

# Virginia Stroke Systems Task Force

Quarterly Meeting (Virtual Available)

**Meeting Location:** John F. Fick III Conference Center at

Mary Washington Healthcare

1301 Sam Perry Blvd, Fredericksburg, VA 22401

**January 19, 2024 | 10am – 3:00pm**



# Virtual Housekeeping

- ▶ Participants will be muted automatically at the start. **Please remain on mute for the duration of the meeting, unless speaking.**
- ▶ **Please turn your camera on!** It's always nice for the speaker to be able to see faces instead of talking to a bunch of blank squares.
- ▶ **Open the chat box** so you can view the discussion and ask any questions of the speaker. The chat box will be monitored by meeting hosts to ensure the questions are brought to the speakers' attention.
- ▶ If you want to speak to contribute to the conversation or ask a question, **please use the “raise hand” feature** found along the bottom of the participant's box.
- ▶ If joining the meeting over the phone only, you **can mute and unmute yourself by pressing \*6** on your phone's keypad.

**Special thanks to Corazon for sponsoring today's meeting!**

*CEUs will not be provided for the industry sponsored speaker on  
Best Practice Perspectives for Elevating Stroke Care.*

*In the spirit of Collegiality and Professionalism, please be mindful of  
any information obtained and shared in this meeting that could be  
sensitive to an individual or an institution*

# Agenda

- 10:00-10:15 am** VSSTF Business, co-chairs: Melanie Winningham, MD, Sentara Healthcare and David Long, Tidewater EMS
- 10:15-11:25am** **Workgroups Report Out**
- 11:25-11:45 am** **Stroke Smart Fredericksburg**, Susan Halpin, MWHC; Nana Noi, Rappahannock EMS; Christina Rauch, MWHC EMS
- 11:45-12:15 pm** **Lunch**
- 12:15 -12:45 pm** **Best Practice Perspectives for Elevating Stroke Care**, Chis Hartman, Client Relations Manager, Corazon, Inc.; Michelle Luffey, Senior VP, Corazon, Inc.
- 12:45-1:00 pm** **Delays in Calling 911 Literature Search**, Allie Lundberg, VDH
- 1:00-1:20 pm** **Looking through a Health Equity Lens to Improve Stroke Care**, Amy Markham, Augusta Health
- 1:20-1:50 pm** **Strategic Planning Session**, David Long, Tidewater EMS
- 1:50-2:00 pm** **VDH Updates and Final Remarks and Wrap Up**, Allie Lundberg, VDH; Melanie Winningham and David Long, co-chairs
- 2:00-3:00pm** **Virginia Stroke Coordinators Consortium Meeting**, Mandi Zemaiduk, Centra and Elizabeth Hart, LewisGale, Co-Chairs

# Welcome and Introductions

Introductions in order of:  
VSSTF Voting Members  
VSSTF Non-Voting Members

Name, Title, Organization/Hospital, City/County

For those joining virtually, introduce yourselves using the chat box to let your colleagues know you are here

# VSSTF Business

- ▶ Approval of meeting minutes from October 20<sup>th</sup> meeting.
  
- ▶ Voting Members
- ▶ New Co-Chair Needed
- ▶ Voting Members Needed

# VSSTF Co-Chair Nominations for April 2024 Voting (Nomination Information to come via email to VSSTF Voting Members)

## Reminder: VSSTF Structure

- ▶ Co-chairs
  - ▶ Two-year term; staggered
  - ▶ Elected by VSSTF voting members
- ▶ Voting members
  - ▶ Listed positions are based on 2014 VSSTF Guidance Document with noted modifications
  - ▶ Two-year term; staggered
  - ▶ Open nomination, except organizational representatives
  - ▶ Selected by VSSTF co-chairs
  - ▶ Member may be reappointed for additional two-year terms
- ▶ Nonvoting members

# Voting Members

- ▶ Can be nominated by anyone attending VSSTF
- ▶ Can Nominate Self
- ▶ Would need to serve 2 Year Term
- ▶ Attendance
- ▶ Would need to agree to attend at least 2 meetings/year in person
- ▶ Contact [Stroke@vdh.virginia.gov](mailto:Stroke@vdh.virginia.gov) with nomination information



# Workgroups Report

# Current Workgroups

1. **EMS Destination Protocols**, Daniel Linkins, Central Shenandoah EMS
2. **May Day for Stroke Awareness**, Melanie Winningham, Sentara Healthcare
3. **Messaging to Address Social Disparities**, Kristie Burnette, Mary Brandenburg, VHHA
4. **Post-Acute Discharge Disposition**, Chad Aldridge, UVA
5. **Teleneurology**, Branden Robinson, Sevaro
6. **Stroke Smart**, Alan Stillman, Kwikpoint

# EMS Destinations Workgroup

Purpose: The EMS Destination workgroup will develop a coordinated system for selecting the appropriate destination for stroke patients using best available evidence to optimize patient outcomes. Destinations will be defined based on alignment of patient needs with appropriate facility capabilities, using standardized screening tools. Destination capabilities must be identified using common terminology, regardless of accrediting or designating organization.

## Goals:

1. Determine stroke screening tools used in each region of Virginia
2. Differentiate appropriate destinations based on category of stroke (LVO, hemorrhage, etc.)
3. Identify stroke designation/accreditation (JCAHO, DNV-GL, etc.) terminology used across Virginia's hospital systems.
4. Establish recommendations for timelines in determining "closest appropriate facility" for each category of stroke.
5. Develop sample protocol
6. Assess any barriers to EMS systems with implementation of new protocol.

Focus:

The focus of the EMS Destination Workgroup is to identify the best screening tools and make recommendations for statewide coordinated protocols on management of stroke patient destinations, while considering the variables encountered in each region of the Commonwealth.

# Want to join?

Scan with your mobile device!



<https://forms.gle/3LbwKC6Kq9CZUf3EA>

# May Day for Stroke Awareness Work Group - Melanie Winningham

- ▶ Annual regional stroke awareness event and fundraiser.
- ▶ Funds allocated to AHA/ASA or local stroke-related causes.
- ▶ Concept is a field day themed event with food vendors, live entertainment (as feasible), and a variety of stroke and CV education / screening / demonstration booths.
- ▶ Corporate sponsors and fundraising (t-shirts, team fundraising for events). Format similar to Relay for Life.
- ▶ Reproducible format for other regions, states.



# VSSTF: Messaging to Address Social Disparities Workgroup

January 19, 2024

## **Members**

Mary Brandenburg, VHHA Foundation (Co-Chair)

Kristie Burnette, VHHA (Co-Chair)

Karen Bonham, HQI / Twin County Regional Healthcare

Tanya Claiborne, Riverside Health System

Beth Cottone, Survivor

Beth Hundt, Centra Health

Keri Johnson, UVA Health

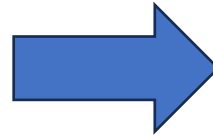


# How do we reach \*everyone\*, regardless of circumstances?

## Scope of Work

The Messaging to Address Social Disparities workgroup will:

- Review available stroke data, stratified by race/ethnicity, payor, zip code, and other socio-demographic factors
- Provide education to partners along the continuum of care about the impact of SDoH on health outcomes, how to identify health-related social needs, and how best to connect patients and their families to resources that address social needs
- Identify practices and frameworks that promote community collaboration on initiatives to address SDoH



## Goals

- Review available data and literature to identify disparities in Stroke treatment and outcomes; share findings with the VSSTF
- Create a multi-modal communication plan to educate partners about the impact of SDoH on health outcomes, the importance of standardized screening for health-related social needs, and how to connect patients and their families to social care resources in the community.
- Initiate innovative strategies to make available “best-practice” education and resources to foster collaboration and support statewide, regional, and community-level efforts to address the social drivers of health impacting Stroke patients and their families.

