Looking through a Health Equity Lens to Improve Stroke Care

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January 19, 2024

Augusta Health

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

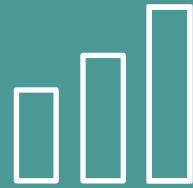- Share early analysis & potential recommendations

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

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
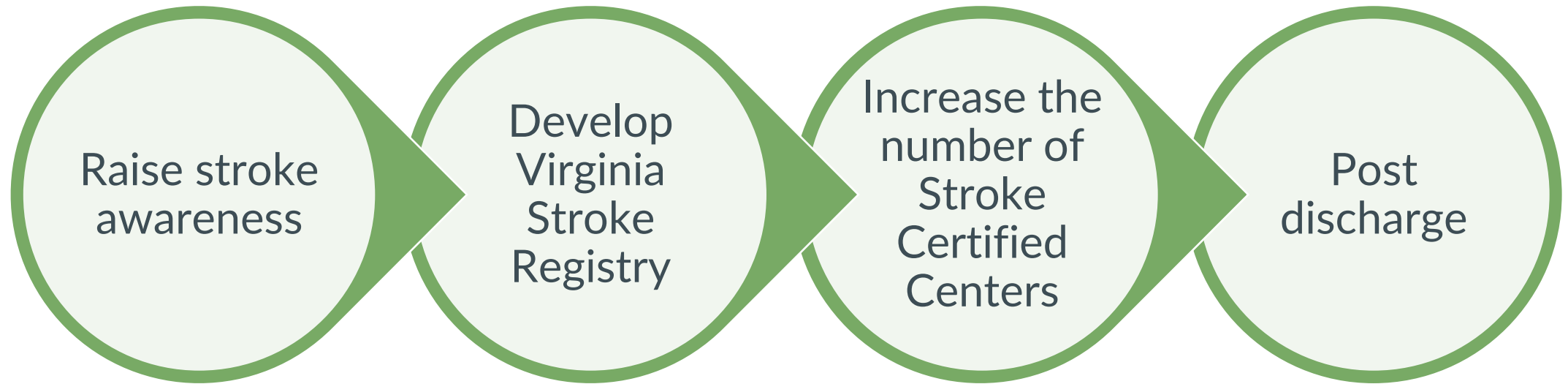
SDOH Process Measures

- 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
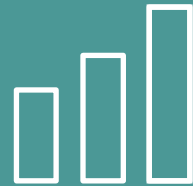
Augusta Health
Call to Action for Health Equity

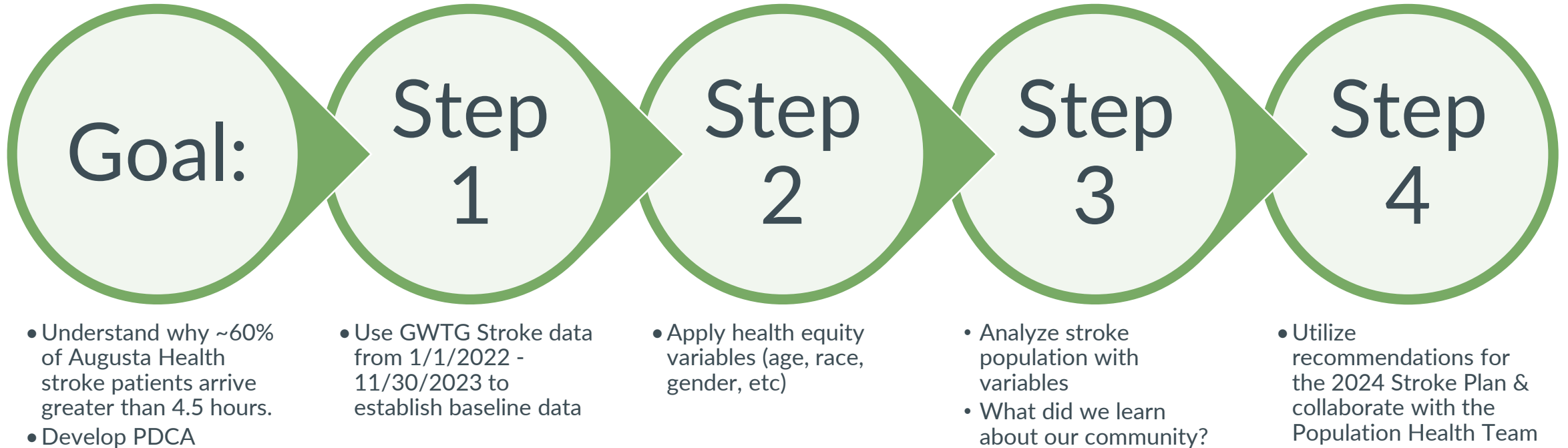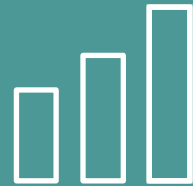# Virginia Statewide Stroke Initiatives (Coverdell Grant)

