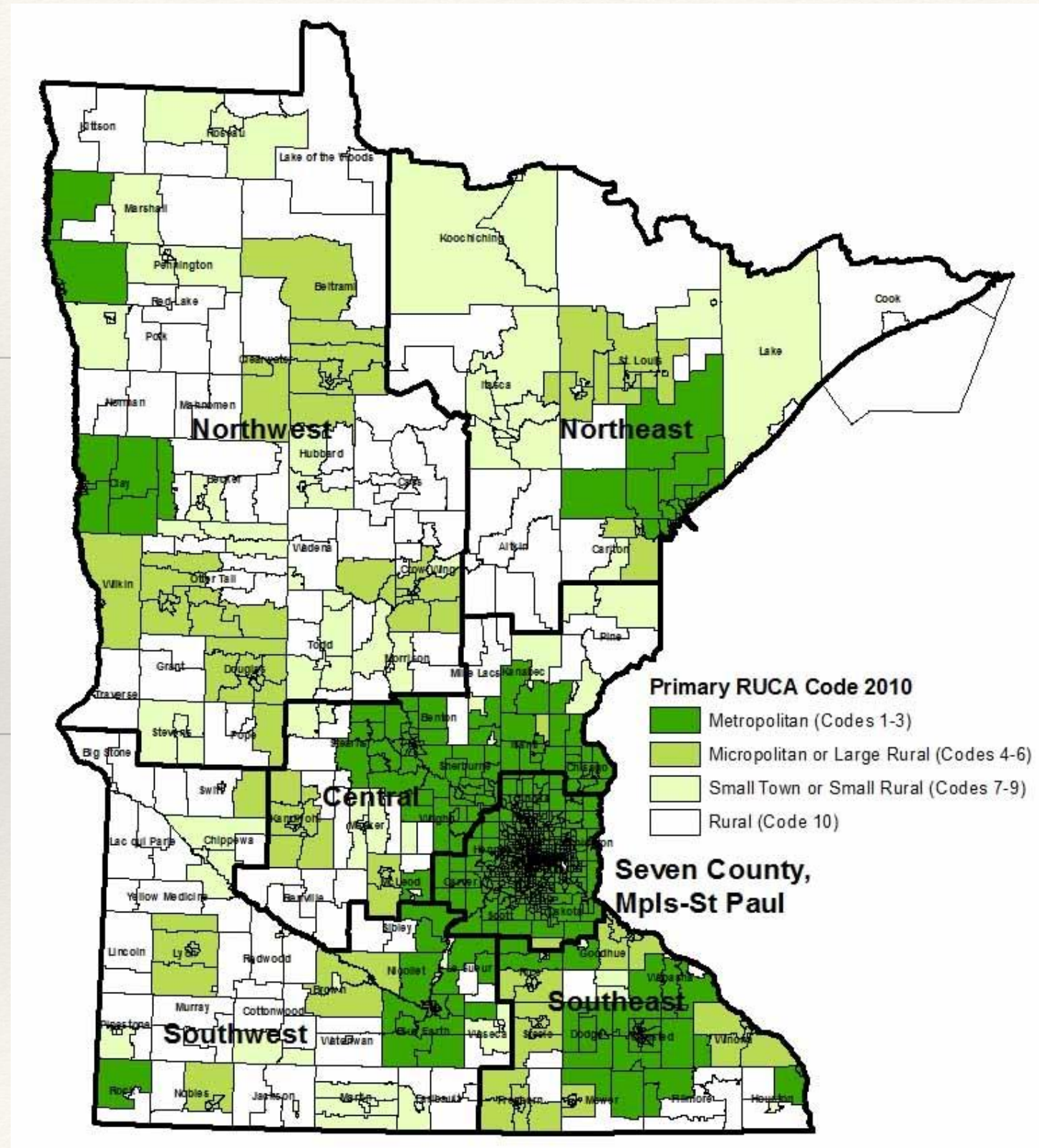

Rural Health Equity/Disparity

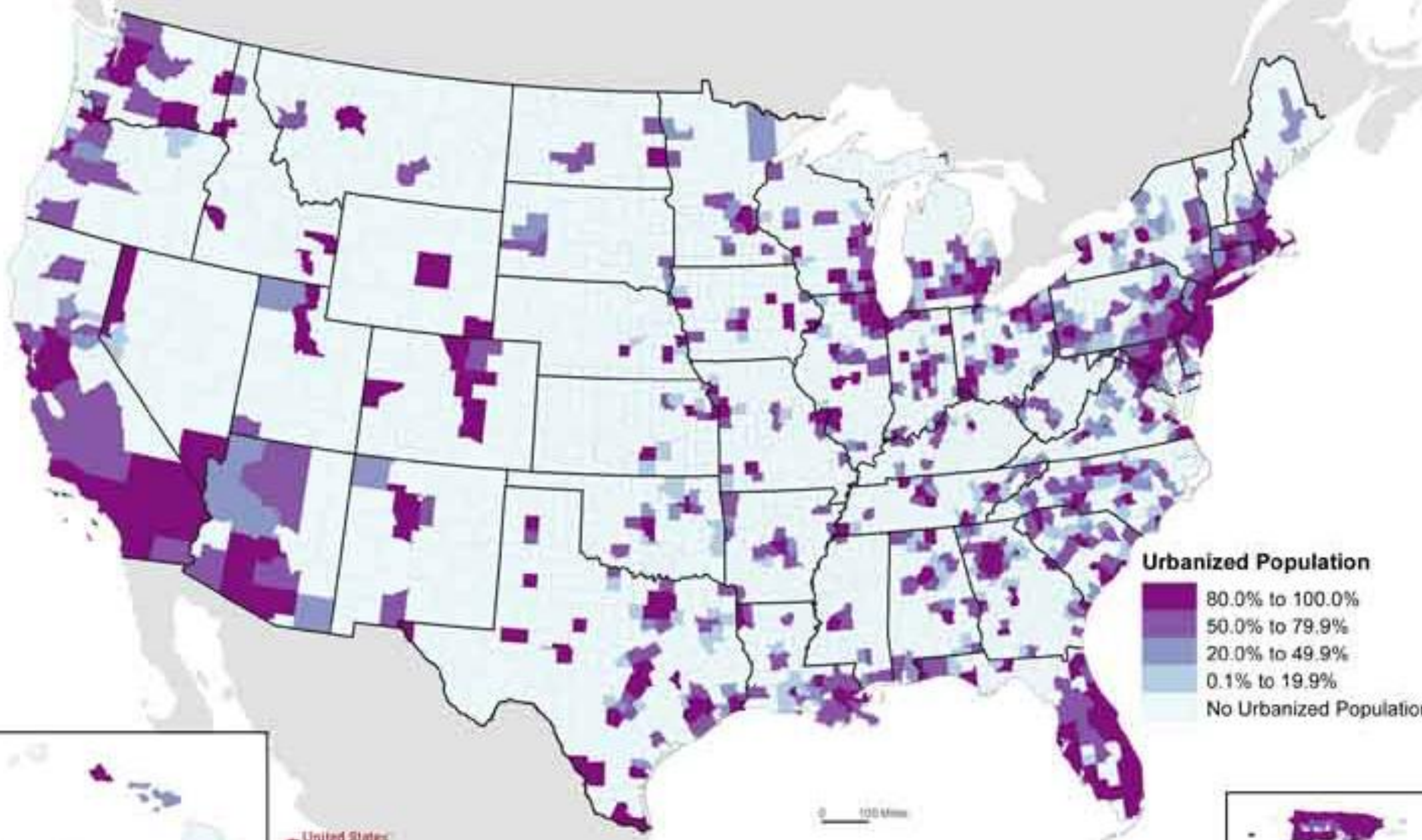
Somewhat random
information and thoughts
Laura E Rathe, MD, CDE
November 2018

- ❖ Disclosures: none
- ❖ Thank you to May Nawal Lutfiyya, PhD, FACE and Kevin Dens, DDS

Rural-urban commuting areas (RUCAs)