# Stroke is a disease of disparities.

## 1/5/24 Meeting

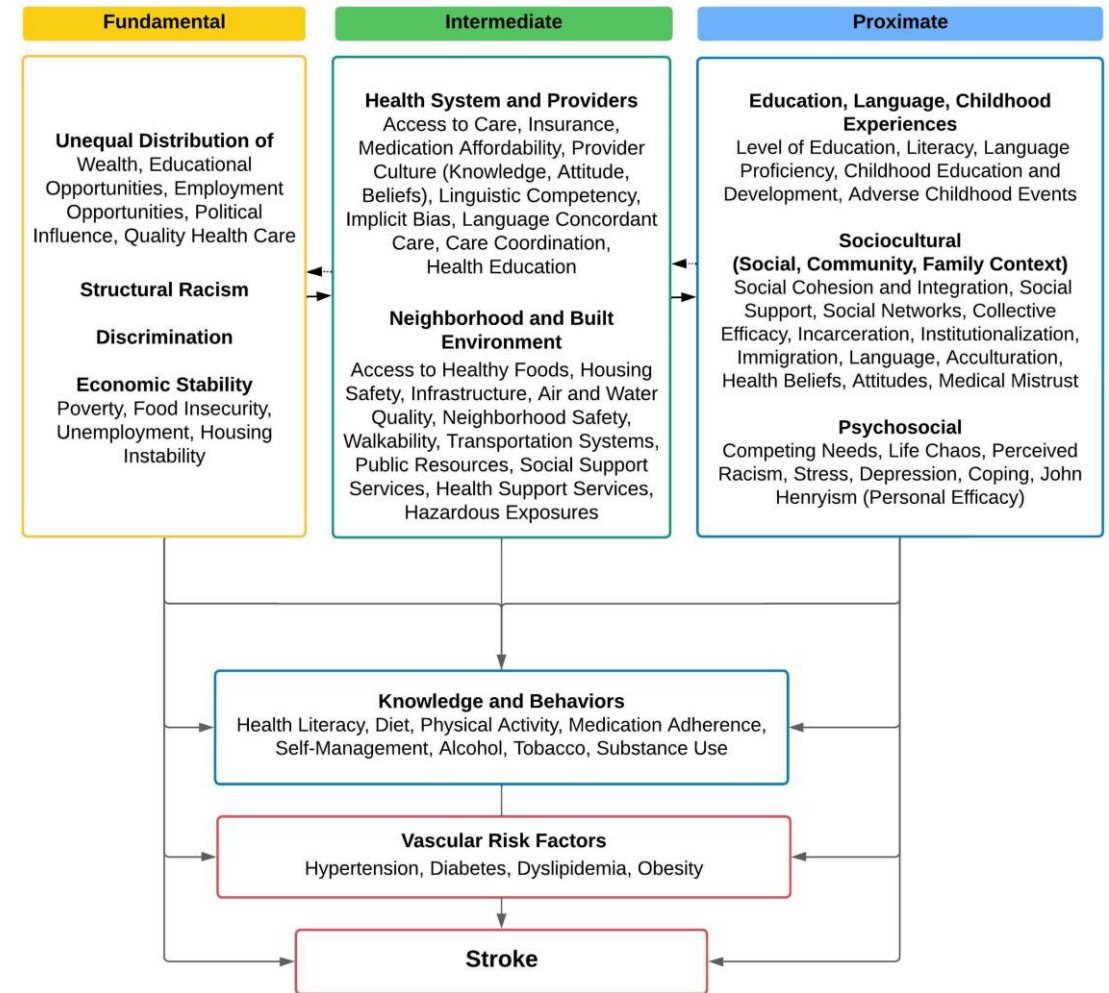
### Approval of Charter & Goals

### Literature Review & Discussion

- **Structural racism** & disparities in stroke outcomes (vs. race as non-modifiable risk factor)
- Adults <75 years have an increased incident of stroke **as the number of SDoH needs increases** (up to 50% higher when controlled for confounders).
- For ischemic stroke patients, SDoH needs related to **finances (cost of meds), education -> health literacy (medication beliefs), quality of and access to care, social supports, and cognition** impact ability to follow a medication regimen.
- Neighborhood socioeconomic status (measured by **income, education, employment, and wealth**) impacts mortality at 1 year post stroke.
- **Non-US born adults and adults categorized as low- and lowest-income** subgroups had a higher proportion of not calling EMS in response to stroke symptoms.

### VHHA Analytics Dashboard – Intro & Demo

- VHHA Analytics will provide state & locality level analysis of inpatient stays and readmissions ahead of the next meeting.
- Data will be stratified by sociodemographic factors.



# Next Steps



Monthly meeting cadence

Next meeting: Friday, February 2  
@ 1:00pm



Data review with VDH Stroke  
epidemiologist



Communication & education  
plan

# Resources

## Literature for Review:

- [Impact of Multiple Social Determinants of Health on Incident Stroke](#)
- [Utilizing Social Determinants of Health Model to Understand Barriers to Medication Adherence in Patients with Ischemic Stroke: A Systematic Review](#)
- [Education Level and Long-term Mortality, Recurrent Stroke, and Cardiovascular Events in Patients with Ischemic Stroke](#)
- [Neighborhood Socioeconomic Disadvantage and Mortality After Stroke](#)
- [Interventions Targeting Racial/Ethnic Disparities in Stroke Prevention and Treatment](#)
- [Strategies to Reduce Racial and Ethnic Inequities in Stroke Preparedness, Care, Recovery, and Risk Factor Control: A Scientific Statement from the American Heart Association](#)
- [Stroke Mortality Among Black and White Adults Aged  \$\geq 35\$  Years Before and During the COVID-19 Pandemic — United States, 2015–2021](#)
- [Association Between Sociodemographic Determinants and Disparities in Stroke Symptom Awareness Among US Young Adults](#)

## Additional Data Sources:

- [Virginia Community Health Improvement Data Portal](#) (2020)
- [VDH Interactive Stroke Map](#) (2020)
- [CDC Interactive Atlas of Heart Disease and Stroke](#) (2020)

# Post-Acute Discharge Disposition Work Group

- ▶ Chad Aldridge, UVA. Lead
- ▶ Discharge to post-acute care is common for patients following hospitalization for neurologic disease. Over one-third of US stroke inpatients are discharged to post-acute care facilities including acute rehabilitation, skilled nursing, and long-term care facilities. (Kennedy, et al., 2023)
- ▶ Contact Chad at Aldridge, Chad M \*HS [CMA7N@uvahealth.org](mailto:CMA7N@uvahealth.org) for more information and to participate.





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# TELENEUROLOGY WORKGROUP

VSST 1/29/2023

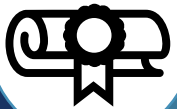
# WORKGROUP MEMBERS

- Carla Gunter, RN
  - Nursing Educator / Stroke Coordinator, Twin County Regional Hospital
- Kim Warren, DNP
  - CNO, Bon Secours Southampton Medical Center
- Laurie Mayer, MBA, BSN
  - Quality Program Specialist, Telespecialists
- Laith Altaweel, MD
  - System Stroke and Acute Care Neurology Medical Director, Inova Health System
- Branden Robinson
  - Chief Growth Officer, Sevaro Health

# TELENEUROLOGY WORKGROUP GOALS



Establish accepted metrics and processes for telestroke and standardization of the process



Educate hospitals that use telestroke and educate non-telestroke programs on the benefits of setting up a telestroke program



Improve outcomes by using telestroke to increase the use of thrombolytics in appropriate patients and route patients quickly for endovascular thrombectomies.



# METRICS

- Stroke alert to telestroke activation within 10 min.
- Telestroke activation to telestroke response within 10 min (total time 20 mins)
- Telestroke imaging interpretation(wet read) w/in 10min notification of imaging completion (total time 30 mins)
- Telestroke imaging interpretation to communicating treatment decision : (total time 40 mins)
  - EVT - 10 minutes
    - Notify onsite staff
    - Calling IR
    - Calling transfer center
  - Intravenous thrombolytic-10 minutes
  - ICH/SAH - 10 minutes
- % of stroke alerts presenting within 4.5 hrs LKW that receive thrombolytics 10%
- Reason thrombolytics was not given.
- Reason video not used
- Track proportion of stroke alerts that are assessed by video.
  - \*all times are median
- Patient outcomes (Mortality Rates, Functional Outcomes, etc)
- Patient Satisfaction (NPS or other Scales)

# BEST PRACTICES

- One-step notification from facility to teleneuro provider (CG)
- Teleneuro Provider Back-up Process (CG)
- Teleneuro Provider Etiquette (CG)
  - Introduction
  - Confirm Identification (Name and Date of Birth)
  - Identify staff and family in room
  - Inclusion/Exclusion Criteria
  - Risks/benefits and alternative conversation with patient or surrogate, and if none available, emergency policy consent.
- ED Provider in room at end of consult to facilitate care (CG)
- Acute Stroke Ready through CSC should expect the same level of care and response from telestroke
- Quick Access to Imaging Studies- Ensure rapid access to imaging studies (CT scans, MRIs) for remote neurologists.
- Utilize advanced imaging interpretation tools(AI) (Brainomix, Rapid, Viz)
- Establish a direct to CT and tele-cart setup protocol.
- Establish a process for telestroke neurologist to contact receiving facility/NIR MD.

# BEST PRACTICES CONT...

- Establish one process when on-site and teleneurology vendor cover different shifts.
- Televideo provider must document in the EHR
- Wifi Connectivity Mapping - designate areas for video evaluation
- NIHSS Certified RNs
- Telepresenter training for bedside staff Imaging shared with receiving hospital within 10 min of transfer request
- DIDO for acute stroke requiring transfer within 120 min
- Multidisciplinary Collaboration- Establish collaboration between neurologists, emergency room staff, radiologists, and other relevant healthcare professionals to include process and metric data sharing.
- Standardized Protocols and Guidelines- Develop and implement standardized protocols and guidelines for telestroke assessments, diagnosis, and treatment. Consistency in procedures helps ensure quality care.

# PHASE II

Education Q2 and Q3:

Current Telestroke Programs

Hospitals not using Telestroke

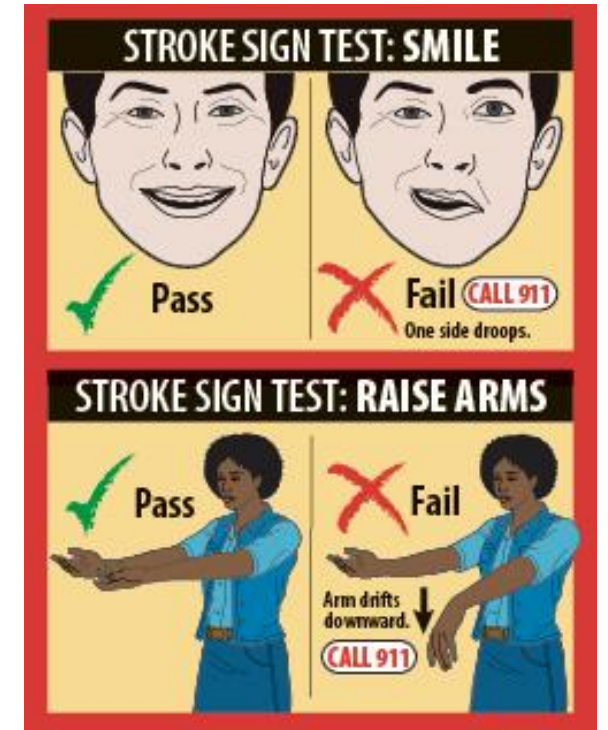


THANK YOU

[BRANDEN@SEVARO.COM](mailto:BRANDEN@SEVARO.COM)

# Stroke Smart Medical Practice – Elements\*

1. Train all office staff to spot strokes and follow the practice protocol if a stroke is suspected (suggested: annually)
2. Ensure *Stroke Smart* education and materials are accessible to all patients (i.e., wallet cards, magnets, posters, videos)
3. Identify high risk patients and provide (intentional) education and materials
4. Incorporate *Stroke Smart* script in phone system recordings (Suggested Element)
5. Track metrics on *Stroke Smart* program activities



\*Approved by Virginia Stroke System Task Force: Jan 2023

# Suggested Levels for Recognition:

## *Stroke Smart Champion*

- Participant has implemented and consistently practices **(1) element** of the Stroke Smart Medical Practice criteria

## *Silver Level:*

- Participant has implemented and consistently practices **(2) elements** of the Stroke Smart Medical Practice criteria

## *Gold Level:*

- Participant has implemented and consistently practices **(3) elements** of the Stroke Smart Medical Practice criteria

## *Platinum:*

- Participant has implemented and consistently practices **(4) or more elements** of the Stroke Smart Medical Practice criteria

# Stroke Smart Fredericksburg

Susan Halpin, Nana Noi, Christina Rauch



# Lunch and Best Practice Perspectives for Elevating Stroke Care

Chis Hartman, Client Relations Manager, Corazon, Inc.; Michelle Luffey, Senior VP, Corazon, Inc.

