

# **Maternal Mortality: Statewide Efforts to Reduce Adverse Outcomes of Pregnancy and Childbirth**

**Judith T. Burgis, MD  
S.C. Summit on Early Childhood  
Public Health Session  
December 6, 2019**

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# Disclosures

**Chair of the SC Maternal Mortality and Morbidity Review Committee (MMMRC)**

**SC ACOG Section Chair**

**Thanks to Dave Goodman, CDC and to Amy Crockett, SC BOI Clinical Lead**



# Key Definitions

**A pregnancy-associated death is the death of a woman (during pregnancy or within one year of pregnancy) that is **temporally** related to pregnancy.**

**A pregnancy-related death is a subset of pregnancy-associated deaths that is **related to or are aggravated by** pregnancy.**



Building U.S. Capacity to Review and Prevent Maternal Deaths. (2018) Report from nine maternal mortality review committees.

**The Maternal Mortality Rate<sup>1</sup> is reported as**

**# of maternal deaths per 100,000 live births**

**The Pregnancy-Related Mortality Ratio<sup>2</sup> is reported as**

**# of pregnancy-related deaths per 100,000 live births**

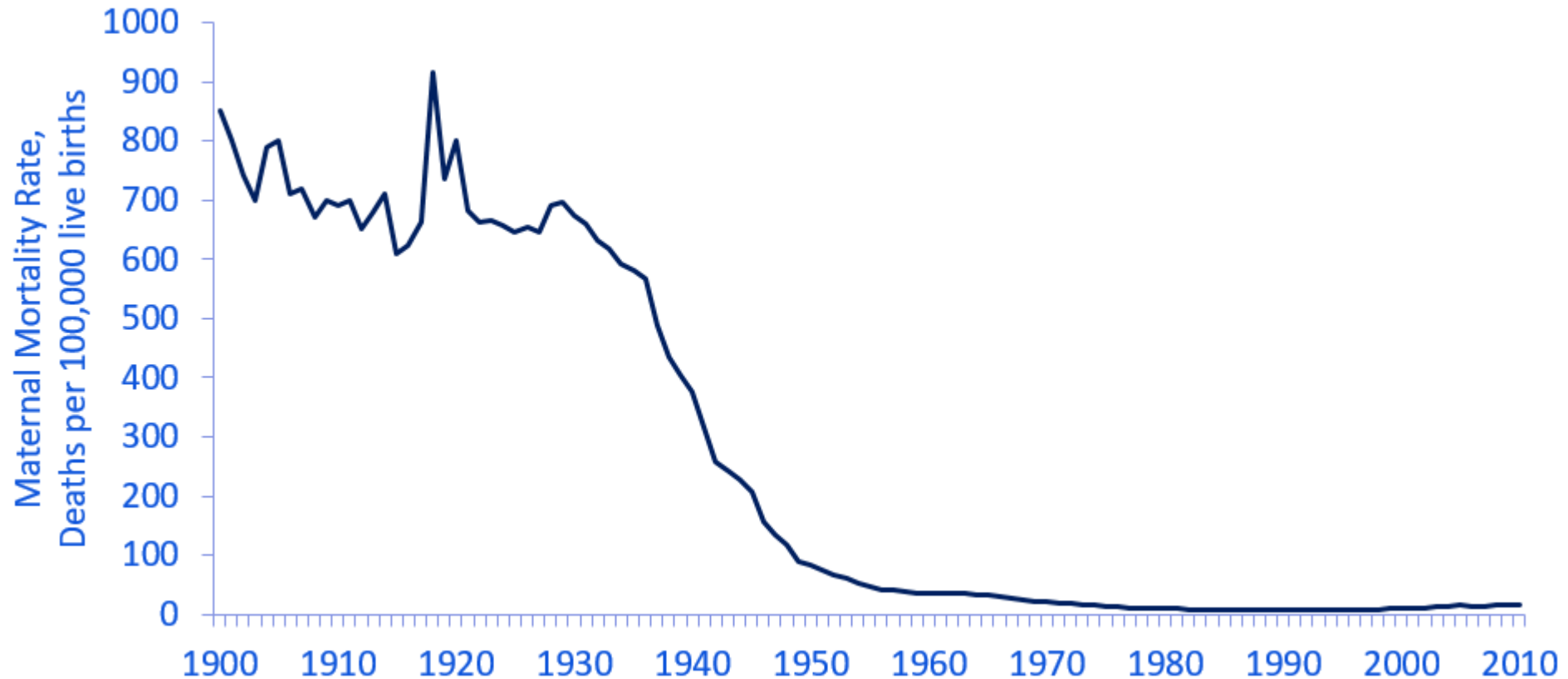


<sup>1</sup>Deaths occurring during pregnancy or within 42 days of delivery. Maternal deaths are identified by ICD-10 codes as listed on the death certificate.

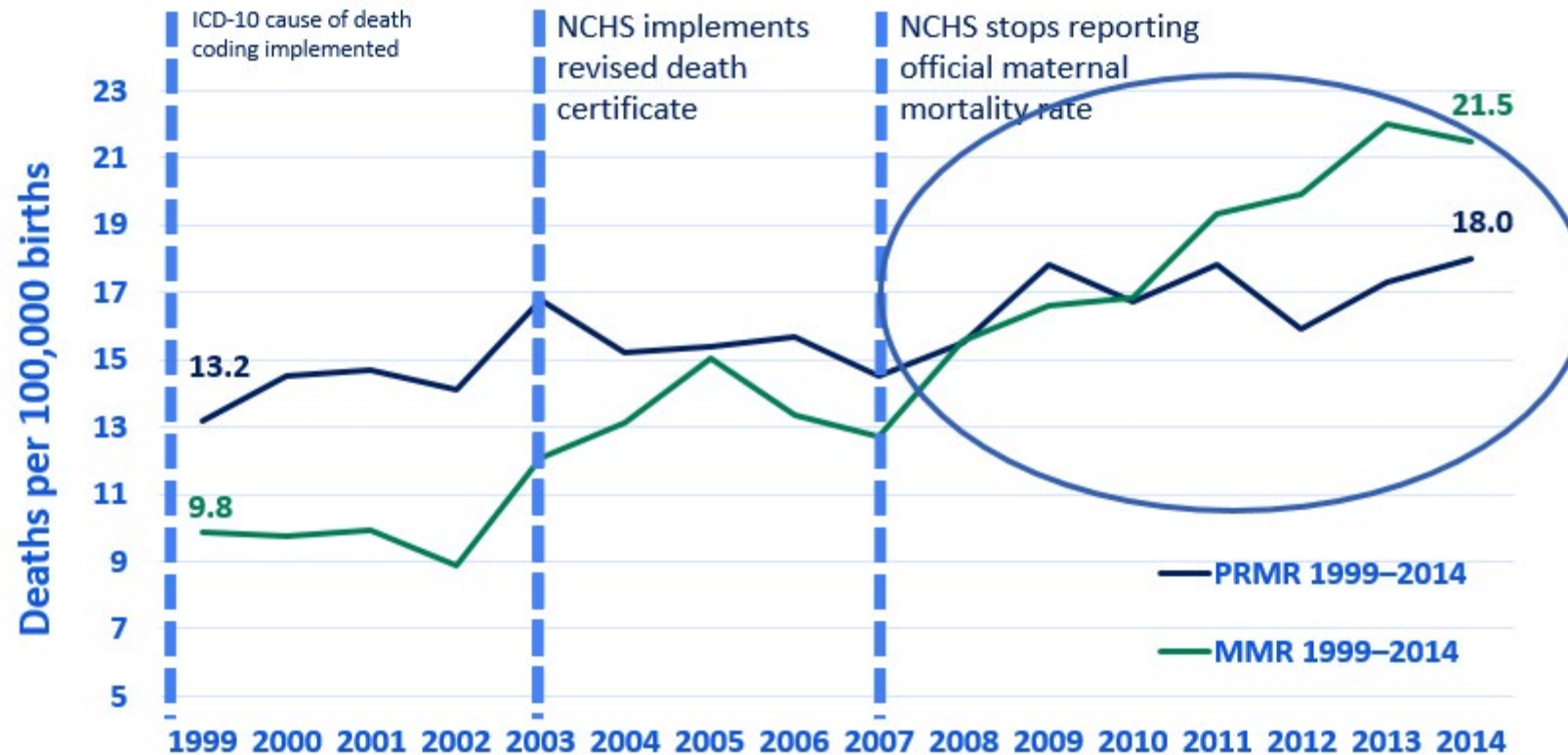
<sup>2</sup> Deaths occurring during pregnancy or within one year of pregnancy. Pregnancy-related deaths are identified by the pregnancy checkbox and/or death certificate linked to fetal deaths or birth certificate.



# Measuring Maternal Deaths



# Measuring Maternal Deaths: NCHS & PMSS

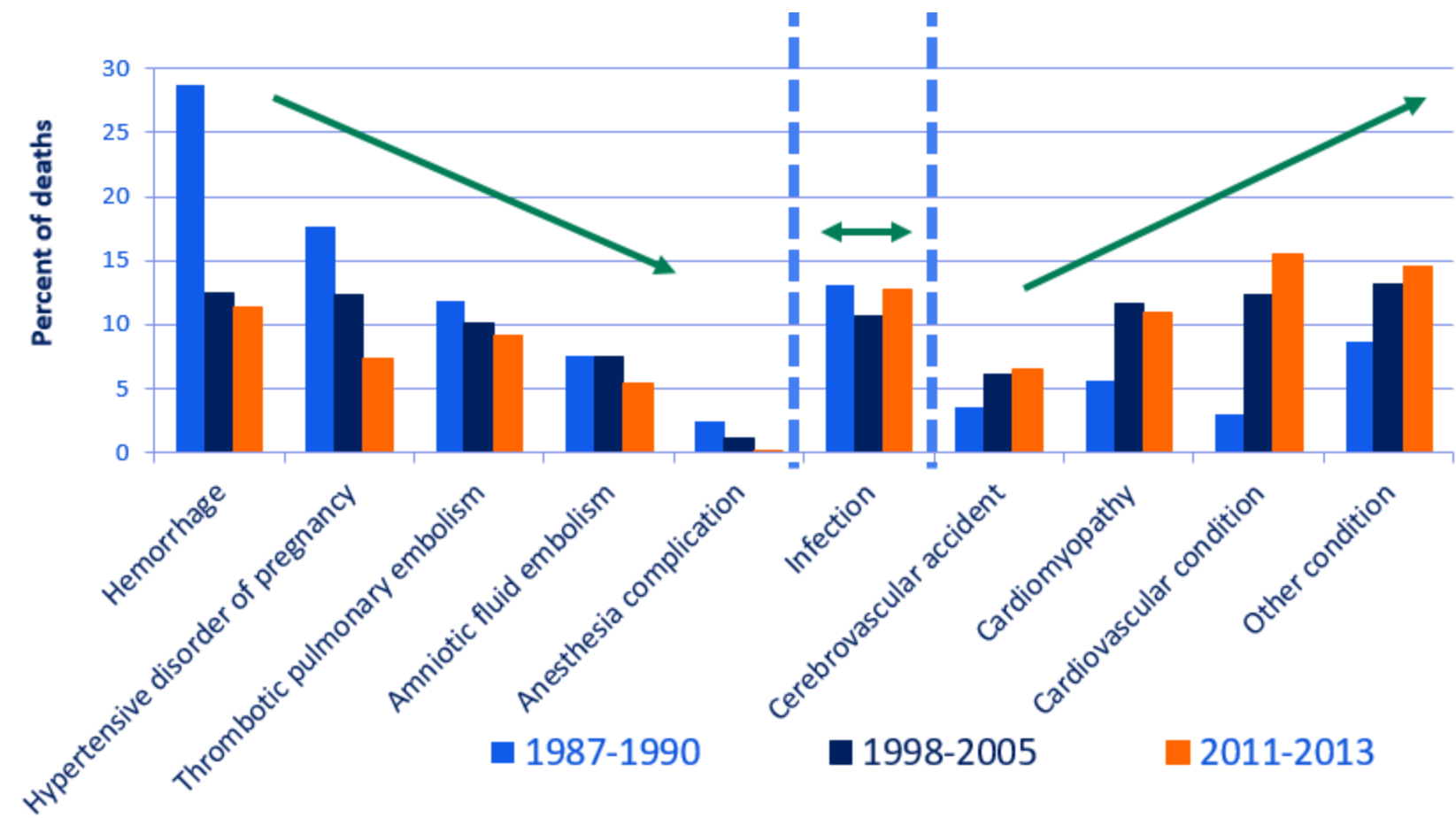


PRMR: Pregnancy-related mortality ratio

MMR: Maternal mortality rate

<http://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>

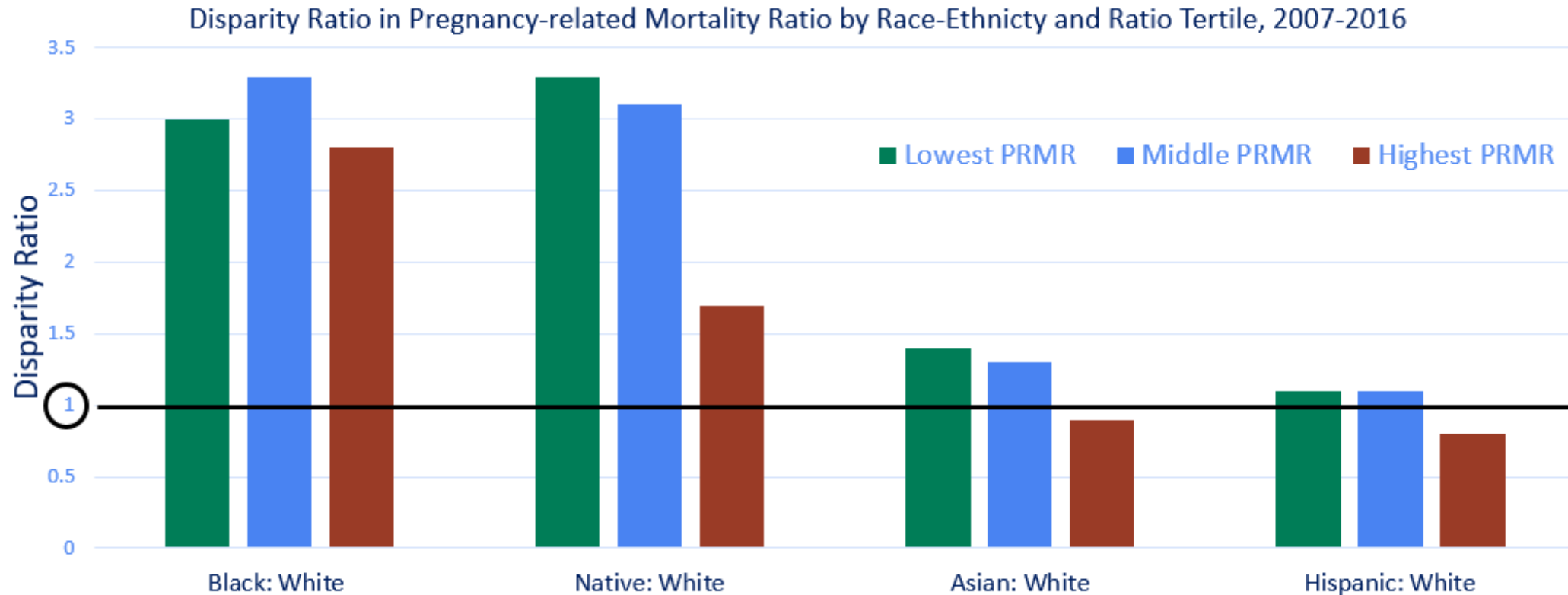
# PMSS: Causes of Pregnancy-related Death



Creanga AA, et al. Obstet Gynecol 2015;125:5-12.

