



Breakout session

# State of Ohio Adversity and Resilience Studies (SOAR): Preliminary Results and Policy Implications



# State of Ohio Adversity and Resilience Studies

**Anthony King, PhD**

Associate Professor

**Department of Psychiatry & Behavioral Health**

**Hyoshin Kim, PhD**

Associate Professor – Clinical

**Department of Biomedical Informatics**

**College of Medicine**

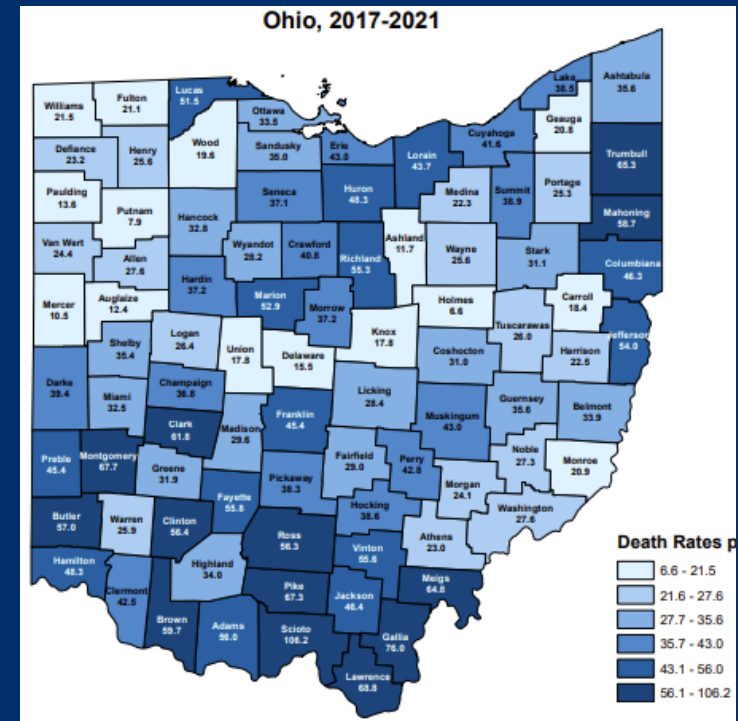
**The Ohio State University**

**Health Policy Institute of Ohio**

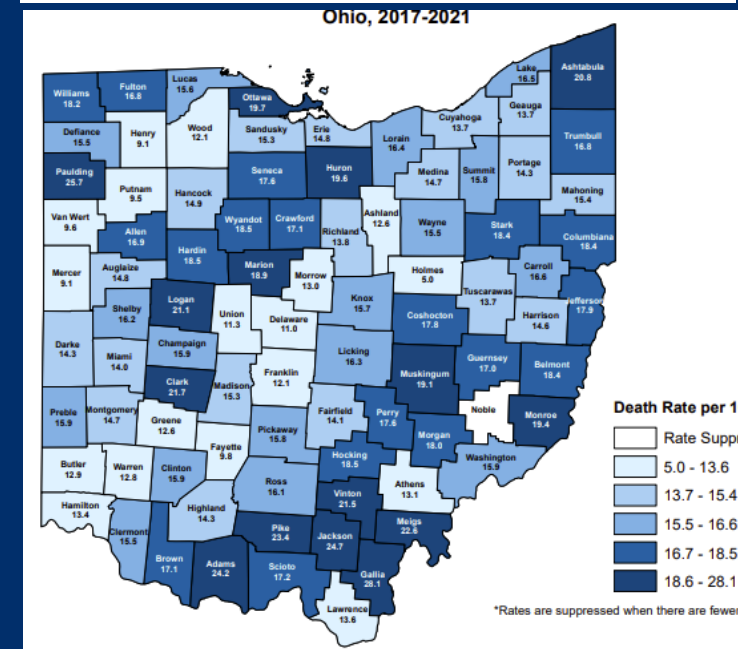
**Summit, October 3, 2024**

# Why Ohio?

Ohio is at the center of the opioid addiction and mental health crises, witnessing some of the highest rates of overdose and suicide deaths in the country.



Overdose



Suicide

# Why Ohio?

Ohio represents a microcosm of the United States due to its geographic, social, economic, racial and ethnic diversity.

# OUR RIVER

FEELING WELL

LANGUISHING

## CAUSES AND RISK FACTORS

Adverse Life Events  
Trauma  
Impoverished Environment  
Loneliness  
Drug Exposure  
Poor Coping Skills  
Altered Biology-Brain  
Genetic Loading

## MENTAL ILLNESSES

Depression  
Anxiety  
PTSD  
Addiction  
Bipolar  
Psychosis

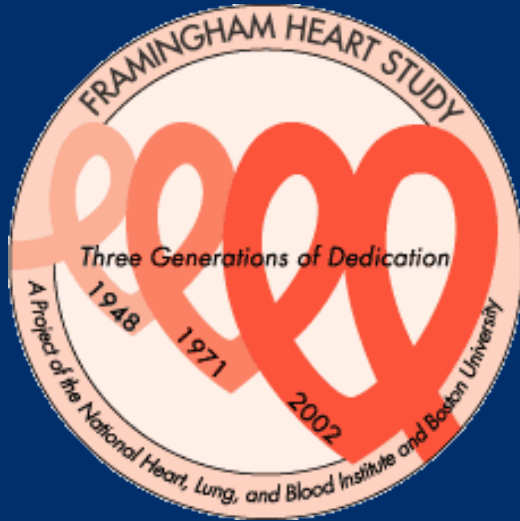
Suicide  
Overdose

Death

**“There comes a point where we need to stop just pulling people out of the river. We need to go upstream and find out why they're falling in.”**

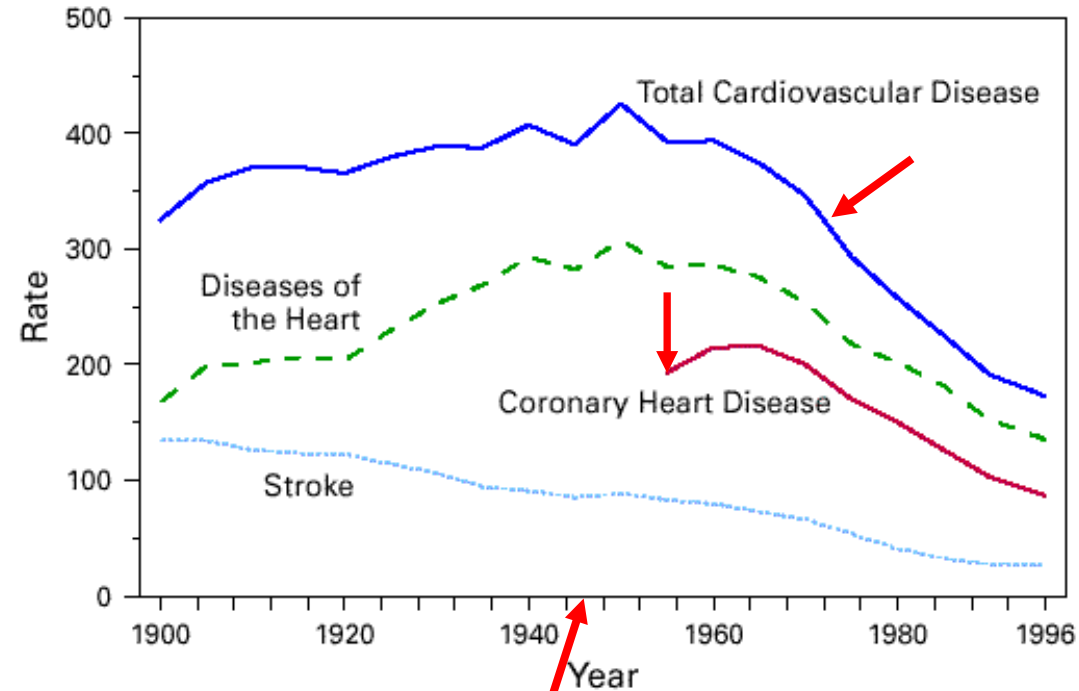
Archbishop Desmond Tutu  
(Nobel Peace Prize, 1984)

# We do know *how* to know.



**Framingham Heart Study**  
Multi-generational Longitudinal Study  
1948 - present

**FIGURE 1. Age-adjusted death rates\* for total cardiovascular disease, diseases of the heart, coronary heart disease, and stroke,† by year — United States, 1900–1996**



\*Per 100,000 population, standardized to the 1940 U.S. population.

†Diseases are classified according to *International Classification of Diseases* (ICD) codes in use when the deaths were reported. ICD classification revisions occurred in 1910, 1921, 1930, 1939, 1949, 1958, 1968, and 1979. Death rates before 1933 do not include all states. Comparability ratios were applied to rates for 1970 and 1975.