# Literature Review: Delays in Calling 911

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Allie Lundberg, MPH

[allie.lundberg@vdh.virginia.gov](mailto:allie.lundberg@vdh.virginia.gov)

[Stroke@vdh.virginia.gov](mailto:Stroke@vdh.virginia.gov)

# Key Words

- 911 call hesitancy
- 911 call
- EMS call hesitancy
- EMS call
- Stroke

# Key Findings – Sociodemographics

- Of the 436 participants, 208 (48%) first called for EMS transport, **while 228 (52%) called their general physician (GP). Women were found to call EMS less often** than men (42% and 53%, respectively). Some of the strongest associations of calling EMS directly were event occurring outside GP office hours, higher FAST score results, and short onset-to-alert time (seeking medical help soon after symptom onset). Weak associations included sex, NIHSS score, and medical history of atrial fibrillation, ischemic stroke, and intracranial hemorrhage. (Duvekot, et. Al., DOI: 10.1016/j.clineuro.2022.107297)
- The top two known symptoms were numbness to the face/arm/leg and difficulty speaking. During a deeper sociodemographic analysis, it was found that **non-US born adults and adults categorized as low- and lowest-income subgroups had a higher proportion of not calling EMS**. (Mszar, et. Al., DOI:10.1161/STROKEAHA.120.031137)

# Key Findings – Sociodemographics, continued

- Younger patients were also found to **least likely use ambulance services** (62% vs 66%), with younger **women least likely to use ambulance services and found to have an onset to hospital arrival time of 9 hours**. (Kapoor, et. Al., DOI: 10.1017/cjn.2020.119)

# Key Findings – Justification & Symptom Recognition

- 12 [patients] **(32%) reported hospital preference (wanted to be at a closer hospital)**, 7 (18%) didn't realize symptoms were an emergency, 5 (13%) family member preferred to drive, 4 (11%) patient or family thought it would be faster to drive, 4 (11%) the stroke event occurred close to the hospital or in a car, 1 (3%) the cost of EMS help, 5 (13%) other. (Ramirez, et. Al., DOI: 10.1161/str.50.suppl\_1.WMP93)
- It was found that just **over half of respondents (51.5%) would call 911 as their initial response if someone presented with sudden trouble speaking** or understanding, **42.0% would call with a sudden numbness or weakness** on one side of their body, but only 20.4% would call 911 for someone with vision trouble in one or both eyes. (Fussman, et. Al., DOI: 10.1161/STROKEAHA.110.578195)

# Discussion

- Younger women (aged 18-44 years) are least likely to call an ambulance when needed.
- Low-income patients are least likely to call an ambulance when needed.
- Some symptoms aren't seen as emergent.
- Hospital preference of patients.

# References

- Kapoor A, Lindsay MP, Yu AYX, Goia C, Cheskes S, Verbeek PR, Swartz RH. Call 911: Lower Ambulance Utilization Among Young Adults, Especially Women, with Stroke. *Can J Neurol Sci*. 2020 Nov;47(6):764-769. doi: 10.1017/cjn.2020.119. Epub 2020 Jun 8. PMID: 32507117.
- Fussman C, Rafferty AP, Lyon-Callo S, Morgenstern LB, Reeves MJ. Lack of association between stroke symptom knowledge and intent to call 911: a population-based survey. *Stroke*. 2010 Jul;41(7):1501-7. doi: 10.1161/STROKEAHA.110.578195. Epub 2010 May 13. PMID: 20466995.
- Duvekot MHC, Kerkhoff H, Venema E, Bos HWDJC, Smeeke D, Buijck BI, Rozeman AD, Moudrous W, Vermeij FH, Lycklama À Nijeholt GJ, Jan van Doormaal P, van Es ACGM, van der Lugt A, Dippel D, Roozenbeek B. Medical attention seeking by suspected stroke patients: Emergency medical services or general practitioner? *Clin Neurol Neurosurg*. 2022 Jul;218:107297. doi: 10.1016/j.clineuro.2022.107297. Epub 2022 May 21. PMID: 35636379.



# References, continued

- Ramirez, M., Bedgio, R., Ramos, V., Gonzalez, I. C., Gonzalez, Y. M., Starosciak, A. K., D'Amour, D., Strauss, J., & La Rosa, F. D. L. R. (n.d.). *Abstract WMP93: Addressing stroke patient and family reasons for not ...* INTERNATIONAL STROKE CONFERENCE 2019 MODERATED POSTER ABSTRACTS.  
[https://www.ahajournals.org/doi/10.1161/str.50.suppl\\_1.WMP93](https://www.ahajournals.org/doi/10.1161/str.50.suppl_1.WMP93)
- Mszar R, Mahajan S, Valero-Elizondo J, Yahya T, Sharma R, Grandhi GR, Khera R, Virani SS, Lichtman J, Khan SU, Cainzos-Achirica M, Vahidy FS, Krumholz HM, Nasir K. Association Between Sociodemographic Determinants and Disparities in Stroke Symptom Awareness Among US Young Adults. *Stroke*. 2020 Dec;51(12):3552-3561. doi: 10.1161/STROKEAHA.120.031137. Epub 2020 Oct 26. PMID: 33100188.

# QUESTIONS?

Contact Allie Lundberg at

- [allie.lundberg@vdh.virginia.gov](mailto:allie.lundberg@vdh.virginia.gov)

Or the Stroke Team at

- [Stroke@vdh.virginia.gov](mailto:Stroke@vdh.virginia.gov)

# Looking through a Health Equity Lens to Improve Stroke Care

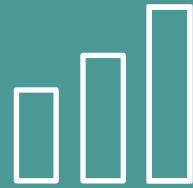
Presented by Amy Markham  
Data Source by Adam Schwartz  
January 19, 2024



Care that makes a lifetime.

# Objectives

- Define Health Equity & terminology
- Share Call to Action for Augusta Health
- Compare & contrast Health Equity variables for Augusta Health service area & stroke population
- Depict Stroke Health Equity variables associated with arrival within 4.5 hours
- Share early analysis & potential recommendations

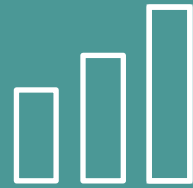


# Health Equity Defined



CMS defines health equity as...

*“attainment of the highest level of health for all people, where everyone has a fair and just opportunity to attain their optimal health regardless of race, ethnicity, disability, sexual orientation, gender identity, socioeconomic status, geography, preferred language, or other factors that affect access to care and health outcomes.”*



# CMS Call to Action

# CMS Framework for Health Equity 2022-2032

- 5 Priorities



- Priority 1:

- *Expand the Collection, Reporting, and Analysis of Standardized Data*

- Priority 2:

- Assess Causes of Disparities Within CMS Programs, and Address Inequities in Policies and Operations to Close Gaps

- Priority 3:

- Build Capacity of Health Care Organizations and the Workforce to Reduce Health and Health Care Disparities

- Priority 4:

- Advance Language Access, Health Literacy, and the Provision of Culturally Tailored Services

- Priority 5:

- Increase All Forms of Accessibility to Health Care Services and Coverage

CMS Framework for Health Equity 2022–2032



[GO.CMS.GOV/OMH](https://www.cms.gov/omh)





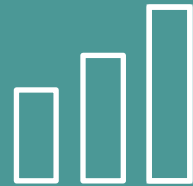
# CMS Inpatient Prospective Payment System (IPPS) Final Rule

## Commitment to Health Equity

- In 2023, CMS added this new structural measure for healthcare organizations to demonstrate their commitment to health equity with 5 domains.
  - Equity is a Strategic Priority, Data Collection, Data Analysis, Quality Improvement, Leadership Engagement

