouri, North Dakota and South Dakota, Nebraska is a member of the West North Central division of the Midwest U.S. Census region. Most members of the West North Central division rank near the top of the nation for rural health, but Kansas (24) and Missouri (35) underperform. Nebraska (8) also outperforms North Dakota (10) and South Dakota (11), but the Cornhusker State falls behind Minnesota (5) and Iowa (9) in the final rankings.

8/47

NEBRASKA ranks eighth in the nation for rural health out of 47 states with rural counties.

Nebraska is one of three states receiving a grade of "A-"

NEBRASKA RECEIVED A GRADE OF "A-" BECAUSE:

Nebraska ranked in the second quintile of states for its rates of mortality in rural counties.

Nebraska ranked in the first quintile of states for measures of daily health and quality of life in rural counties.

Nebraska ranked in the second quintile of states for health care access in rural counties.

Nebraska places among the top 10 performers in the nation in this year's RHQ Rural Health Report Card. One possible contributing factor to the state's success is its foresight in planning for rural health workforce shortages.

Nebraska passed the Rural Health Systems and Professional Incentive Act in 1991, creating the Rural Health Advisory Commission, the Nebraska Rural Health Student Loan Program, and the Nebraska Loan Repayment Program. As a result of these rural incentive programs, there were 113 licensed health professionals in practice under obligation as of September 2016.

There is still a chronic shortage of behavioral health professionals in rural Nebraska, however. The shortages of personnel include psychiatrists, psychologists, licensed mental health practitioners, psychiatric mental health nurse practitioner, alcohol and drug abuse counselors and others. Currently, the RHAC has fully designated 80 counties, and eight additional counties have been partially designated as mental health shortage areas.

RURAL HEALTH CARE FACILITIES

The Rural Health Information Hub, an organization funded by the Federal Office of Rural Health Policy, reports that there are 64 Critical Access Hospitals in the state, as well as 141 Rural Health Clinics and 7 Federally Qualified Health Centers providing services at 42 sites.

URBAN-RURAL DIVIDE

Most U.S. states report a marked difference in health outcomes between rural and urban counties. Nebraska shows an unusual decrease (0.9 percent) in rural mortality as compared to urban counties. The state ranks 2nd for rural/urban difference in mortality.

RURAL RESOURCES

Rural health resource organizations in Nebraska include:

- Nebraska Office of Rural Health
  dhhs.ne.gov/publichealth/RuralHealth/Pages/RuralHome.aspx
- Nebraska Rural Health Association
  nebraskaruralhealth.org
- Great Plains Telehealth Resource Center
  www.gptrac.org
- Health Center Association of Nebraska
  hcanebraska.org

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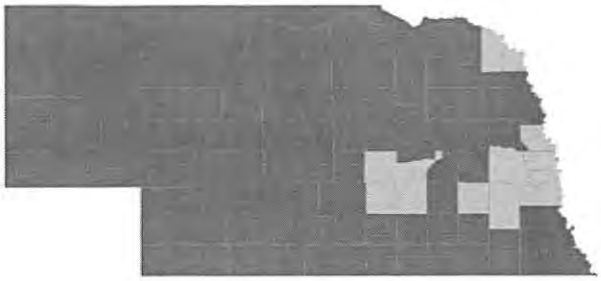
NEBRASKA BY THE NUMBERS



Nebraska has an estimated population of 1,907,116 people, and 35 percent live in one of Nebraska's 80 rural counties.

The poverty rate in rural Nebraska is 23 percent, compared with 17.1 percent in urban areas of the state.

10.1 percent of the rural population has not completed high school, while 8.9 percent of the urban population lacks a high school diploma.

9.6 percent of rural Nebraska residents are U.S. military veterans, and 7.9 percent of the rural population under age 65 lives with a disability.

86.6 percent of the state's rural population is Non-Hispanic White, 0.8 percent is Black/African-American, 9.4 percent is Hispanic/Latino, 1.2 percent is American Indian/Alaska Native and 0.6 percent is Asian.

MORTALITY

Heart Disease: *B-*

Heart disease is the leading cause of death in Nebraska, and the state is ranked 19th in the U.S. for the number of deaths by heart disease among rural residents. The age-adjusted rate for heart disease in rural counties is 162.5 per 100,000. The national average is 168.5 per 100,000

Cancer: *A-*

Cancer is the second leading cause of death in Nebraska, and the state is ranked 8th in the U.S. for deaths by cancer among rural residents. The age-adjusted rate for cancer in rural counties is 152.9 per 100,000. The national average is 158.5 per 100,000.

CLRD: *C*

Chronic lower respiratory disease (CLRD) is the third leading cause of death in Nebraska, and the state is ranked 25th in the U.S. for deaths by CLRD among rural residents. The age-adjusted rate for CLRD in rural counties is 51.1 per 100,000. The national average is 41.6 per 100,000.

QUALITY OF LIFE

Fair/Poor Health: *A-*

The percentage of Nebraskans reporting poor general health is among the lowest in the nation. The state ranked 10th for rural counties (13.1 percent) and 8/51 for urban counties (12.1 percent).

Mental Health: *A+*

Rural residents of Nebraska reported an average of 2.9 mentally unhealthy days in the past 30 days. The national average is 3.7 days. The state ranked 2nd for self-reported mental health in rural counties.

Physical Health: *A+*

The number of physically unhealthy days reported in rural Nebraska is 3 in 30 days, while urban residents report 2.8 days. The national average is 3.9. Rural Nebraska ranks 2nd nationally.

Low Birth Weight: *A-*

The percentage of live births with low birth weight (< 5 pounds, 8 ounces) in rural Nebraska is 6.4 percent. The national average is 8 percent. Nebraska ranks 8th in the category.

ACCESS TO CARE

Primary Care: *B*

Nebraska ranks 15th in the U.S. for the number of primary care physicians practicing in rural counties (62.8 per 100,000). The national average for rural counties is 54.5 per 100,000.

Mental Care: *D+*

Nebraska ranks 32nd in the U.S. for the number of psychiatrists practicing in rural counties. Nebraska has 2.4 per 100,000 residents. The U.S. rural average is 3.4.

Dental Care: *A-*

Nebraska ranks 9th in the nation for rural access to dental care with 58.6 dentists per 100,000 rural residents. The national rural average is 42.8.

Uninsured Rate: *B+*

12.7 percent of Nebraska's rural population under age 65 is uninsured. The average uninsured rate for urban residents of Nebraska is 11.4 percent. Nebraska is one of 19 states that did not adopt Medicaid expansion as offered under the Affordable Care Act. ■