

Geographical Disparities in the Management of Type 2 Diabetes

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February 24, 2023*

Learning Objectives

1. Nurses will gain further knowledge of the significant geographical disparities in the prevalence of diabetes, access to care and diabetes technology, self-management, perceptions of illness, and diabetes-related complications.
2. Nurses will gain further knowledge of the profound emotional burden of diabetes and the critical need for support and resources for diabetes self-management
3. Nurses will gain further knowledge of the clinical recommendations and available resources to address the geographical disparities in the management of Type 2 DM.

Rurality - A Social Determinant of Health

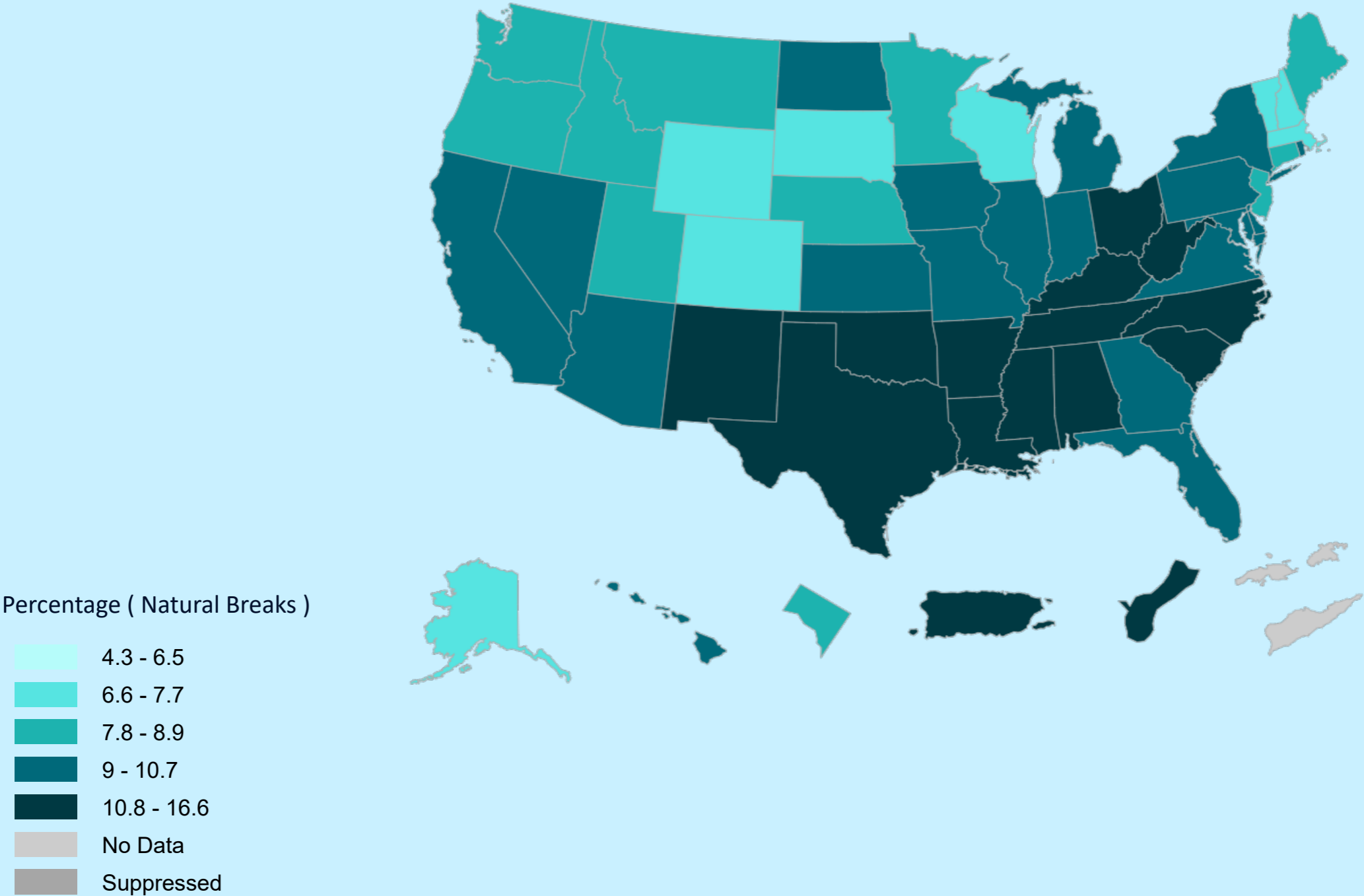
Lutfiyya, M. N., McCullough, J. E., Haller, I. V., Waring, S. C., Bianco, J. A., & Lipsky, M. S. (2012). **Rurality as a Root or Fundamental Social Determinant of Health.** *Disease-a-Month*, 58(11), 620-628. <https://doi.org/http://dx.doi.org/10.1016/j.disamonth.2012.08.005>

Hill-Briggs, F., Adler, N. E., Berkowitz, S. A., Chin, M. H., Gary-Webb, T. L., Navas-Acien, A., Thornton, P. L., & Haire-Joshu, D. (2021). **Social Determinants of Health and Diabetes: A Scientific Review.** *Diabetes Care*, 44(1), 258-279. <https://doi.org/10.2337/dci20-0053>

Tabaei, B. P., Rundle, A. G., Wu, W. Y., Horowitz, C. R., Mayer, V., Sheehan, D. M., & Chamany, S. (2017). **Residential Socioeconomic, Food and Built Environments and Glycemic Control in Individuals With Diabetes in New York City 2007-2013.** *Am J Epidemiol*. <https://doi.org/10.1093/aje/kwx300>

“Several residential-level environment characteristics, including more advantaged socioeconomic conditions, greater ratio of healthy food outlets to unhealthy food outlets, and residential walkability were associated with glycemic control. Individuals who lived continuously in the most advantaged residential areas had shorter time to achieve glycemic control compared to the individuals who lived continuously in the least advantaged residential areas (9.9 vs. 11.5 months). **Moving from less advantaged residential areas to more advantaged residential areas was related to improved diabetes control (0.38% (95% CI: 0.22%, 0.55%) decrease in A1C), while moving from more advantaged residential areas to less advantaged residential areas was related to worsening diabetes control (0.34% (95% CI: 0.24%, 0.44%) increase in A1C).** These results show that residential areas with greater resources to support healthy food and residential walkability are associated with glycemic control in persons with diabetes.”