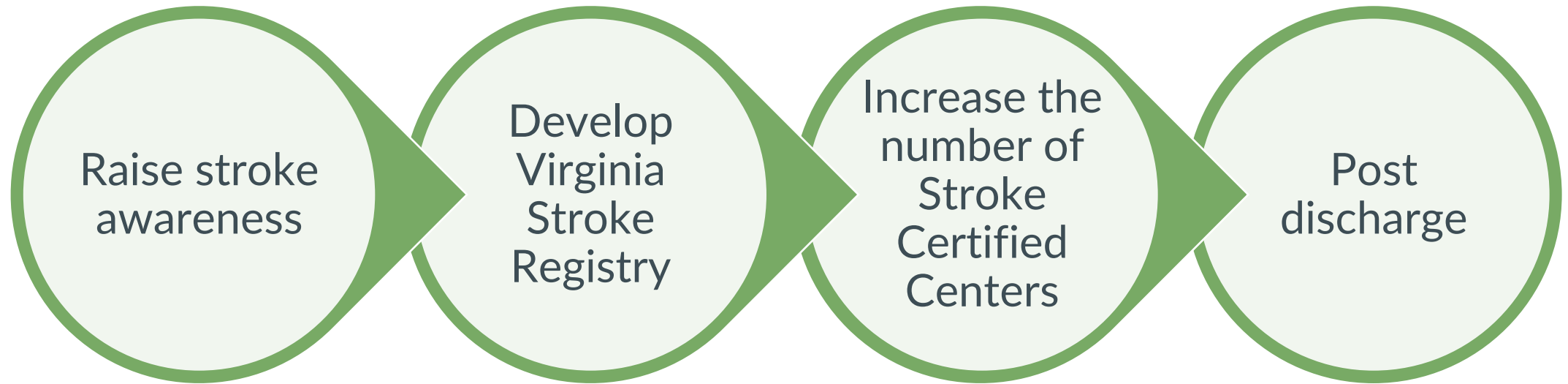
## SDOH Process Measures

- In 2024, CMS added the Social Determinants of Health process measure
  - To screen patients and assess data for those who identified as having one or more social risk factors
    - Food insecurity, housing instability, transportation needs, utility difficulty & interpersonal safety



# Augusta Health Call to Action for Health Equity

# Virginia Statewide Stroke Initiatives (Coverdell Grant)

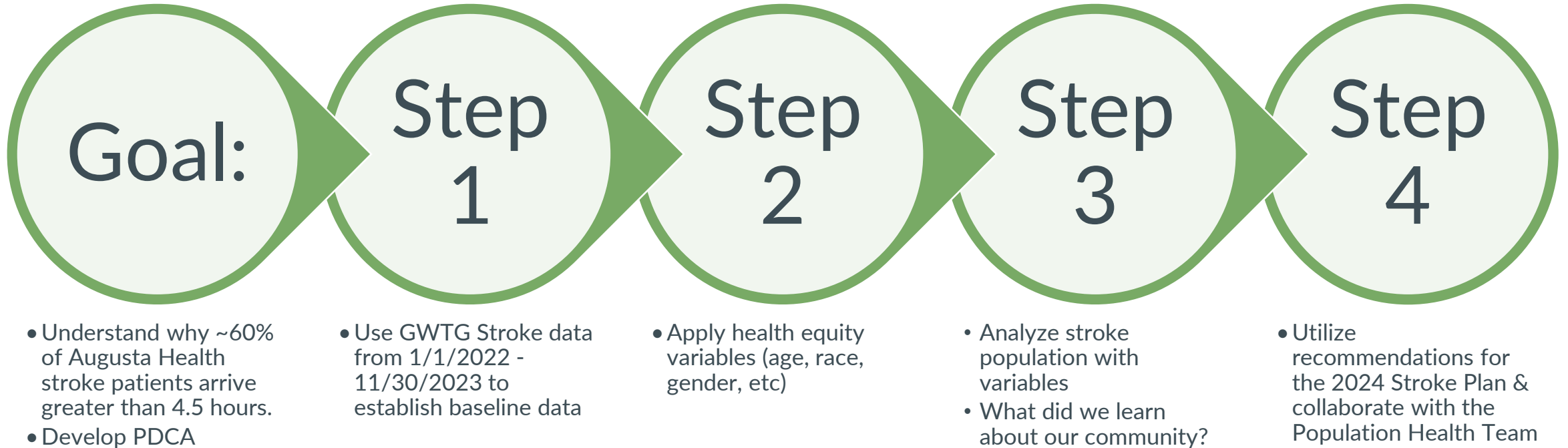


- Stroke Smart Virginia

- Health Equity, SDOH

- Raise awareness of resources available

# Augusta Health Plan for CMS Call of Action





# Augusta Health Stroke Accreditation & Program

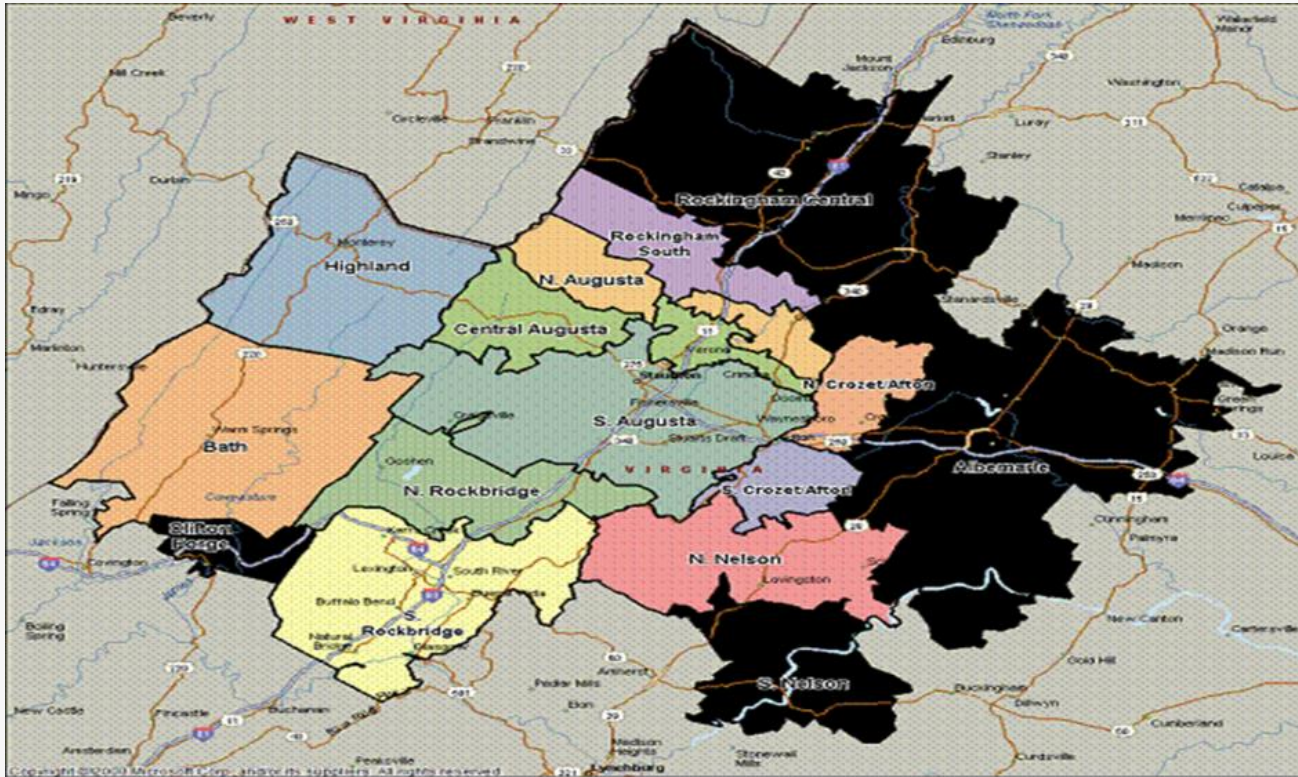
# Our Program

- Augusta Health is a 255, non-profit, community hospital that was established in 1994
- Stroke journey begun in 2003 with dedicated nurses & therapists wanting to give better stroke care
- Recognized as an AHA GWTG Stroke Participating Hospital in May 2007
- Recognized at a Primary Stroke Center by Joint Commission in 2009
- Became certified by DNV as a Primary Stroke Center in 2020
- Recipient of multiple Achievement Awards through GTWG
  - In 2023, received the Gold Plus Target Stroke Elite Honor Roll/Target Type 2 Diabetes Honor Roll





# Population Served



- Primary Areas:
  - Augusta County
  - Staunton City
  - Waynesboro City
- Secondary Areas:
  - Bath County
  - Highland County
  - Nelson County
  - Northern Rockbridge County
  - Southern Rockingham County
  - Western Albemarle County
- 63,234 Emergency visits in 2023
- 10,341 Admissions in 2023
- Stroke Volume (GWTG)
  - 2022 = 456
    - Stroke Alerts = 436
  - 2023 = 550
    - Stroke Alerts = 396



# Our Data Story



# Definitions



## Mini market

Combination of zip codes to form a smaller group than primary or secondary service areas



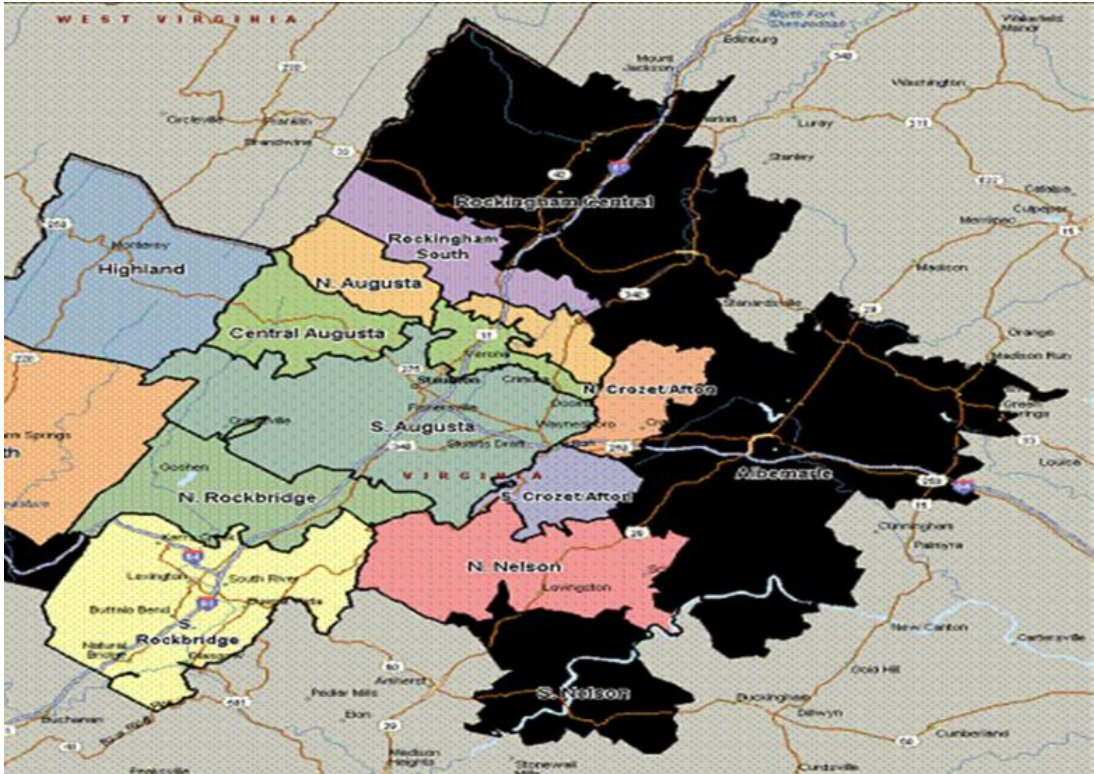
## Area Deprivation Index (ADI)