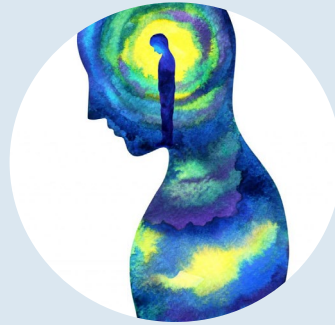
Source: Adapted from reference 1; data provided by the National Heart, Lung and Blood Institute, National Institutes of Health.

**SOAR is an effort to accomplish for mental illness what the Framingham Heart Study did for heart disease.**



## Biological

Brain Structure & Function  
Stress Biomarkers  
Physical Health  
Genes



## Psychological

Emotion  
Cognition  
Behavior  
Personality

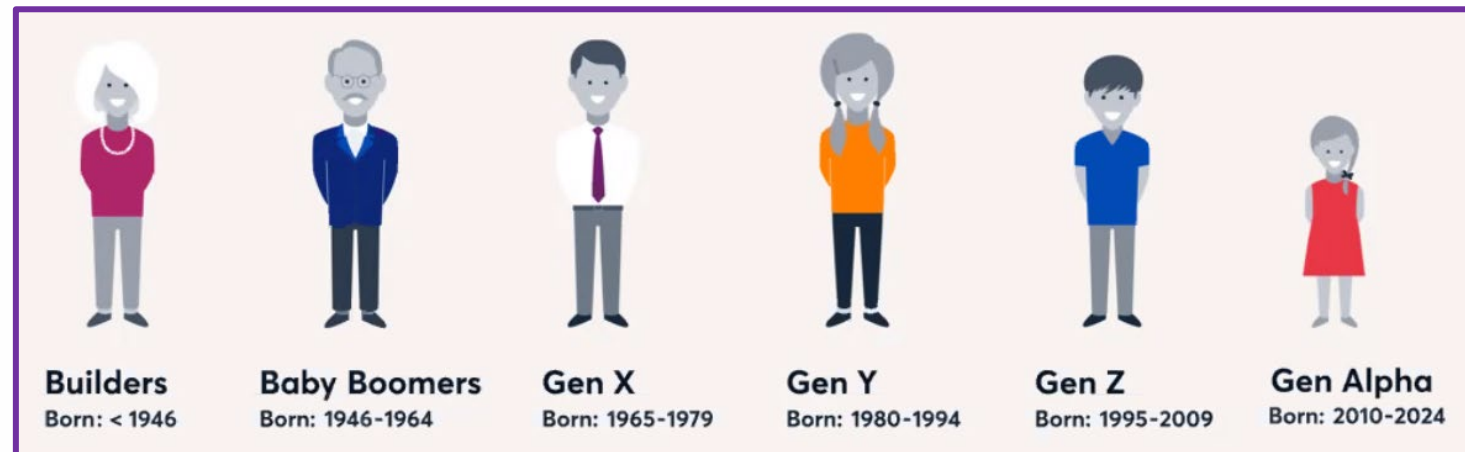
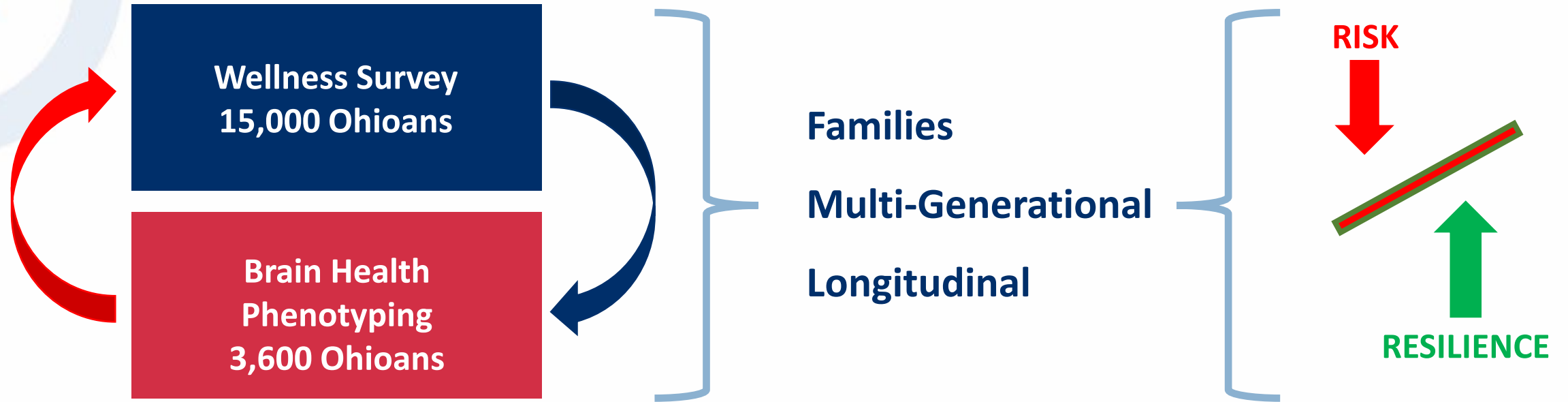