**Disparity implies inequality often where a greater equality might be reasonably expected**

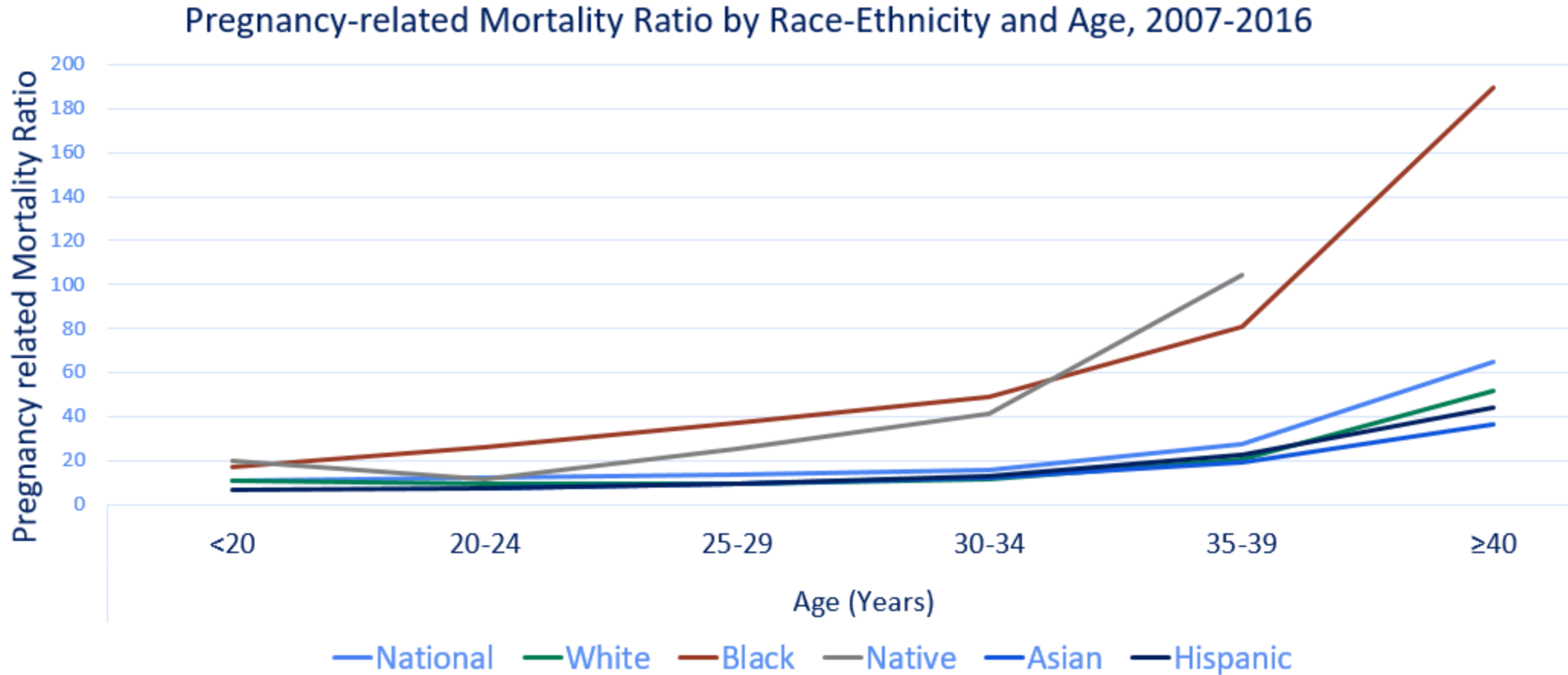
# PMSS: Disparity Ratio



Petersen EE, Davis NL, Goodman D, et al. Racial/Ethnic Disparities in Pregnancy-Related Deaths — United States, 2007–2016. MMWR Morb Mortal Wkly Rep 2019;68:762–765



# PMSS: by Age Grouping



Petersen EE, Davis NL, Goodman D, et al. Racial/Ethnic Disparities in Pregnancy-Related Deaths — United States, 2007–2016. MMWR Morb Mortal Wkly Rep 2019;68:762–765



# Preventing Maternal Deaths: Maternal Mortality Review Committees (MMRCs)



# Preventing Maternal Deaths: Maternal Mortality Review Committees (MMRCs)

*MMRCs have 3 components that the other systems (NCHS and PMSS) don't have:*

1. Robust **DATA** system dedicated to maternal mortality with multi-level data from multiple sources (including non-traditional sources)
2. A multidisciplinary committee of **EXPERTS** to review each death, through clinical and non-clinical lens, with a focus on prevention (population level)
3. PH **STAFF** (usually a state department of public health team) to gather and manage the data, establish and guide the committee, communicate with stakeholders, and conduct and disseminate research and surveillance. (AKA, put it all together)





# Preventing Maternal Deaths

## Committee reporting forms

### MMRIA



REVIEW DATE

RECORD ID #

## COMMITTEE DETERMINATION OF CAUSE(S) OF DEATH

TYPE

CAUSE (DESCRIPTIVE)

IMMEDIATE

CONTRIBUTING

UNDERLYING

OTHER SIGNIFICANT

PREGNANCY-RELATEDNESS: SELECT ONE

☐ PREGNANCY-RELATED

The death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy

☐ PREGNANCY-ASSOCIATED, BUT NOT -RELATED

The death of a woman during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy

☐ UNABLE TO DETERMINE IF PREGNANCY-RELATED OR PREGNANCY-ASSOCIATED, BUT NOT -RELATED☐ NOT PREGNANCY-RELATED OR -ASSOCIATED  
(i.e. false positive, woman was not pregnant within one year of her death)

ESTIMATE THE DEGREE OF RELEVANT INFORMATION (RECORDS) AVAILABLE FOR THIS CASE:

☐ COMPLETE

All records necessary for adequate review of the case were available

☐ SOMEWHAT COMPLETE

Major gaps (i.e. information that would have been crucial to the review of the case)

☐ MOSTLY COMPLETE

Minor gaps (i.e. information that would have been beneficial but was not essential to the review of the case)

☐ NOT COMPLETE

Minimal records available for review (i.e. death certificate and no additional records)

☐ N/A

DOES THE COMMITTEE AGREE WITH THE UNDERLYING CAUSE OF DEATH LISTED ON DEATH CERTIFICATE?

☐ YES☐ NO

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING CAUSE OF DEATH  
Refer to page 3 for PMSS-MM cause of death list. If more than one is selected, list in order of importance beginning with the most compelling (1-2; no more than 2 may be selected in the system).

DID OBESITY CONTRIBUTE TO THE DEATH?

☐ YES☐ PROBABLY☐ NO☐ UNKNOWN

DID MENTAL HEALTH CONDITIONS CONTRIBUTE TO THE DEATH?

☐ YES☐ PROBABLY☐ NO☐ UNKNOWN

DID SUBSTANCE USE DISORDER CONTRIBUTE TO THE DEATH?

☐ YES☐ PROBABLY☐ NO☐ UNKNOWN

WAS THIS DEATH A SUICIDE?

☐ YES☐ PROBABLY☐ NO☐ UNKNOWN

WAS THIS DEATH A HOMICIDE?

☐ YES☐ PROBABLY☐ NO☐ UNKNOWN

IF HOMICIDE, SUICIDE, OR ACCIDENTAL DEATH, LIST THE MEANS OF FATAL INJURY

☐ FIREARM☐ SHARP INSTRUMENT☐ BLUNT INSTRUMENT☐ POISONING/  
OVERDOSE☐ HANGING/  
STRANGULATION/  
SUFFOCATION☐ FALL☐ PUNCHING/  
KICKING/BEATING☐ EXPLOSIVE☐ DROWNING☐ FIRE OR BURNS☐ MOTOR VEHICLE☐ INTENTIONAL  
NEGLECT☐ OTHER, SPECIFY:☐ UNKNOWN☐ NOT APPLICABLE

IF HOMICIDE, WHAT WAS THE RELATIONSHIP OF THE PERPETRATOR TO THE DECEDENT?

☐ NO RELATIONSHIP☐ PARTNER☐ EX-PARTNER☐ OTHER RELATIVE☐ OTHER  
ACQUAINTANCE☐ OTHER, SPECIFY:☐ UNKNOWN☐ NOT APPLICABLE

## COMMITTEE DETERMINATION OF PREVENTABILITY

A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

WAS THIS DEATH PREVENTABLE?

☐ YES☐ NO

CHANCE TO ALTER OUTCOME?

☐ GOOD CHANCE☐ SOME CHANCE☐ NO CHANCE☐ UNABLE TO DETERMINE

## CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death? Multiple contributing factors may be present at each level.

## RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

CONTRIBUTING  
FACTOR LEVELCONTRIBUTING FACTOR AND DESCRIPTION  
OF ISSUE

RECOMMENDATIONS OF THE COMMITTEE

LEVEL OF PREVENTION  
(SEE BELOW)LEVEL OF IMPACT  
(SEE BELOW)

PATIENT/FAMILY

PROVIDER

FACILITY

SYSTEM

COMMUNITY

## CONTRIBUTING FACTOR KEY (DESCRIPTIONS ON PAGE 4)

- Delay
- Adherence
- Knowledge
- Cultural/religious
- Environmental
- Violence
- Mental health conditions
- Substance use disorder - alcohol, illicit/prescription drugs

- Tobacco use
- Chronic disease
- Childhood abuse/trauma
- Access/financial
- Unstable housing
- Social support/isolation
- Equipment/technology
- Policies/procedures
- Communication

- Continuity of care/ care coordination
- Clinical skill/ quality of care
- Outreach
- Enforcement
- Referral
- Assessment
- Legal
- Other

## PREVENTION LEVEL

- **PRIMARY:** Prevents the contributing factor before it ever occurs
- **SECONDARY:** Reduces the impact of the contributing factor once it has occurred (i.e. treatment)
- **TERTIARY:** Reduces the impact or progression of an ongoing contributing factor once it has occurred (i.e. management of complications)

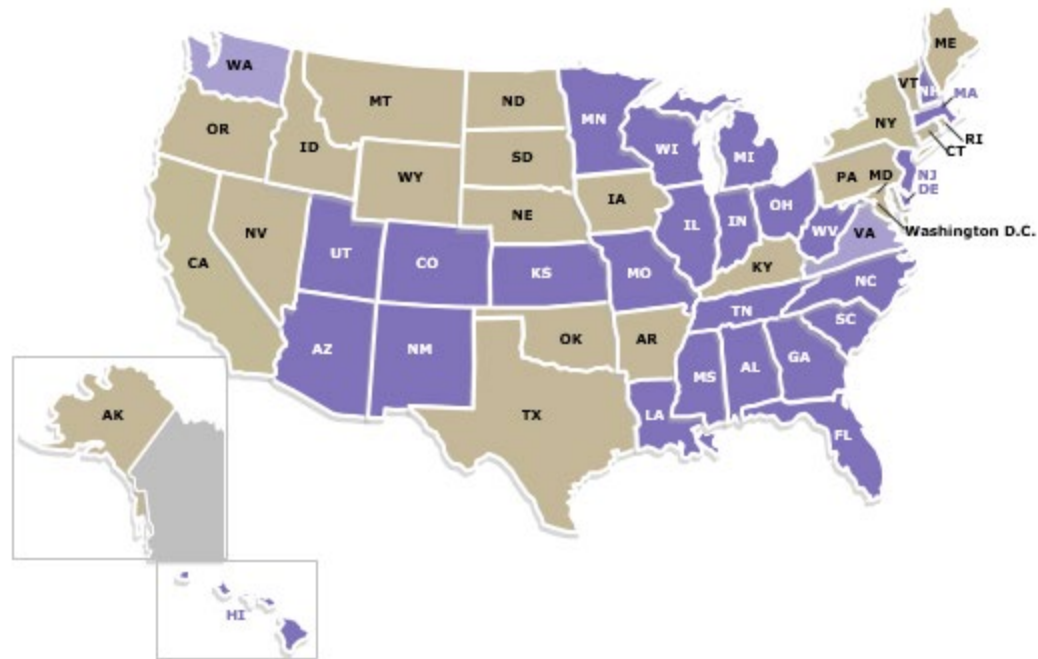
## EXPECTED IMPACT LEVEL

- **SMALL:** Education/counseling (community- and/or provider-based health promotion and education activities)
- **MEDIUM:** Clinical intervention and coordination of care across continuum of well-woman visits through obstetrics (protocols, prescriptions)
- **LARGE:** Long-lasting protective intervention (improve readiness, recognition and response to obstetric emergencies/LARC)
- **EXTRA LARGE:** Change in context (promote environments that support healthy living/ensure available and accessible services)
- **GIANT:** Address social determinants of health (poverty, inequality, etc.)



# Maternal Mortality Review Information Application (MMRIA)

A common language for reviews to work together



# MMRCs: Equity Framework

Understanding community contributing factors requires a shift in thinking

1. We can link MMRIA data to community context
2. Assigning contributing role of community in individual cases is challenging
3. Community factors may be more evident in aggregate data
4. Adaptation, implementation, and evaluation of a Health Equity Toolkit in process(!)

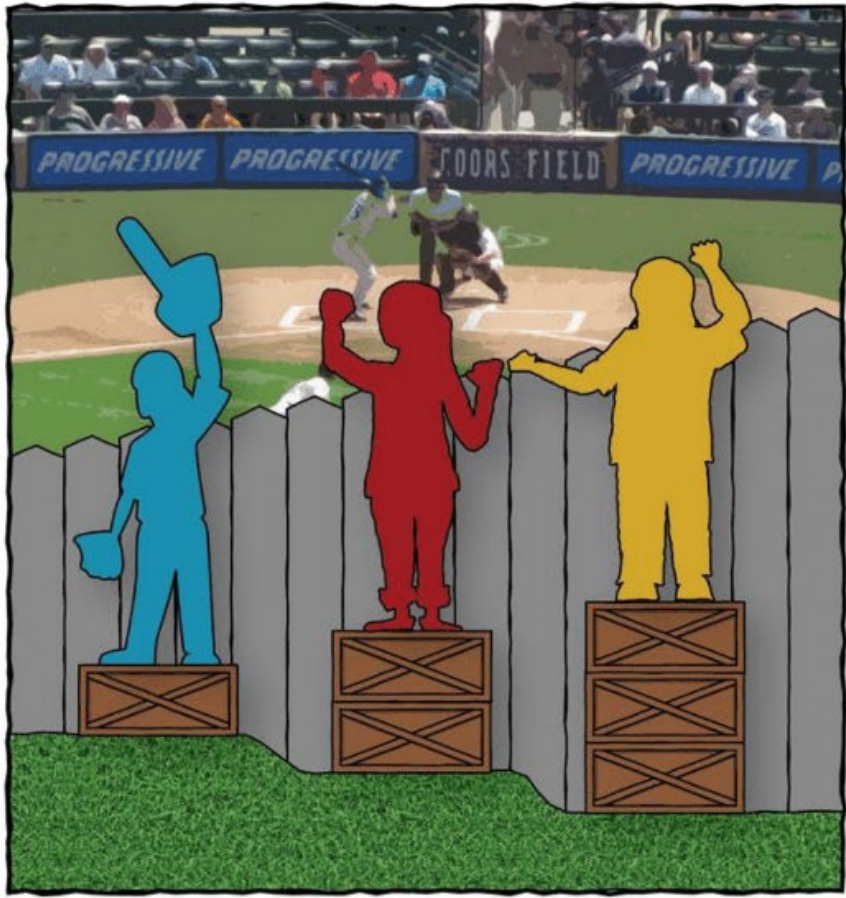
Kramer MR, Strahan AE, Preslar J, Zaharatos J, ST. Pierre A, Grant J, Davis NL, Goodman D, Callaghan W, Changing the conversation: Applying a health equity framework to maternal mortality reviews, *American Journal of Obstetrics and Gynecology* (2019), doi: <https://doi.org/10.1016/j.ajog.2019.08.057>



# MMRCs Equity Framework



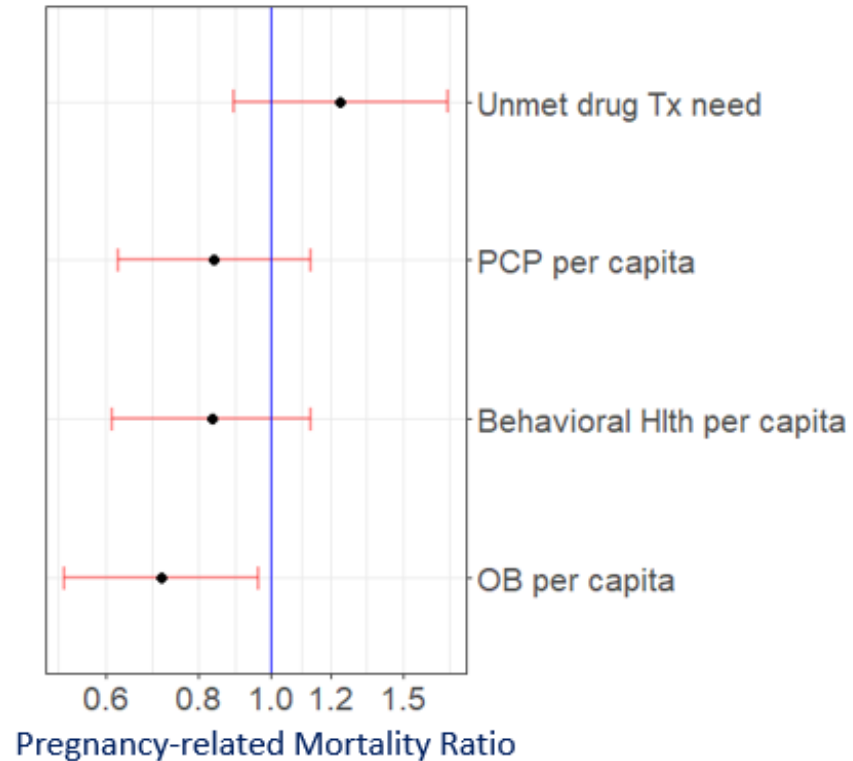
EQUALITY



EQUITY

# MMRCs: Equity Framework

## Health Care Service Environ



## Social Environ



# MMRIA: Preventability

## Definition

A death is **considered preventable** if the committee determines there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