Raise stroke awareness

Develop Virginia Stroke Registry

Increase the number of Stroke Certified Centers

Post discharge

- Stroke Smart Virginia

- Health Equity, SDOH

- Raise awareness of resources available

Augusta Health Plan for CMS Call of Action

Goal:
- Understand why ~60% of Augusta Health stroke patients arrive greater than 4.5 hours.
- Develop PDCA

Step 1
- Use GWTG Stroke data from 1/1/2022 - 11/30/2023 to establish baseline data

Step 2
- Apply health equity variables (age, race, gender, etc)

Step 3
- Analyze stroke population with variables
- What did we learn about our community?

Step 4
- Utilize recommendations for the 2024 Stroke Plan & collaborate with the Population Health Team

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
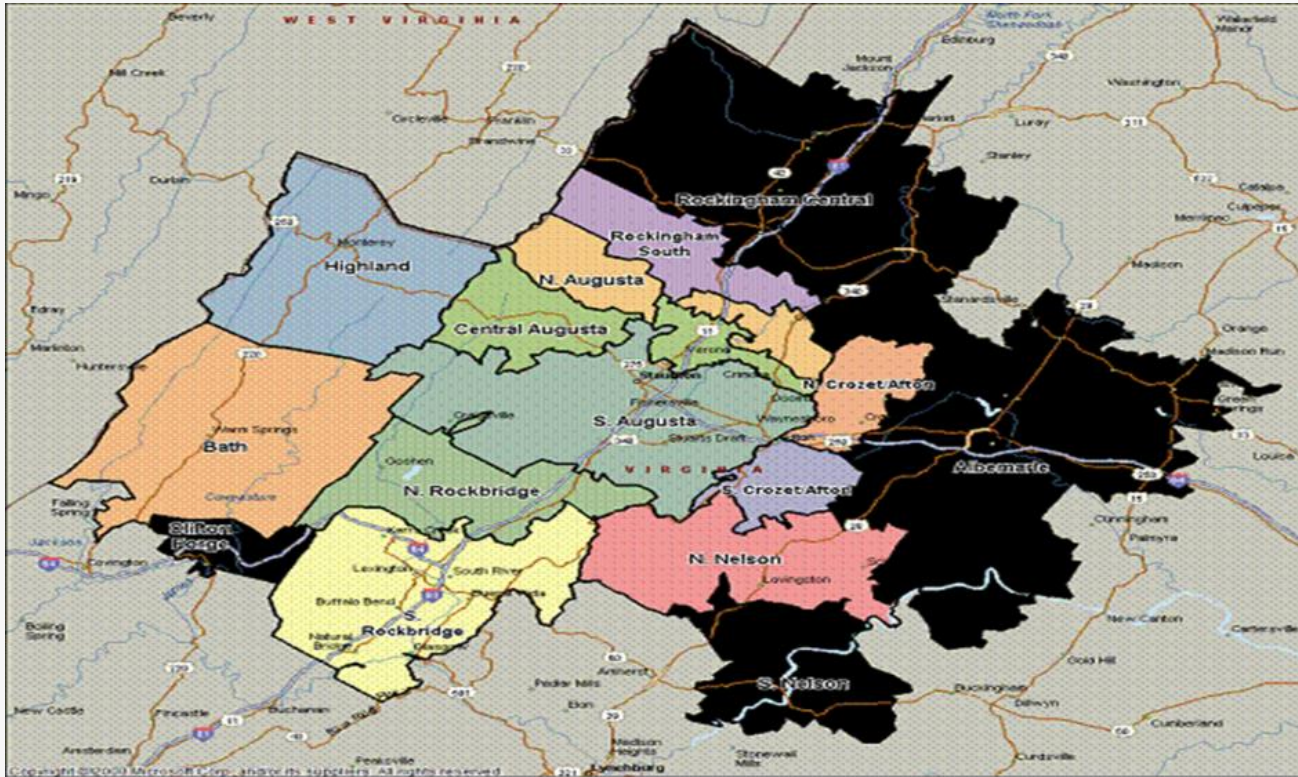
- Primary Areas:
  - Augusta County
  - Staunton City
  - Waynesboro City
- Secondary Areas:
  - Bath County
  - Highland County
  - Nelson County
  - Northern Rockbridge County
  - Southern Rockingham County
  - Western Albemarle County
- 63,234 Emergency visits in 2023
- 10,341 Admissions in 2023
- 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
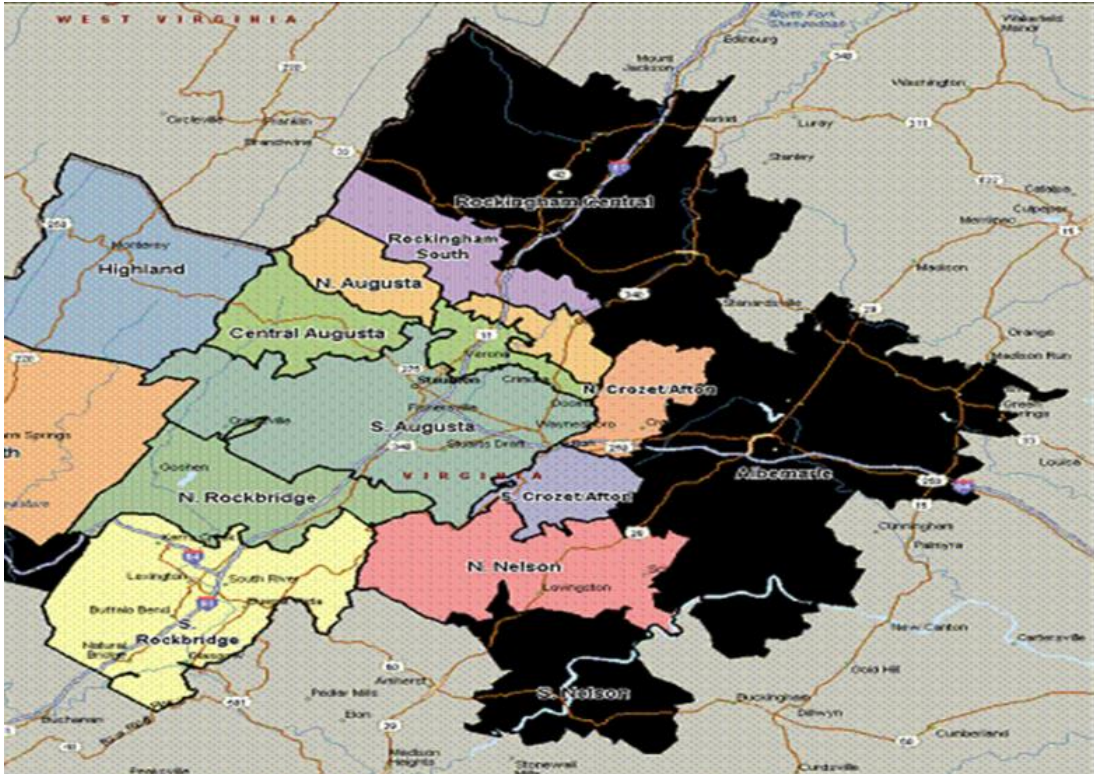
Area Deprivation Index (ADI)