## Social

Family  
Friends  
Neighborhood  
Work

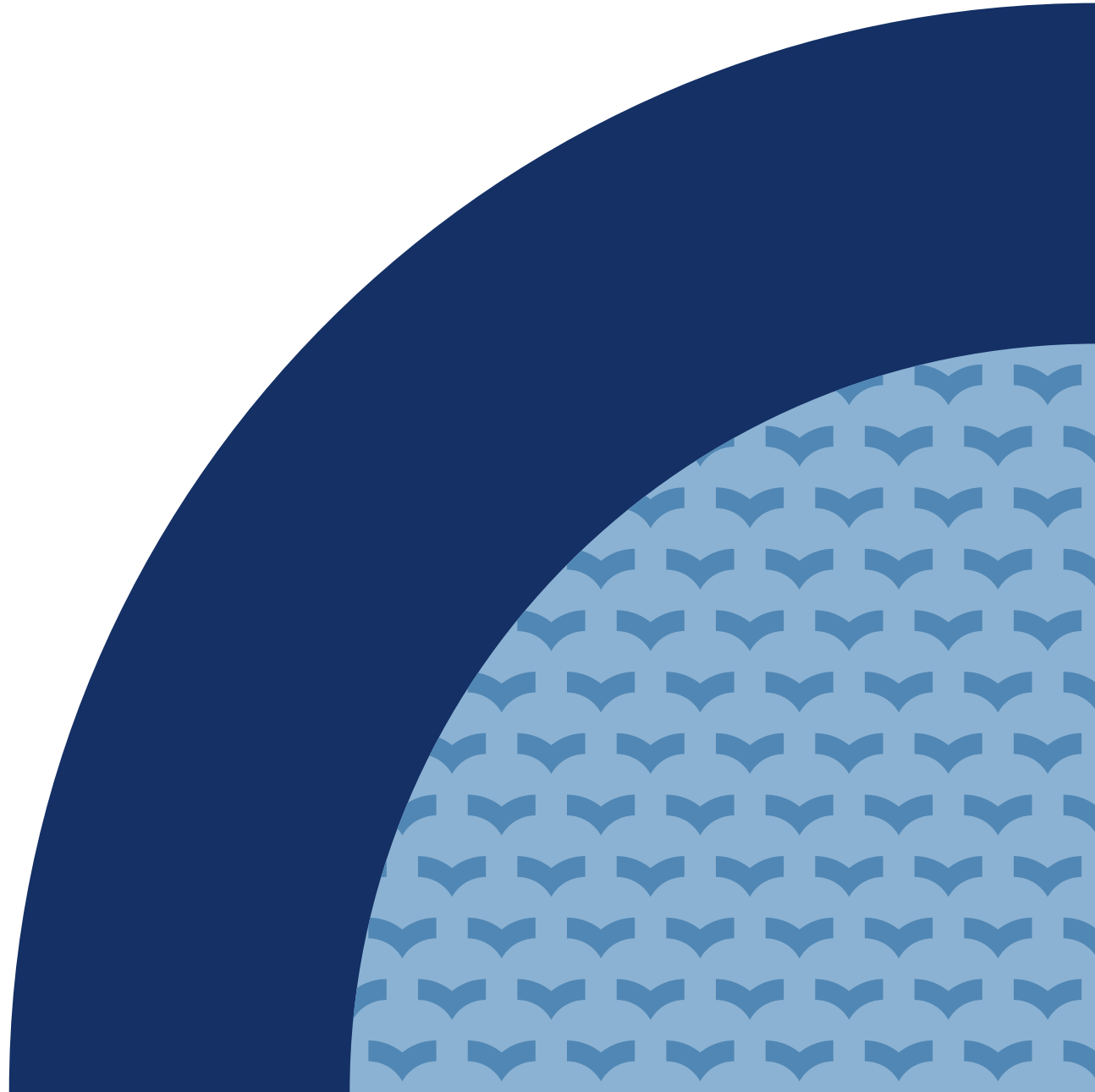
Experience & Time & Change

# SOAR STUDY





# WELLNESS DISCOVERY SURVEY

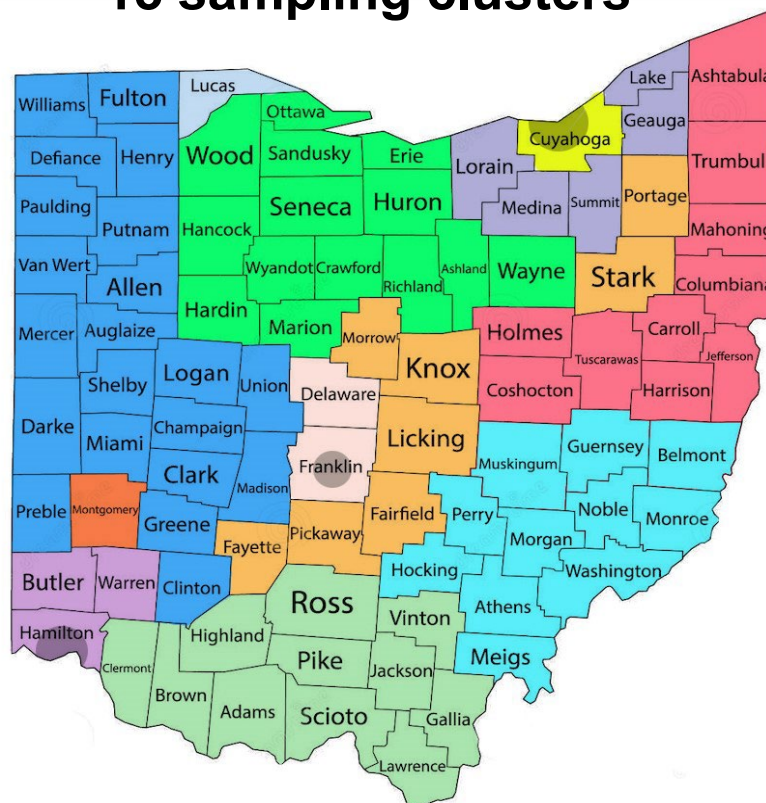


## CHRR at OSU



Ohio Gambling Survey

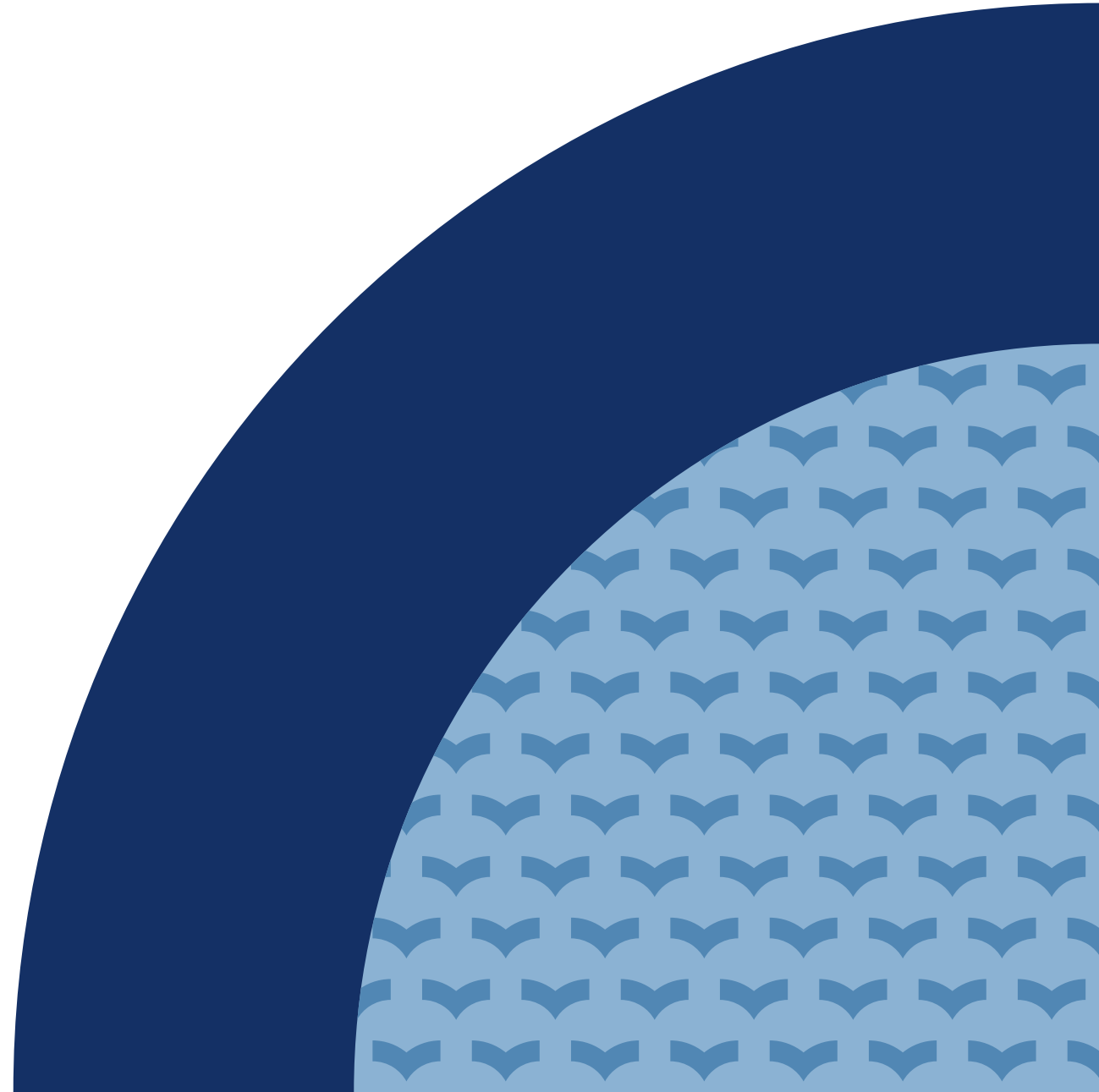
**Address-based (ABS)  
Representative Sample  
Target: 15,000 Ohioans  
320,000 mailings  
15 sampling clusters**



## Wellness Survey Domains

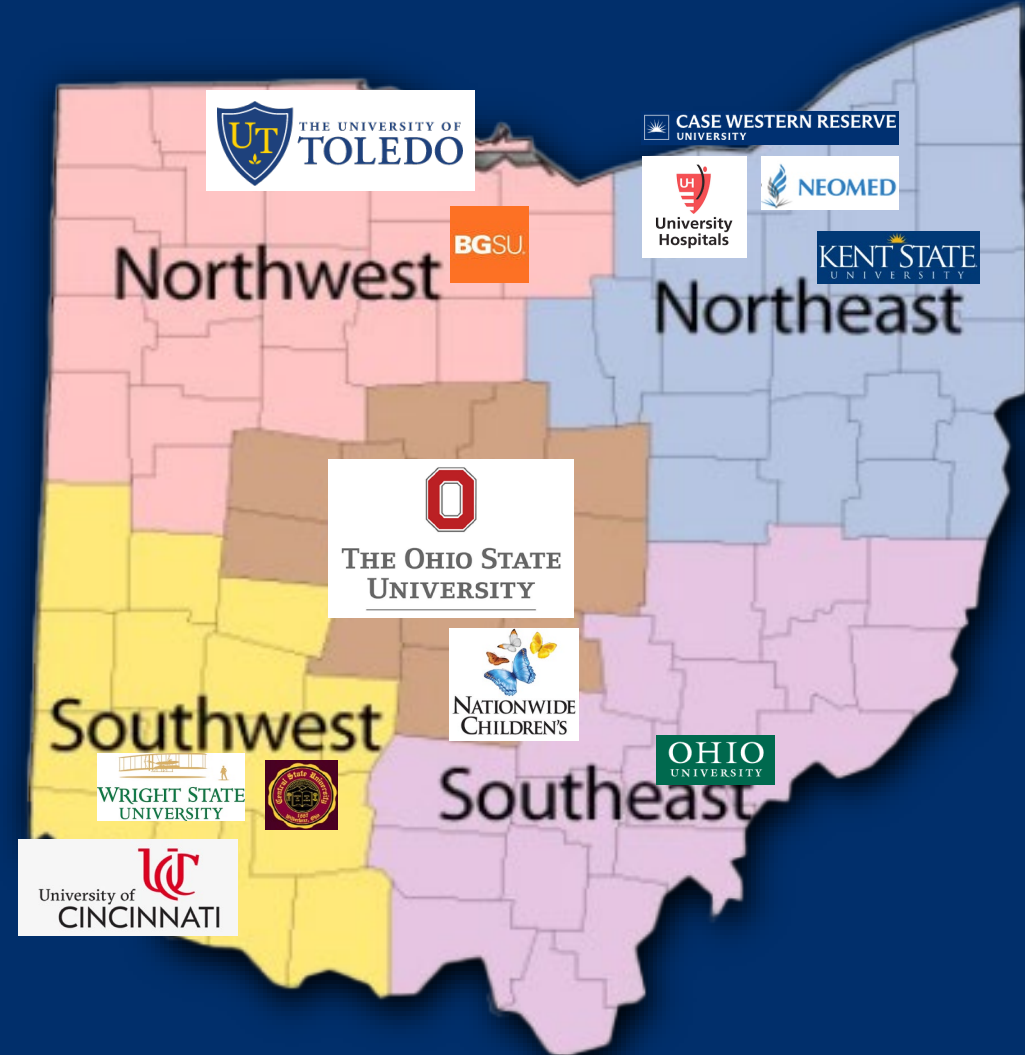
- **Demographics**
  - Age, Gender, Race, Education, SES,
- **Substance Use (DSM-5, AUDIT)**
  - Tobacco, EtOH, Opioids, Meth, etc
- **Suicidality (lifetime)**
  - Ideation and Behavior (SITBI)
- **Persistent Distress (Kessler 6)**
- **Family Health & MH History**
- **Mental Health (DSM5 Cross-cutting screener)**
- **Social Functioning**
  - Social Network, Loneliness
- **Childhood – ACEs & PCEs**
  - Address age 10. school lunch eligible
- **Lifetime Trauma & Discrimination**
- **Psychological Factors**
  - meaning in life, “resilience”, intolerance of uncertainty, hope, emotional regulation style, cognitive flexibility, coping style