A tool that assesses local area deprivation that is linked to a number of healthcare outcomes

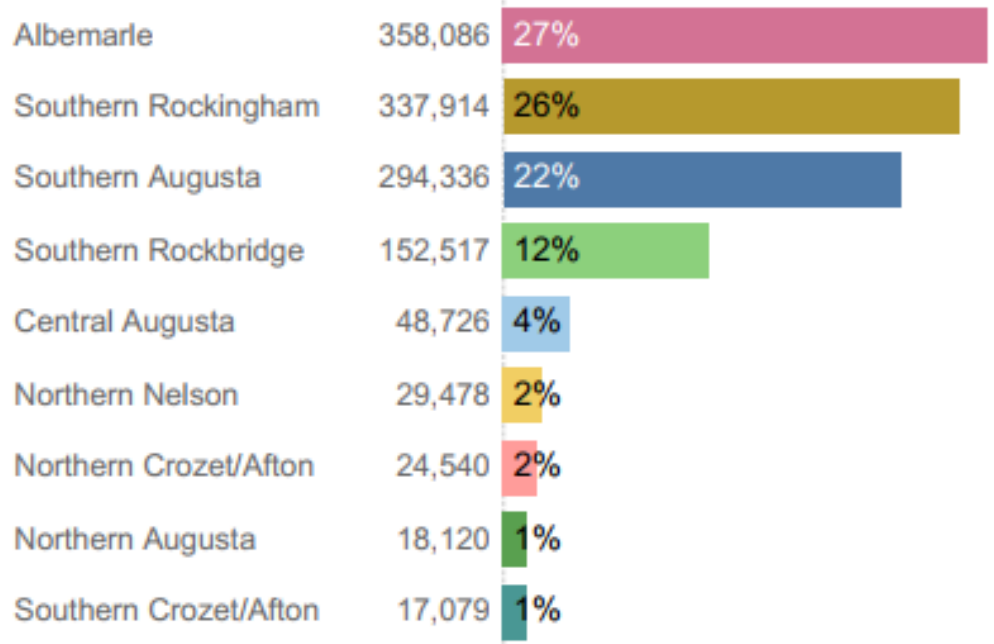


## Social Determinants of Health (SDOH)

Non-medical factors that can influence patients' healthcare outcomes  
Include Housing, transportation, food, utilities, emotional/personal safety



### US Census by mini market | ACS 5 year survey 2021



## Augusta Health Service Area Population

## by age

|         | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|---------|------------------------|-----|-----|---------|------------------------|-----|---------|
|         | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| 18 - 49 | 57                     | 27  | 25  | 5       | 47%                    | 44% | 9%      |
| 50 - 64 | 199                    | 68  | 120 | 11      | 34%                    | 60% | 6%      |
| 65 +    | 655                    | 250 | 346 | 59      | 38%                    | 53% | 9%      |

## by race

|         | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|---------|------------------------|-----|-----|---------|------------------------|-----|---------|
|         | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| Black   | 71                     | 13  | 50  | 8       | 18%                    | 70% | 11%     |
| White   | 819                    | 320 | 434 | 65      | 39%                    | 53% | 8%      |
| Unknown | 21                     | 13  | 6   | 2       | 62%                    | 29% | 10%     |

## by gender

|         | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|---------|------------------------|-----|-----|---------|------------------------|-----|---------|
|         | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| Female  | 479                    | 180 | 263 | 36      | 38%                    | 55% | 8%      |
| Male    | 428                    | 163 | 226 | 39      | 38%                    | 53% | 9%      |
| Unknown | 5                      | 3   | 2   |         | 60%                    | 40% |         |

## has seen a primary care provider in the 12 months prior?

|     | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|-----|------------------------|-----|-----|---------|------------------------|-----|---------|
|     | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| Yes | 392                    | 142 | 212 | 38      | 36%                    | 54% | 10%     |
| No  | 520                    | 204 | 279 | 37      | 39%                    | 54% | 7%      |

# Overall Stroke Population Variables

## by age

|         | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|---------|------------------------|-----|-----|---------|------------------------|-----|---------|
|         | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| 18 - 49 | 45                     | 22  | 19  | 4       | 49%                    | 42% | 9%      |
| 50 - 64 | 149                    | 55  | 86  | 8       | 37%                    | 58% | 5%      |
| 65 +    | 526                    | 202 | 275 | 49      | 38%                    | 52% | 9%      |

## by race

|         | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|---------|------------------------|-----|-----|---------|------------------------|-----|---------|
|         | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| Black   | 67                     | 13  | 46  | 8       | 19%                    | 69% | 12%     |
| White   | 637                    | 256 | 330 | 51      | 40%                    | 52% | 8%      |
| Unknown | 16                     | 11  | 3   | 2       | 69%                    | 19% | 13%     |

## by gender

|         | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|---------|------------------------|-----|-----|---------|------------------------|-----|---------|
|         | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| Female  | 388                    | 151 | 208 | 29      | 39%                    | 54% | 7%      |
| Male    | 331                    | 127 | 172 | 32      | 38%                    | 52% | 10%     |
| Unknown | 2                      | 2   |     |         | 100%                   |     |         |

## has seen a primary care provider in the 12 months prior?

|     | Seen within 4.5 hours? |     |     |         | Seen within 4.5 hours? |     |         |
|-----|------------------------|-----|-----|---------|------------------------|-----|---------|
|     | Total                  | Yes | No  | Unknown | Yes                    | No  | Unknown |
| Yes | 315                    | 123 | 160 | 32      | 39%                    | 54% | 7%      |
| No  | 406                    | 157 | 220 | 29      | 39%                    | 51% | 10%     |

# Stroke Population Variables

## Southern Augusta County



## Area Deprivation Index (ADI)

- Living in a disadvantaged neighborhood has been linked to a number of healthcare outcomes, including higher rates of diabetes and cardiovascular disease, increased utilization of health services, and earlier death.
- Health interventions and policies that don't account for neighborhood disadvantage may be ineffective.
- The Neighborhood Atlas website was created to freely share measures of neighborhood disadvantage with the public, including educational institutions, health systems, not-for-profit organizations, and government agencies. This project is an effort of the University of Wisconsin.
- Data is provided at the Census Block Group levels. A low ADI score indicates affluence or prosperity. A high ADI score is indicative of high levels of deprivation.
- Measured at the level of census block groups roughly 1500 persons. Close to neighborhood level.

# 17 Variables for ADI



## Education

- % Population aged 25 or older with less than 9 years of education
- % Population aged 25 or older with at least a high school diploma
- % Employed population aged 16 years or older in white collar occupations



## Income Employment

- Median family income in US dollars
- Income disparity
- % Families below federal poverty level
- % Populations below 150% federal poverty level
- % Civilian labor force population aged 16 years and older who are unemployed



## Housing

- Median home value in US dollars
- Median gross rent in US dollars
- Median monthly mortgage in US dollars
- % Owner-occupied housing units
- % Occupied housing units without complete plumbing



