

ACS Cancer Conference 2025

March 12-14 | Phoenix, AZ

Collaborative Research Agenda: Improving Surgical Care in Rural Communities

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Chair of Surgery at Creighton University School of Medicine

Chair of Surgery at CHI Health

Omaha, NE

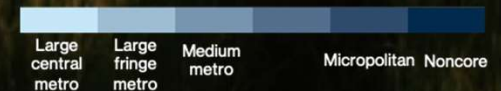
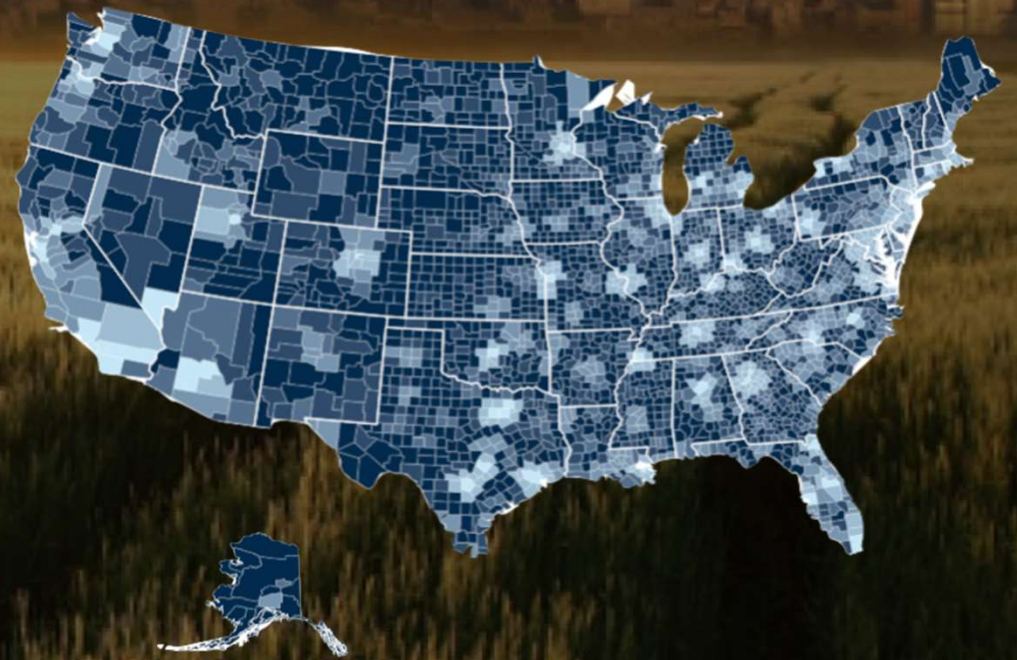
Disclosures and Sources of Funding

- Dr. & Mrs. Arnold W. Lempka Endowment
- NIMHD R01 \$3M (m-PI: Shara/Al-Refaie)
- Kuwait Foundation for Advancement of Science \$250K (m-PI: Al-Ibrahim/Al-Refaie)
- State of Nebraska LB595 Grant (PI)
- Dr. Haddix Creighton University President Award (Co-I)
- Views don't represent NIH, KFAS, or Creighton-CHI

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National Relevance of Rural Residents

- U.S. Census Bureau “rural”: all individuals, housing, and territory that are not within an urban area
- 20% (57 million) inhabit rural counties.



Curtin SC, Spencer MR. Trends in death rates in urban and rural areas: United States, 1999–2019. NCHS Data Brief, no 417. Hyattsville, MD: National Center for Health Statistics. 2021. DOI: <https://dx.doi.org/10.15620/cdc:109049>.



Inequities in Rural Surgery

- 30% Decrease in supply of rural surgeons over past 25 years
- 60% of rural counties have no active general surgeon
- Rural residents are typically older, underinsured, and have less access to quality care
- Rural populations have higher incidence of and mortality from Lung and Colorectal Cancer
 - Surgery is critical for the treatment of both

Larson EH, Andrilla CHA, Kearny J, Garberson LA, Patterson DG. The Distribution of the General Surgery Workforce in Rural and Urban America in 2019. Policy Brief. WWAMI Rural Health Research Center, University of Washington; March 2021