Percent Population Residing in Urbanized Areas by County: 2010



United States
Census
Bureau

100 Miles



Source: U.S. Census Bureau, 2010 Census Urban Area Delineation Program

Place Matters

- ❖ **20% of adults over the age of 65 are edentulous.** If you are edentulous you are **62.7% more likely to live in a rural area.** You are 21% more likely to **suffer from depression** If you are only partially edentulous you are 22.5% more likely to be a rural resident and 31.5% more likely to be depressed.
- ❖ Rural **adolescents** are more likely to be **daily smokers** and were more likely to have smoked a whole cigarette at school **under the age of 12.**
- ❖ Rural adults with **asthma** are at greater risk of **not having health insurance or deferring medical care due to cost**
- ❖ Rural adults with **type 2 diabetes** are **less likely to receive adequate care**
- ❖ Rural adults have a **higher incidence of Type 2 DM**

- ❖ Children who are **obese** are more likely to live in a rural area
- ❖ **Incidence of cancer**, including cervical and lung cancer is **higher in rural areas as are deaths from these.**
- ❖ Rural residence seems to be an **independent factor** when other socioeconomic and lifestyle risk factors are separated out.

Cost of New EPA Coal Up to 1,400 ~~More~~ Deaths a Year



A power plant in Cheshire, Ohio. The mortality numbers for the Trump administration plan are calculated using a modeling system reviewed by the National Academy of Sciences.

Maddie McGarvey for The New York Times

By [Lisa Friedman](#)

• Aug. 21, 2018

*Want climate news in your inbox? [Sign up](#) for our **Climate Fwd: newsletter.***

WASHINGTON — The Trump administration has hailed its overhaul of federal pollution restrictions on coal-burning power plants as creating new jobs, eliminating burdensome government regulations and ending what President Trump has long described as a “war on coal.” The administration’s own analysis, however, revealed on Tuesday that the new rules could also lead to as many as 1,400 premature deaths annually by 2030 from an increase in the extremely fine particulate matter that is linked to heart and lung disease, up to 15,000 new cases of upper respiratory problems, a rise in bronchitis, and tens of thousands of missed school days.

Top 5 Rural Health Problems Related to Work in American Agriculture

Susanna Von Essen MD MPH University of
Nebraska Medical svonesse@unmc.edu

- ❖ There are > 2.2 million US farms and 85% do not fall under OSHA regulations
- ❖ 2 million children work on US farms, 23,000 will be injured this year
- ❖ Number of children killed on US farms greatly reduced over 20 years
- ❖ 1/2 US farmers hold off-the-farm jobs to make ends meet, provide health insurance
- ❖ Farmers have one of the highest suicide rates , 10% have a work-related amputation

The day I spoke to Michael

Patient E

- ❖ E is a 71 year old woman seen in my clinic for bp recheck. My astute nurse did a depression screen.
- ❖ She recently stopped volunteering and going to church and cannot motivate herself to leave her house.
- ❖ After much discussion, I discover that she recently had her last few teeth pulled and is ashamed to be seen. She is relatively low income- lives on her social security and spent much of her saved income to have her teeth pulled.

- ❖ IN MINNESOTA
- ❖ **\$50 MILLION annually** on ER visits related to teeth (where no dental care is given) -DHS, 2017
- ❖ 49th state reimbursement for MA dental care, **stopped reimbursing at higher rates for dentists** outside of urban crisis clinics in 2010.
- ❖ **No Medicare** dental coverage.

Nationwide loss due to dental problems

- ❖ 51 million hours of school lost/year
- ❖ 64 million hours of work lost/year
- ❖ dental caries is the most prevalent childhood disease. it occurs 6-8 times more frequently than the second, asthma.