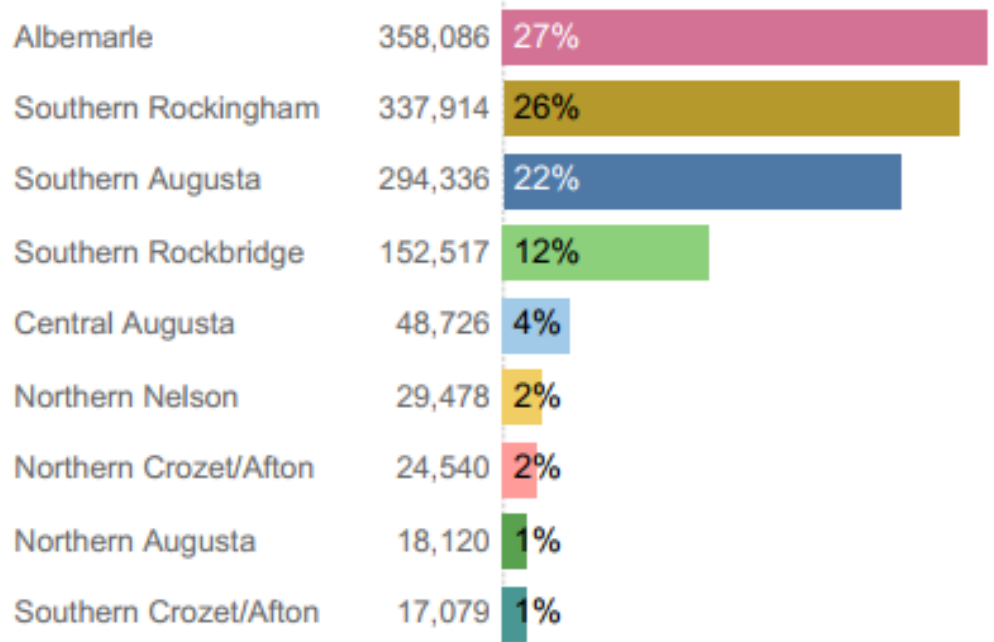A tool that assesses local area deprivation that is linked to a number of healthcare outcomes

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

Mini market	Population	Percent
Albemarle	358,086	27%
Southern Rockingham	337,914	26%
Southern Augusta	294,336	22%
Southern Rockbridge	152,517	12%
Central Augusta	48,726	4%
Northern Nelson	29,478	2%
Northern Crozet/Afton	24,540	2%
Northern Augusta	18,120	1%
Southern Crozet/Afton	17,079	1%

Augusta Health Service Area Population

by age

	Total	Seen within 4.5 hours?			Seen within 4.5 hours?		
		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

	Total	Seen within 4.5 hours?			Seen within 4.5 hours?		
		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

	Total	Seen within 4.5 hours?			Seen within 4.5 hours?		
		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?

	Total	Seen within 4.5 hours?			Seen within 4.5 hours?		
		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

	Total	Seen within 4.5 hours? Yes	No	Unknown	Seen within 4.5 hours? 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

	Total	Seen within 4.5 hours? Yes	No	Unknown	Seen within 4.5 hours? 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

	Total	Seen within 4.5 hours? Yes	No	Unknown	Seen within 4.5 hours? 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?

	Total	Seen within 4.5 hours? Yes	No	Unknown	Seen within 4.5 hours? 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 while 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
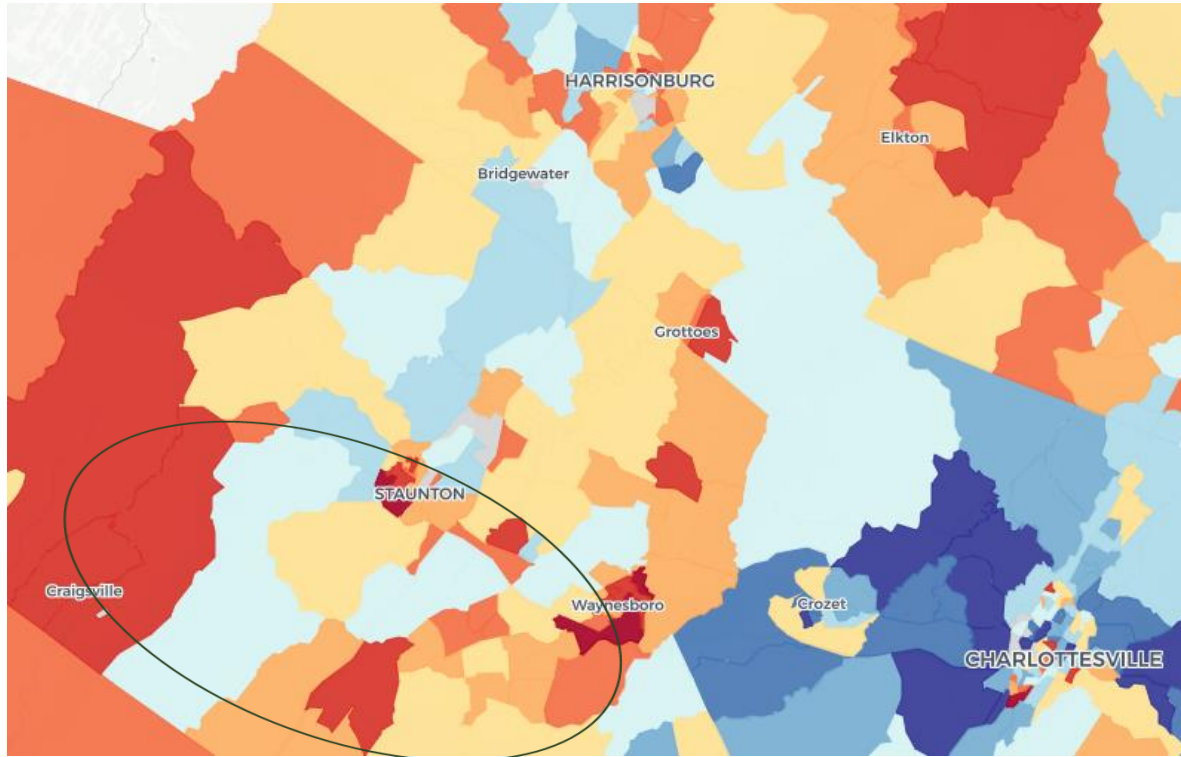
Combines 17 metrics on housing quality, employment, poverty and education.