Diagnosed Diabetes, Total, Adults Aged 18+ Years, Age-Adjusted Percentage, U.S. States, 2020



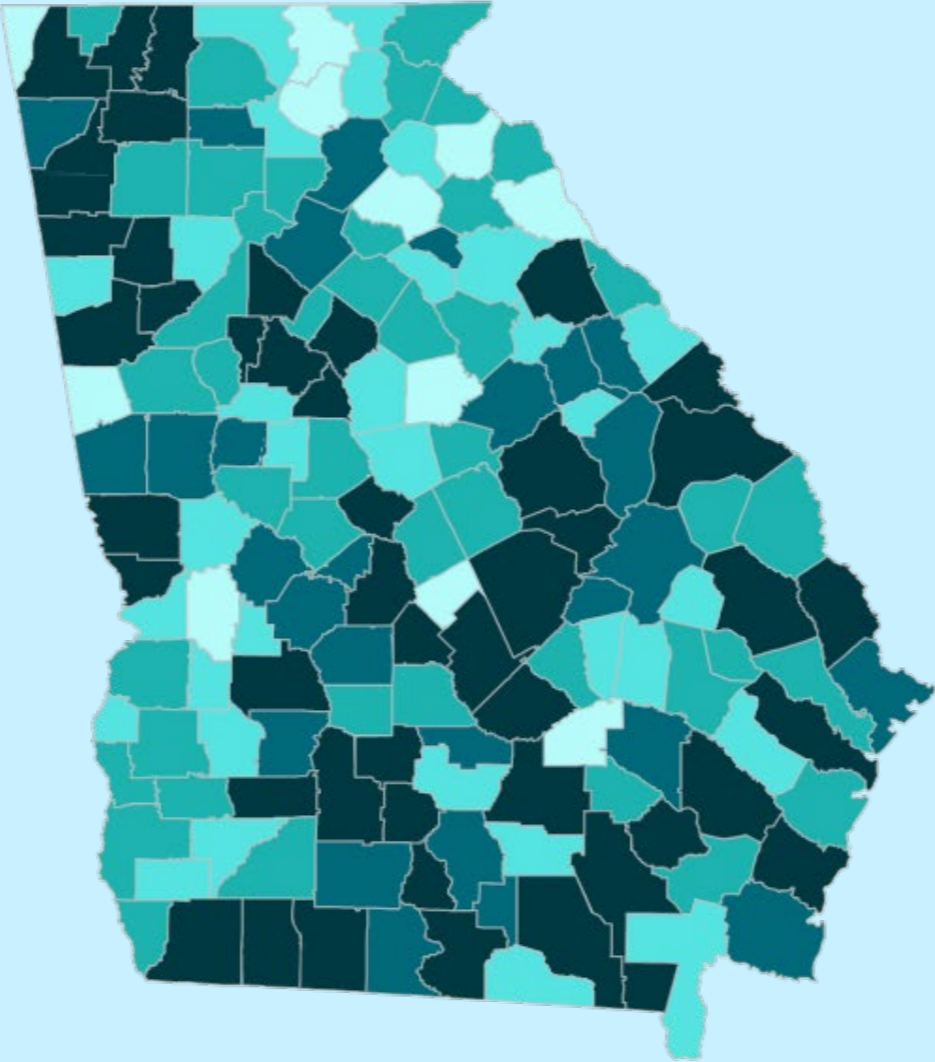
Source: [USDSS](#)

Disclaimer: This is a user-generated report. The findings and conclusions are those of the user and do not necessarily represent the views of the CDC.

National Center for Chronic Disease Prevention and Health Promotion

Division of Diabetes Translation

Diagnosed Diabetes, Total, Adults Aged 20+ Years, Age-Adjusted Percentage, Georgia, 2020



Percentage (Natural Breaks)

- 5.7 - 7.3
- 7.4 - 8.2
- 8.3 - 9
- 9.1 - 10.2
- 10.3 - 15.6
- No Data
- Suppressed

Source: [USDSS](#)

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Division of Diabetes Translation

Disparities in Rural GA – Diabetes Prevalence

GA = 10.7%

Columbia: 8.2%

Richmond: 14.7%

Bibb: 15.6% highest in GA

Burke	11.1
Washington	10.6
Wilkes	10.4
Emanuel	10.2
Jefferson	10.1
Hancock	9.6
Warren	9.4
Jenkins	8.6
Screven	8.6
Greene	8.3
Taliaferro	8.2
Glascocock	7.5
Jackson	7.3
Elbert	7.2

<https://gis.cdc.gov/grasp/diabetes/diabetesatlas-surveillance.html#>

Preventive efforts and early diagnosis

Preventive Health Service Use

- Drastic decline during COVID pandemic

Persons at high risk for diabetes-related complications reported up to an **8-fold increase in avoiding timely follow-up eye exams and treatment**, partly due to fear of exposure to COVID-19.