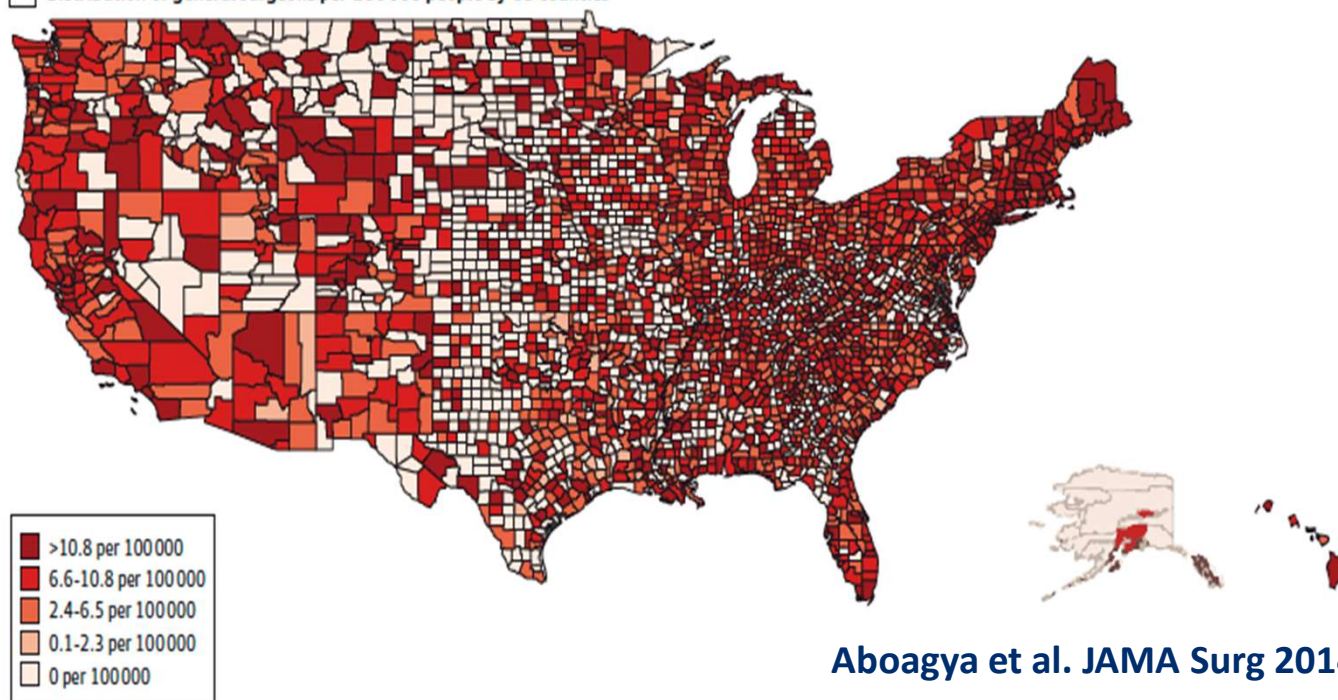
National Cancer Institute. (n.d.). *Rural Urban Disparities in Cancer*. gis.cancer.gov; National Cancer Institute. Retrieved November 7, 2024, from <https://gis.cancer.gov/mapstory/rural-urban/index.html>

American Cancer Society. (n.d.). *Cancer treatment and survivorship facts & figures 2019-2021*. Cancer.org. <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2019-2021.pdf>

The Alarming Short Supply of Rural Surgeons!

Figure 1. Specialty Provider Density per 100 000 People Across Counties

A Distribution of general surgeons per 100 000 people by US counties



Aboagya et al. JAMA Surg 2014

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Rural Surgery at Creighton

Mission: Creighton University School of Medicine aims to become a center of excellence in rural healthcare.

Commitment: The Department of Surgery is dedicated to addressing rural healthcare disparities through research and excellent clinical practice.

Initiatives:

- Research Interest Group with Specific Focus on Rural Surgery
- Resident rotations in CHI Critical Access Hospitals
- Resident Research Year focused on rural surgery
- Creighton-CHI Rural Research Symposium: May 30, 2025

Creighton-CHI Surgical Equity Research Team



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Medical Student



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Mark Pedersen
Research Assistant



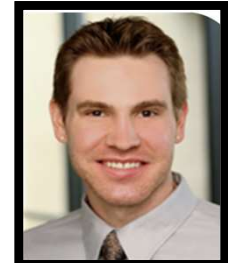
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Senior Research
Program Coordinator