Measured at the level of census block groups→ roughly 1500 persons. Close to neighborhood level
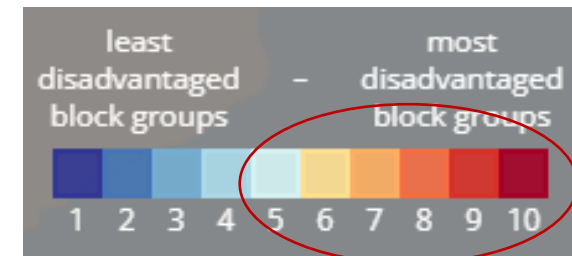
The area you are seeing here is the primary service area for Augusta Health. The areas in deep red are areas of higher deprivation. As you can imagine southern Augusta County represents many "neighborhoods" and thus potentially a mixture of ADI scores.

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

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

ADI & Mini-Market: Overall Stroke Population

All markets

Stroke patients	Last Known Well within 4.5 hours?		
	Yes	No	Unknown
ADI..			
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 grouped

1 to 6	7 to 10
41%	59%

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
40%	60%

1 to 4	5 to 6	7 to 8	9 to 10
4%	36%	38%	22%
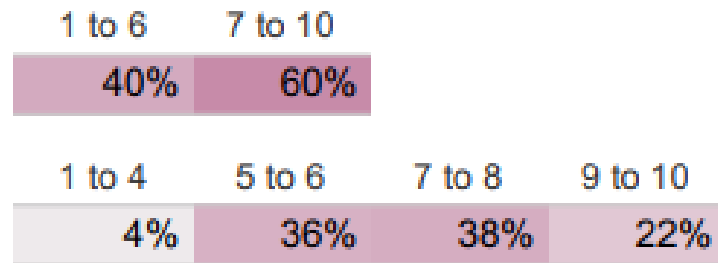
SDOH Current State

- 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

SDOH Screening (inpatient) 2023	56%
SDOH Positive	7%
Food Insecurity	1%
Housing Instability	2%
Transportation Needs	3%
Utility Difficulties	2%
Interpersonal Safety	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

Current Population Health Community Outreach

Augusta Health's Mobile Primary Care Clinic

Fall 2023

Verona Community Center

Valley Mission Shelter

Elizabeth Miller Gardens

Allen Chapel

Central UM Church

Plaza Apartments

Craigsville Community Center

Grottoes Fire Dept.