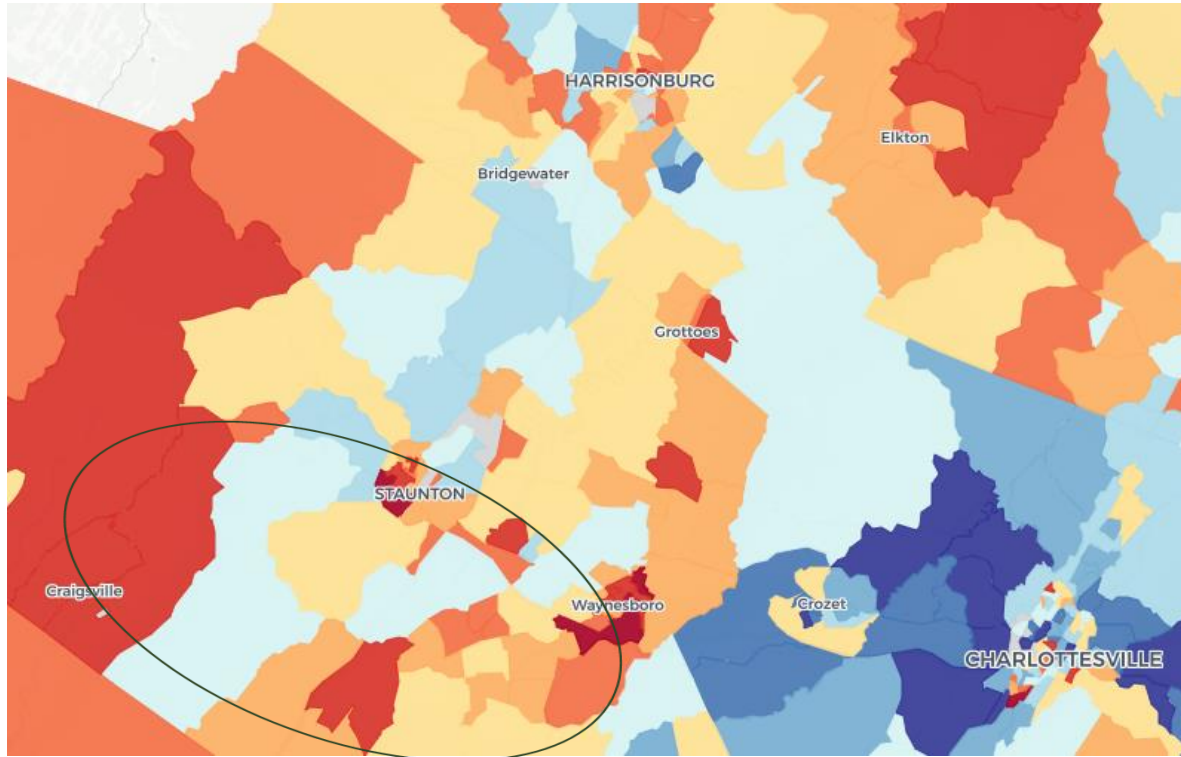
## Household Characteristics

- % Single parent households with children younger than 18
- % Households without a motor vehicle
- % Households without a telephone
- % Households with more than 1 person per room



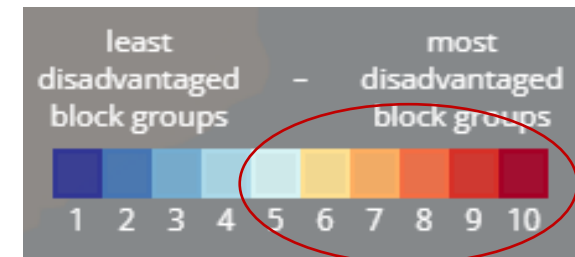
# The Area Deprivation Index– A Metric for Social Risk

## Neighborhood Atlas, University of Wisconsin



Combines 17 metrics on housing quality, employment, poverty and education.

Measured at the level of census block groups → roughly 1500 persons. Close to neighborhood level



The area you are seeing here is the primary service area for Augusta Health. The areas in deep red are areas of higher deprivation. As you can imagine southern Augusta County represents many “neighborhoods” and thus potentially a mixture of ADI scores.

Our region’s map of census tract ADI scores, 4/27/23

Source: <https://www.neighborhoodatlas.medicine.wisc.edu/mapping>

## All markets

Stroke patients Last Known Well within 4.5 hours?

| ADI |     | Yes | No  | Unknown |
|-----|-----|-----|-----|---------|
| 1   | 0%  |     | 0%  | 2%      |
| 2   | 0%  |     | 0%  |         |
| 3   | 0%  | 0%  | 0%  |         |
| 4   | 5%  | 4%  | 5%  | 8%      |
| 5   | 15% | 17% | 14% | 17%     |
| 6   | 21% | 22% | 21% | 11%     |
| 7   | 23% | 23% | 22% | 27%     |
| 8   | 14% | 14% | 14% | 17%     |
| 9   | 15% | 14% | 16% | 14%     |
| 10  | 6%  | 6%  | 7%  | 6%      |

## ADI & Mini-Market: Overall Stroke Population

ADI grouped

| 1 to 6 | 7 to 10 |        |         |
|--------|---------|--------|---------|
| 21%    | 79%     |        |         |
| 1 to 4 | 5 to 6  | 7 to 8 | 9 to 10 |
| 5%     | 36%     | 38%    | 21%     |



# Southern Augusta

Stroke patients Last Known Well within 4.5 hour..

| ADI.. |     | Yes | No  | Unknown |
|-------|-----|-----|-----|---------|
| 1     | 0%  |     | 0%  |         |
| 2     |     |     |     |         |
| 3     | 0%  |     | 0%  |         |
| 4     | 4%  | 4%  | 4%  | 7%      |
| 5     | 17% | 18% | 16% | 20%     |
| 6     | 19% | 21% | 20% | 7%      |
| 7     | 25% | 24% | 24% | 33%     |
| 8     | 13% | 12% | 14% | 15%     |
| 9     | 14% | 15% | 14% | 13%     |
| 10    | 7%  | 7%  | 8%  | 5%      |

## ADI & Mini-Market: Southern Augusta Co. Stroke Population

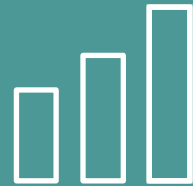
ADI grouped

| 1 to 6 | 7 to 10 |        |         |
|--------|---------|--------|---------|
| 21%    | 79%     |        |         |
| 1 to 4 | 5 to 6  | 7 to 8 | 9 to 10 |
| 4%     | 36%     | 38%    | 22%     |

# SDOH Current State

- Case management is screening for SDOH for our inpatients
  - Not capturing 100% of patients
- Opportunity to screen all stroke patients
  - Identify possible barriers
  - Improve stroke care

|  |            |
|--|------------|
| <b>SDOH Screening (inpatient) 2023</b> | <b>56%</b> |
| <b>SDOH Positive</b>                   | 7%         |
| <b>Food Insecurity</b>                 | 1%         |
| <b>Housing Instability</b>             | 2%         |
| <b>Transportation Needs</b>            | 3%         |
| <b>Utility Difficulties</b>            | 2%         |
| <b>Interpersonal Safety</b>            | 0%         |



# Stroke Marketing & Community Outreach

# Marketing Current State

- Radio
- Television (WHSV, NBC29, Effect TV)
- Newspaper Articles
- Billboards (Fishersville, Waynesboro, Verona & Stuarts Draft)
- Digital Ads
- AMG Clinics & Exam Rooms
- AH Hospital & Patient Care areas
- AH Blog
- Health Matters publication
- Social Media Posts (Facebook, Instagram, X)
- Community e-Newsletter
- Senior Health Fairs



**B. E. F. A. S. T.**  
**Call 9-1-1 at first sign of stroke.**

**Augusta Health** MAYO CLINIC CARE NETWORK Member

**EVERY MINUTE COUNTS**  
 If you're having a stroke.

**Living Healthy**  
 May 2023 **Augusta Health**

**AUGUSTA HEALTH RECEIVES PRIMARY STROKE CENTER CERTIFICATION FROM DNV**

Augusta Health announces that it has received certification from DNV as a Primary Stroke Center, affirming the hospital's readiness to handle a full range of stroke-related medical problems. This certification is the ability to effectively evaluate patients to the care expertise they require treatment beyond our capabilities. In addition, the certification is the highest level of recognition that our stroke team has earned. "This certification is an important milestone for us because it demonstrates our commitment to provide the best possible stroke care," says Dr. Robert M. MDA, MD, MSc, Quality Coordinator of Neurology and Emergency Medicine. "It's a combination of the right equipment, personnel, and training to quickly assess and treat stroke. This includes and establishes clear roles to ensure uniformity."

Adherence to certification standards, such as the American Stroke Association, makes a lasting impact on the lives of patients. It's a commitment to our community that we are proud to share. It's a commitment to our patients and stakeholders to be the best at what we do. It's a commitment to our patients and stakeholders to be the best at what we do. It's a commitment to our patients and stakeholders to be the best at what we do.

**About DNV**  
 DNV is a global independent certification, inspection, and risk management provider. Operating in more than 100 countries, through its local presence and deep expertise, DNV provides a wide range of services to help organizations improve their performance and ensure compliance with industry standards. For more information about DNV, visit [www.dnv.com/healthcare](http://www.dnv.com/healthcare).

**HOW TO SPOT A STROKE**  
**B.E. F.A.S.T.**

- Balance (Equilibrium)** - Watch for sudden loss of balance
- Eyes (Eyes)** - Check for vision loss
- Face (Face)** - Look for an uneven smile
- Arms (Arms)** - Check if one arm is weak
- Speech (Speech)** - Listen for slurred speech
- Time (Time)** - Call 9-1-1 right away

**Augusta Health** MAYO CLINIC CARE NETWORK Member

**B. E. F. A. S. T.**  
**Call 9-1-1 at first sign of stroke.**

**Augusta Health** MAYO CLINIC CARE NETWORK Member

**Augusta Health**

**HOW TO SPOT A STROKE**

- Balance**  
 Watch for sudden loss of balance
- Eyes**  
 Check for vision loss
- Face**  
 Look for an uneven smile
- Arms**  
 Check if one arm is weak
- Speech**  
 Listen for slurred speech
- Time**  
 Call 9-1-1 right away