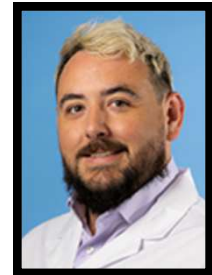
**Maureen Tierney,
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Associate Dean, Clinical
Research and Public Health



Dillon Wade, MD
General Surgery Resident



**Ryan W. Walters,
PhD**
Vice Chair, Dept of Clinical
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James Hazen, MD
General Surgery Resident

High Priority Research Areas

- Do we have a validated research framework for rural surgery access and outcome?
- Health Policy and Access to Surgical Cancer Care
- Social Determinants of Health and Surgical Outcomes
- Transforming rural surgical cancer care through artificial intelligence (AI)

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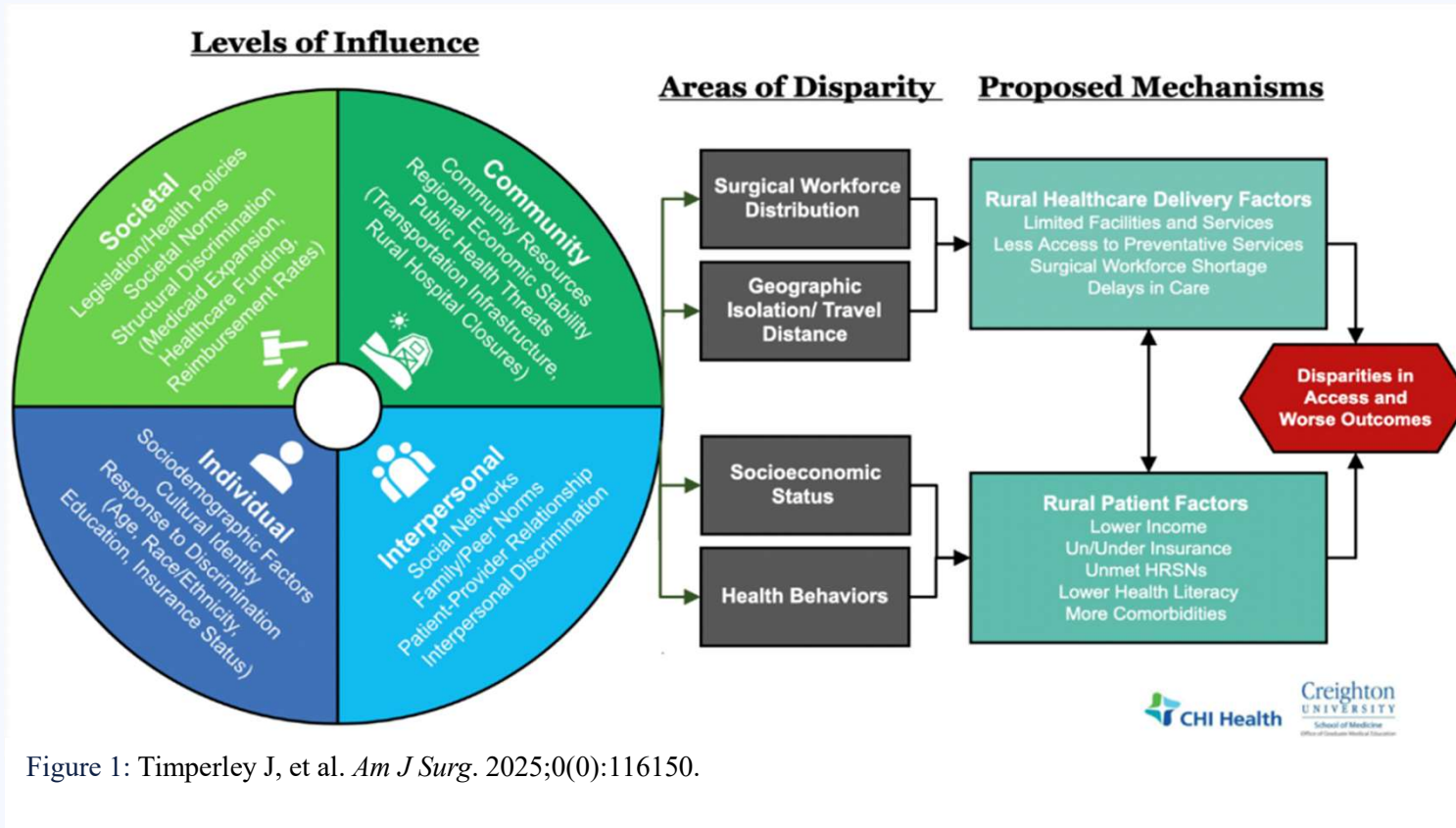
Lack of Validated Research Frame in Rural Surgery Access and Outcomes