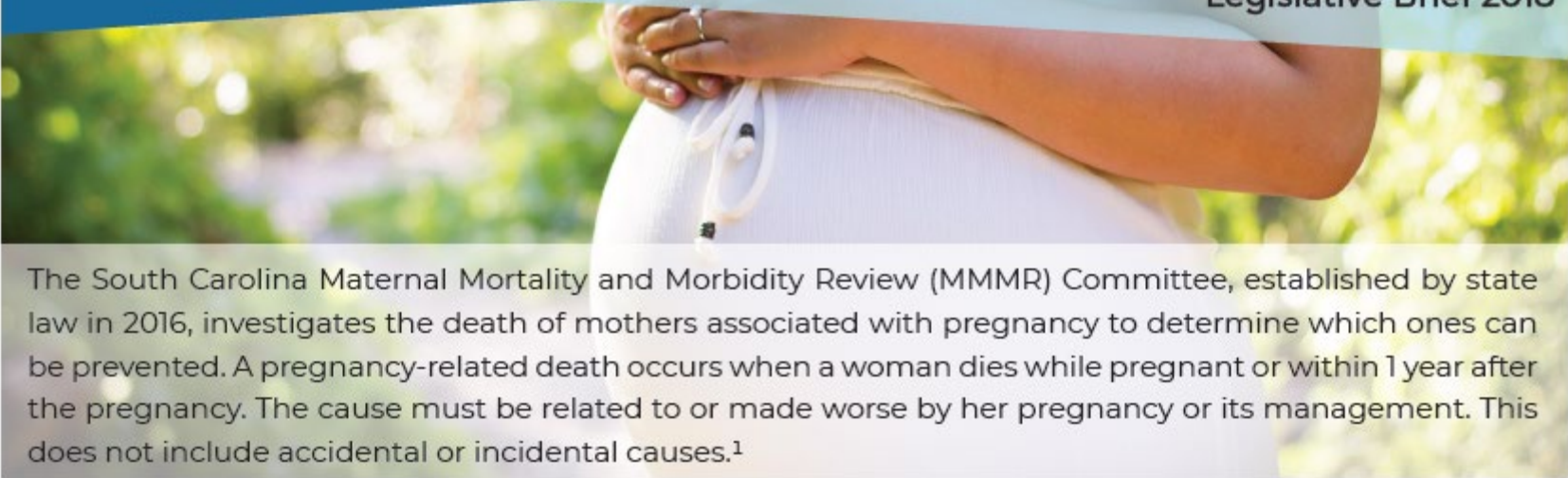
## Why

MMRCs determine preventability to prioritize interventions with the greatest opportunity for impact.



# South Carolina Maternal Mortality and Morbidity Review Committee

Legislative Brief 2018



The South Carolina Maternal Mortality and Morbidity Review (MMMR) Committee, established by state law in 2016, investigates the death of mothers associated with pregnancy to determine which ones can be prevented. A pregnancy-related death occurs when a woman dies while pregnant or within 1 year after the pregnancy. The cause must be related to or made worse by her pregnancy or its management. This does not include accidental or incidental causes.<sup>1</sup>

**Committee established by statute – 2016**

**Meets quarterly**

**Voluntary reporting**

**Annual report to the legislature**

<https://www.scstatehouse.gov/reports/DHEC/MMMR%202019%20Legislative%20Brief%20-%20Revised%2003182019.pdf>

# **SC Maternal Morbidity and Mortality Review Committee (MMMRC)**

**Multidisciplinary**

**Actively practicing**

**Based on ACOG and CDC recommendations**

**Three- to four-year terms**

**75% attendance requirements**

**Renewable once**

# SC Maternal Morbidity and Mortality Review Committee (MMMRC)

## 3 YEARS

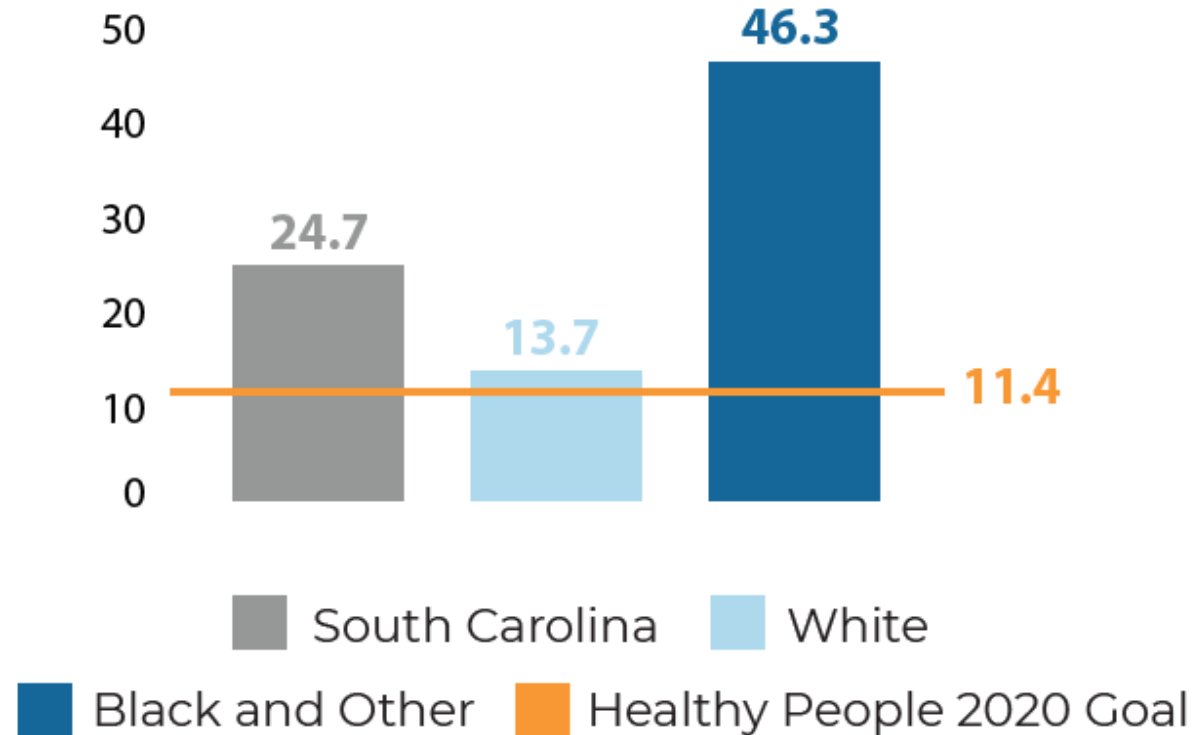
- ACOG
- MRM/OB each Regional Perinatal Center (RPC)
- SC Perinatal Association
- Coroner
- SC Hospital Association
- SC Department of Health and Human Services (DHHS)
- OB MD FQHC
- OB MD Level II hospital

## 4 YEARS

- OB Anesthesia
- Cardiology
- Domestic Violence
- Midwife
- Law Enforcement
- Alcohol and Drug Abuse
- Regional Systems Developers (RSDs)
- Family Medicine
- Psychiatry/Behavioral Medicine

## South Carolina Pregnancy-Related Death by Race, 2013-2017<sup>2</sup>

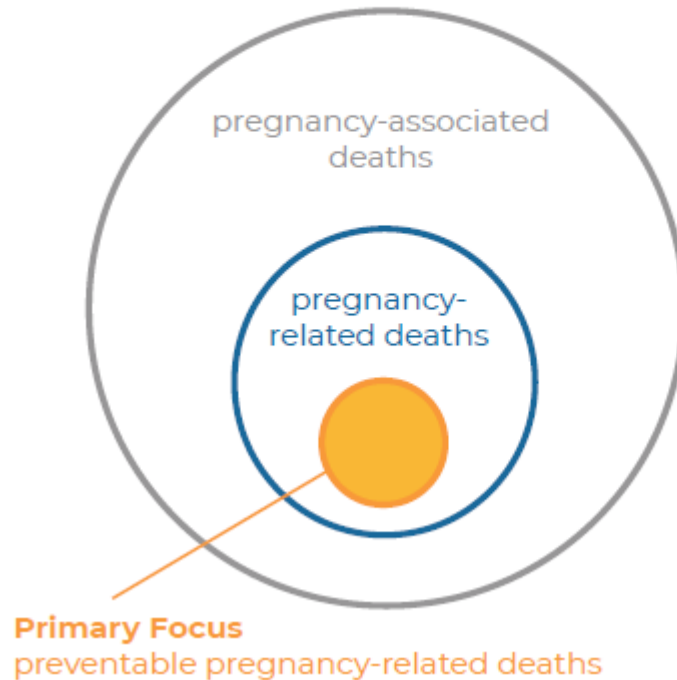
*Rate per 100,000 live births*



<https://www.scstatehouse.gov/reports/DHEC/MMMR%202019%20Legislative%20Brief%20-%20Revised%2003182019.pdf>

# SC Maternal Morbidity and Mortality Review Committee (MMMRC)

## Scope of Case Review



## MMMR Committee Findings

During the 2016-2018 review period, 13 of the 15 maternal deaths reviewed in South Carolina were determined to be pregnancy-related. One death was determined to be pregnancy-associated but not related to pregnancy, and the other could not be determined. Among the 13 pregnancy-related deaths, 54% were determined to be preventable.

**54%**

As reported nationally<sup>3</sup>, the findings from South Carolina's MMMR Committee show that the common causes of maternal death include cardiovascular and coronary conditions, hemorrhage, infection, and embolism.

<https://www.scstatehouse.gov/reports/DHEC/MMMR%202019%20Legislative%20Brief%20-%20Revised%2003182019.pdf>

# SC Maternal Morbidity and Mortality Review Committee (MMMRC)

## SC MMMRC ACCOMPLISHMENTS

SC uses the **MMRIA** reporting format

CDC-developed

Assist with identifying social determinants

Includes **community factors**

# **SC Maternal Morbidity and Mortality Review Committee (MMMRC)**

## **SC MMMRC ACCOMPLISHMENTS**

**Annual Report to the South Carolina Birth  
Outcomes Initiative (SC BOI) each Spring**

**Annual Report to the SC General Assembly**

<https://www.scstatehouse.gov/reports/DHEC/MMMR%202019%20Legislative%20Brief%20-%20Revised%2003182019.pdf>



# Moving from Thought to Action: State Level South Carolina SimCoach

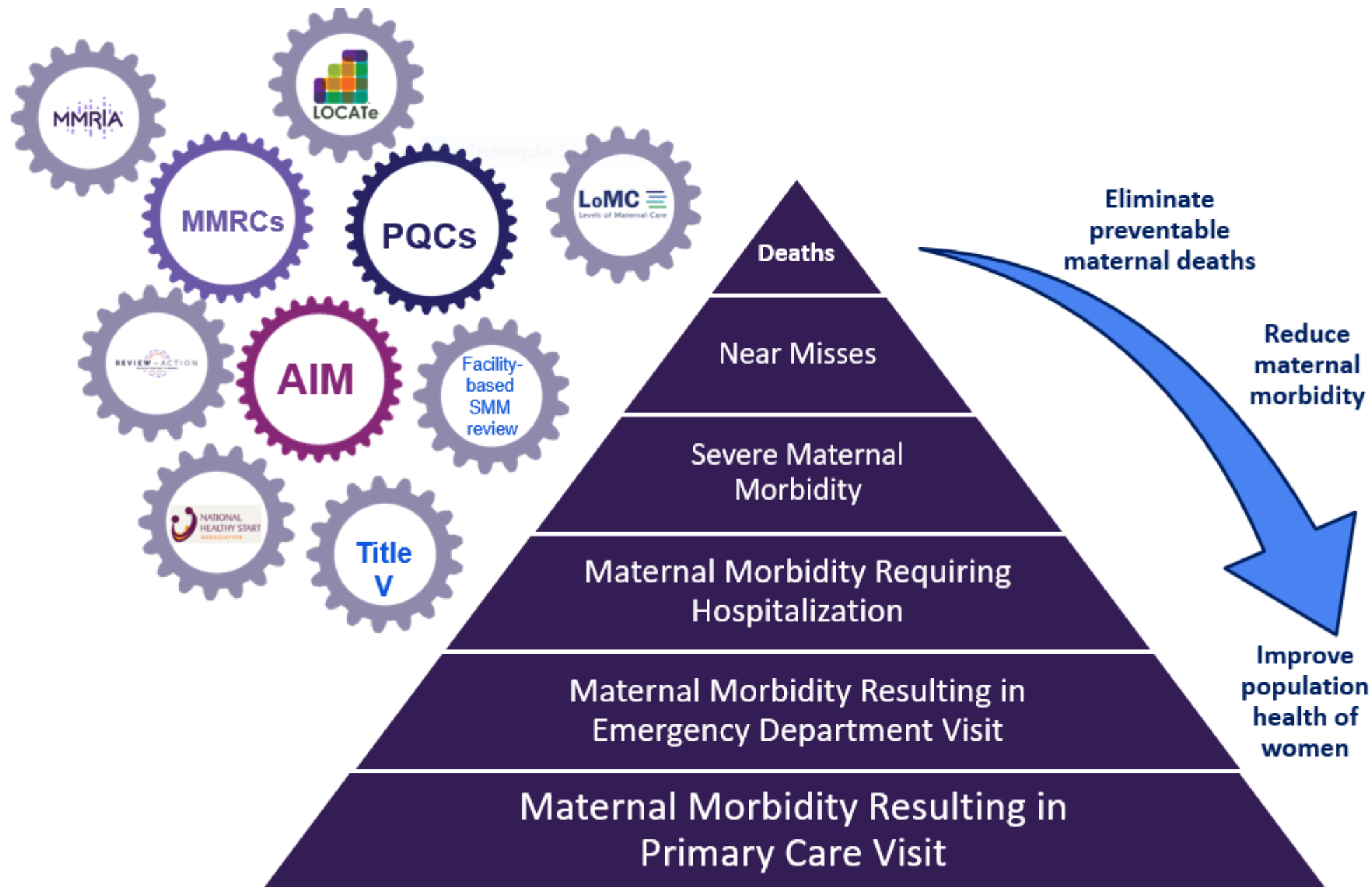




## Moving from Thought to Action: Local Level GHS Postpartum Hemorrhage Cart



A standardized PPH cart that contains all equipment needed for any staff in any setting within the Women's Hospital.



# Thanks



[Judith.burgis@prismahealth.org](mailto:Judith.burgis@prismahealth.org)



































# *Maternal and Child Health in Rural Communities*

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Elizabeth Crouch, PhD, Deputy Director  
Rural and Minority Health Research Center  
University of South Carolina Arnold School of Public  
Health

# Our center's mission

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To illuminate and address the problems experienced by rural and minority populations in order to guide research, policy, and related advocacy.

*Director: Jan M. Eberth, PhD*

*Deputy Director: Elizabeth Crouch, PhD*



## Identification of High-Need Rural Counties to Assist in Resource Location Planning

- This report demonstrates how a relatively simple technique can be used to measure the level of potential health care need across communities.
- It illustrates how sorting counties by need can identify areas in greatest need of additional safety net providers and resources.

### BACKGROUND

Analyses of location selection by healthcare providers in the U.S. are often retrospective, mapping the results of previous decisions. Examples include studies of the location choices of new physicians [1], freestanding emergency departments [2], and diabetes self-management education programs [3]. These studies have generally documented that providers preferentially locate in urban, well-resourced areas, rather than areas with high rates of illness and/or low-income populations. Prospective analyses, which attempt to provide recommendations for future facility location based on need, are more common in situations where resources are administered through a central authority at the state or national level [4]. In the U.S., disaster management and emergency services use geospatial analyses for planning purposes, but generally employ computationally complex methodologies that may be difficult to implement [5, 6].