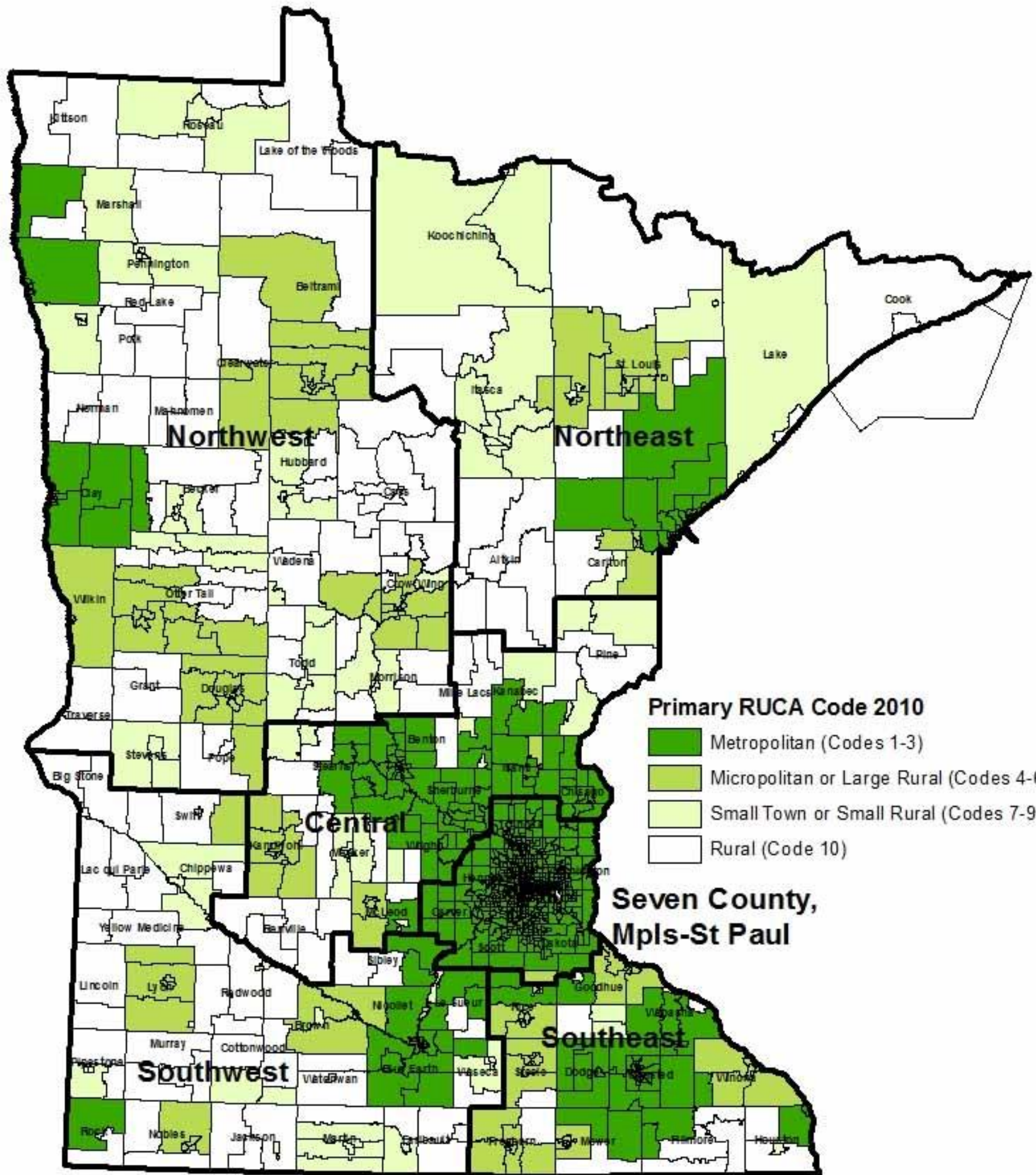
Oral health and disease

- ❖ Dental infection is thought to increase one's risk of vascular disease and impact other diseases.
- ❖ Healthcare costs decrease by about \$1700/year in those first diagnosed with type 2 diabetes who are not started on medication who receive periodontal care. (Nasseh et al, Health Econ 26:519-27, 2017)
- ❖ Rural location is an independent predictor of edentulous status (Lutfiyya et al BMC Public health 2014, 14:65)
- ❖ Bad dentition decreases employment options
- ❖ oral infection and pain