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Research Framework for Rural Surgery

Jillian Timperley BS, Naomi Schmalz PhD, Kyle Cassling MD, Bonnie Simpson Mason MD



- Scalable and flexible
- Mixed methods study
- Patients, clinicians, administrators, NARSS, and ACS
- Educational curriculum

Evaluating Health Policy's Impact on Rural Surgical Cancer Care

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Rural Variations Matter: Not All Rural Areas Are the Same!

Jillian Timperley, Danielle Dilsaver, Megan McClain, Yanick Tade, Emily Brown, MD Scott Reetz, MD, Paul Wolpert, Nicole De Rosa, MD, FACS, Ryan Walters, PhD, Waddah Al-Refaie, MD, FACS

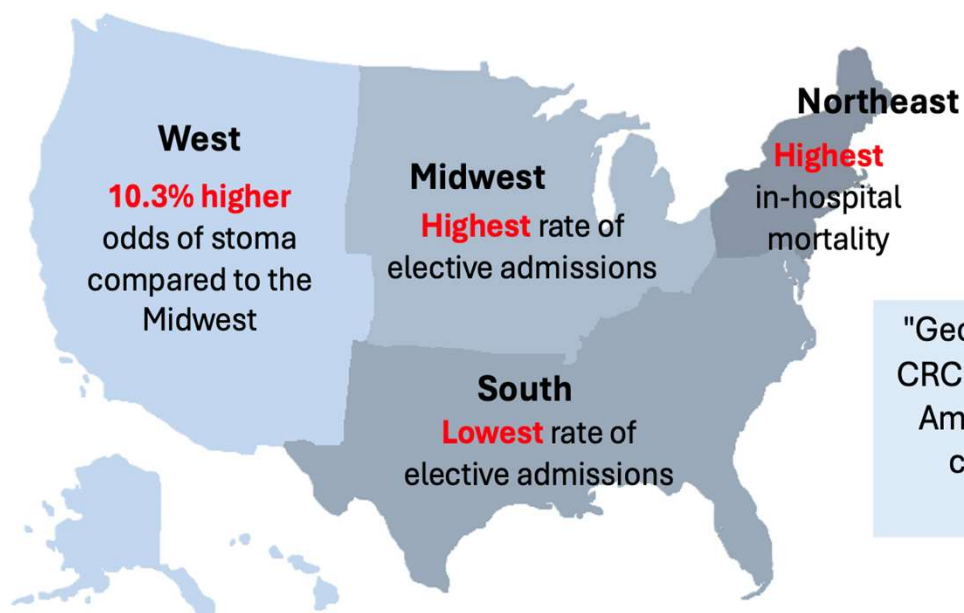
60 million rural Americans face disparities in CRC surgery access and outcomes.

Study Aim: Examine sources of disparities, by geographic region, in access to colorectal cancer (CRC) surgery among rural residents.

Data: 
2007-2020 National Inpatient Sample

Population: 
Rural patients undergoing CRC resections

Measurements: 
✓ Elective CRC surgery rates
✓ In-hospital mortality
✓ Stoma rates