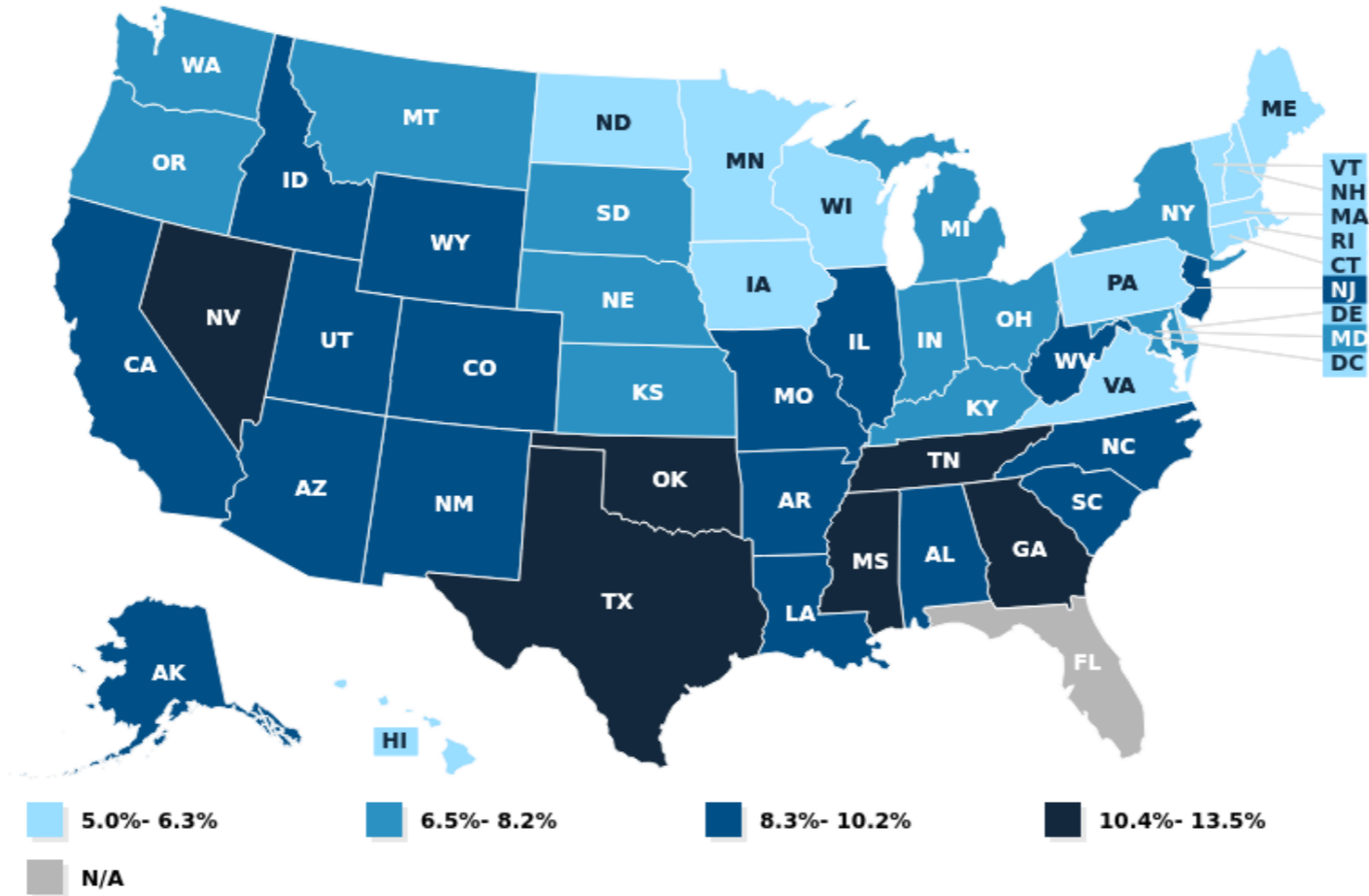
- Rural = insufficient data
- Urban = ?

Diabetes Awareness

- **8.5 million adults** not aware of or did not report having diabetes (undiagnosed diabetes)
- Rural = unknown
- Urban = unknown

Access to care

Adults Who Report Not Seeing a Doctor in the Past 12 Months Because of Cost by Sex: All Adults, 2021