*Findings briefs are produced 2-3 times/year on a variety of topics related to rural health and healthcare. Briefs are available at [www.ruralhealthresearch.org](http://www.ruralhealthresearch.org).*

# Unique issues facing rural communities

## DISPARITIES IN HEALTH

- Increased mortality rates
- Lower life expectancies
- Higher % of overweight adults
- Higher rates of pain and suffering
- Higher rate of teen births
- Higher rate of children hospitalized for unintentional injuries

## DISPARITIES IN HEALTH CARE

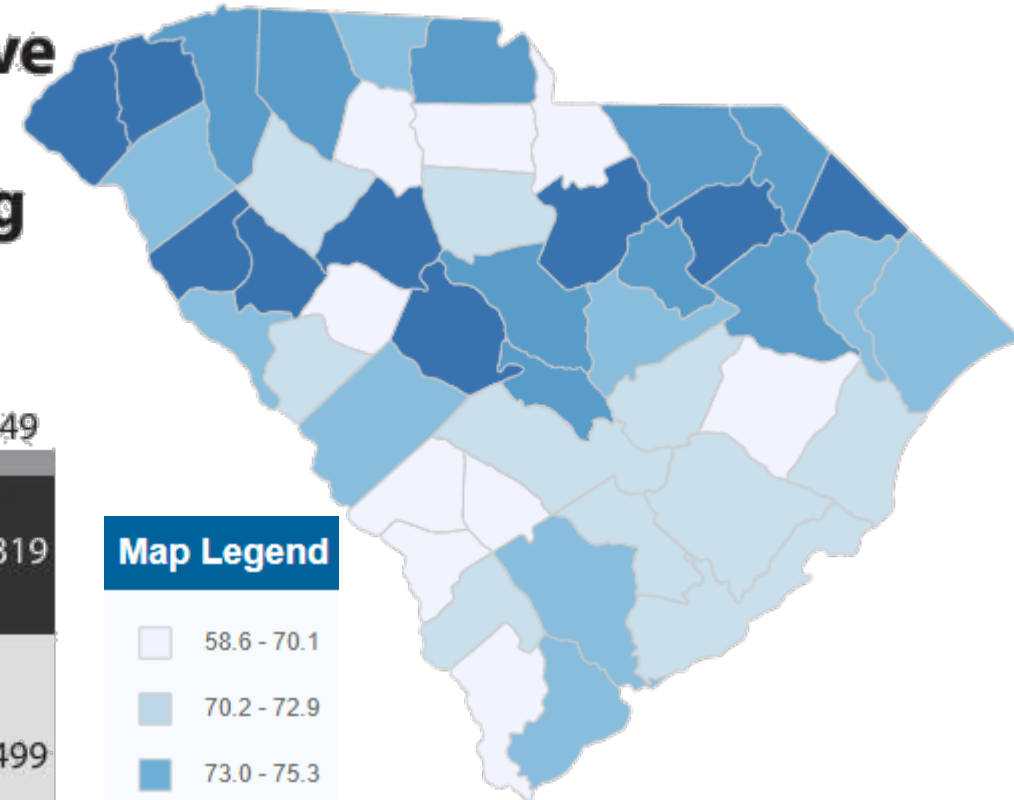
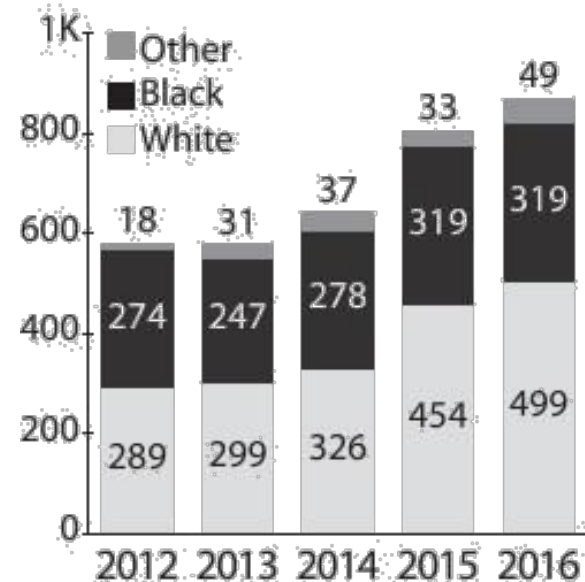
- Geographic isolation
- Lower socio-economic status
- Higher rates of health risk behaviors
- Limited job opportunities
- Lack of health care coverage
- Higher % of adults who delay seeing a doctor due to cost
- Lower % of screening for cervical, breast, and colorectal cancers

# Gaps to be addressed...

## Prenatal Care

“More than **860** pregnant women gave birth in South Carolina last year having received no prenatal care — **the highest number in more than 20 years**”

**Women who gave birth in S.C. without receiving prenatal care**



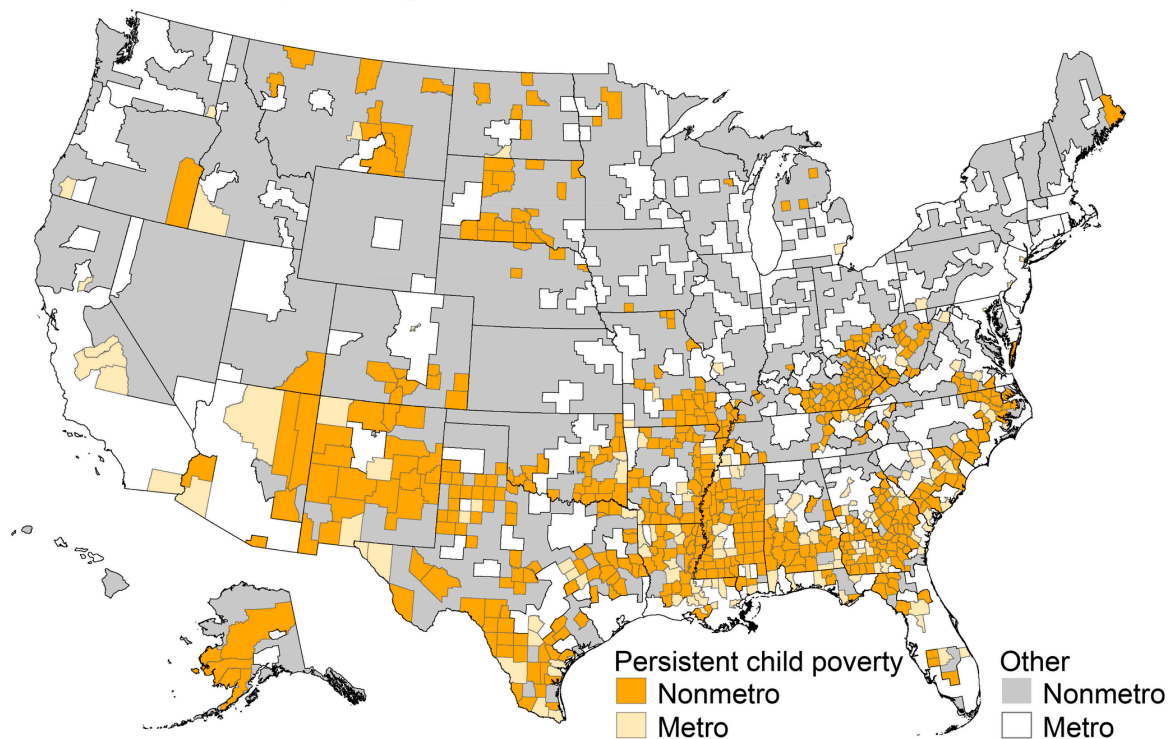
**Map Legend**

58.6 - 70.1  
70.2 - 72.9  
73.0 - 75.3  
75.4 - 77.4  
77.5 - 82.6

There are 708  
persistent child  
poverty counties.

558 of them are  
rural.

### Persistent child poverty counties, 2015 edition

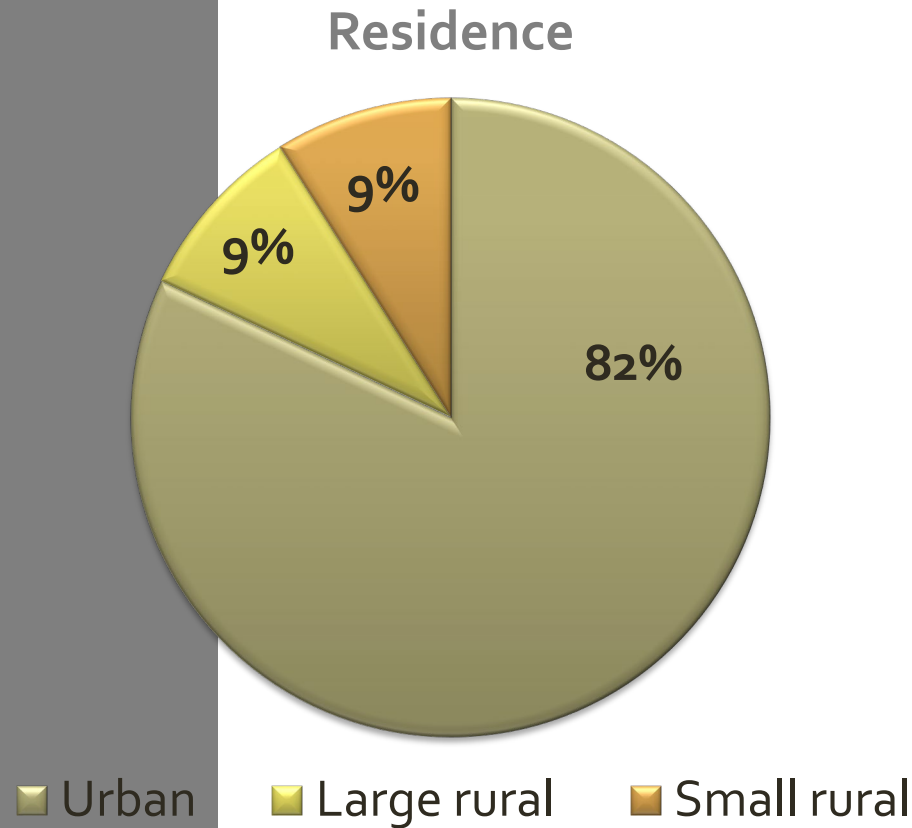


Persistent child poverty counties are those where 20 percent or more of county related children under 18 were poor, measured in the 1980, 1990, 2000 censuses, and the 2007-11 American Community Survey.

Note that county boundaries are drawn for the persistent child poverty counties only.

Source: USDA, Economic Research Service using data from U.S. Census Bureau.

# Nationwide: Children by rural/urban residence



Urban: 58.9 million children  
Large rural: 6.5 million children  
Small rural: 6.4 million children



# Children in rural areas

- Compared to urban children, rural children are:
  - less likely to be breastfed
  - more likely to be overweight or obese
  - more likely to live with someone who smokes
    - less likely to have preventative health & dental care
    - more likely to travel far for specialized care
    - more likely to require hospital readmissions
- more **likely to die**, largely due to unintentional injury



## Lots of bad news

- Infant Death Rates Are Higher in Rural America - but Not for All Causes
- Eroding Access and Quality of Childbirth Care in Rural US Counties
- Delivering rural babies: Maternity Care Shortages in Rural America
- A Shrinking Number of Rural Texas Hospitals Still Deliver Babies
- Rural Maternity Care Losses Lead to Childbirth Risks
- Diminishing Access to Rural Maternity Care and Associated Changes in Birth Location and Outcomes

# Maternal and Child Health Collaborations



This Photo is licensed under [CC BY-NC-ND](#) downloaded  
from Microsoft Office

Children's Trust Maternal, Infant, and  
Early Childhood Home Visiting  
Evaluation

Community Support for Young  
Parents Evaluation

Fact Forward

Maternal  
Infant and  
Early  
Childhood  
Visiting  
Program



MIECHV was created under the 2010  
*Affordable Care Act*

*Home visits by a nurse, social worker,  
early childhood educator, or other  
trained personnel during early parenting  
improve the lives of children and families.*

## Legislatively mandated benchmark measures

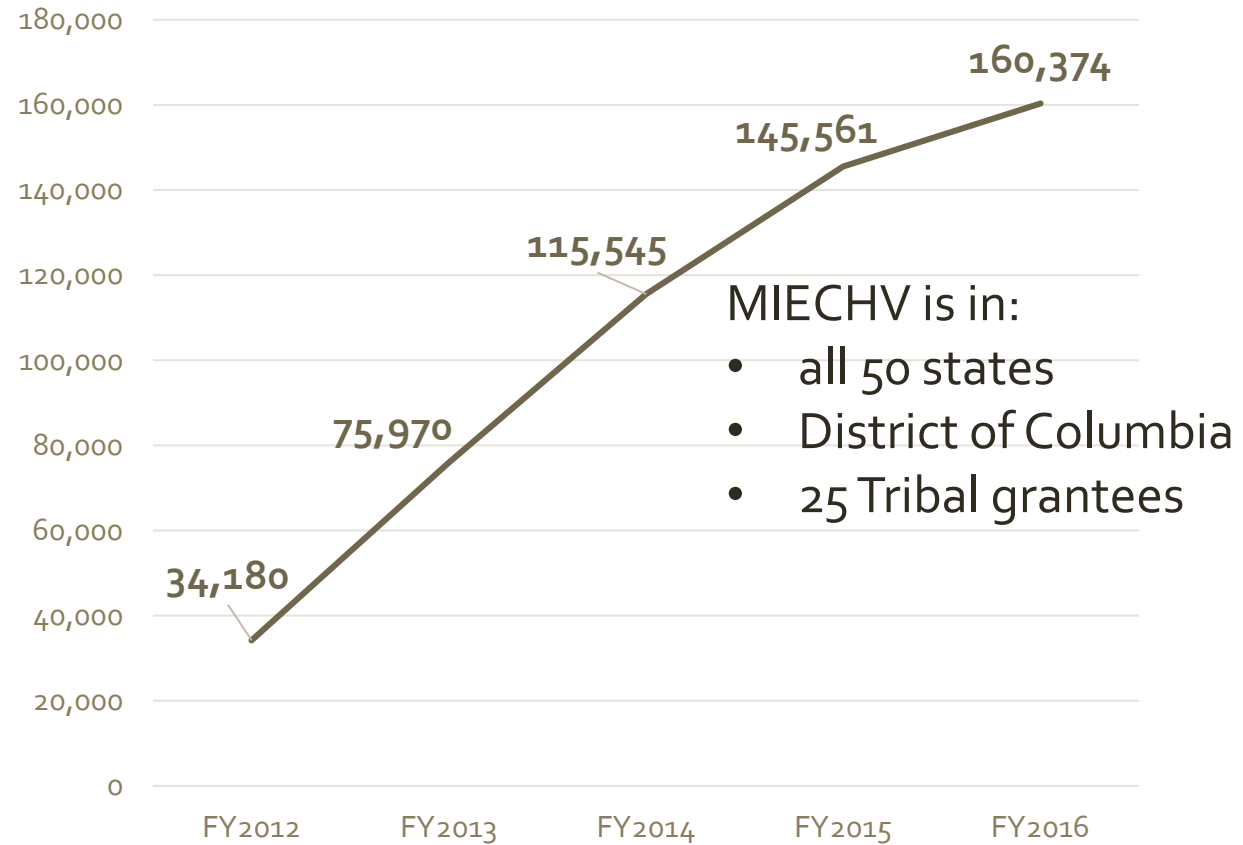
1. Improve maternal, newborn, and child health
2. Prevent child maltreatment & injury-related ER visits
3. Improve school readiness
4. Reduce crime and domestic violence
5. Improve family economic self-sufficiency
6. Improve coordination of community resources

# Maternal Infant, and Early Childhood Home Visiting Program (MIECHV)

*Aimed at breaking  
intergenerational patterns  
related to  
poverty, neglect,  
and poor health outcomes*



## Number of children & parents served by MIECHV grantees, 2012-2016

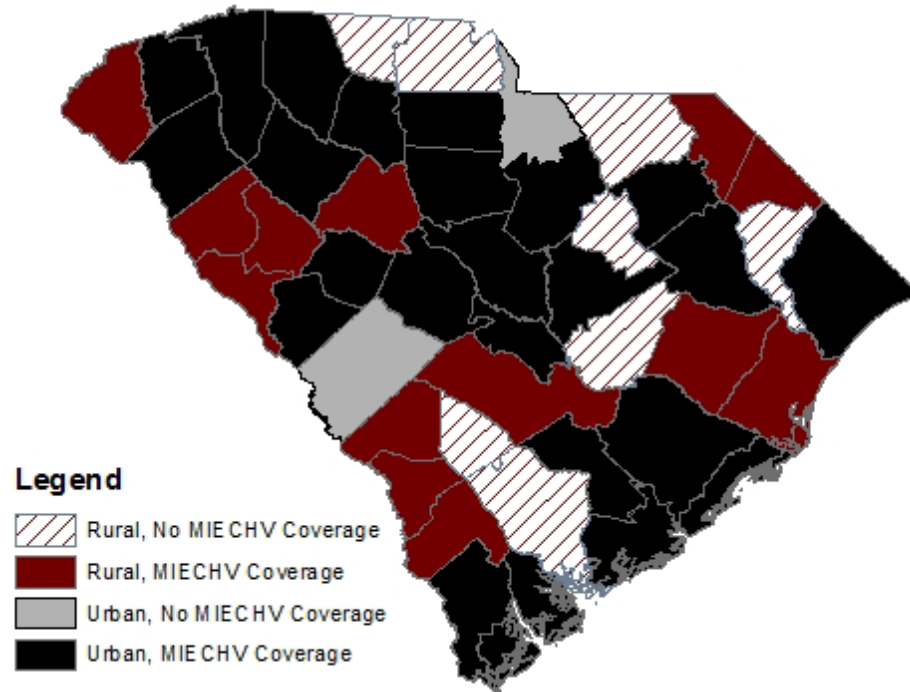


3.3 million home visits  
made in 2012-2016



## SC MIECHV: rural vs. urban coverage

2015



thank  
you

Elizabeth Crouch, PhD  
[CROUCHEL@mailbox.sc.edu](mailto:CROUCHEL@mailbox.sc.edu)

**RURAL &  
MINORITY**  
Health Research Center



**AL &  
RITY**  
arch Center  

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*of South Carolina*

## Questions and contact information

- The Rural and Minority Health Research Center receives funding from a variety of federal, state, and local grants and contracts including a cooperative agreement with the **Federal Office of Rural Health Policy**.