Rural Dentistry in MN: The Current Landscape

Workgroup briefing book #1
April 2016

Office of Rural Health & Primary Care – for the Rural Health Advisory Committee,
Rural Dentistry 2.0 Project



Jackson

Robeson

Lake of the Woods

Marshall

Koochiching

Pennington

Beiram

Cook

Big Lake

Lake

Pock

St. Louis

Hennepin

Northwest

Northeast

Clay

Hubbard

Vik

Vadara

Albany

Carleton

Other Tail

Clayton

Graft

Douglas

Todd

Morrison

Pine

Traverse

Stevens

Pope

Benon

Sherman

Chicago

Big Stone

Swift

Central

Shannon

Chippewa

Lac Qui Parle

Chippewa

Wadena

Wadena

Wadena

Wadena

Yellow Medicine

Beauregard

Le Sueur

Le Sueur

Le Sueur

Lincoln

Lyons

Redwood

Noble

Le Sueur

Goodhue

Weston

Murray

Cottonwood

Brown

Le Sueur

Wadena

Southwest

Southeast

Rock

Nobles

Jackson

Wadena

Wadena

Wadena

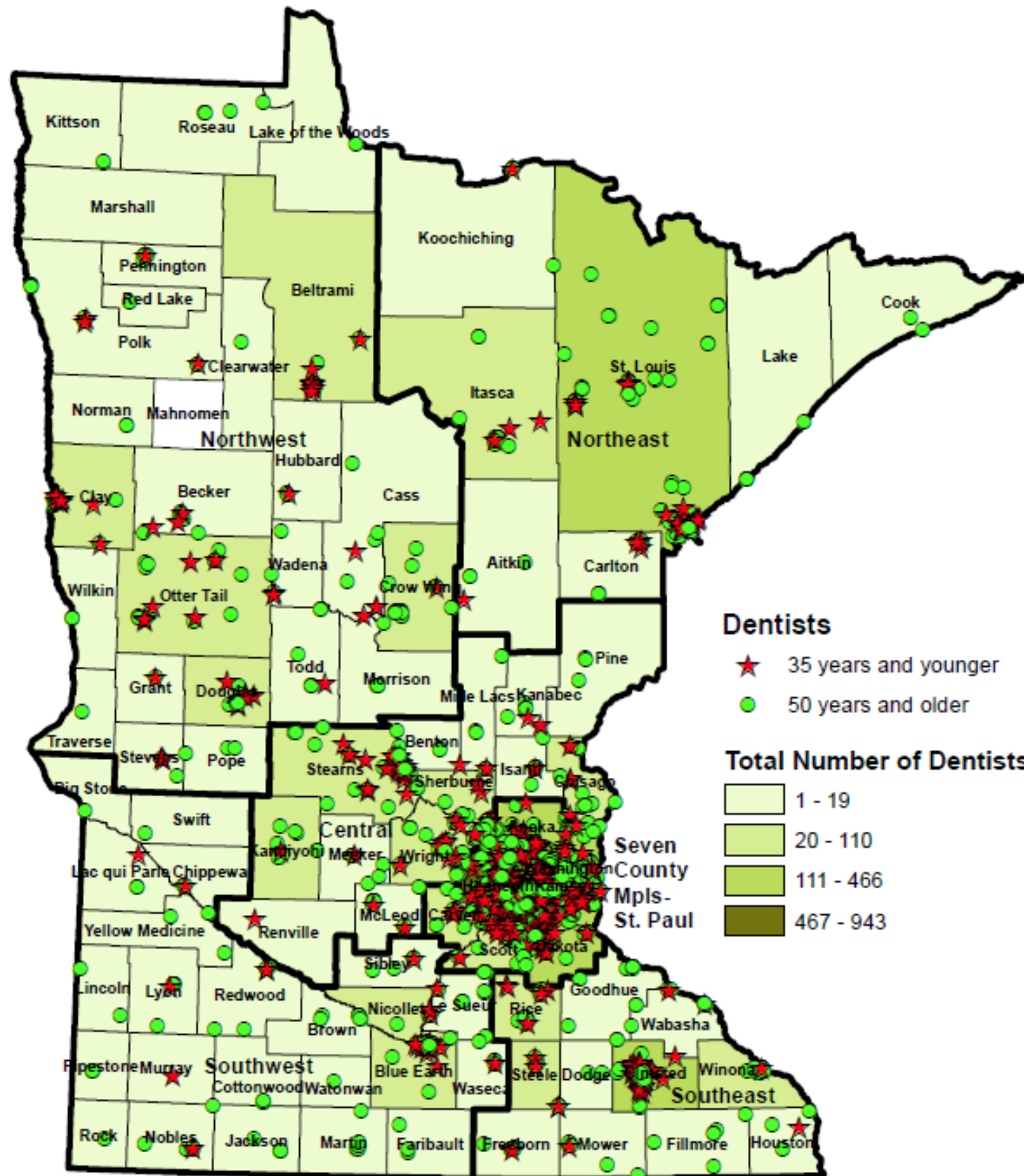
Wadena

Wadena

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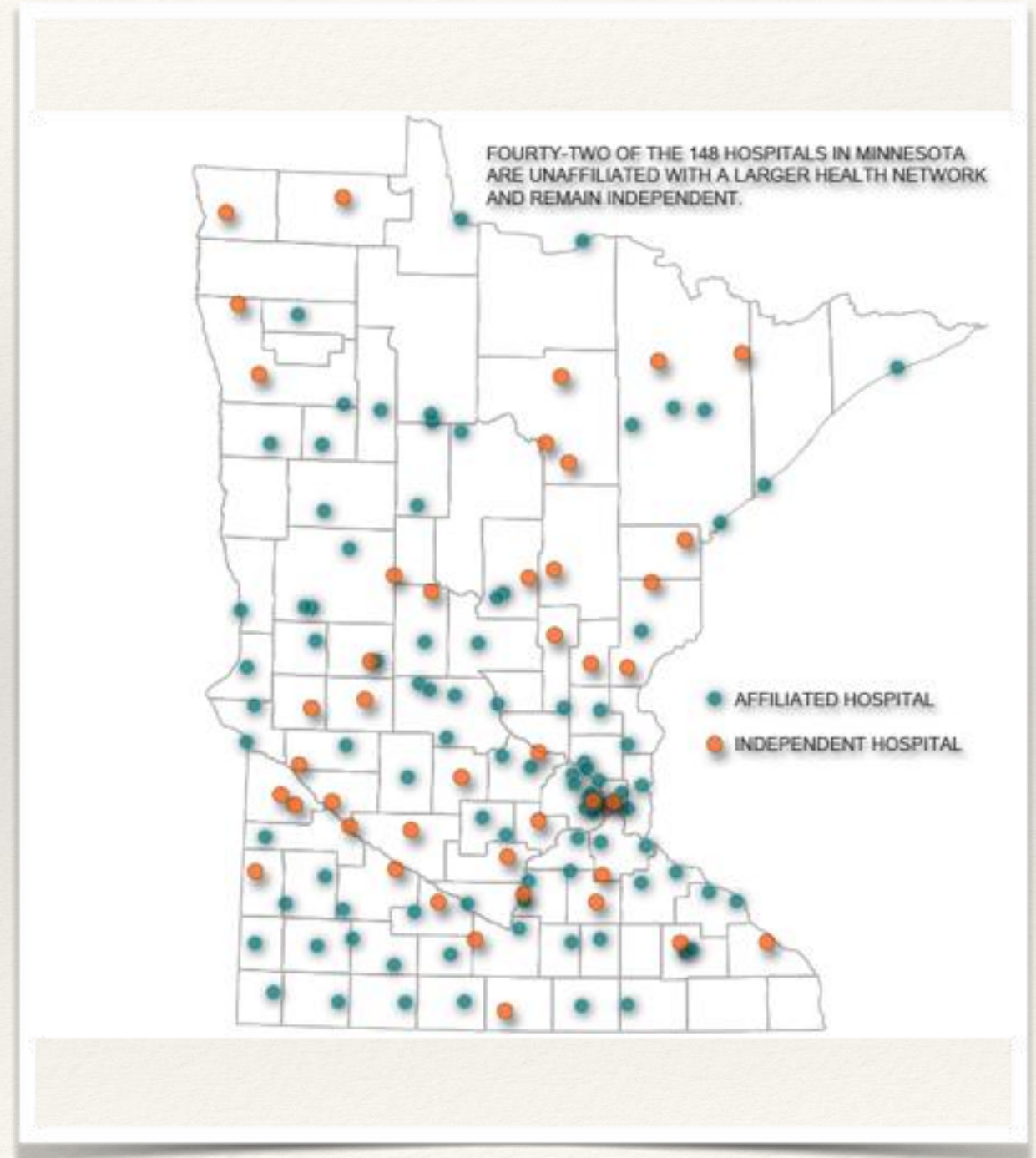
Dentists by Age Group and Location Minnesota 2014-2015