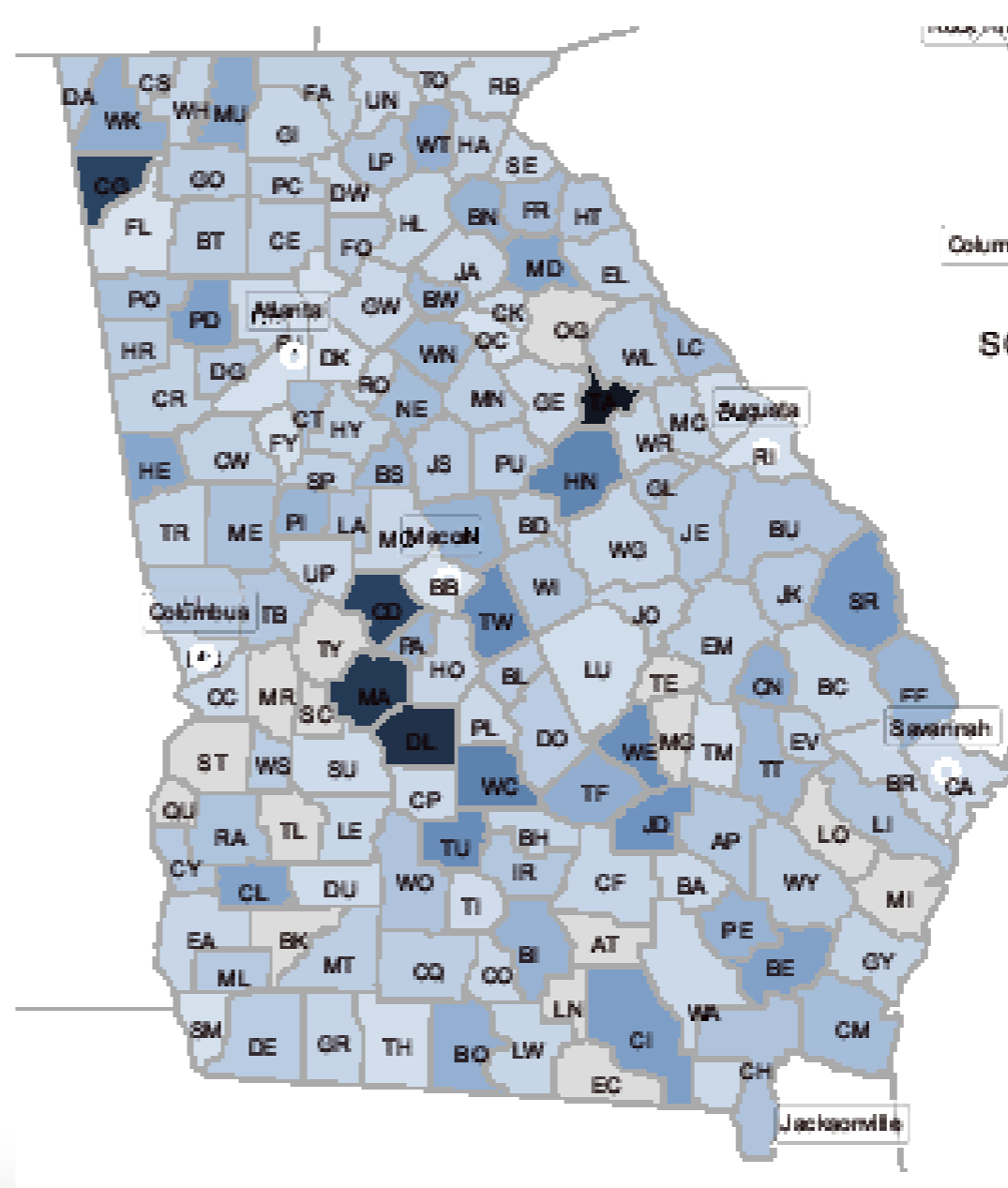


SOURCE: Kaiser Family Foundation's State Health Facts.

Access to care

There was one primary care physician per 1,490 people in Georgia

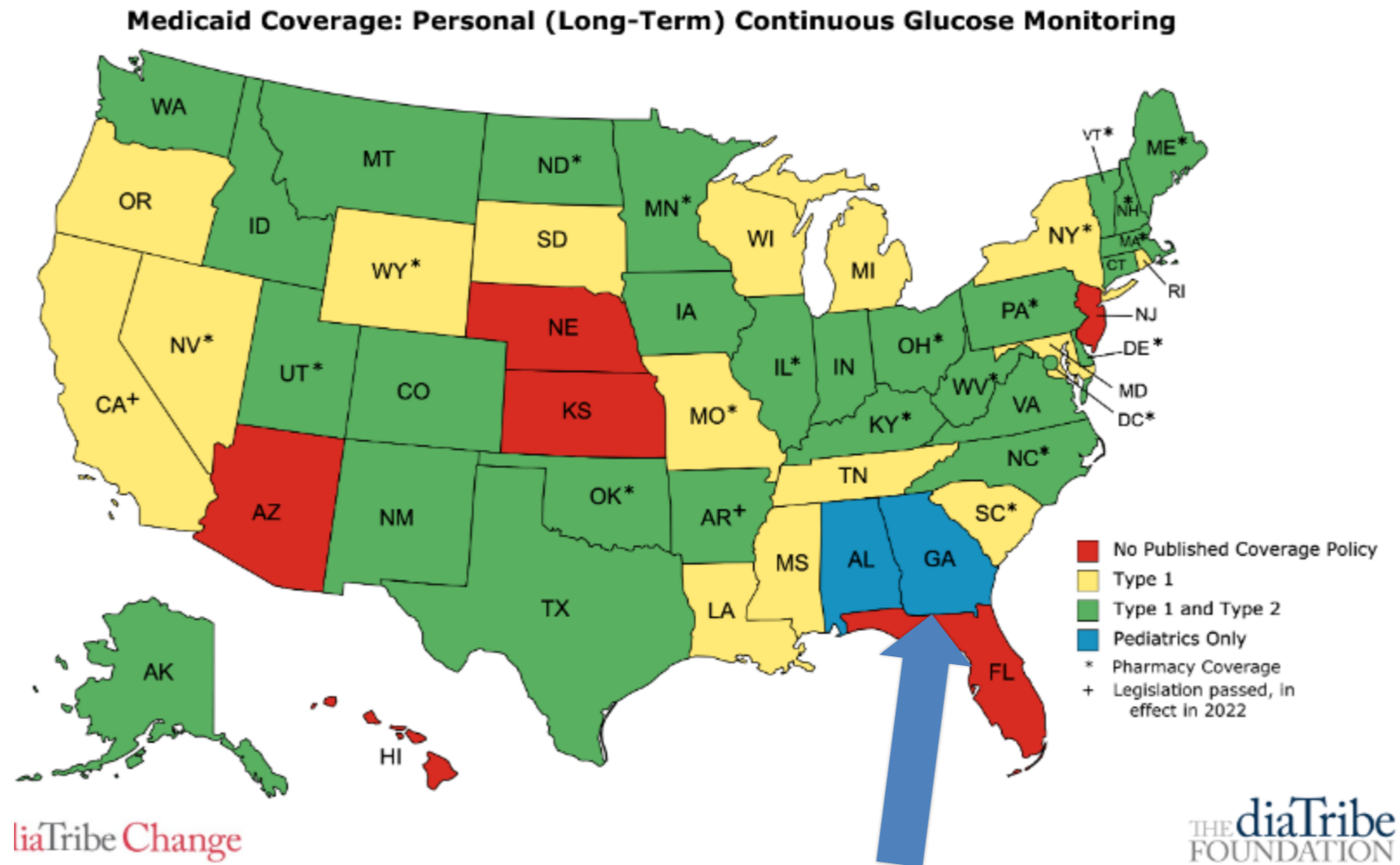
Taliaferro County:
Reported as 0
(CHC in Crawfordville)