### Contact Us

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Phone: 803-251-6317  
Email to: [jmeberth@mailbox.sc.edu](mailto:jmeberth@mailbox.sc.edu)

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# Live Healthy SC: The Blueprint for Achieving Health and Racial Equity across South Carolina



**ALLIANCE FOR A HEALTHIER  
SOUTH CAROLINA**



“THE TEST OF OUR  
PROGRESS IS NOT  
WHETHER WE ADD MORE  
TO THE ABUNDANCE OF  
THOSE WHO HAVE MUCH,  
IT IS WHETHER WE  
PROVIDE ENOUGH FOR  
THOSE WHO HAVE LITTLE.”

FRANKLIN D. ROOSEVELT



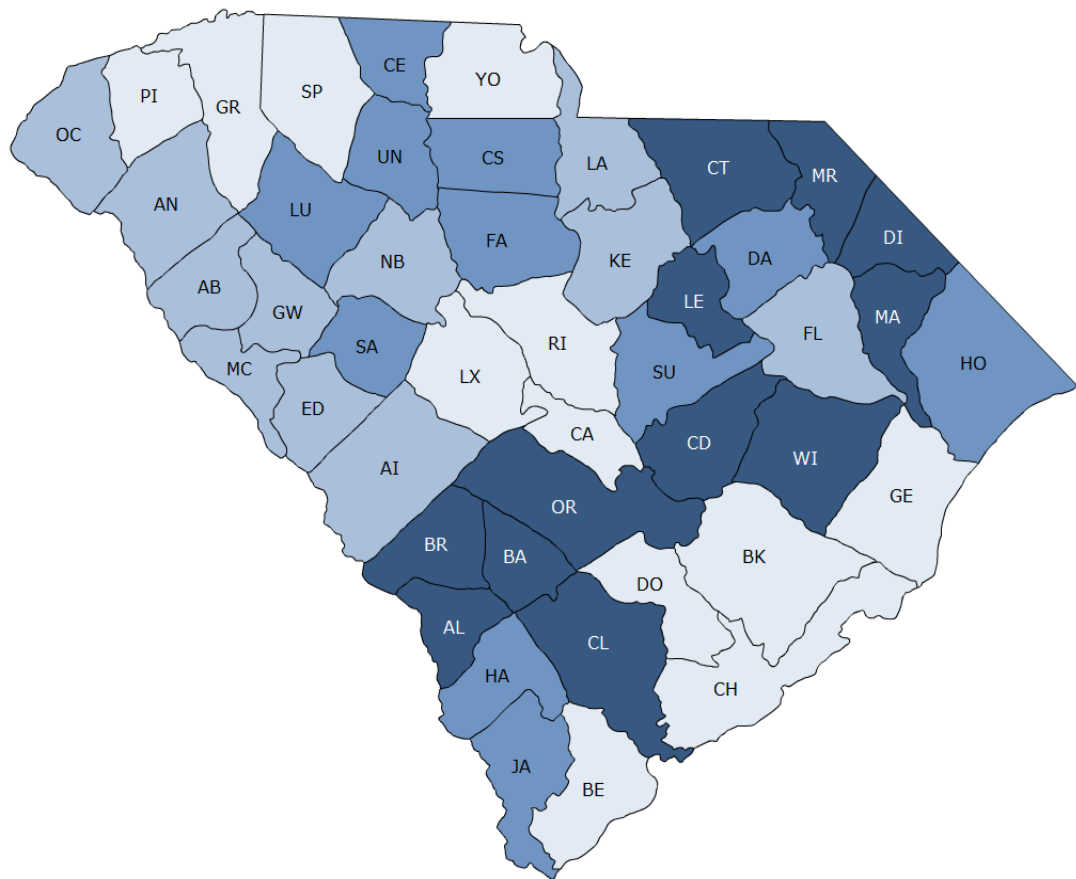
# SC Health and Racial Equity Blueprint

## Key Populations



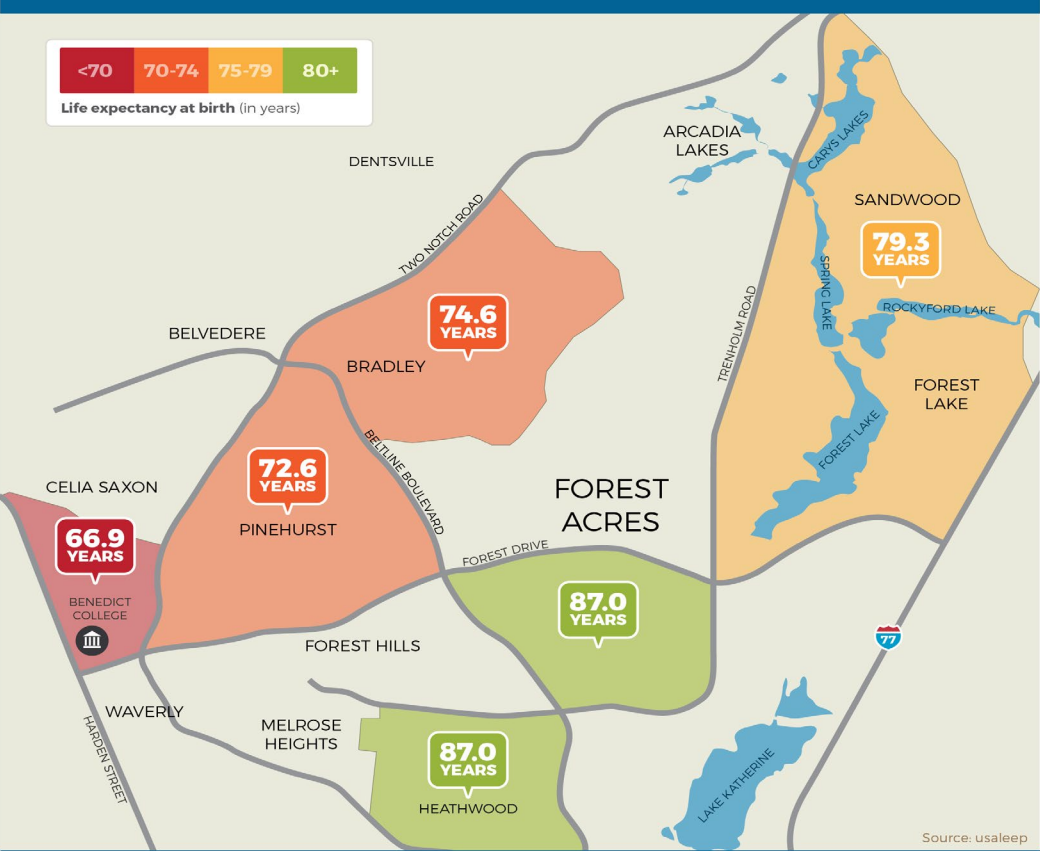
- **Racial and rural gaps in maternal/child care access and health outcomes**
- **Children living in poverty that experience major gaps in social support, educational performance and academic advancement opportunities**
- **Racial and rural gaps in access to preventive care screening and chronic disease rates**
- **Equity gaps in access to non-emergent behavioral healthcare services for low income populations**
- **Higher rates of suicide in adolescents/young adults who suffer from discrimination and social isolation**

• Health Outcomes Map



Rank 1-12   Rank 13-23   Rank 24-34   Rank 35-46

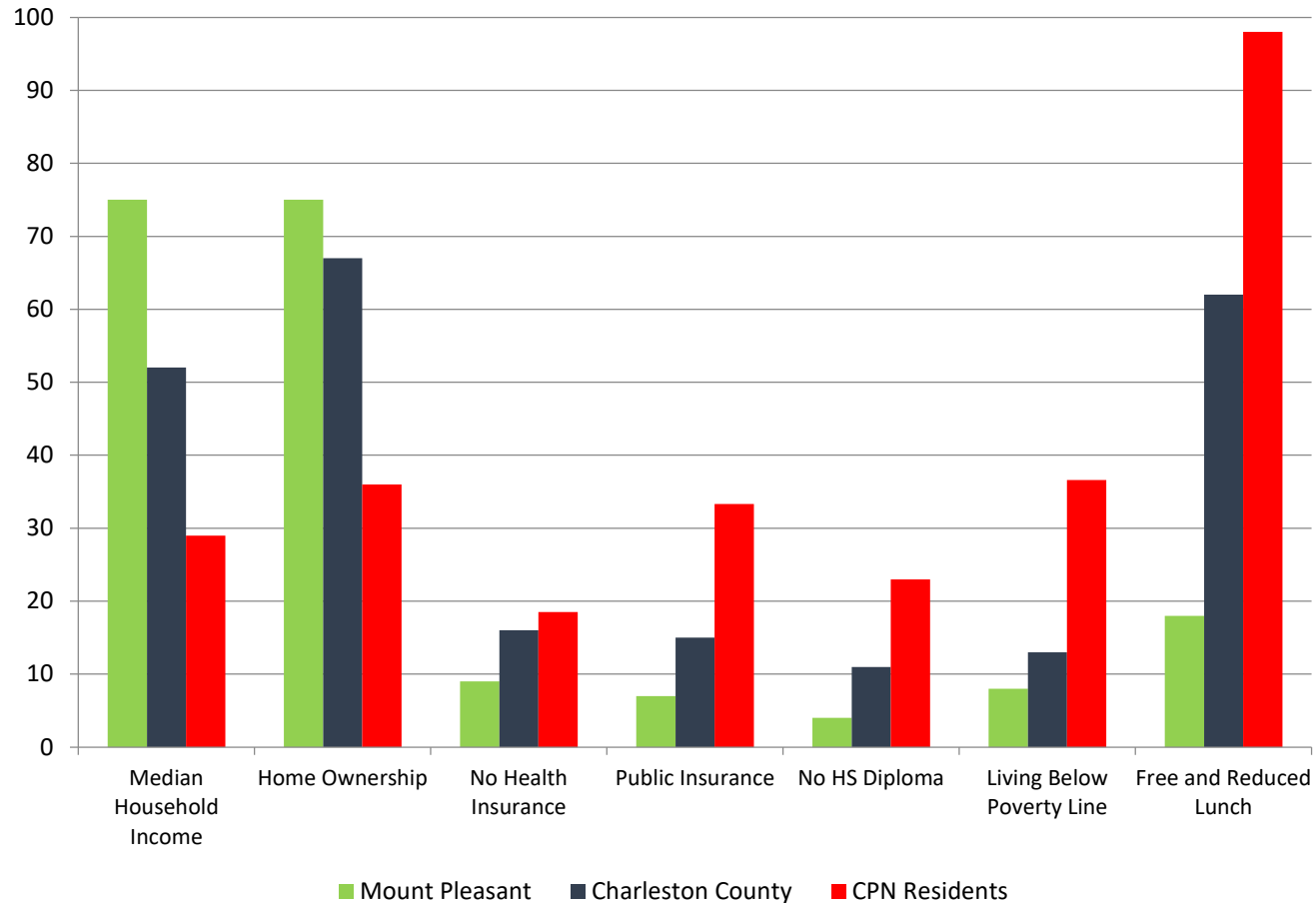
It's a short distance to a wide gap in life expectancy.  
COLUMBIA, SOUTH CAROLINA





## Area Comparison

Mt. Pleasant, Charleston County, CPN Neighborhood



The 5.6 square mile area of CPN is marked by under-education, teenage pregnancy, poor healthcare, violent crime, unemployment, and intergenerational poverty.

**We aim to break that cycle.**

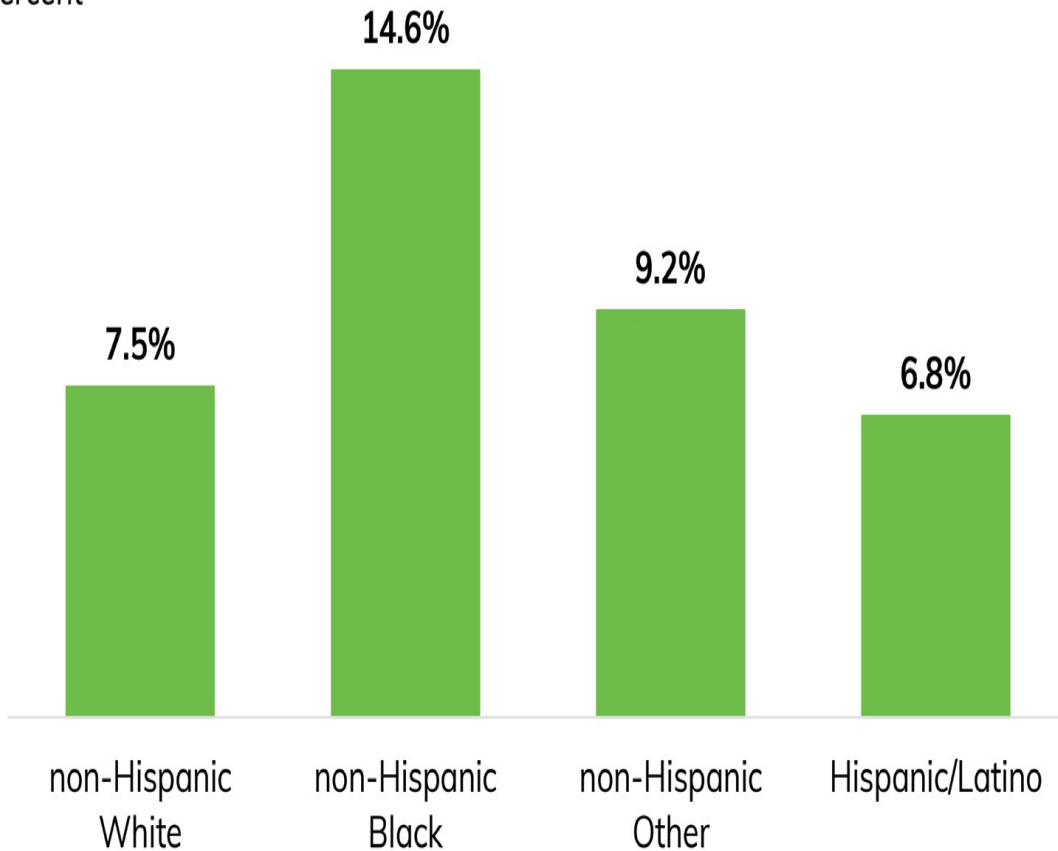
*Note: 2016 Federal Poverty Line for a family of 4 (200% FPL) = \$48,500*