# BRAIN HEALTH STUDY



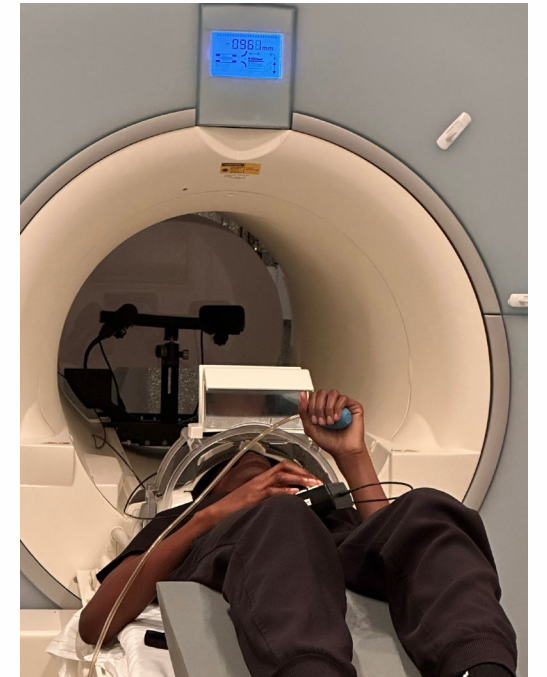
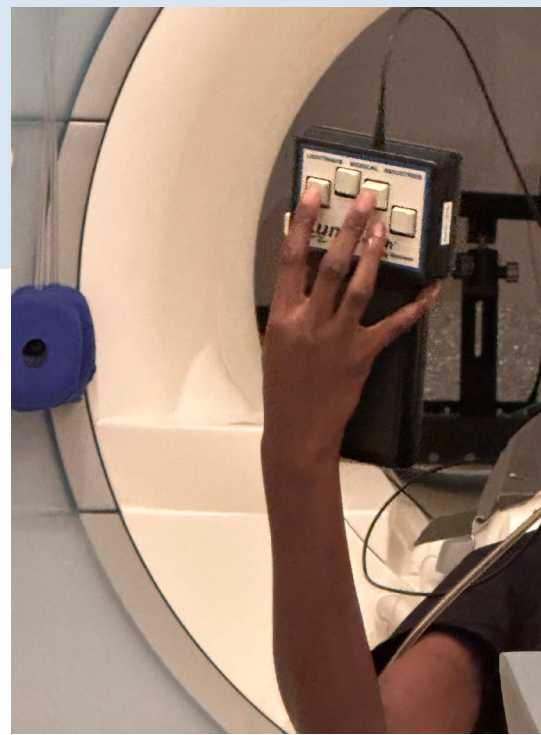
# Science from (and for) the families of Ohio

Committed partnerships and an ecosystem of care across Ohio will be critical for success and implementation



# BRAIN HEALTH STUDY ACTIVITIES

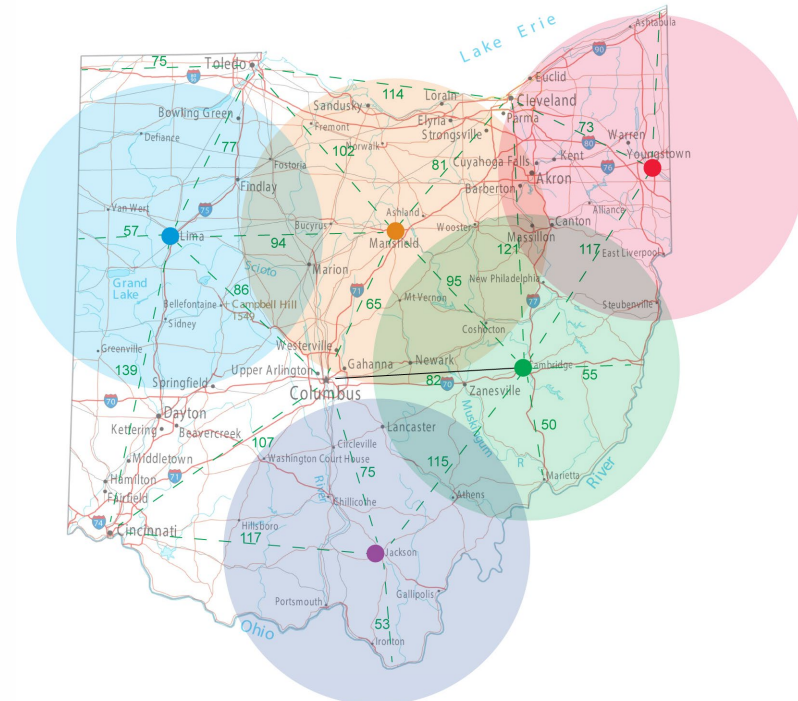
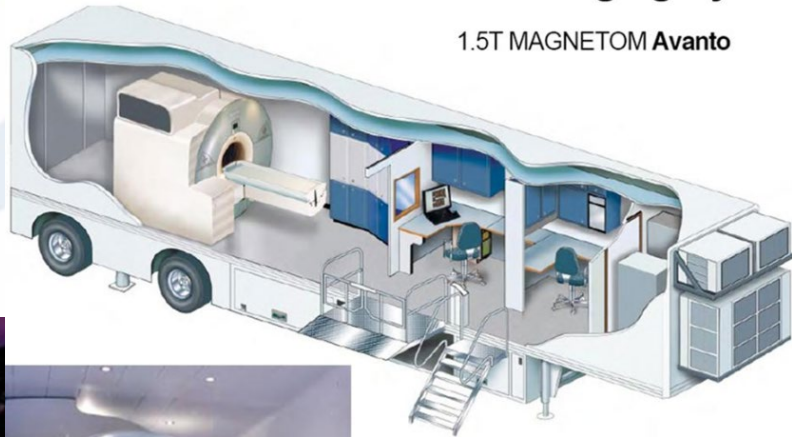
- **Consent, Parental Permission, Assent (15 mins)**
- **Demographics (10 mins)**
- **MRI Brain Scan (75 mins)**
- **EEG (90 mins)**
- **Biospecimens/Biometrics (30 mins)**
- **Neuropsych Assessments (45 mins)**
- **Questionnaires (45 mins)**
- **Ecological Momentary Assessments (>5 minutes daily for 4 weeks)**
- **Diagnostic Interview (virtual 40 mins)**