Access to diabetes technology

- “Diabetes technology is a driver for disparities based on insurance status, socioeconomic status, rural/urban, minority or ethnicity group”
- Broadband access and “digital deserts” often impair access to telehealth services, including access to diabetes specialty care

Access to diabetes technology



<https://diatribechange.org/news/cgm-and-medicaid-whos-covered#:~:text=CGMs%20are%20covered%20by%20most,older%2C%20or%20who%20are%20disabled.>

Access to diabetes technology - CGM

- CGM use urban vs. rural? 30% vs. 24%
- Provider implicit bias up to 85% for Type 1 DM providers
- NHW children were 2 times more likely to be prescribed CGM than NHB children
- NHB children more likely than NHW children to discontinue CGM within 1 year, even with adequate insurance coverage
- Diabetes technology use is lowest and HbA_{1c} is highest in those of the lowest SES quintile in the T1DX

Addala et al. 2021; Lai et al. 2021

Disparities in Health Care Costs

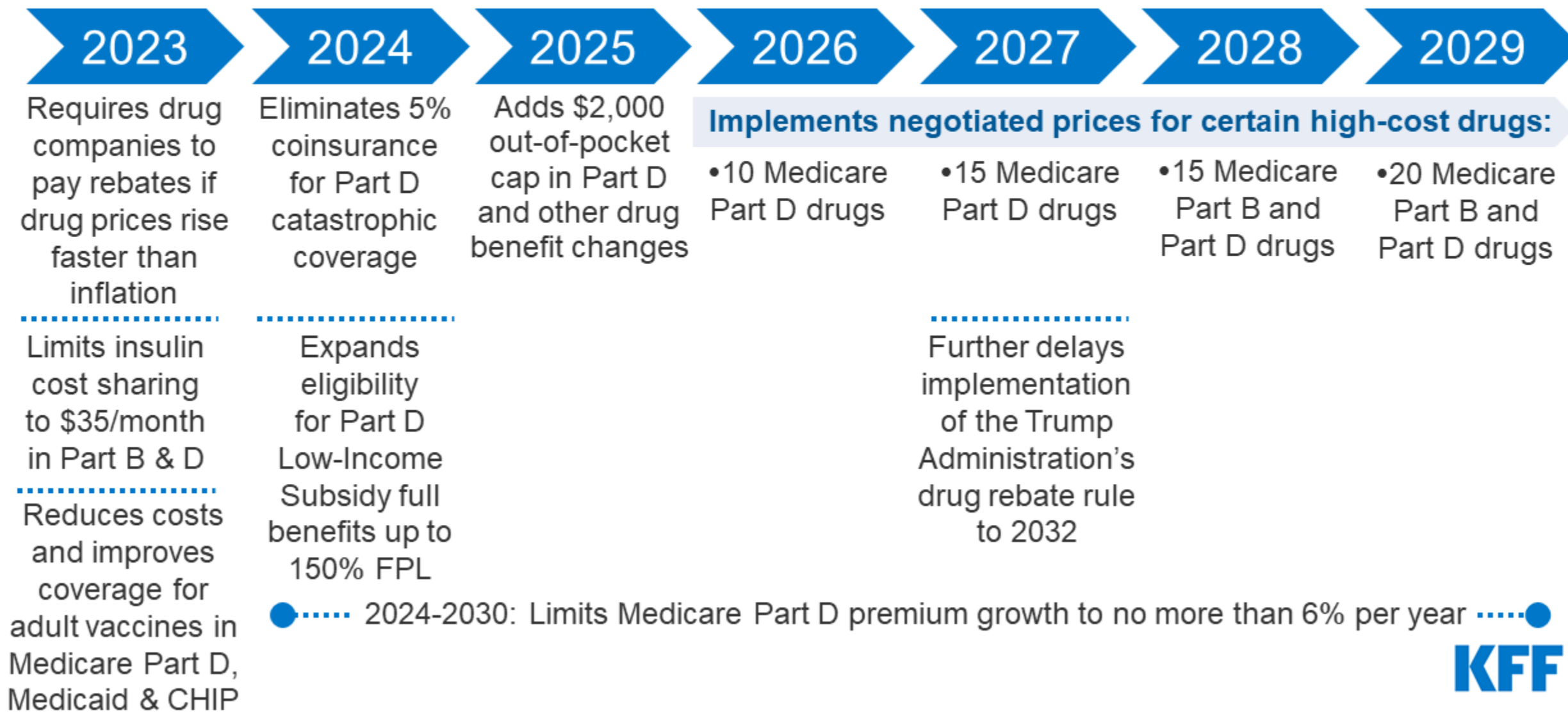
Insulin Affordability and the Inflation Reduction Act

- Effective January 1, 2023, out-of-pocket costs for insulin are capped at \$35 per monthly prescription among Medicare Part D enrollees under the Inflation Reduction Act (IRA). A similar cap takes effect in Medicare Part B on July 1, 2023.