# Specific Equity-Based Health Disparities

FIGURE 5.7

Low Birthweight, by Race/Ethnicity

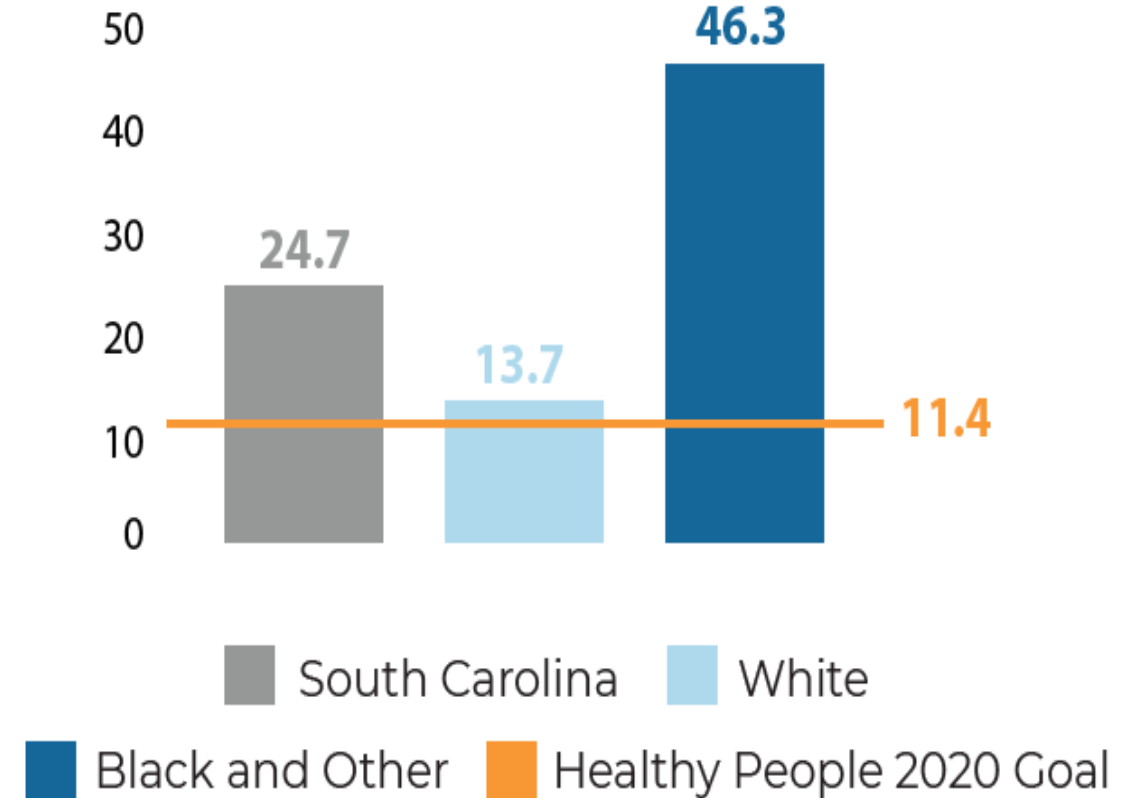
Percent



Source: SC DHEC Vital Statistics, 2016.

South Carolina Pregnancy-Related Death by Race, 2013-2017<sup>2</sup>

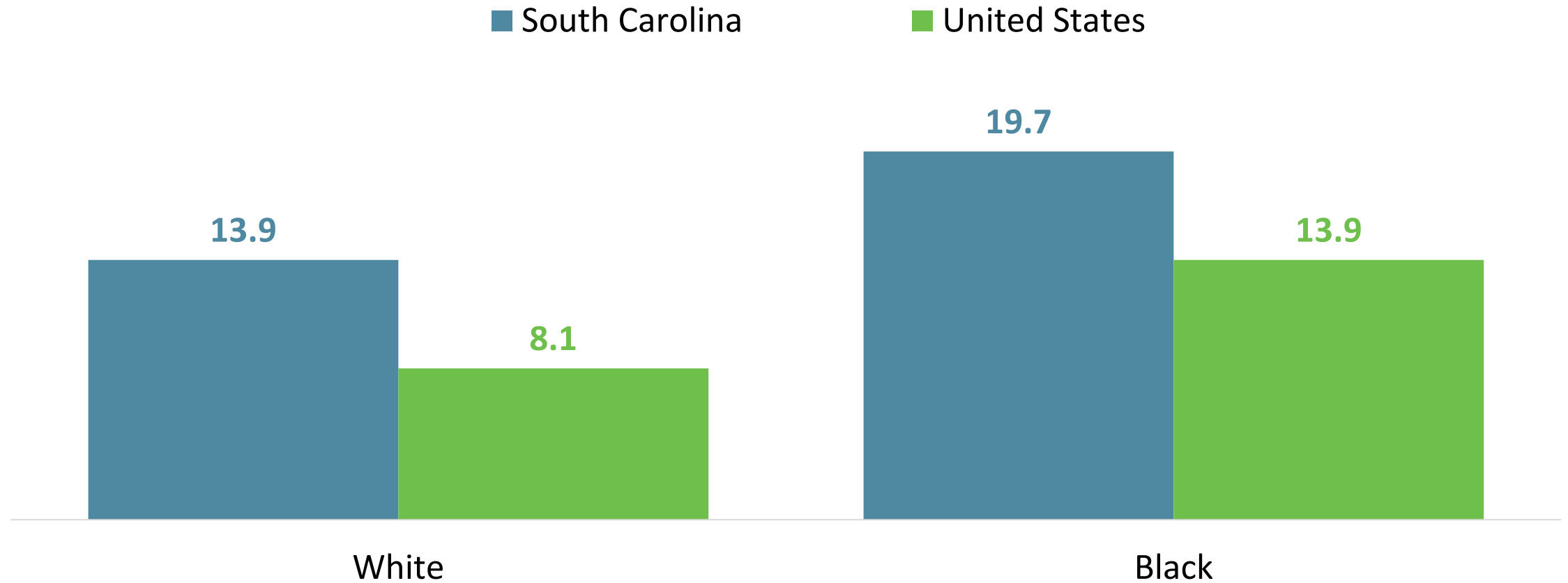
Rate per 100,000 live births



# Specific Equity-Based Health Disparities

## Nonfatal Child Maltreatment, by Race

*Rate per 1,000*



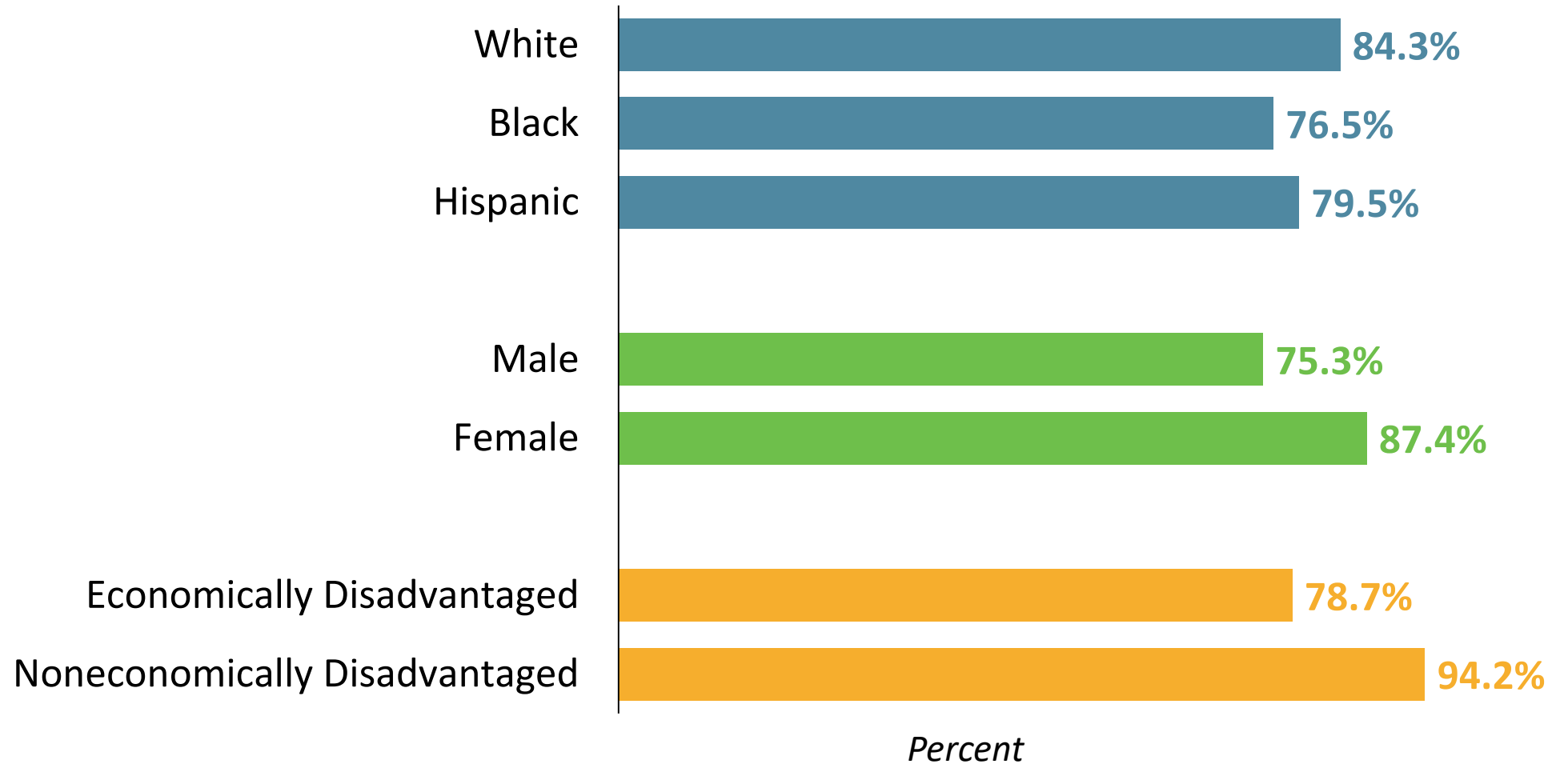
Source: National Child Abuse and Neglect Data System, 2017.

Note: Ages less than 18.

# Specific Equity-Based Health Disparities

## South Carolina Graduation Rate, by Demographics

*Demographic Characteristic*

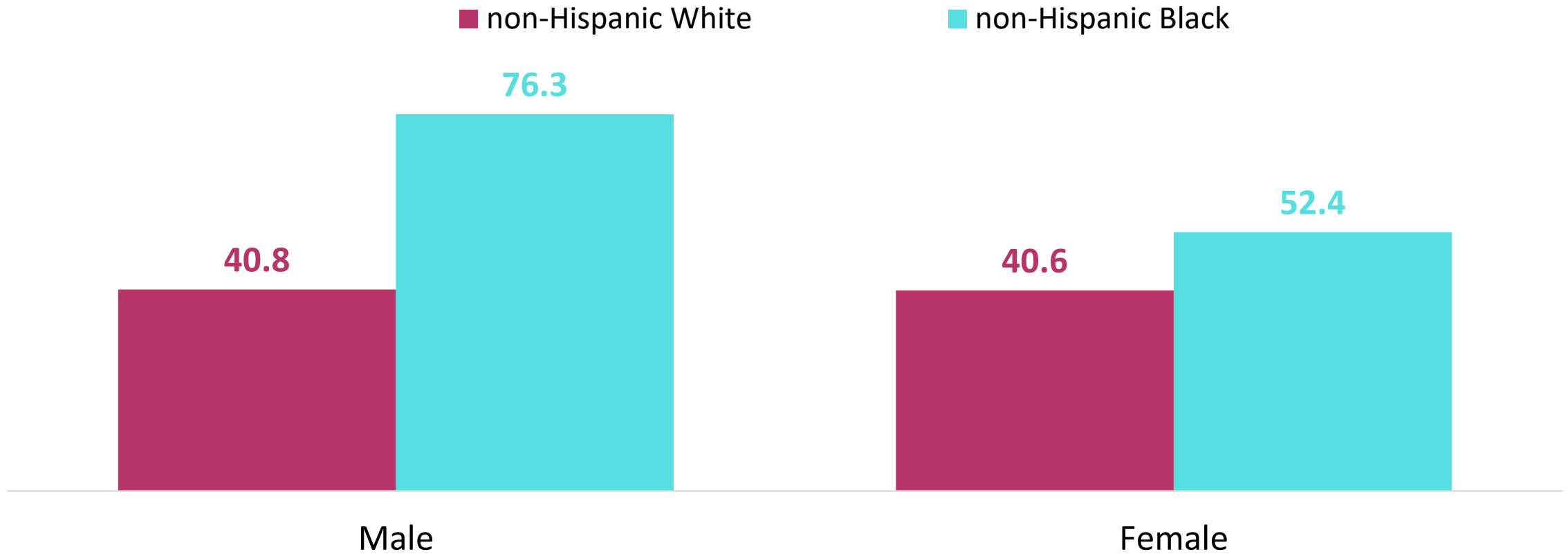


Source: SC Department of Education, 2019.

# Specific Equity-Based Health Disparities

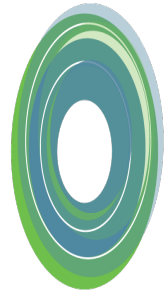
## Stroke Deaths, by Race/Ethnicity and Sex

Rate per 100,000 population



Source: SC DHEC Vital Statistics, 2018.

Note: Age-adjusted.



ALLIANCE FOR A HEALTHIER  
SOUTH CAROLINA



**dhhec**

Healthy People. Healthy Communities.



**LIVE**  
**HEALTHY**  
SOUTH CAROLINA

# SHARED PRIORITIES

- **Mission:**
- Coordinating action on shared goals to improve the health of ALL people in South Carolina.



## Health Equity Commitment For all people in SC

Strive to attain the highest level of health for all people, independent of gender, race, sexual orientation, neighborhood, disability, ethnicity, education level, or socioeconomic status



## Healthy Babies

Improve the health of moms and babies from preconception through the first year of life



## Healthy Minds

Improve access to appropriate behavioral health services and other necessary critical and support services



## Healthy Children

Improve the health and educational outcomes of children



## Healthy Bodies

Improve physical health through good nutrition, physical activity, and increased access to high quality primary care