Shenandoah LGBTQ Center

Embrace Community Center

Christ Tabernacle

Disciple's Kitchen

YMCA Waynesboro

Magnolia Rose Human Trafficking Shelter
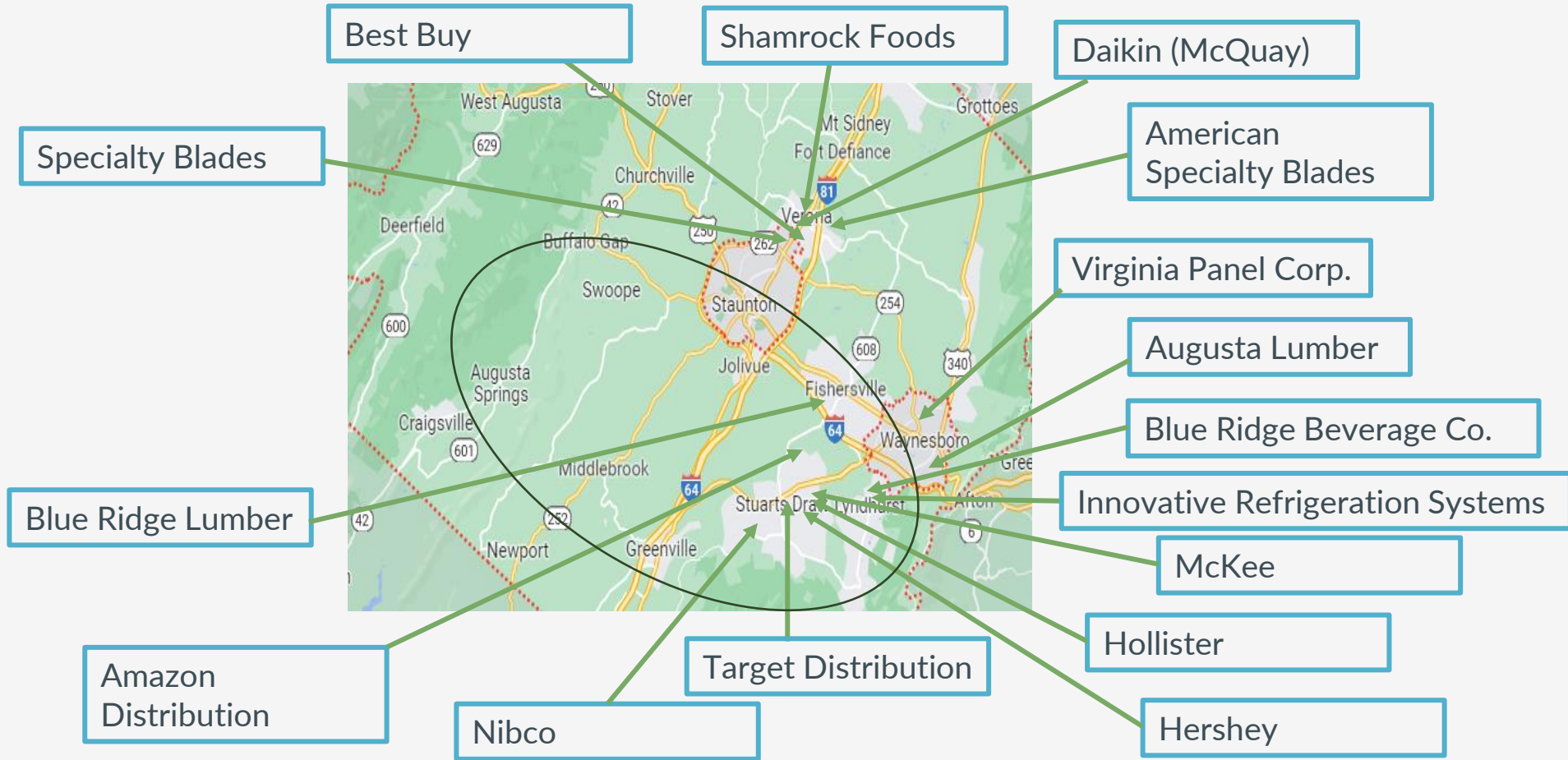
All locations have community partners supporting our work.

Community Opportunities

Large Corporations in Service Area

Best Buy

Shamrock Foods

Daikin (McQuay)

Specialty Blades

American Specialty Blades

Virginia Panel Corp.

Augusta Lumber

Blue Ridge Beverage Co.