Figure 1

Implementation Timeline of the Prescription Drug Provisions in the Inflation Reduction Act



<https://www.kff.org/medicare/issue-brief/how-will-the-prescription-drug-provisions-in-the-inflation-reduction-act-affect-medicare-beneficiaries/>

Diabetes Self-Management

Rural vs. Urban Disparities Unknown

- Access to DPP in urban areas is 3 times greater than rural areas

Ariel-Donges, et al. 2020

- 50 % had HgA1C 7% or greater; higher mean HgA1C levels in T1 DX registry Rural > Urban ($p < 0.001$)

Gill et al. 2020

- Overall, 52% attended Diabetes Self-Management Classes
- 25% met physical activity recommendations

Centers for Disease Control and Prevention. National Diabetes Statistics Report website. <https://www.cdc.gov/diabetes/data/statistics-report/index.html>.

- More likely to engage in other preventive care practices (diabetes eye exam, foot exam, SBGM, flu vaccine, physical activity, etc.)

Mendez et al. 2022

Diabetes-related Stigma and Illness Perceptions

- Diabetes Distress - significant negative psychological reactions related to the emotional burden of diabetes self-management
 - ~ Rates of depression and diabetes-related distress are similar in both rural and urban populations

Perrin et al. 2017

- Illness perception
 - ~ Geographical and Racial disparities

Patients in Nevada perceive T2DM as more serious and having more impact on their lives than patients living in Georgia

Understanding of disease NHW > NHB and Asians

Ledford et al. 2019

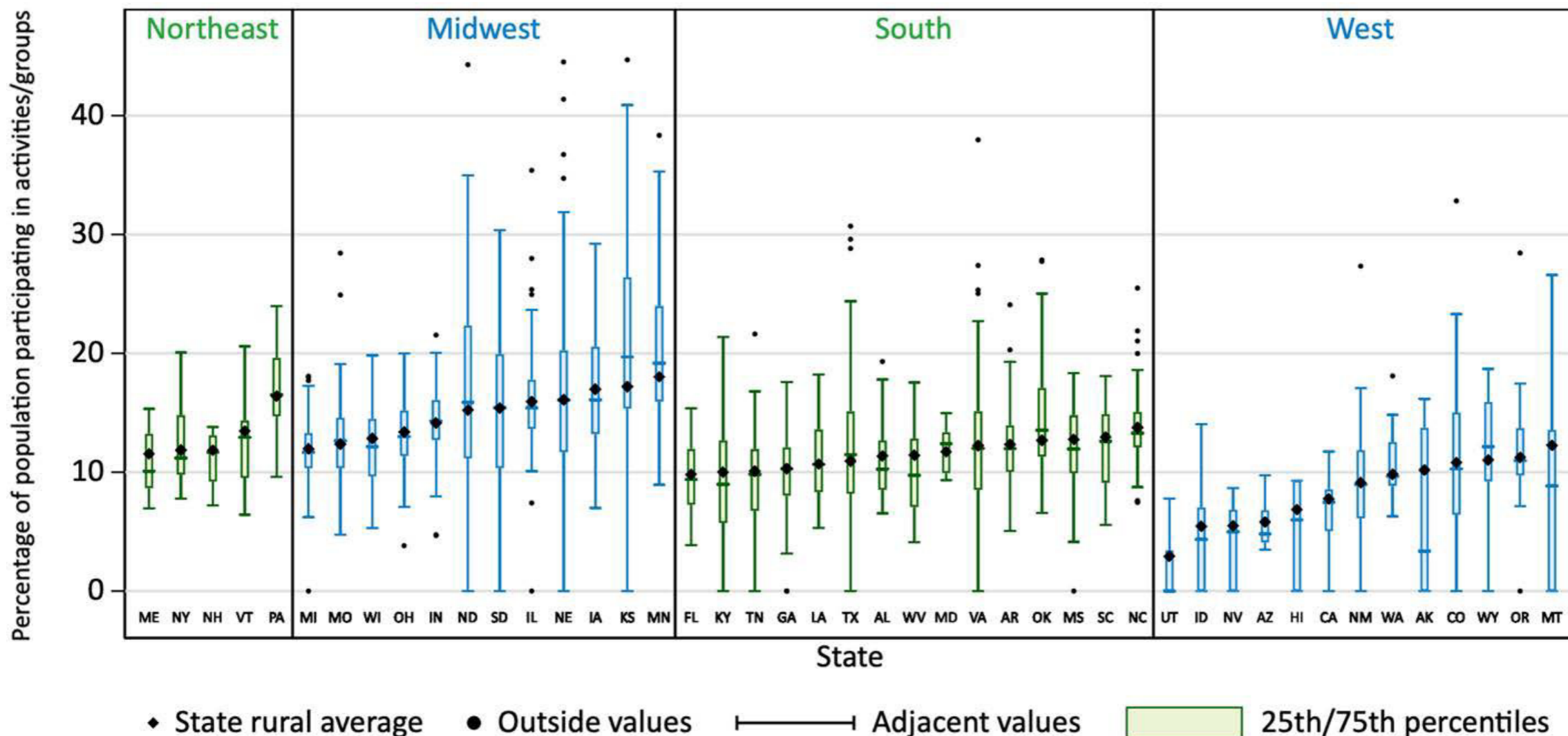
Disparities in Social Connectedness



Social connectedness is defined as participating in group activities

- Rates (pre-pandemic) -- higher among rural vs. urban areas in all four Census regions!
- Many Western states -- low rates of social connectedness for both rural and urban areas.
- Utah -- lowest rates for both rural and urban
- Georgia – 10% (median)

Randolph R, Thomas S, Holmes M, Perry J, John R, Gurzenda S, Ricks K, Maxwell A, Thompson K. Rural Population Health in the United States: A Chartbook. North Carolina Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill. February 2023.