# SOAR STUDY

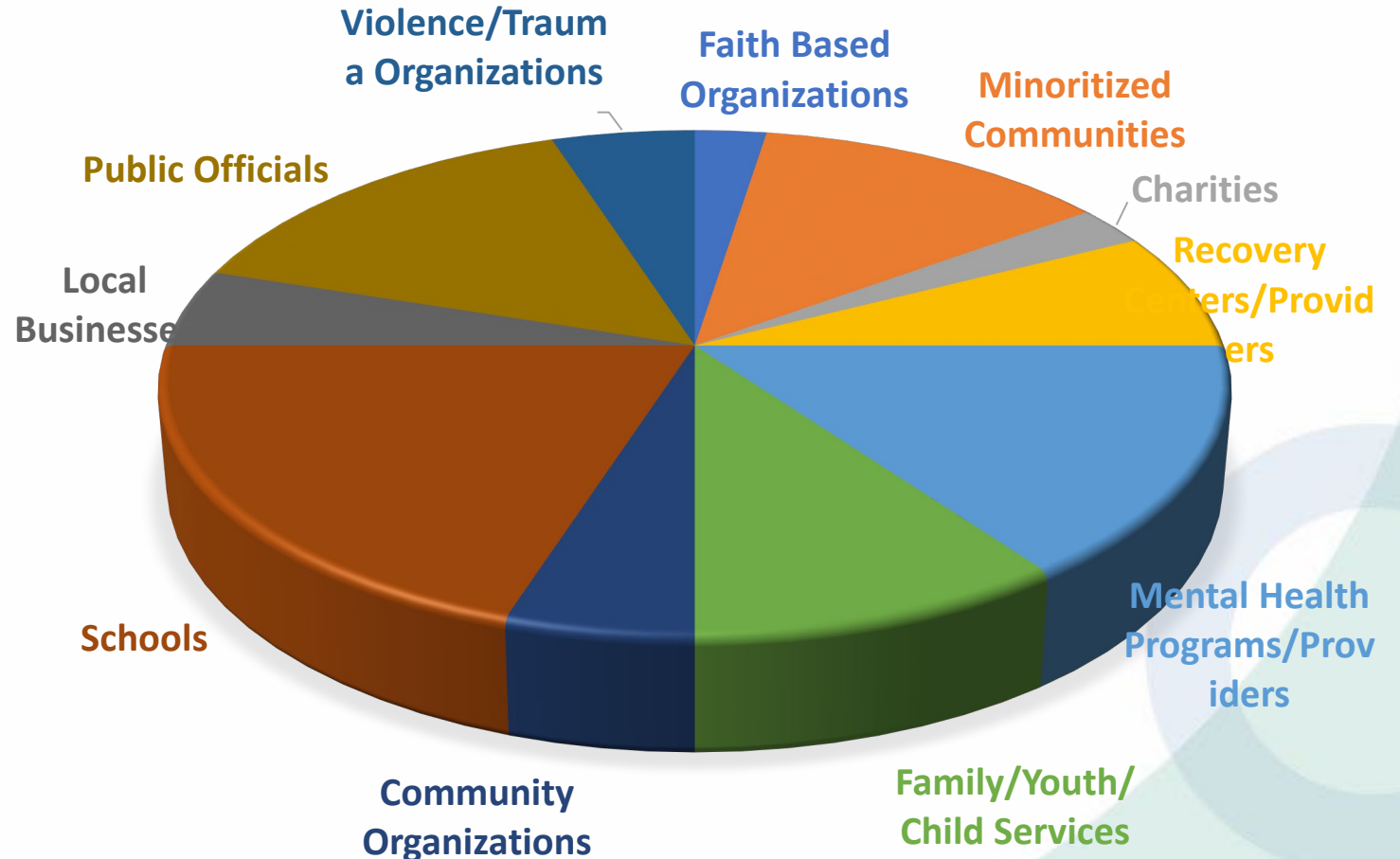
# BRAIN HEALTH STUDY



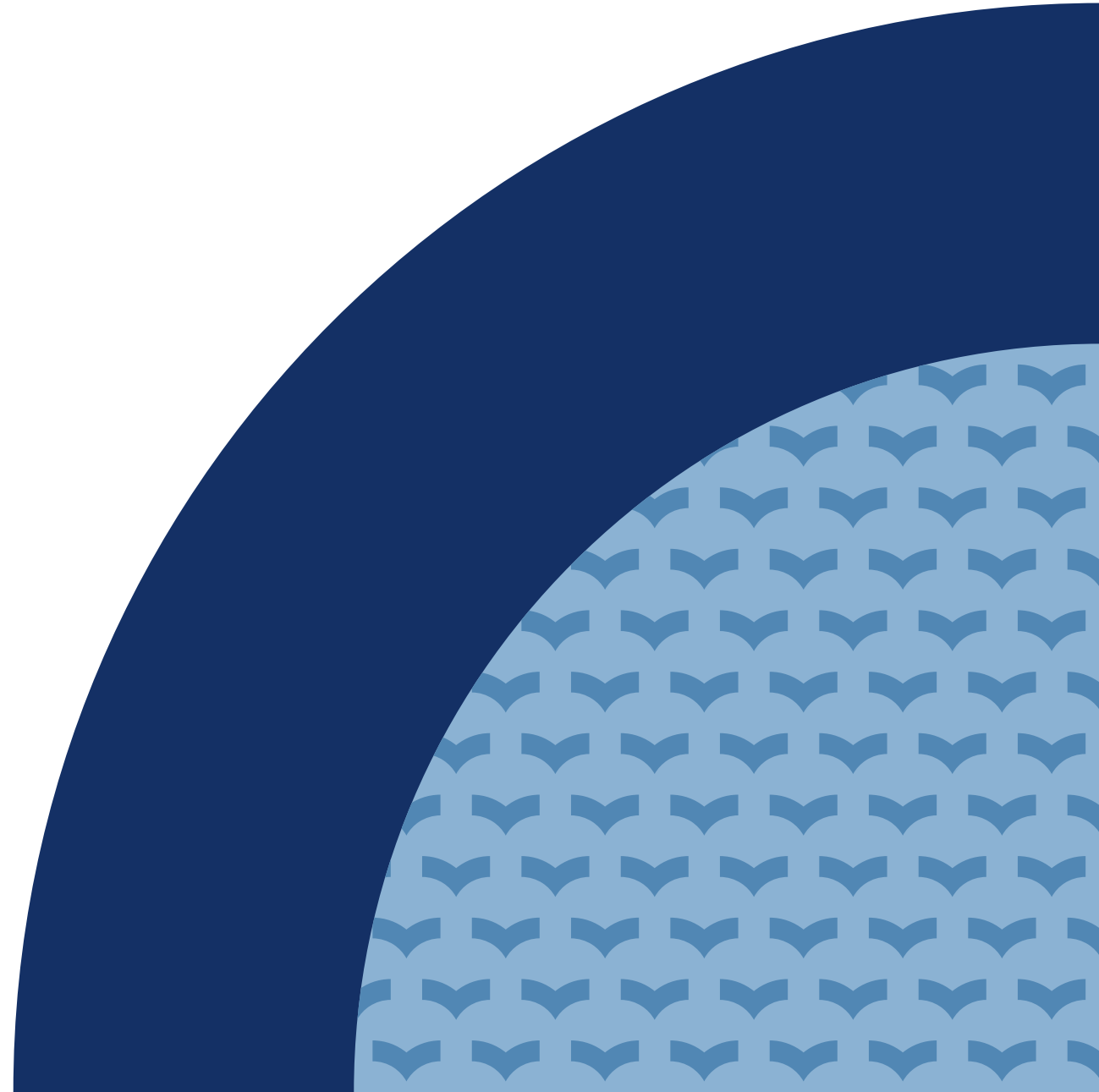
# COMMUNITY OUTREACH & AWARENESS

## Outreach to multiple organizations and institutions to enhance recruitment and retention

- OhioMHAS and ADAMH and Recovery Boards and Coalitions
- Hospitals and Clinics
- School Systems and Parent-Teacher Organizations
- Community, Civic and Advocacy Organizations
- Recovery-based Organizations, NAMI, and others
- Churches and Faith Groups and Organizations
- Business, Corporate, Employer stakeholders