**B.E. F.A.S.T! Call 9-1-1 at the first sign of stroke.**

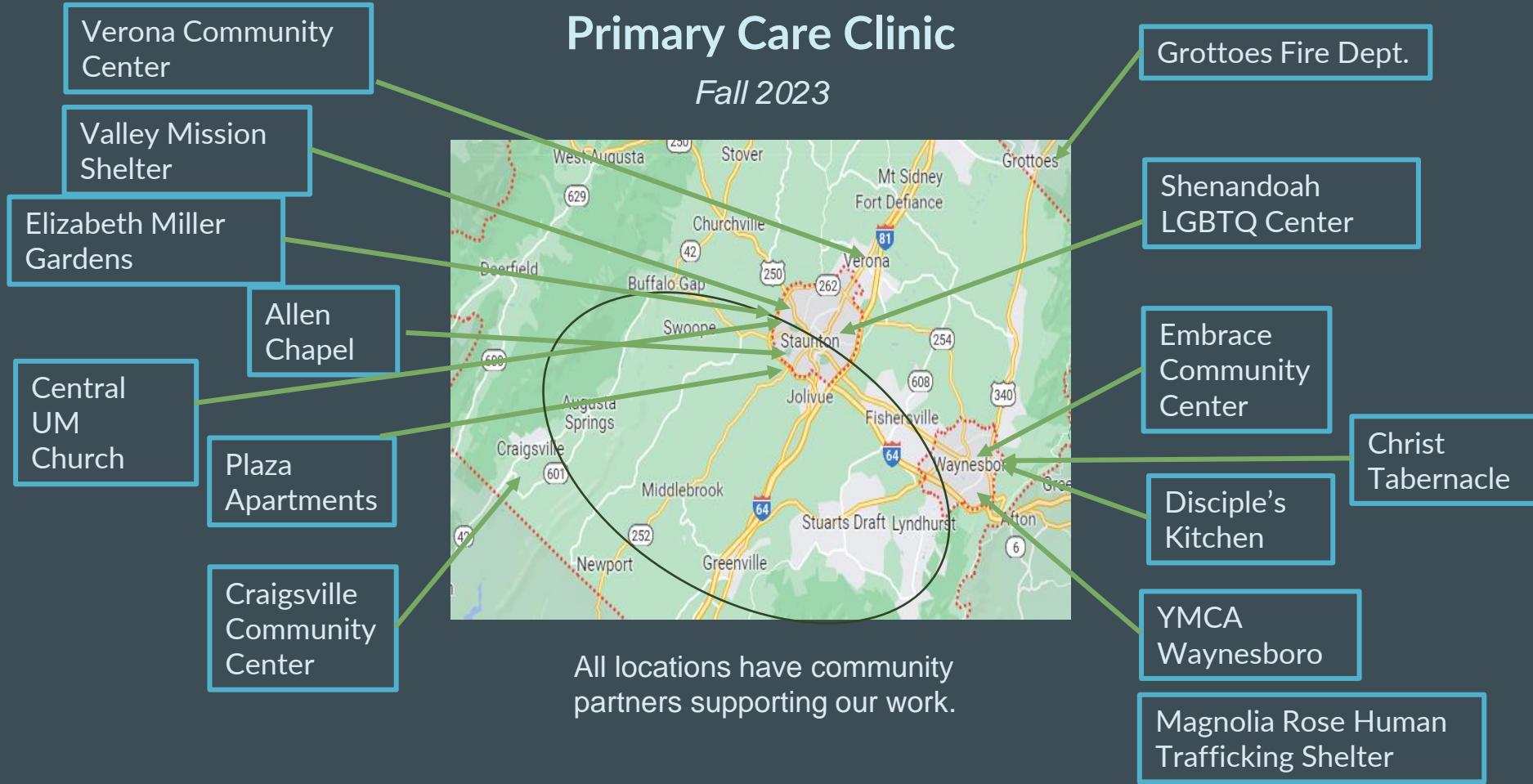
Visit [augustahospital.com/stroke](http://augustahospital.com/stroke) or [stroke.org](http://stroke.org) for more information.



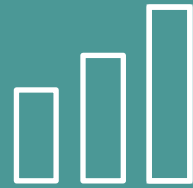
# Current Population Health Community Outreach

# Augusta Health's Mobile Primary Care Clinic

Fall 2023

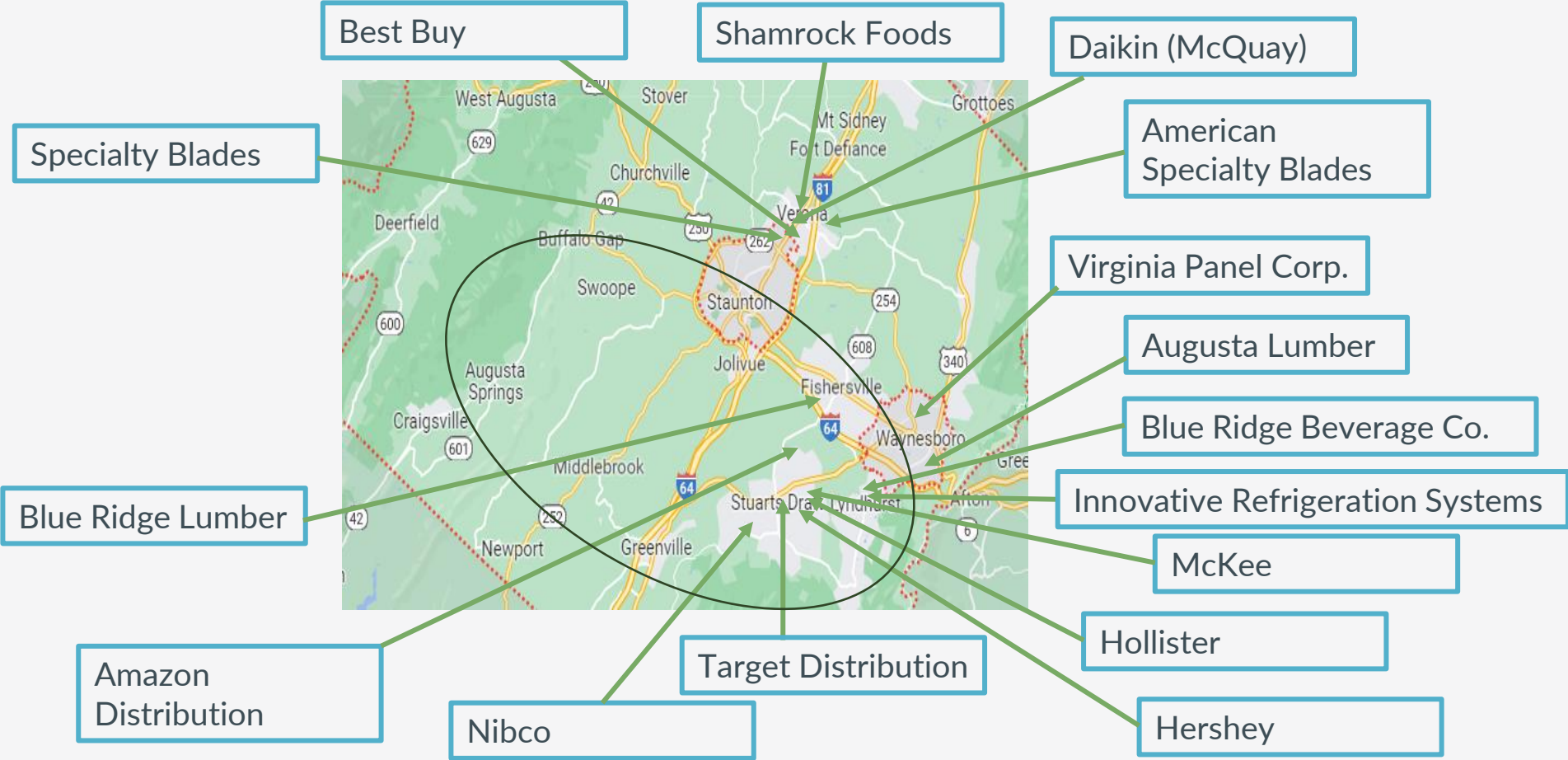


All locations have community partners supporting our work.



# Community Opportunities

# Large Corporations in Service Area





# Top 3 Industries in Augusta County

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## Industry

Manufacturing (7,252 employees)

Health Care & Social Assistance (4293 employees)

Transportation & Warehousing (3087 employees)

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*Source: U.S. Census Bureau,  
Local Employment Dynamics (LED) Program, 4th Quarter (October, November, December) 2022, all ownerships.*

## Age Group (50-64)

Manufacturing (3264)

Health Care & Social Assistance (1944)

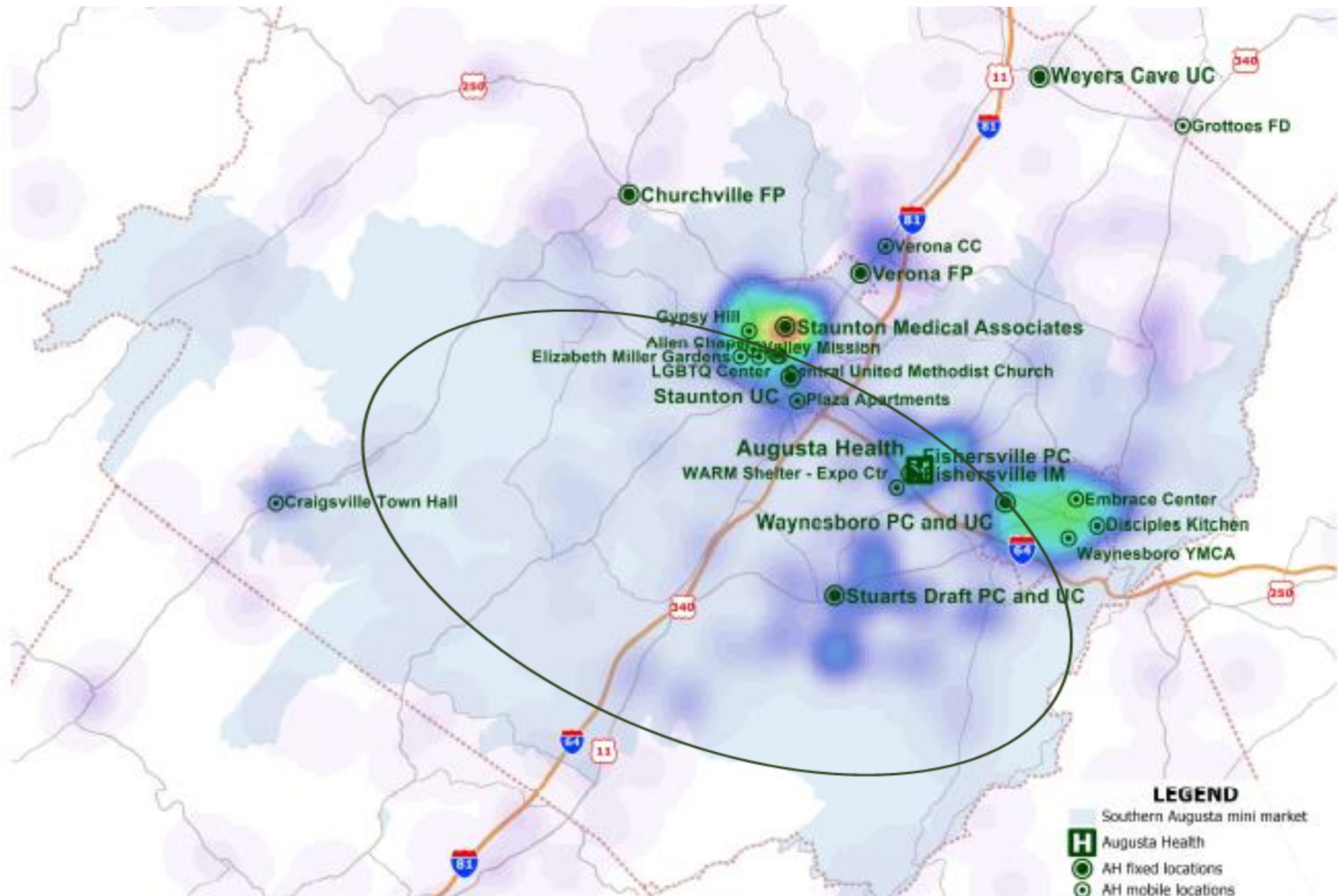
Transportation & Warehousing (1156)