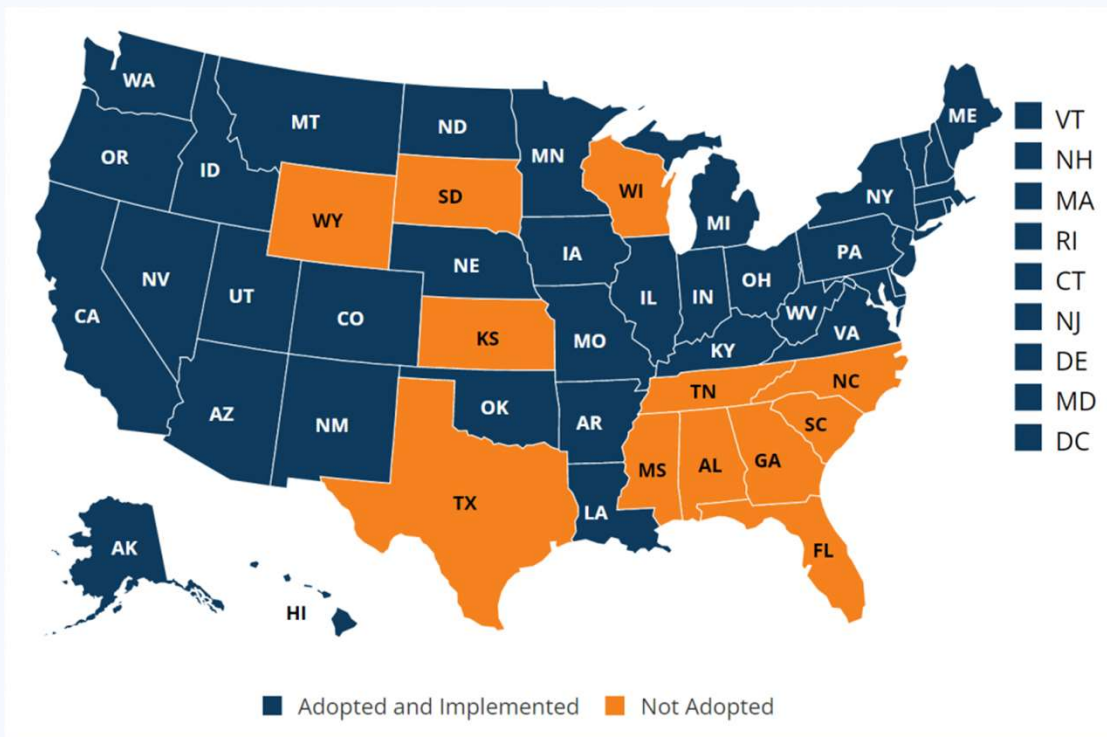
"Geographic disparities in CRC surgery highlight rural America's diversity, and challenge universal solutions."

Medicaid Expansion and Cancer Care Access

Funded by LB595 Pilot Grant: **\$100,000**

Ryan Walters PhD, Erin Gillaspie MD, MPH, Awinder Singh MD, Waddah Al-Refaie, MD

**ACA Medicaid Expansion improved urban cancer access.
What impact did it have in rural America?**



- Evaluate access to: colorectal, pancreatic and lung cancer surgery
- 9 Midwest states with varied expansion status
- Effect modification between expansion status and hospital closure

Medicare Advantage

Funded by Lynch Cancer Center in partnership with Kicks for a Cure: **\$60,000**

Mark Pedersen , Bonnie Simpson Mason MD, Ryan Walters PhD, Waddah Al-Refaie, MD



The screenshot shows the top of a web page for The American Journal of Surgery (AJS). The header includes the AJS logo and a graphic of four stylized human figures in orange, blue, green, and red. Below the header, a navigation bar contains links for Articles, Publish, Multimedia, About, and Contact. The main content area displays the article title, authors (Mark Pedersen, Jillian Timperley, Bonnie Simpson Mason, M.D., FACS, and Waddah Al-Refaie, M.D., FACS), and various interactive options like Download PDF, Cite, Share, Set Alert, Get Rights, and Reprints. A sidebar on the left shows a 'Show Outline' button and a list of article sections.

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EDITORIAL · Articles in Press, 116189, January 06, 2025

Medicare Advantage and Equity in Surgical Access and Quality: A Growing Program with Potentially Growing Problems

Mark Pedersen^a · Jillian Timperley^a · Bonnie Simpson Mason, M.D., FACS^{b,c} · Waddah Al-Refaie, M.D., FACS^{a,d} ✉

Affiliations & Notes ▾ Article Info ▾

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» Medicare Advantage: A Continuing Policy Priority:

Show Outline

The growing proportion of aging adults in the US population, combined with their healthcare needs, advancements in innovative technologies, and evolving insurance pricing will continue to drive focus towards Medicare growth and spending. (1) In the wake of the recent U.S. election, there has been much attention directed toward Medicare Advantage (MA) plans, especially as the Centers for Medicare and Medicaid Services (CMS) transitions to new leadership. To date, MA plans enroll over 32 million Medicare-eligible Americans accounting for over half (54%) of all Medicare beneficiaries, a number that has doubled in the last decade alone. (1) Medicare Advantage, or Medicare Part C, is a managed care program offered as an alternative to Traditional Medicare (TM) in which a private company offers an approved plan to cover Medicare Parts A, B, and usually D. (2) MA offers a wide variety of plans, such as Health Maintenance Organization (HMO) and Preferred Provider Organization (PPO), which have varying benefits. (2) These plans play a critical role in underserved communities, with nearly half of rural and other rural Medicare communities covered by MA plans. (3, 4)

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- Medicare Advantage enrollment in rural areas has quadrupled since 2010.
- Prior authorization, limited provider networks, financial impact on critical access hospitals of concern.
- How do these factors affect rural patients' access to cancer surgery and their outcomes?