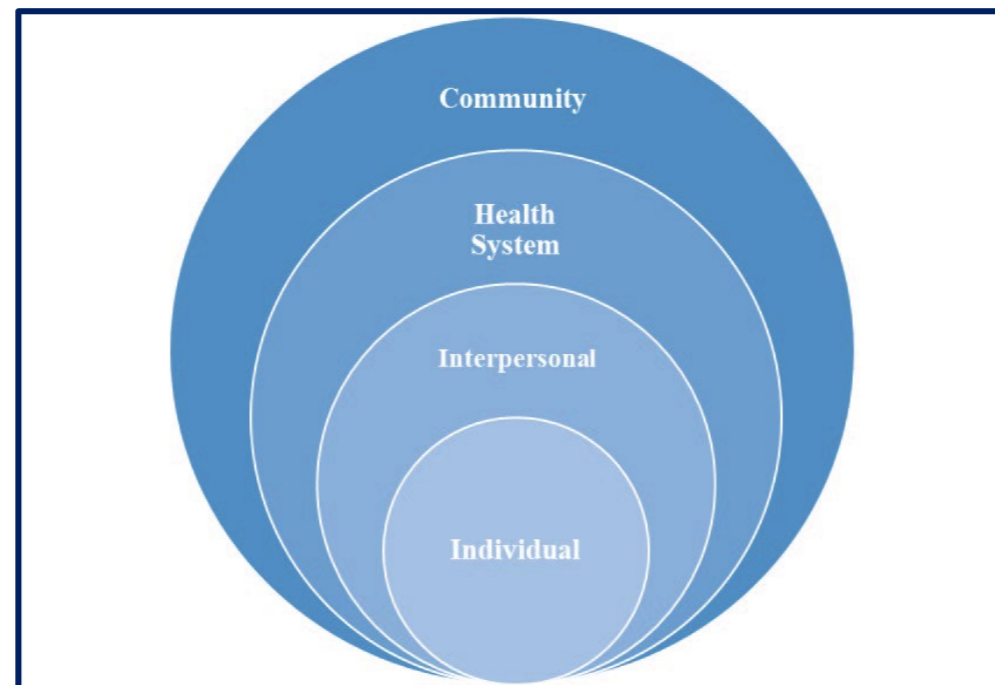
Note: States sorted by rural average within region.
Counties with rate higher than 45 not shown (KS:1).

The average rural percentages of social connectedness were generally lowest among Western states. Among the 13 states in this region, seven had average rural social connectedness percentages at or below 10%. Comparatively, among the Northeast, Midwest, and South, no states had average rural social connectedness percentages below this value, while only a handful of Southern states had percentages around this value. Within the Northeast, Midwest, South, and West, the states with the highest average rural social connectedness percentages were Pennsylvania, Minnesota, North Carolina, and Montana, respectively. The states with the lowest average rural social connectedness percentages were Maine, Michigan, Florida, and Utah, respectively.

“The ‘Ups and Downs’ of Living with Type 2 Diabetes Among Working Adults in the Rural South”

Journal of Primary Care & Community Health
Published December 2022

“The ‘Ups and Downs’ of Living with Type 2 Diabetes Among Working Adults in the Rural South”



Fisher's Resources and Supports for Self-Management model

Synergistic or cumulative effect R/T lack/insufficiency of resources

Berkowitz et al. (2015)

- 4 material needs - food insecurity, cost-related medication underuse, housing instability, energy insecurity
- **An increasing number of insecurities was associated with poor diabetes control, increased use of health care resources, and increased risk for ED/inpatient visits**

Age (years)	47.3 (25-65)
Race (African American)	12 (60%)
White	7 (35%)
Other (Indian)	1 (5%)
Gender (Female)	14 (70%)
Male	6 (30%)
County of Residence (classification)	
Rural (RUCA >5)	8 (35%)
Rural (RUCA < 5)	2 (10%)
Micropolitan	9 (45%)
Metropolitan	1 (5%)
County of Employment (classification)	
Rural	10 (50%)
Micropolitan	8 (40%)
Metropolitan	2 (10%)
Employment Status	
Full-Time ~40 hours/wk.	16 (80%)
Part-Time ~20 hours/wk.	4 (20%)
Annual Income (Less than \$50,000/year)	13 (65%)
More than \$50,000/year	7 (35%)
Insurance (via employee benefits)	13 (65%)
Uninsured	5 (25%)
Medicare	1 (5%)
VA insurance	1 (5%)
Patient Activation Score (PAM-10)	59.4 (47.4–72.1) 6.8 s.d.

Research Questions

1. What are **the individual, interpersonal, health system, and community factors** that facilitate, modify, or hinder engagement and use of **recommended, preventive health services** among rural, working adults with T2DM, and low patient activation scores (<75), as measured by Patient Activation Measure (PAM-10)?
2. How do **individual, interpersonal, health system, and community factors** facilitate, modify, or hinder engagement in **recommended, preventive health services** according to rural, working adults with T2DM, and low patient activation scores (<75), as measured by PAM-10?

Themes

I. Individual

“The Struggle”

II. Interpersonal:

“Doing Things Together”

III. Community

“We’re Lucky to Have What We Have”

IV. System

“Diabetes is Not the Priority”

Living With the “Ups” and “Downs”

- Inconsistency vs. Individual Responsibility and Daily Routine

*Then I realize it's (blood sugar) going up again, go to the doctor and they get on me about it and then I go back to eating like I was supposed to eat. And then after a while when I feel like I'm comfortable with it again, I go eating what I want to eat. And it's just **up and down, up and down, up and down.***

Diabetes is something I just don't wish on my worst enemy.