Blue Ridge Lumber

Innovative Refrigeration Systems

McKee

Hollister

Amazon Distribution

Nibco

Target Distribution

Hershey

Top 3 Industries in Augusta County

Industry

Manufacturing (7,252 employees)

Health Care & Social Assistance (4293 employees)

Transportation & Warehousing (3087 employees)

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

Age Group (50-64)

Manufacturing (3264)
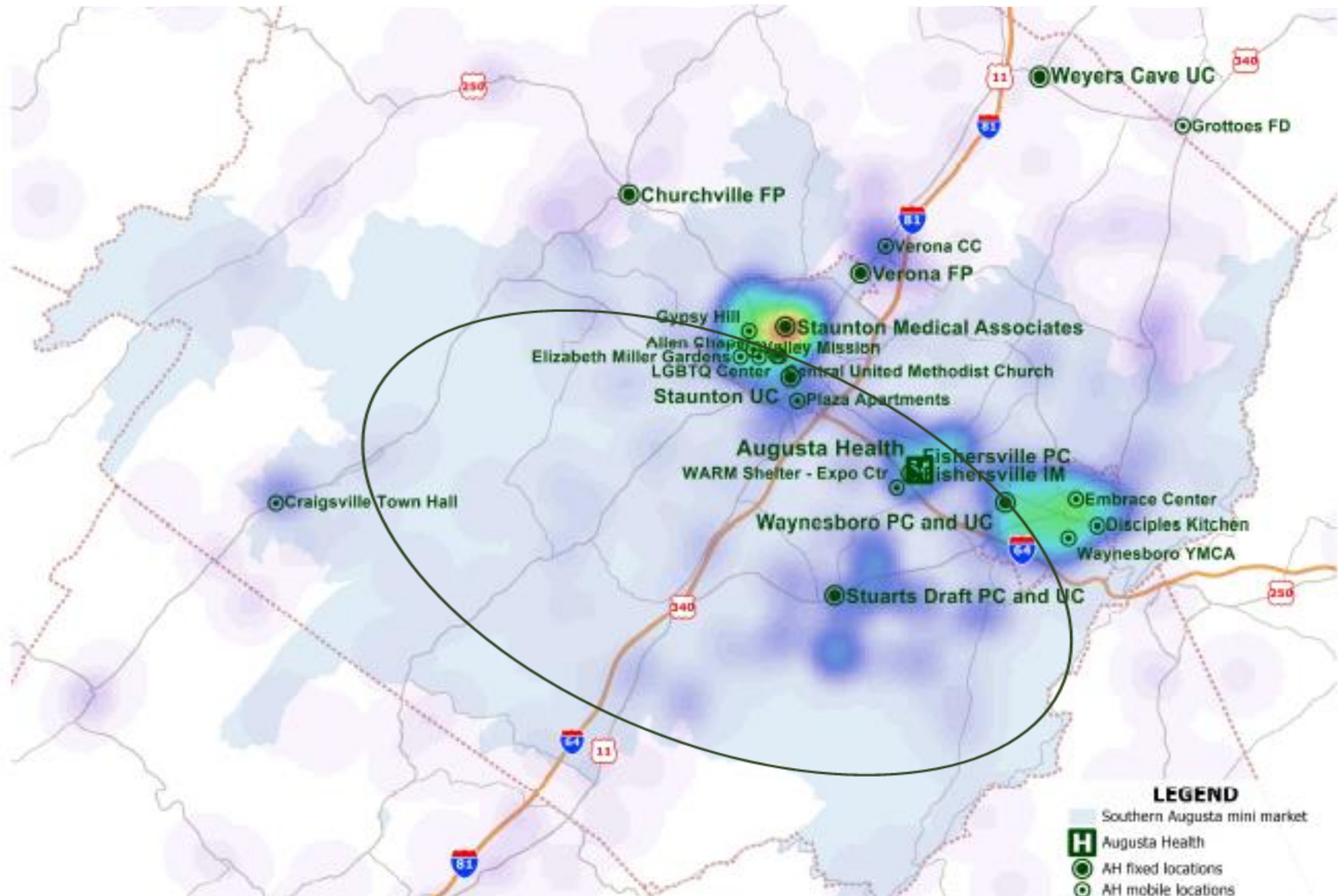
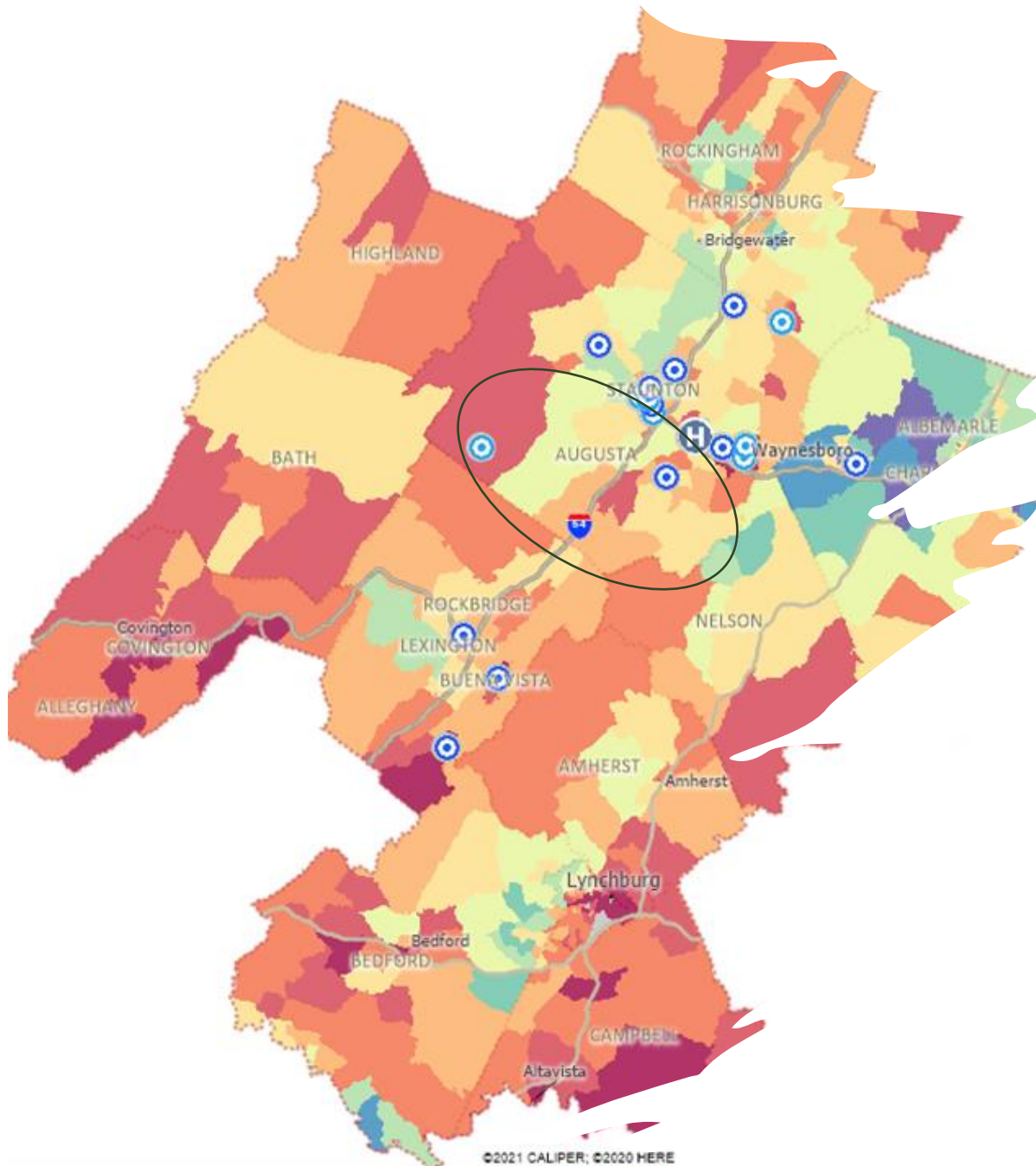Health Care & Social Assistance (1944)

Transportation & Warehousing (1156)

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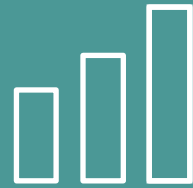Quarterly Census of Employment and Wages (QCEW), 2nd Quarter (April, May, June) 2023.

Interstate 81 & 64

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

LEGEND

Southern Augusta mini market

H Augusta Health

◉ AH fixed locations

◎ AH mobile locations

# 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
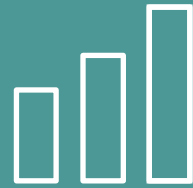
Looking Ahead

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??