Workforce and the American Board of Surgery

Jennifer Tseng MD, MPH, Scott Shipman MD, MPH, Ryan Walters PhD, Waddah Al-Refaie MD



Examine time-trend
GIS analyses,
demographics, and
training factors for
ABS-certified
surgeons.

Compare trends in
surgical supply and
distribution

Focus groups/surveys
of key stakeholders to
evaluate strategies to
address the workforce
deficit.

Formulate a consensus
recommendation
responsive to the
surgical workforce
deficit.

To provide a deeper understanding of the surgical workforce deficit and generate consensus-driven stakeholder recommendations to mitigate it.

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Understanding and Addressing Social Determinants of Health

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SDOH Screening at CHI

Supported by the Haddix Grant: **\$25,000**

Joy Doll OTD, OTR/L, Rebecca Davis DNP, APHN-BC, Ashley Carroll MPH, Waddah Al-Refaie MD

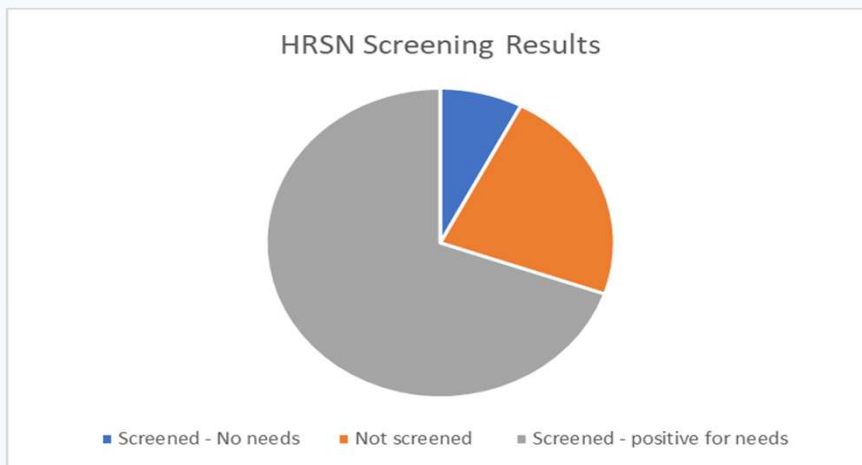
- Aim: Engage in a mixed methods approach to better understand the impact of the health-related social needs screening process
- New Screening Process (Started April 2024):
 - Aligns with CMS health-related social needs (HRSNs) requirements.
 - Conducted by a virtual nurse upon admission.
 - 8 Screening Questions Cover:
Food insecurity, Housing stability, Intimate partner violence, Transportation access, Utilities



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SDOH Screening at CHI: Preliminary Results

- 10,168 patient encounters at CUMC Bergan Mercy eligible for screening
- Average age = 55
- 44 languages spoken
- Wide payor mix



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Health-Related Social Need Screening	Number of Positive Responses
Housing	277
Transportation	438
Utilities	244
Food insecurity – Worry	440
Food insecurity – Ability to pay	430
Intimate Partner Violence – Emotional abuse	68
Intimate Partner Violence – Fear	52
Intimate Partner Violence – Physical violence	40

Transforming Cancer Care: The Impact of AI and New Technologies

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REmote symptom COllection to improVE
postopeRative care (RECOVER)

NIMHD R01 \$3M

Multiple-PI:

Nawar Shara and Waddah Al-Refaie

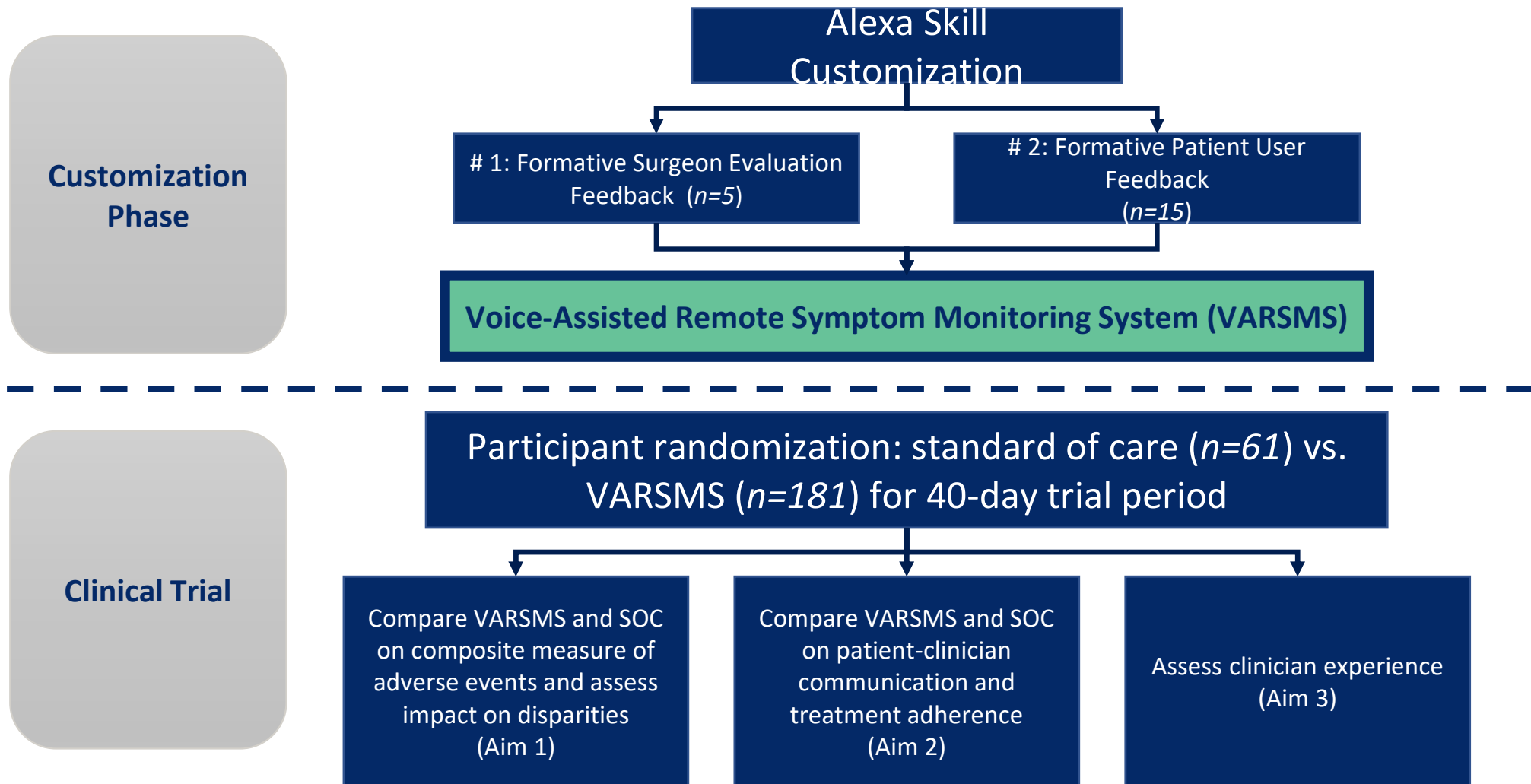
GEORGETOWN
UNIVERSITY



MedStar Health

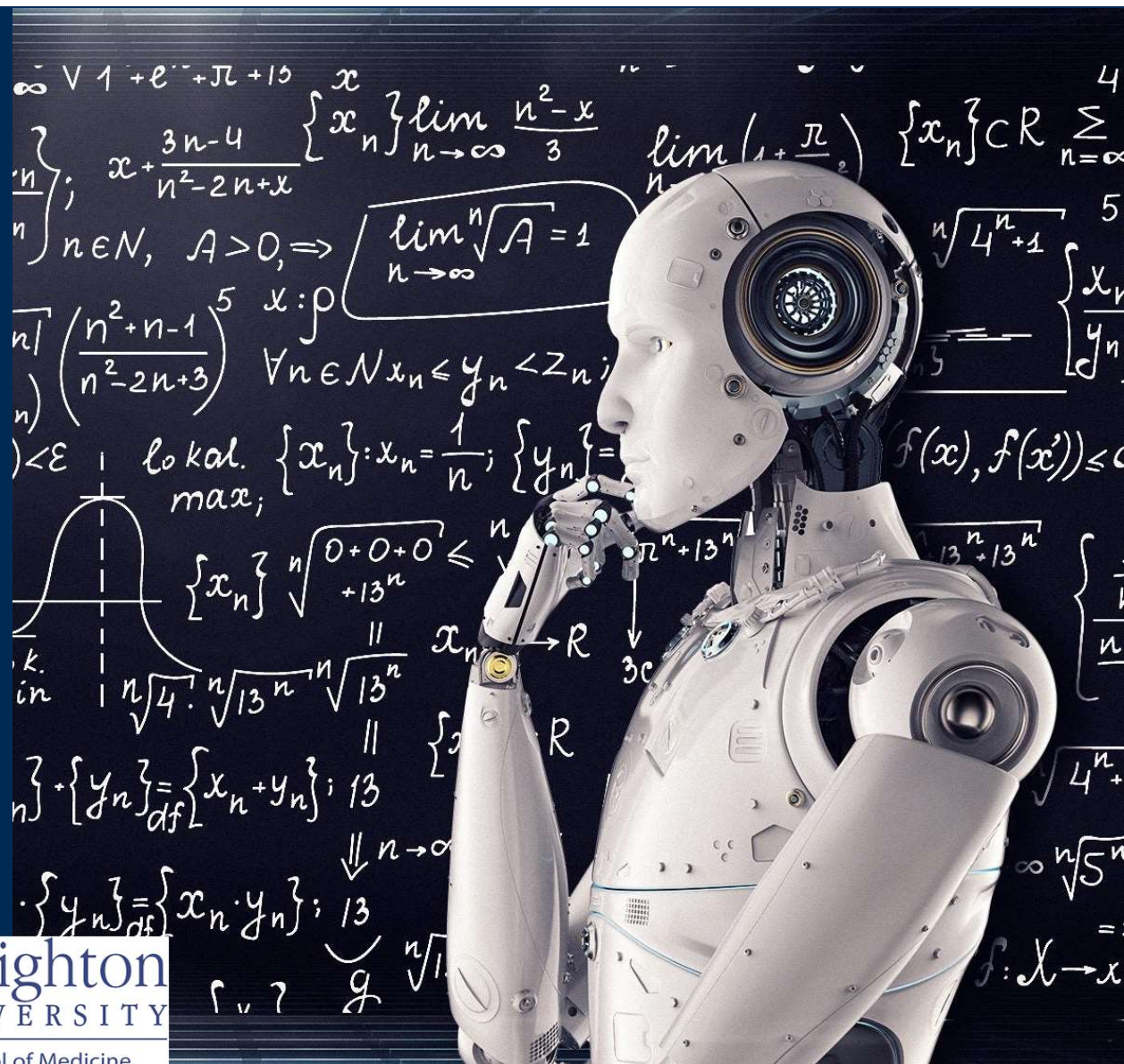
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Lessons Learned from Customization:

- Bridging the Digital Divide
- Flexible AI Solutions
- Provider/Staff Perceptions
- High Retention and Compliance
- Enhancing Relationships and SDOH Insights



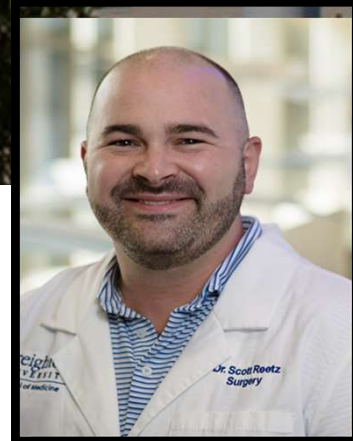
AI and the Cancer Care Journey

- 44% of rural NEs believe AI could positively impact healthcare.
- Daily tracking of patients throughout their cancer surgery recovery.
- Increased access to rural patients
- Enable us to track patient well-being, SDOH, etc., beyond the clinical measures
- Potential positive impact on clinical outcomes and patient satisfaction.



Comments from The Real Rural World

The **hospital in my hometown** has actually just announced that it will be **closing** this spring after **over 130 years of service** in the community. I will attest first-hand that these closures are **earth-shattering for communities!** People are legitimately **scared and wondering “where do I go if I am sick?”** It’s another reminder that **healthcare is not a protected right in this country, and it’s our moral imperative to find ways to deliver care** in spite of the financial constraints to do so.



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With Gratitude
Thank you!