*Source: Virginia Employment Commission, Economic Information & Analytics,  
Quarterly Census of Employment and Wages (QCEW), 2nd Quarter (April, May, June) 2023.*

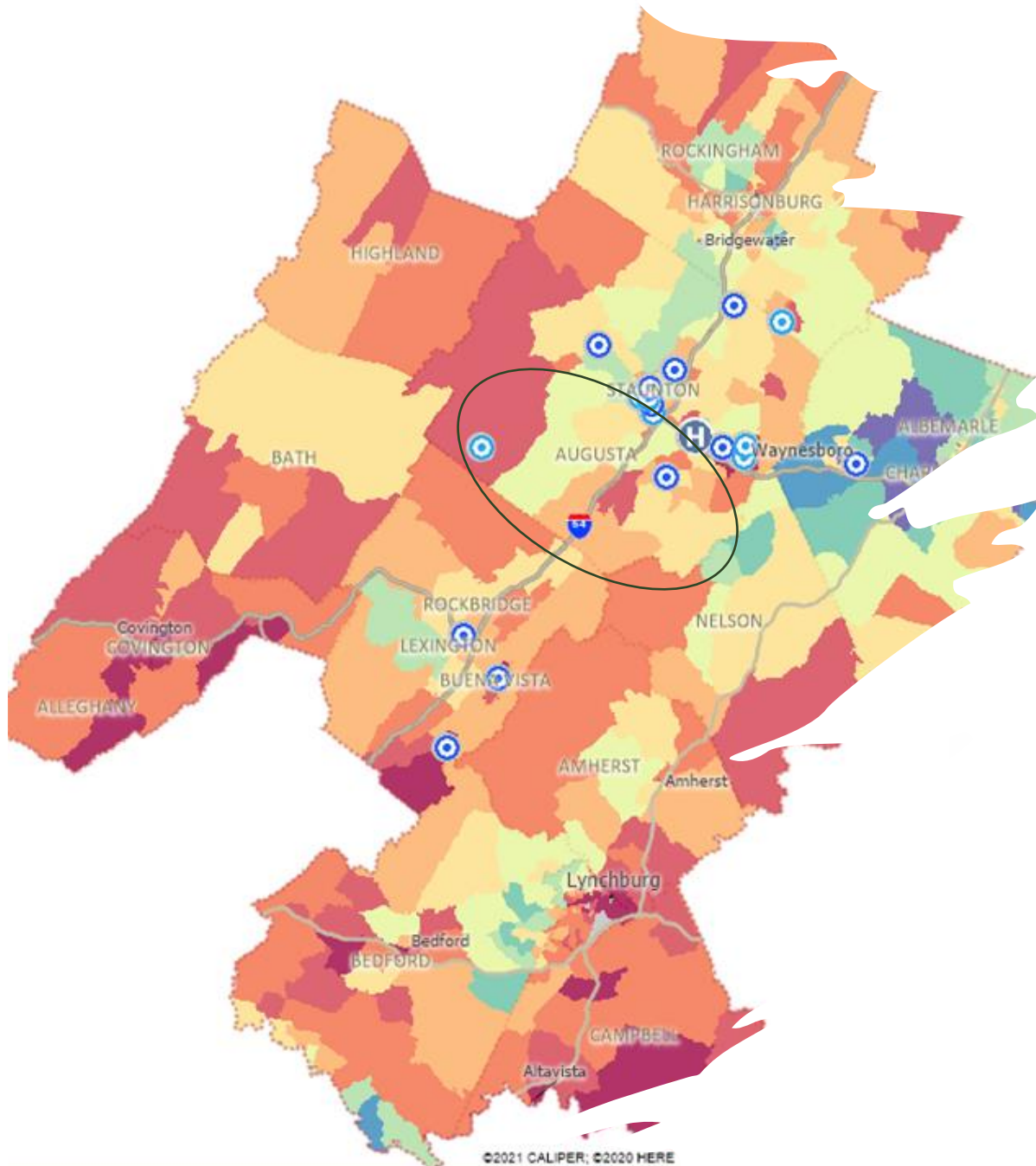
# Interstate 81 & 64

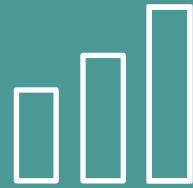
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- Two large truck stops in Augusta County on I-81 south
  - Greenville
  - Raphine



# ADI & Access to Healthcare Facilities for Service Area





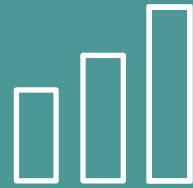
# Analysis & Observations

# What we know...

- Stroke program has centered around application of evidenced-based guidelines upon arrival and inpatient care
- Community emphasis to call 911 but without targeted data to measure efficacy
- Need patients to arrive timely to receive evidence-based care

# Observations

- Stroke population is clearly impacted by ADI, majority coming from impoverished areas within the community
- Main mini market is Southern Augusta
- Main age group that is not arriving in 4.5 hours is between 50-64 years old
- Large area of manufacturing & distribution centers in the Southern Augusta area
- Two large truck stops in Southern Augusta
- Southern Augusta is not as well covered by the mobile clinic and access primary care



# Looking Ahead





## Augusta Health Scorecard

Increase PCP visits



## Augusta Health Marketing

Broaden marketing area with focus on Southern Augusta County



## Augusta Health Centric

Case Management  
Food Pharmacy (AH Farm)  
Augusta Medical Group teaching  
Occupational Health  
\*Mobile Clinic



## Community Centric

EMS  
Churches  
Unite Us

# References

Bureau, U. C. (2023, November 9). *American Community survey 5-year data (2009-2022)*. Census.gov. <https://www.census.gov/data/developers/data-sets/acs-5year.html>

*IPUMS NHGIS: National Historical Geographic Information System*. IPUMS NHGIS | National Historical Geographic Information System. (n.d.). <http://doi.org/10.18128/D050.V18.0>

Kind, A. J. H., & Buckingham, W. R. (2018). Making neighborhood-disadvantage metrics accessible – the Neighborhood Atlas. *New England Journal of Medicine*, 378(26), 2456–2458. <https://doi.org/10.1056/nejmp1802313>

*Neighborhood atlas*. Neighborhood Atlas - Home. (n.d.). <https://www.neighborhoodatlas.medicine.wisc.edu/>

NHGIS Data Finder. <https://data2.nhgis.org/main>

- "Mini Market" and "Service Area" refer to geographies defined by Augusta Health
- Tools used:
  - Excel
  - Maptitude
  - MS SQL Server
  - Notepad++



Questions??

# Strategic Planning Session

David Long, TEMS

# **VDH Stroke Team General Updates**

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- Welcome Bethany McCunn – Stroke Registry Epidemiologist!
- Finalizing stroke registry data model before February 15, 2024.
  - Registry foundation currently in build
- Next Coverdell data submission in February
  - To date, 21,100 unique stroke encounters have been submitted to the CDC!
- Re-abstraction in progress!
  - Hospitals have until January 31 to complete their assigned re-abstractions.
  - Hospital-specific result reports will be sent out in March.

# VSSTF Final Remarks and Wrap Up

# VSSTF Business

*VSSTF Co-Chairs: Melanie Wunningham, MD, Sentara Martha Jefferson Hospital  
and David Long, MA, NRP, Tidewater EMS Council*

## ▶ Next Meeting Dates Schedule:

- ▶ April 19, 2024, Edward Via College of Osteopathic Medicine - Blacksburg
- ▶ July 19, 2024, Maryview Medical Center, Portsmouth, VA
- ▶ October 18, 2024, in Richmond, Site TBD, Save the Dates to be sent shortly

Look for Calendar Invitations from [Kathryn.Funk@vdh.virginia.gov](mailto:Kathryn.Funk@vdh.virginia.gov)



# Virginia Stroke Coordinators Consortium

January 19, 2024

Mandi Zemaiduk, Centra Health, Lynchburg

Elizabeth Hart LewisGale Hospital, Salem