Source: Licensing Data from the MN Board of Dentistry
Prepared by the MN Office of Rural Health & Primary Care

Infant mortality

- ❖ Neonatal outcome in the first year is directly related to distance to care at birth
- ❖ US: rural counties without OB services
 - ❖ 1985- 24%
 - ❖ 2002-44%
 - ❖ 2014-54%



After OB units close

- ❖ Fewer prenatal visits
- ❖ Increase in preterm births
- ❖ Increase in births in facilities without birthing services

Patient T

- ❖ T is a 56 yo male with CD who was admitted for a fall and rib fractures.
- ❖ He has been trying to get a CD screening intake. Lives 15 miles from nearest intake (\$45 cab ride). no insurance, no job, homeless/couch surfing, no phone. Meth is drug of choice. Don't get me started on his teeth.....
- ❖ Long talk as inpatient about goals, seems ready to change, actually had notes on paper in pocket about previous discussion with intake via friend's phone. All friends use.

- ❖ EPIC hospital discharge summary
- ❖ TCM 'phone note'
- ❖ no-show just before I talked to Mike

- ❖ Homeless shelters for men- St. Cloud, Twin Cities
- ❖ Mental health services/CD services for MA
- ❖ jail-9/23/18 A-H Crow Wing county jail: 84 people, 44 of these listed as drug/alcohol offenses, 54 caucasian.
- ❖ census- 96% of Crow Wing county is caucasian
- ❖ Genetic disorder. Drosophila will be trapped if you put a small container of wine next to your trash under the sink. The gene associated with increased likelihood that the fruit fly will be trapped there is know as the cheap date gene.
- ❖ suboxone \$8.10/day. Jail ~\$150/day (direct jail cost only)

Brainerd hospital stops admitting patients with severe mental illnesses, citing state bottlenecks

Brainerd decision alarms officials, mental health advocates.

By [Chris Serres](#) Star Tribune NOVEMBER 1, 2017 — 9:24PM

Patient A

- ❖ A is an 81 yo widower who lives alone in his lake home with help from Home Instead. He is quite anxious, has a history of stroke and is unsteady. He calls 911 when he is lonely or afraid.

- ❖ I receive a call from the ER doc. A is in the ER for the 3rd time this week.
- ❖ Could I make a care plan for him?

Summary

- ❖ Rural residency is a risk in and of itself
- ❖ Environmental and workplace exposure
- ❖ Resource scarcity and distance
- ❖ Wholistic context- bigger than healthcare
- ❖ Cost

- ❖ Lutfiyya, MN,et al. Rurality as a Root or Fundamental Social Determinant of Health. Dis Mon 2012,:58:620-628
- ❖ Kristina A. Dittrich, PharmD, et al. A Population-Based Cross-Sectional Study Comparing Depression and Health Service Deficits Between Rural and Nonrural US. Military Veterans. Military Medicine, Vol. 180, April 2015
- ❖ Daniel M Saman et al. A population-based study of edentulism in the US: does depression and rural residency matter after controlling for potential confounders? BMC Public Health 2014. 14:65
- ❖ <https://www.mprnews.org/story/2017/05/17/the-countrys-dental-crisis>