# **WELLNESS DISCOVERY SURVEY, EARLY RESULTS**



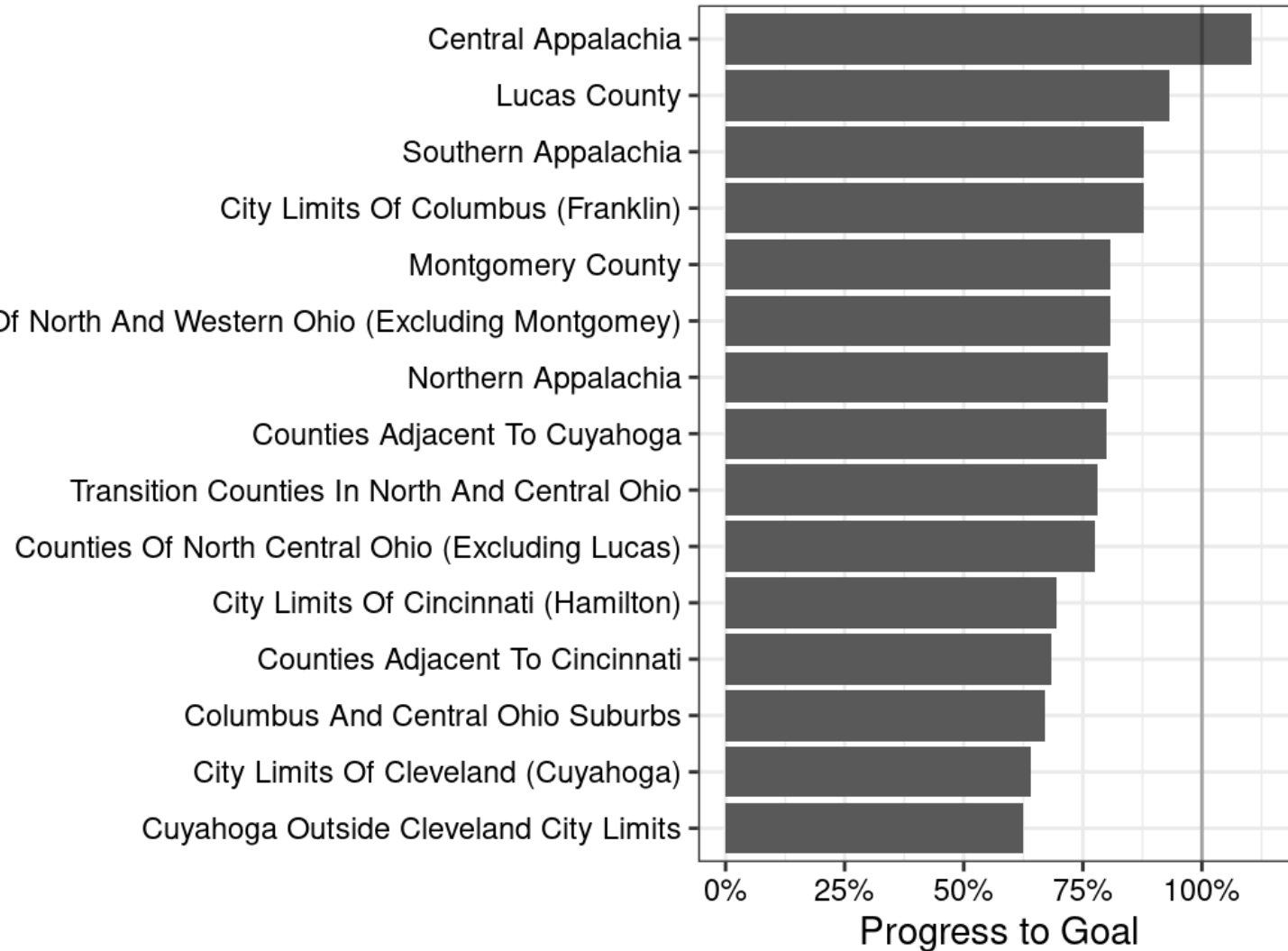
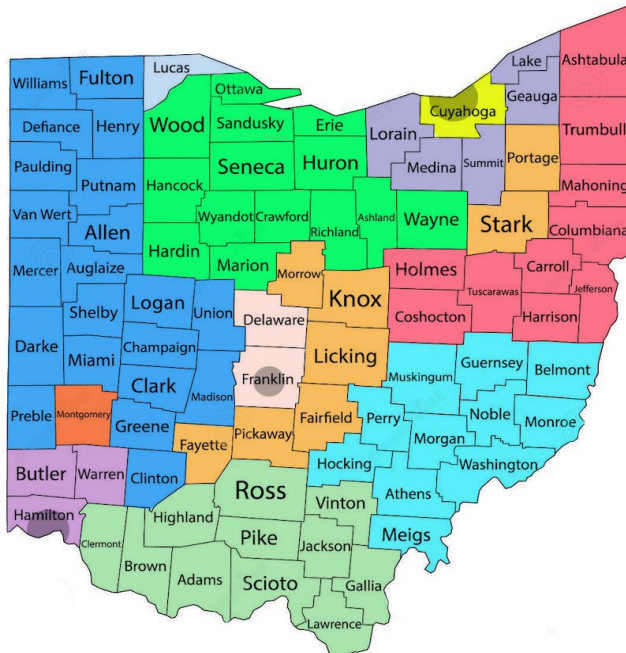


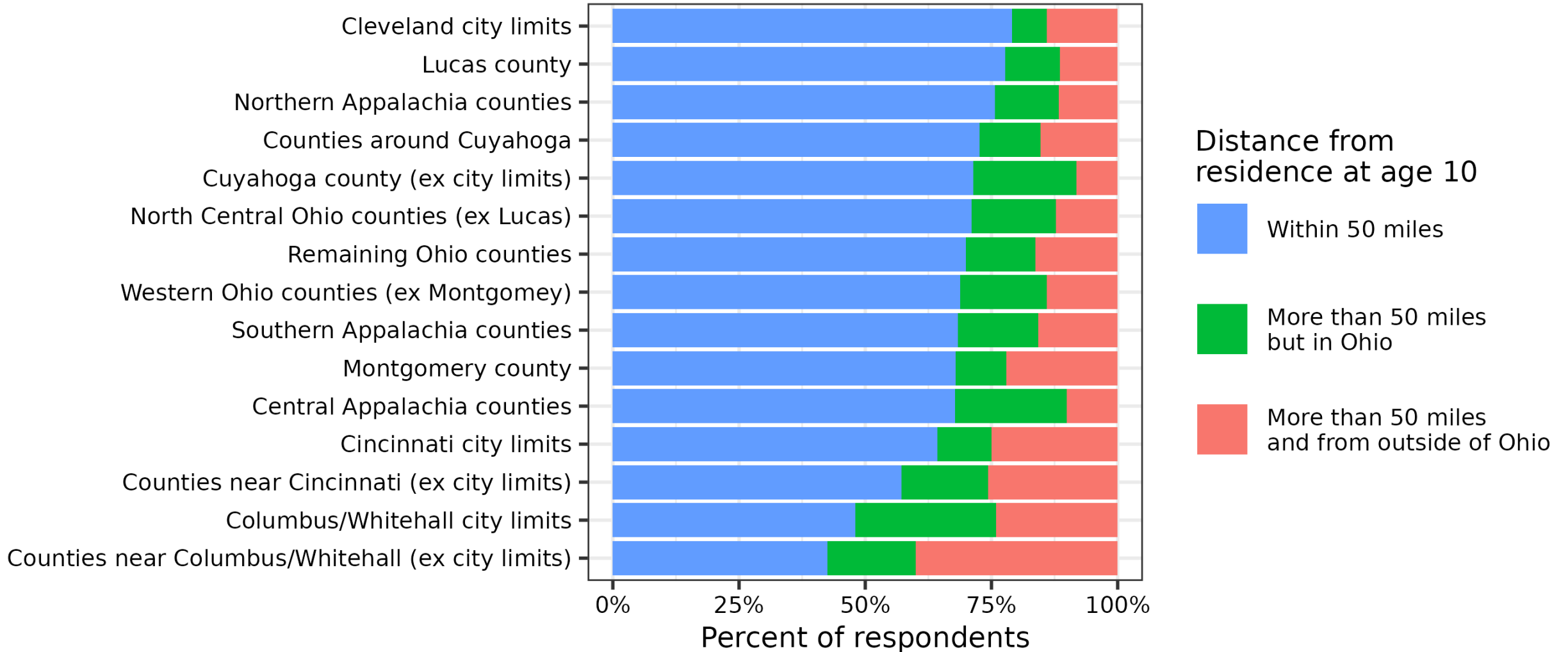


# Response Rates by Ohio Regions

## SOAR Cluster Response To date

- Grouped into 15 clusters (Regions)
- 11,194 responses, across all 88 counties
- 61% want to participate again
- Good response rates from all clusters!