“The Struggle”

- Emotions – regret, guilt, tired, depressed

“Feeling like you’ve been hit by a bus” or “like a dead man walking.”

- Acceptance vs. Denial

*“I thought that would never be me. But it **ended up being me.**”*

- Coping Strategies and Self-Control vs. Lack of Self-Control

*“... just like being an **alcoholic**, you want something that you know you shouldn’t be eating, but you enjoy it”*

- Motivation for a Healthy Future vs. Fear of Complications

“I don’t want that to happen.”

“Doing Things Together”

- Social support and sense of belonging

It's hard for people who don't understand diabetes or don't have it and is not going to realize someone else who has it and what kind of effect does it have on them because they don't have it.”

- Family support versus “You don't talk about it.”

“The kind of house I grew up in, certain stuff is just not–You don't talk about it.”

- Feelings of shame and guilt

“She made a mistake of letting other people know she had it. So, when she wants to cheat, she can't cheat because they'll say, ‘No, you can't have it.’”

- Physical Activity with Family and Friends

*“I love to play kickball, and I would always go out and play ball with **my kids**, especially on Saturdays, but during the week, it was just **hard** because I'll be **tired**.”*

Clinical Recommendations

Priority Needs in Rural Populations



- Psychological assessment and support
 - ~ less than 25% of health care providers ask how diabetes affects patients' lives (Nicolucci et al., 2013)
- Individual Accountability and Interpersonal Support for Preventive Behaviors
 - ~ Increase in telemedicine use, increase in preventive care, patient-centered care models and shared decision making
- Normalizing open discussions about diabetes
 - ~ Dispel myths, fatalism and stigma
- Early Diagnosis, Timely Diabetes Health Screenings, Equitable Care
 - ~ New ADA guidelines recommend screening adults 35 and older

Social Connectedness is their biggest resource and FREE

Resources and Databases

[Diabetes]

[CDC Diabetes Surveillance System USDSS](#)

[American Diabetes Association Patient Education Resources](#)

[American Diabetes Association Professional Resources](#)

[ADA Standards of Care in Diabetes 2023](#)

[Standards-of-Care-in-Diabetes-2023-Abridged Primary Care Providers](#)

[Rural Health]

[Rural Information Hub](#)

<https://www.ruralhealthresearch.org/>

[Rural Population Health in the U.S. Chartbook](#)

Insulin Help



**HELP WITH INSULIN IS A
PHONE CALL AWAY.**

If you are struggling to pay for insulin and diabetes medication, ADA can help. We've consolidated all the resources you need so that you can find help, fast.

Manufacturers are not reporting that COVID-19 is impacting access to insulin and other supplies:

Leading manufacturers are reporting that COVID-19 is not having an impact on their current manufacturing and distribution capabilities for insulin and other supplies at this time. We are continuing to monitor the situation and will provide updates should anything change. If you are struggling to pay for insulin or know someone who is, the ADA has resources to help.



The Diabetes Placemat: Classic (25/Pkg)
Sold out



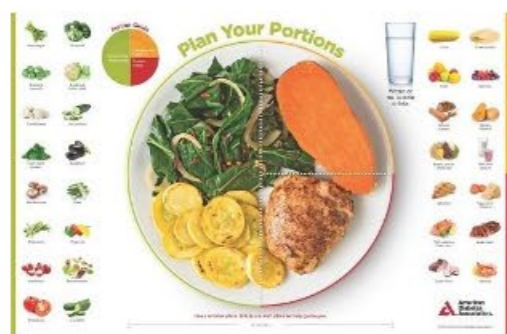
Diabetes Placemat Tear Pads (4/Pkg)
Your Price: \$23.95



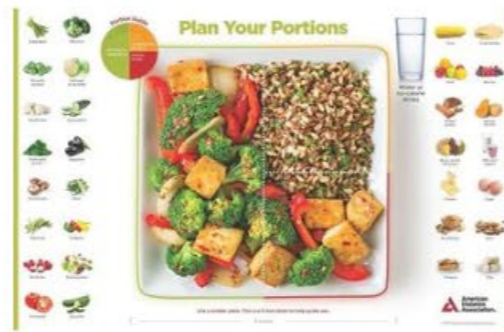
The Diabetes Placemat: Classic (Single)
Sold out



The Diabetes Placemat: Hispanic (25/Pkg)
Your Price: \$26.25



The Diabetes Placemat: Southern (Single)
Your Price: \$1.50



The Diabetes Placemat: Vegetarian (Single)
Your Price: \$1.50



The Diabetes Placemat: Hispanic (Single)
Your Price: \$1.50



The Diabetes Placemat: Asian (Single)
Your Price: \$1.50

2023 ADA Standards of Care

First 5 email requests will receive a pocket guide 😊



2023 Standards of Care in Diabetes Pocket Chart

Author(s): American Diabetes Association

Your Price: \$5.95

In stock. Usually processed within 2 business day(s).

Login to your account to get member discounts.

The 2023 ADA Standards of Care in Diabetes Pocket Chart is a quick reference guide highlighting the Association's most recent positions on control of hyperglycemia, medication therapy, cardiovascular risk factors and treatment goals for patients with diabetes and prediabetes.

HEALTH = ZIP CODE

A TALE OF TWO ZIP CODES

with **GEORGE TAKSI**

87 **73**

MEET DEB & MARIA
Deb & Maria live one mile apart, but Deb will live 18 years longer than Maria.
Watch to find out why!

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Thank You!

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