Optimism and Concern/Cynicism about Economic prospects by Cluster/Region



Location	Mean	ES diff from overall
Cuyahoga outside Cleveland city limits	7.26	0.368644068
Columbus and Central Ohio suburbs	7.28	0.360169492
Counties of North and Western Ohio (excluding Montgomery)	7.52	0.258474576
Counties Adjacent to Cuyahoga	7.6	0.224576271
Counties of North Central OH (excluding Lucas)	7.85	0.118644068
Transition Counties of North and Central Ohio	7.89	0.101694915
Counties Adjacent to Cincinnati	7.9	0.097457627
Lucas County	8.02	0.046610169
Montgomery County	8.06	0.029661017
Ohio (all)	8.13	0
City limits of Columbus (Franklin)	8.17	-0.016949153
City limits of Cincinnati (Hamilton)	8.25	-0.050847458
Northern Appalachia	8.42	-0.122881356
Southern Appalachia	8.47	-0.144067797
Central Appalachia	8.83	-0.296610169
City limits of Cleveland (Cuyahoga)	8.84	-0.300847458

# Policy Implications

**Hyoshin Kim**  
Associate Professor – Clinical

Department of Biomedical Informatics  
College of Medicine  
The Ohio State University

Health Policy Institute of Ohio  
Summit, October 3, 2024

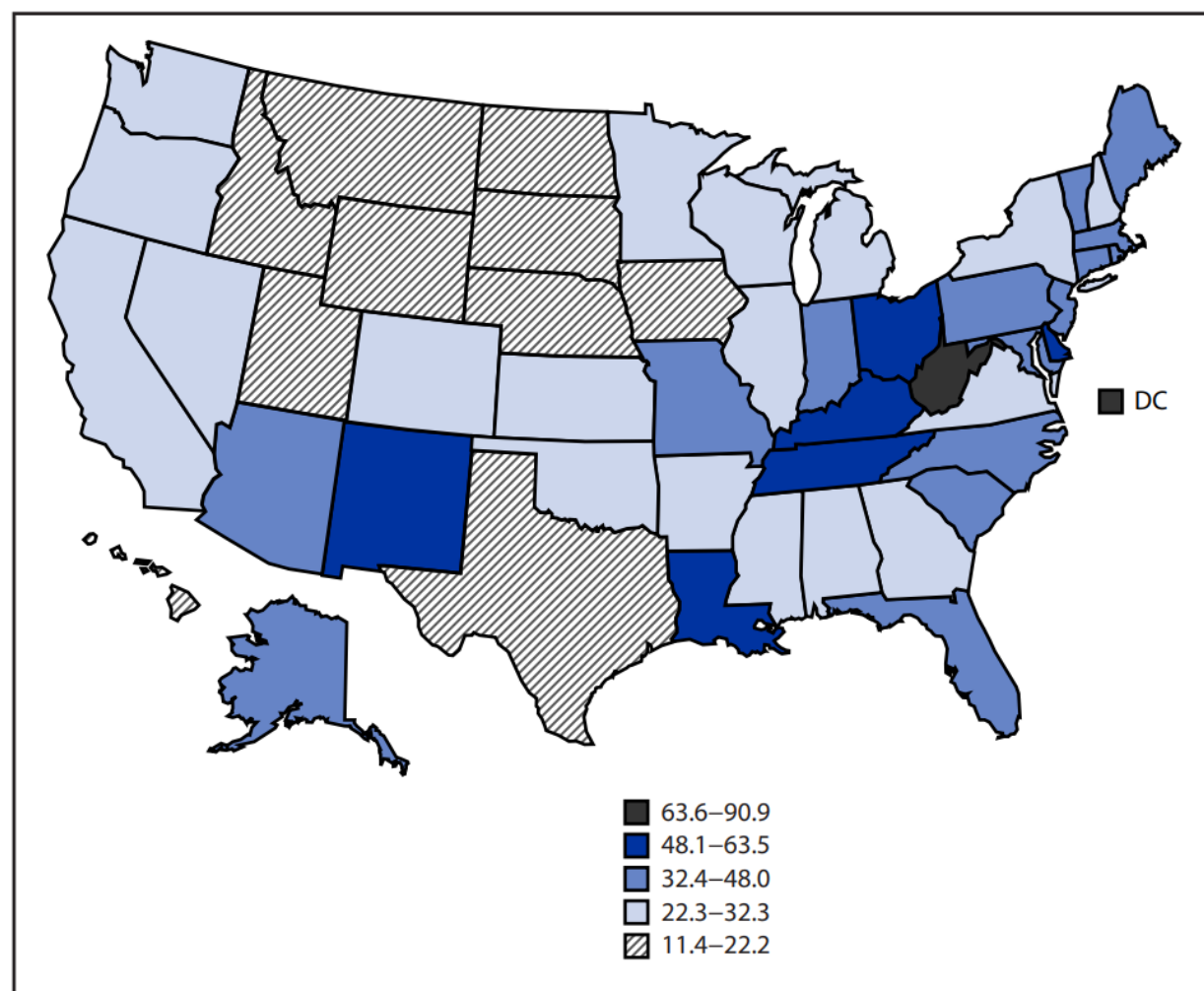
# Snapshot of Mental Health and Well-being of Ohioans

Category	Ohio	Nationwide
Drug Overdose	<ul style="list-style-type: none"> <li>• 43.6 per 100,000 (2022);</li> <li>• Opioid addiction rate: 1.4%</li> </ul>	<ul style="list-style-type: none"> <li>• 32.4 per 100,000 (2020)</li> <li>• Opioid addiction rate: 0.7%</li> </ul>
Suicide	<ul style="list-style-type: none"> <li>• 15.0 per 100,000 (2022);</li> </ul>	<ul style="list-style-type: none"> <li>• 13.5 per 100,000 (2022);</li> <li>• Peak in 2022</li> </ul>
Mental Illness	<ul style="list-style-type: none"> <li>• 1 in 5 adults;</li> <li>• Ranks 38<sup>th</sup> for adult mental health (2023);</li> <li>• Ranks 27<sup>th</sup> for young adults (2023)</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in 5 adults (23%)</li> <li>• 33.7% young adults</li> </ul>
Overall Health System	<ul style="list-style-type: none"> <li>• Ranks 31 out of 50 states and the District of Columbia (2023)</li> </ul>	<ul style="list-style-type: none"> <li>• Top: Massachusetts, Hawaii, and New Hampshire</li> <li>• Lowest: Oklahoma, West Virginia, and Mississippi</li> </ul>

Sources: Health Policy of Ohio; Ohio MHAS; Commonwealth Fund 2023 Scorecard on State Health System Performance



# Age-Adjusted Drug Overdose Death Rates by State, 2021



Source: National Center for Health Statistics, National Vital Statistics System, Mortality Data.  
<https://www.cdc.gov/nchs/nvss/deaths.htm>

QuickStats: Age-Adjusted Drug Overdose Death Rates, by State — National Vital Statistics System, United States, 2021. MMWR Morb Mortal Wkly Rep 2023;72:293.

DOI: <http://dx.doi.org/10.15585/mmwr.mm7211a7>

\* Deaths per 100,000 standard population. Age-adjusted drug overdose death rates were calculated using the direct method and the 2000 U.S. Census Bureau standard population. In 2021, the age-adjusted drug overdose death rate was 32.4 per 100,000 standard population.

† Drug overdose deaths were identified using *International Classification of Diseases, Tenth Revision* underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14.

# Who died of a drug overdose in 2022, Ohio?<sup>17</sup>

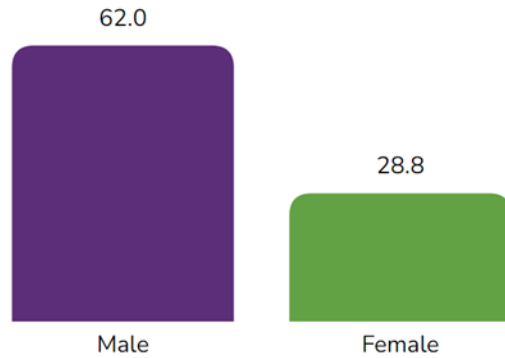
Ohio

2022

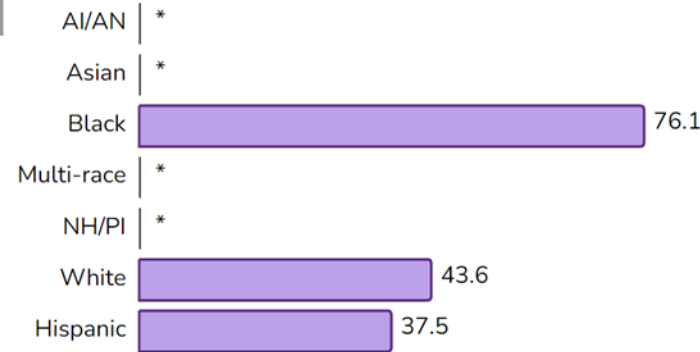
68.5% of people who died of a drug overdose were male, 27.7% were 35–44 years old, and 73.9% were White, non-Hispanic. The largest percentage of males were aged 35–44 and the largest percentage of females were aged 35–44. Male, 35–44, and Black, non-Hispanic race had the highest overdose death rates.

Metric:  Rate per 100,000 persons  Percent

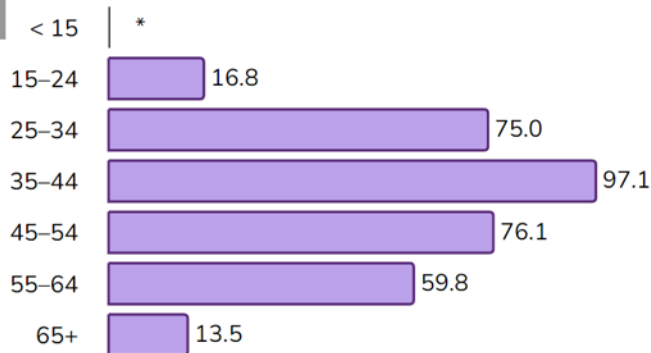
## By Sex



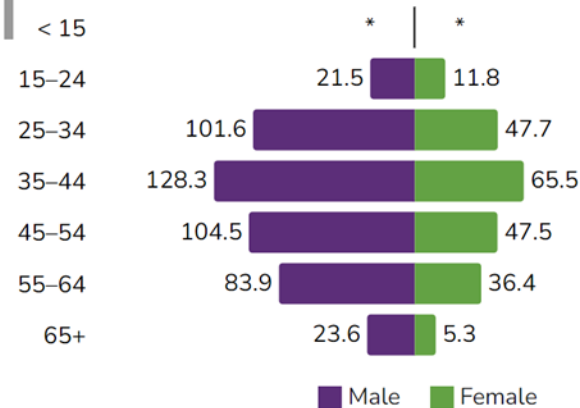
## By Race/Ethnicity



## By Age (In Years)



## By Age and Sex



Source: Centers for Disease Control and Prevention. State Unintentional Drug Overdose Reporting System (SUDORS). Final Data. Atlanta, GA: US Department of Health and Human Services, CDC; [INSERT YEAR, MONTH, DAY]. Access at: <https://www.cdc.gov/overdose-prevention/data-research/facts-stats/sudors-dashboard-fatal-overdose-data.html>

# What were the circumstances<sup>18</sup> surrounding overdose deaths in 2022, *Ohio*?

Ohio

2022

View data for:

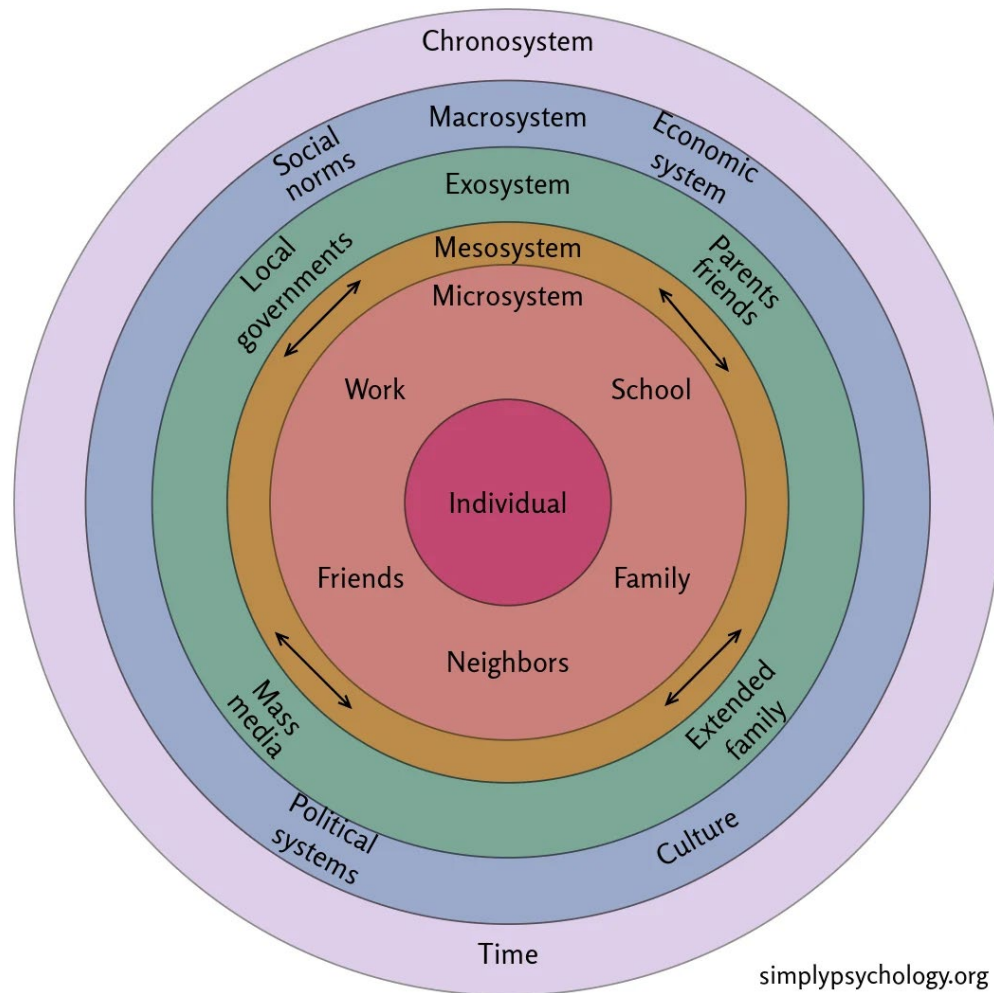
Potential opportunities for intervention to prevent overdose

Potential opportunities for intervention to prevent overdose	Number of deaths	Percent of deaths
<b>≥1 potential opportunity for intervention</b>	2,823	55.5%
Current treatment for substance use disorder(s) <sup>19</sup>	295	5.8%
Fatal drug use witnessed	290	5.7%
Mental health diagnosis	1,233	24.2%
Potential bystander present <sup>20</sup>	1,444	28.4%
Prior overdose	643	12.6%
Decedent was recently released from institutional setting <sup>21</sup>	311	6.1%

<sup>18</sup>Circumstance percentages are only among decedents with an available medical examiner or coroner report



# Need for Comprehensive Understanding of How Mental Health and Well-being Are Shaped



**Question:** Are there measurable and modifiable risk and resilience factors preceding these deaths and mental health issues?

**Bronfenbrenner's  
Ecological Systems Theory  
(1977)**

# SOAR Study - Wellness Discovery Cohort

- **Data are collected on a representative sample of Ohioans**

- Demographics
- Socioeconomic status
- Family and social network connection and support
- Physical health
- Psycho-social-cognitive functioning
- Mental health (depression, suicide)
- Behavioral health (e.g., substance use, alcohol)
- Childhood experience
- Other health data connected to Electronic Health Records
- Social determinants of health from contextual data

 Provide comprehensive information to answer **what and how** factors influence status of overall health, especially mental health, and well-being of Ohioans

## SOAR Data will provide information

- To better understand **status of Ohioans'** mental health and well-being and related factors
- To make **inferences about complex pathways** of factors related to mental health status and outcomes
- To identify **risk and resilience factors** that influence mental health status and outcomes
- To determine what and how **contextual factors and social determinants of health** are associated with mental health status and outcomes
- To help **identify disparity and design interventions**
- To provide **opportunities** to track changes over time

# Policy Implications

- **Improve Access to Mental Health Services**
  - Medicaid expansion and insurance coverage
  - Increased public support for specific areas (e.g., telehealth in rural and underserved areas)
- **Enhance substance abuse treatment programs**
  - Drug specific programs (e.g., opioid)
  - Integrated treatment for co-occurring disorders
  - Harm reduction programs in certain geographical areas
- **Support suicide prevention initiatives**
  - Community engagement and education
  - Crisis intervention (e.g., hotlines, mobile services)

# Policy Implications (cont'd)

- **Integrate mental and physical healthcare**
  - Connected, streamlined healthcare system
  - Reduced the stigma associated with mental health issues
- **Promote early intervention and prevention**
  - School-based programs to identify issues early
  - Community education and awareness
- **Address social determinants of health**
  - Recognize structural barriers – education, employment, healthcare, neighborhood
  - Invest in education and job training to reduce stressors that contribute to mental health
- **Integrate social support system with health care**
  - Support for families and caregivers
  - Collaborative care models

## Vision of SOAR Studies

- Data will help **identify complex pathways** of the ongoing epidemic of persistent mental illness, suicide, and drug overdose in the state of Ohio.
- The SOAR Study Team and its wide network of academic and community partners will **work together** to investigate the role of biological, psychological, and social factors that underlie this epidemic.
- Knowledgebase from the SOAR Study will **inform policy makers** to develop programs and policies to help Ohioans better manage adversity and develop resilience.
- Data and best practices of the SOAR initiative will **help other states and communities** to address similar challenges in this epidemic.

**Thank You!**

**Q and A**



# We value your opinion!

Please fill out our evaluation using the QR code to the right or in your program