## Healthy Aging

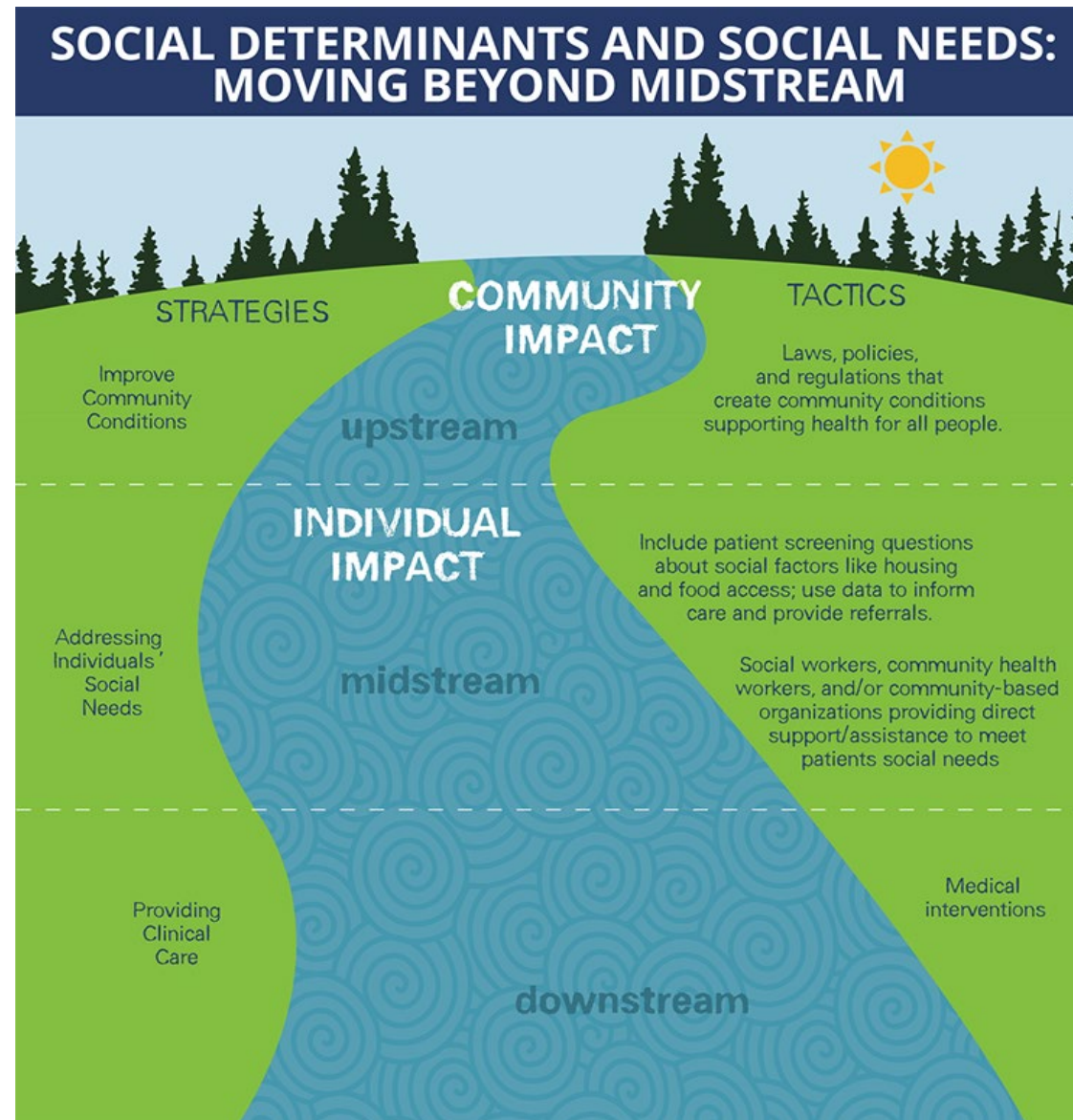
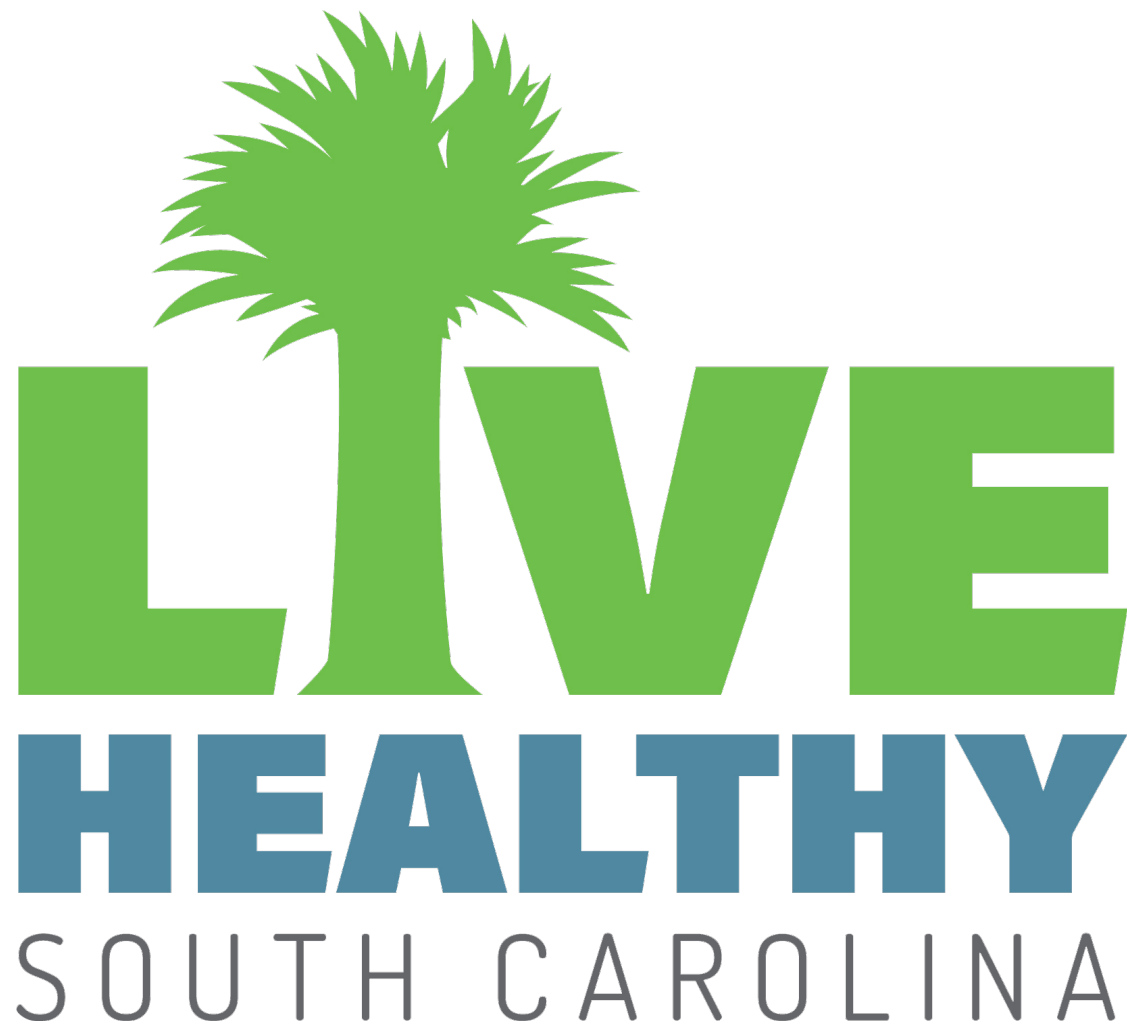
Improve the environment and opportunity to live a long and healthy life



## At a lower per-capita cost

Reduce the cost of care for every individual in the state







**Live Healthy SC**

**Behavioral Health Improvement**

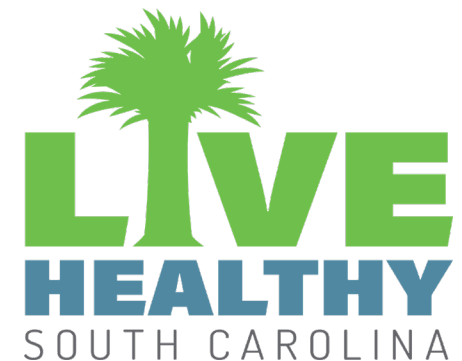
**Obesity & Chronic Disease Prevention**

**Maternal & Child Health and Wellbeing**

**Health System  
Transformation**

**Focus on Social  
Determinants  
of Health**

**Health Equity**





# South Carolina State Health Improvement Plan



## OBJECTIVES for 2023:



**1. Decrease the rate of nonfatal child maltreatment to 14.2 per 1,000 children**

2016: 15.8 per 1,000

2017: 15.5 per 1,000



**2. Increase the high school graduation rate to 88.8%**

2017: 84.6%

2019: 81.1%



**3. Decrease the percent of adults ages 20 years or older who are obese to 31.5%**

2016: 33.2%

2018: 35.2%



**4. Decrease the percent of adults who smoke to 18.5%**

2016: 20.6%

2018: 18.6%



**5. Decrease the stroke death rate to 43.1 per 100,000**

2016: 45.4 per 100,000

2018: 45.5 per 100,000



**6. Decrease the suicide rate from to 14.9 per 100,000**

2016: 15.7 per 100,000

2018: 15.4 per 100,000



**7. Decrease the rate of drug overdose deaths to 17.1 per 100,000**

2016: 18.0 per 100,000

2018: 22.2 per 100,000



# Blueprint for Health and Racial Equity in SC

- **A call to action focused on achieving health and racial equity across all SC communities:**
- **Built on 4 collective action categories:**
  - **Cultural awareness and humility**
  - **Health equity in all policies**
  - **Equity targeted improvement programs/practices**
  - **Investments in upstream SDOH solutions**
- **Focus on specific areas with the greatest equity gaps:**
  - **Maternal/child health**
  - **Obesity and chronic disease prevention**
  - **Access to behavioral health services**



# Achievi

A large, diverse group of stylized people of various ages and ethnicities, including a person on a bicycle, a person with a cane, and a dog, all within a circular frame. The illustration is colorful and depicts a community of people engaged in various activities, symbolizing achievement and social inclusion.

- **Create a “safe space” for candid dialogue about the root causes of health and racial inequities**
- **Build the capacity for cultural humility and the capability to counter the implicit biases that most contribute to inequity**
- **Ensure that all key population and community health data indicators are equity-stratified and geo-mapped**
- **Target collective policy and programmatic actions to the major equity-driven gaps in healthcare access and health outcomes**
- **Give an active voice to those who are most impacted by health and social inequities- realizing the “power of with”**



A woman with long brown hair, wearing a white t-shirt and a green pinafore dress, is helping a young child learn to ride a bicycle. The child is wearing a blue and white striped shirt, green and white checkered shorts, and a blue helmet. The woman is standing behind the child, holding the back of the bicycle. They are on a paved path that leads into a wooded area. The sun is shining from the left, creating a warm, golden light. A white arrow is painted on the pavement in the foreground.

[LiveHealthySC.com](https://LiveHealthySC.com)



**#thisispublichealth**

# **The Impact of Adverse Childhood Experiences in South Carolina**

**Dr. Aditi Srivastav Bussells**

@aditisrivastav

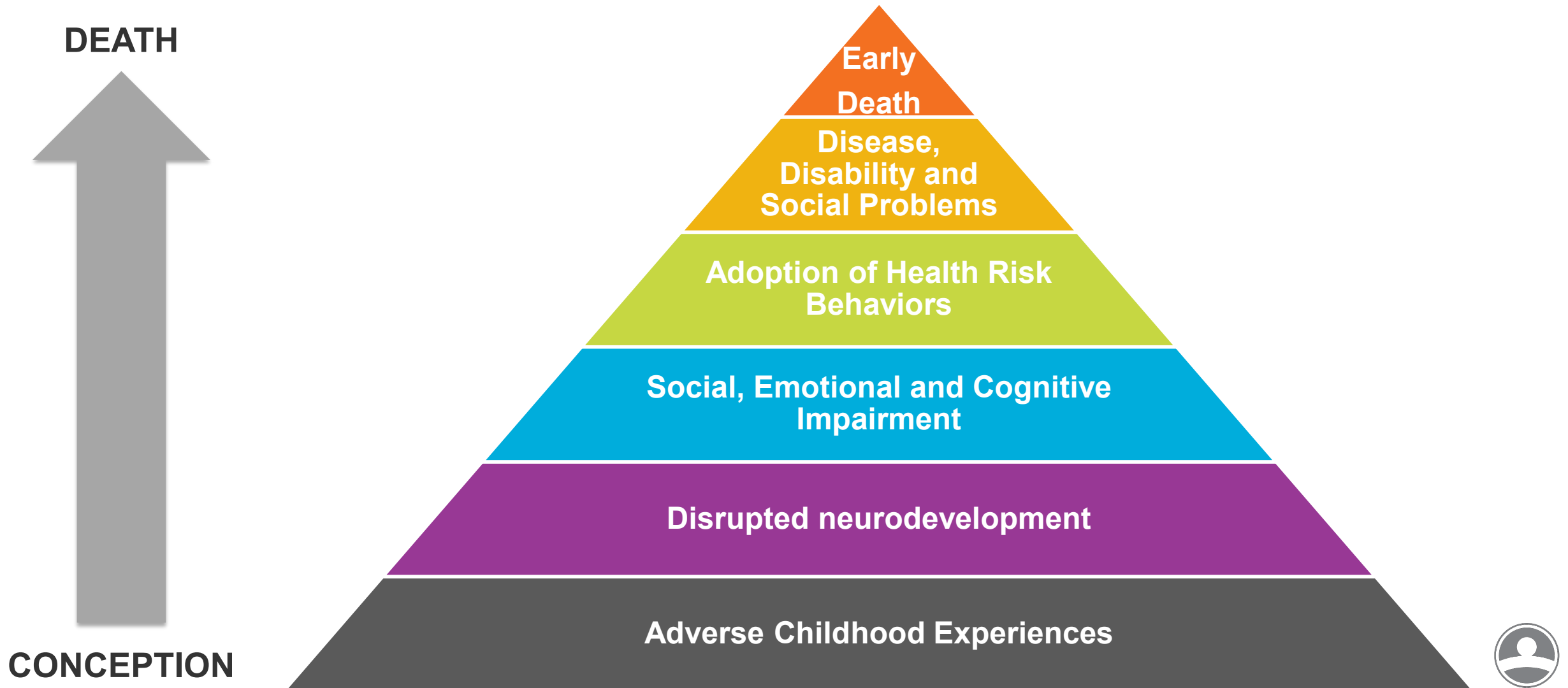
@childrenstrusts

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# The Original ACE Study





# Adverse Childhood Experiences

## Household Dysfunction

- Domestic violence
- Incarceration of a parent
- Mental illness in the household
- Substance use in the household
- Parent divorce/separation

## Abuse

- Physical
- Emotional
- Sexual

## Neglect

- Emotional
- Physical





**ACE Score  
= Number of  
Yes's to  
Questions**

Did you live with anyone who was depressed, mentally ill, or suicidal?

Did you live with anyone who was a problem drinker or alcoholic?

Did you live with anyone who used illegal street drugs or who abused prescription medications?

Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?

Were your parents separated or divorced?

Did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up?

Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?

# Key Findings of The CDC-Kaiser ACE Study

- ACEs are common (63% )
- ACEs are interrelated (87%)
- ACEs have a **dose-response relationship** with health and social outcomes



# South Carolina ACE Data

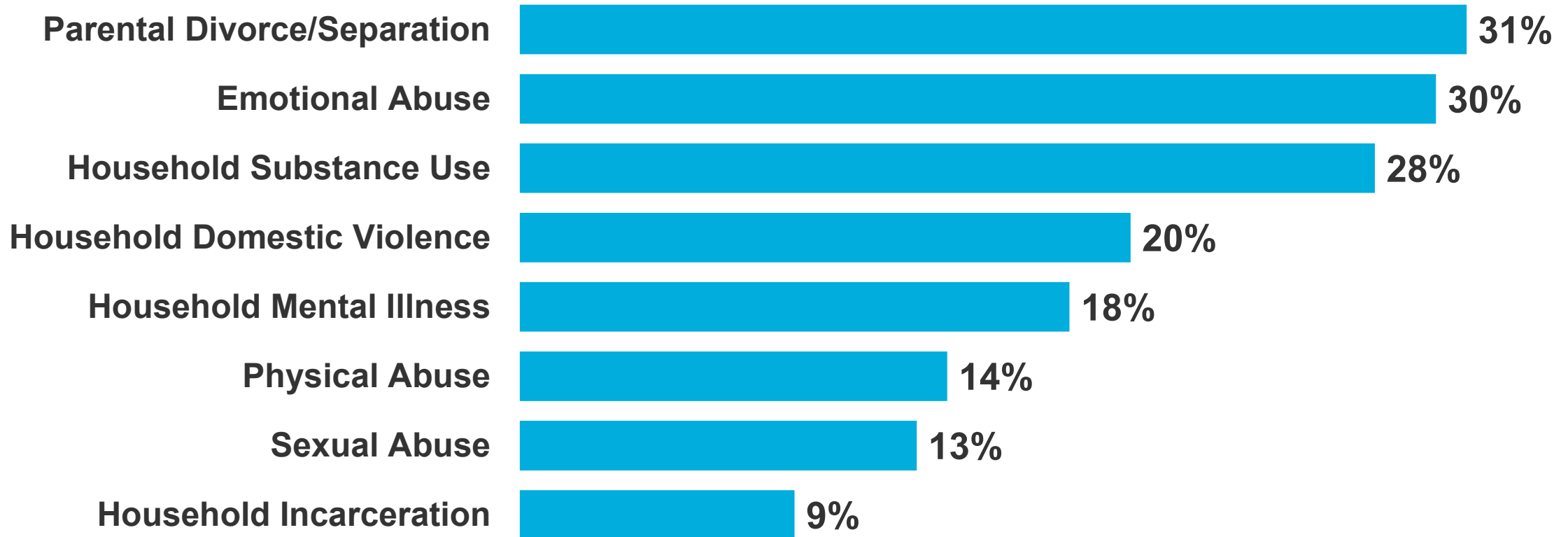


Three in five  
South Carolinians  
report ACEs

60%



# ACEs are common in South Carolina



# Lower income is associated with higher ACEs



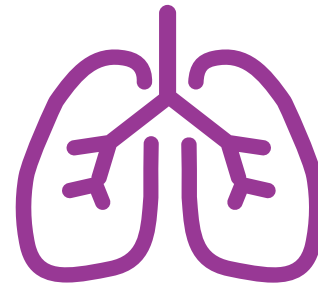
# To understand the impact of ACEs, we can examine their links to:



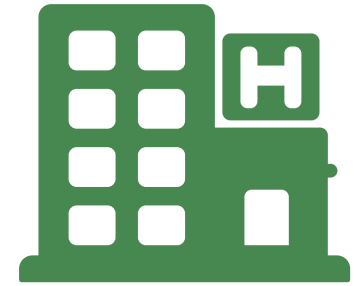
Risk  
Behaviors



Mental  
Health



Chronic  
Disease



Healthcare  
Access

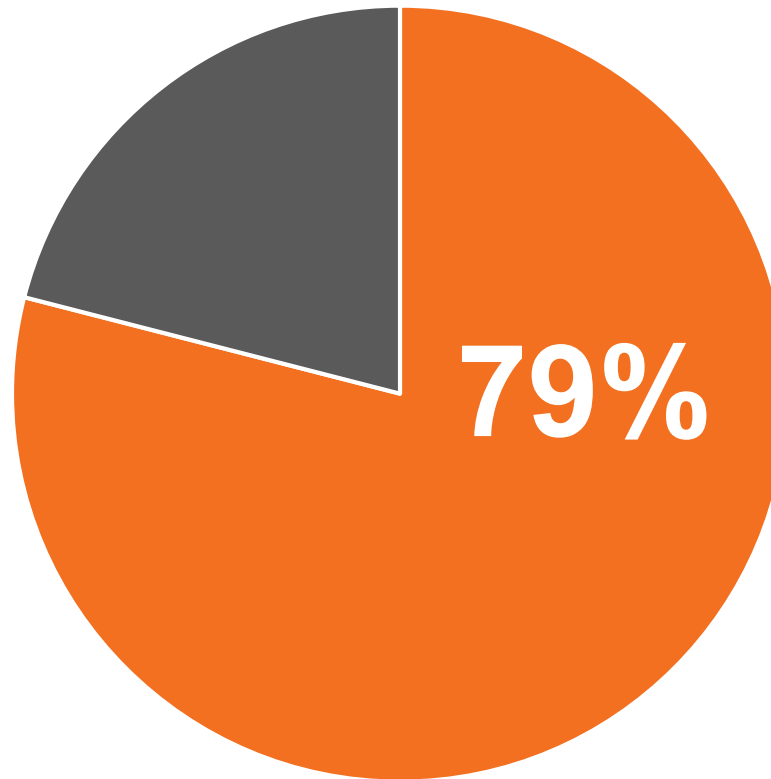




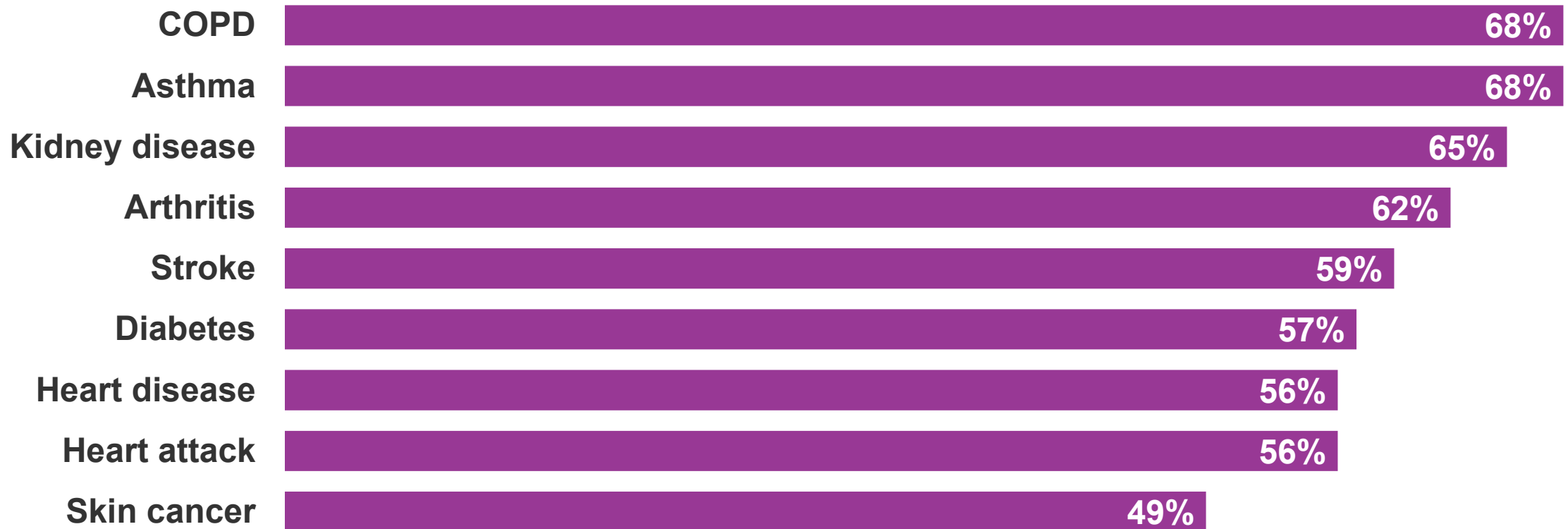
# South Carolinians who engage in **risky behaviors** also report high rates of ACEs



More than a majority of South Carolinians who report **depressive disorder** also report ACEs.



# South Carolinians who report **chronic physical health conditions** also report high rates of ACEs



South Carolinians who report **lack of access to healthcare** also report high rates of ACEs.





88%

Of the South Carolinians  
who reported ACEs, 88%  
reported more than one  
ACE.



# ACEs are common, interrelated, powerful



**High ACE scores  
in population**



**Increased risk of  
multiple health and  
social problems**



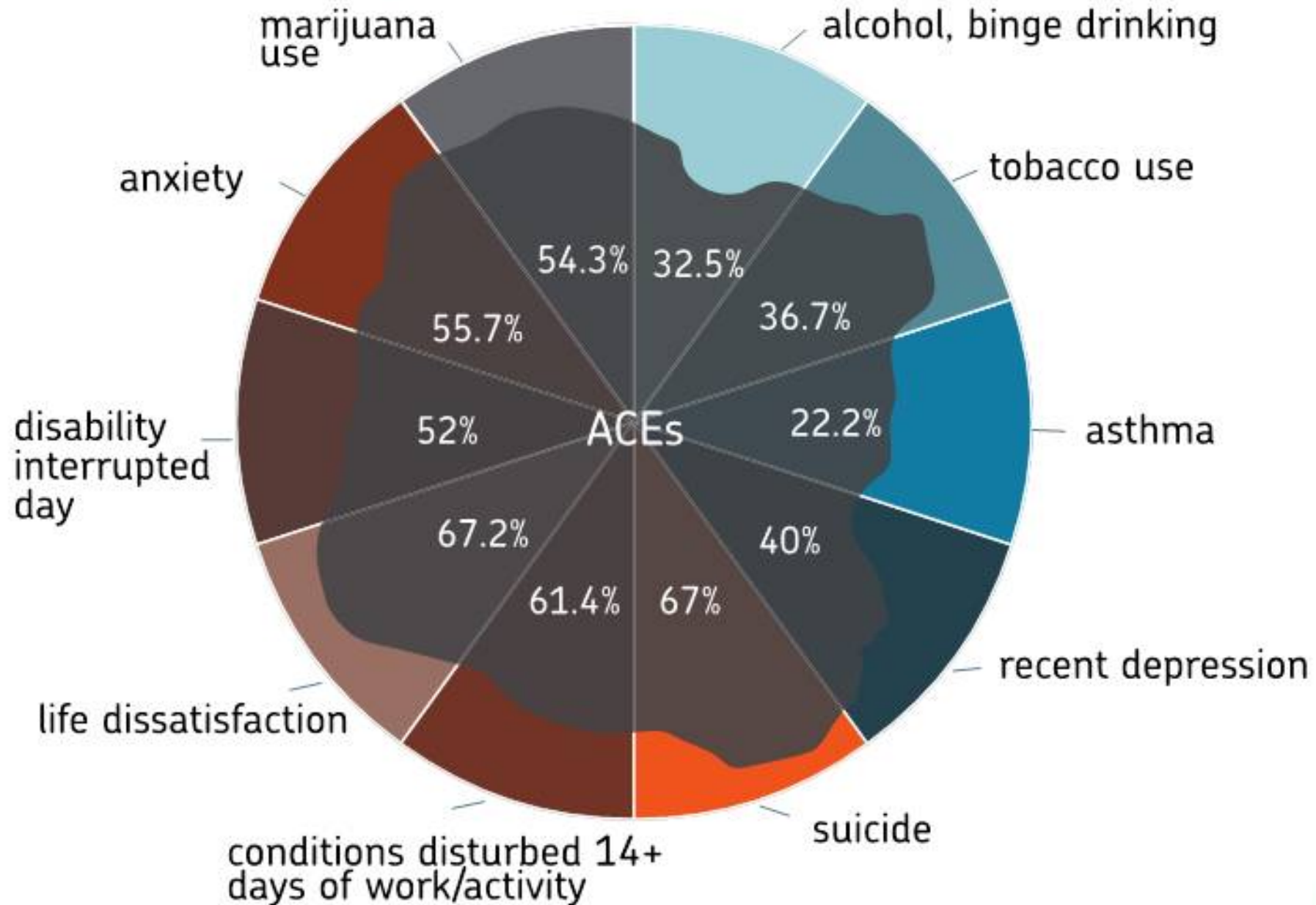
**Opportunity for  
prevention**



# **Impact of ACEs in South Carolina: Equity & Impact**

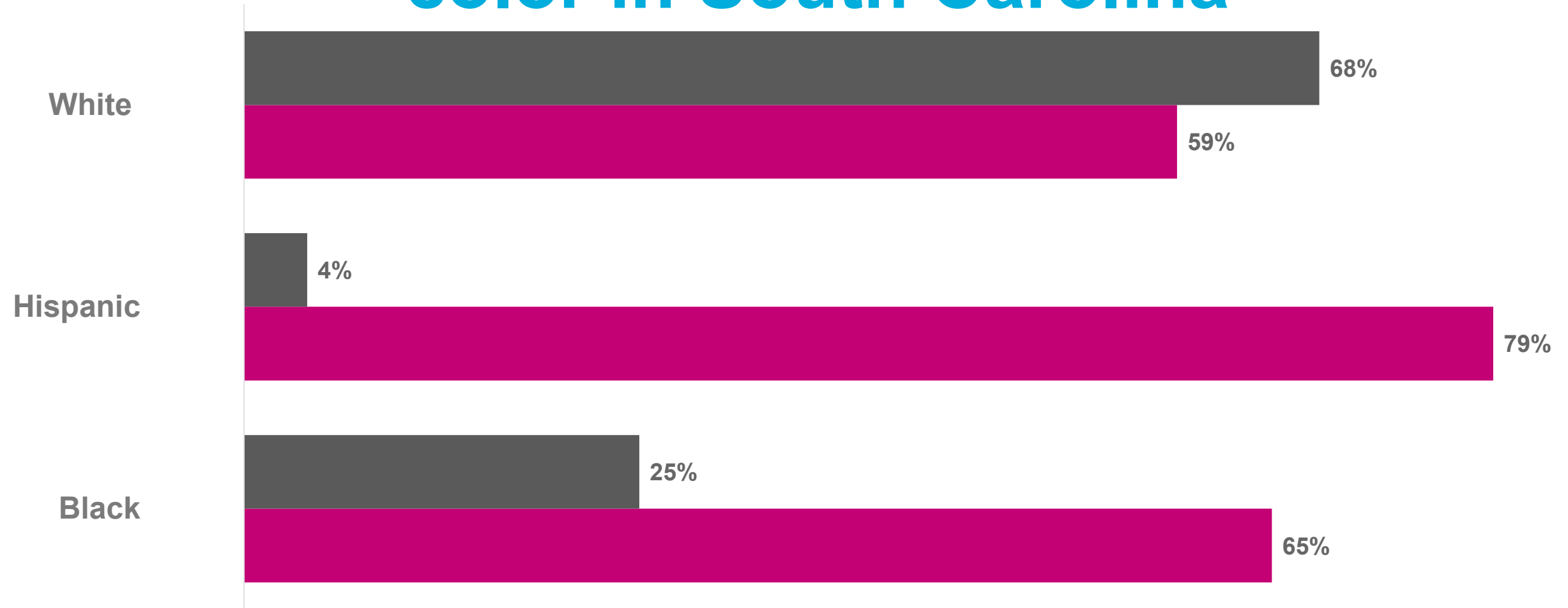


## Population Attributable Risk





# ACEs are more common among people of color in South Carolina



# ACEs are Experienced Differently By People of Color in South Carolina

**34%**

of Hispanic adults  
report domestic  
violence in  
childhood

**14%**

of Black adults  
reported a parent  
being incarcerated  
in childhood

**10%**

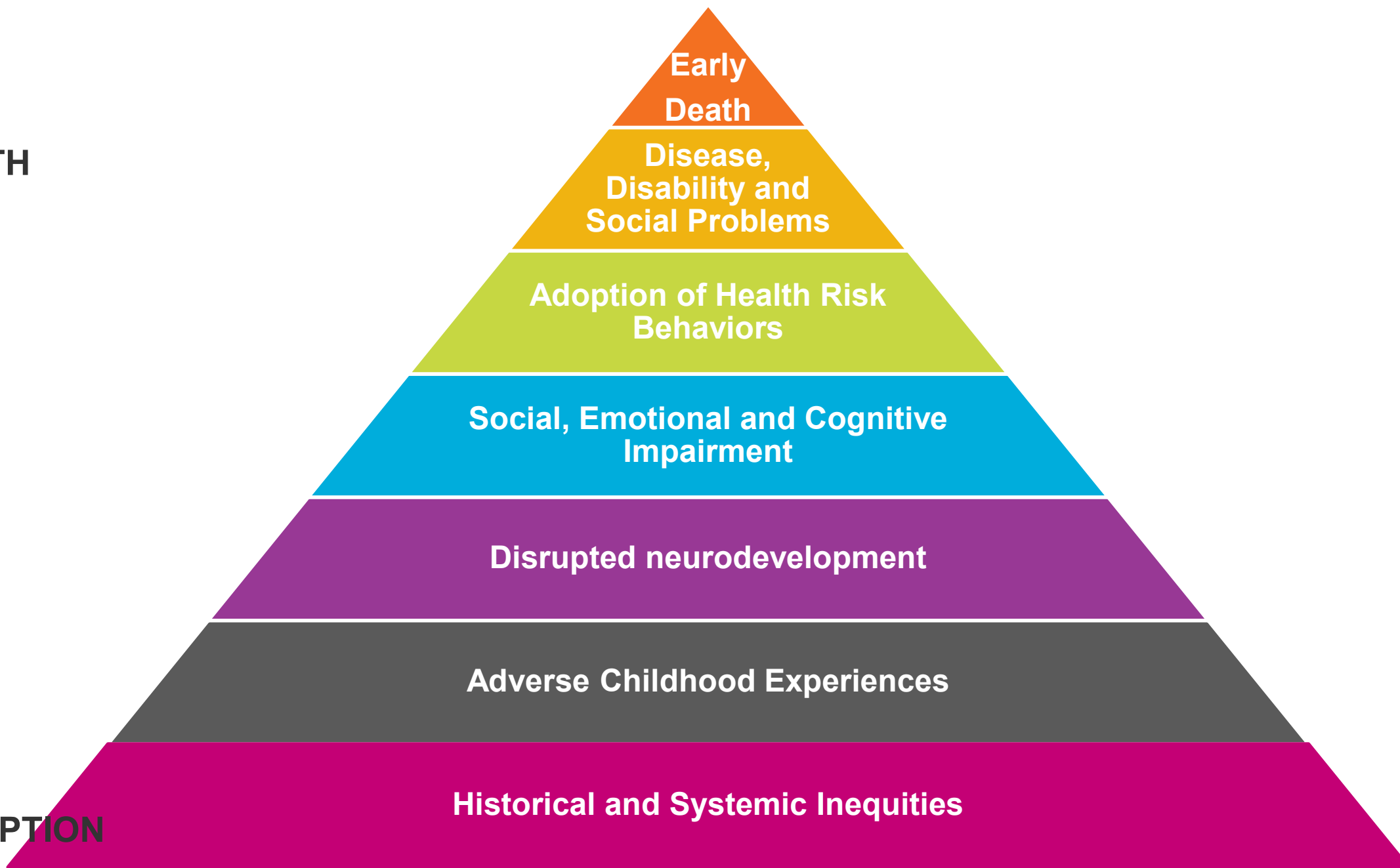
Higher prevalence  
of health  
consequences  
associated with  
ACEs



**DEATH**



**CONCEPTION**



# ACEs = Adverse Community Experiences?

## Household Dysfunction

- Domestic violence
- Incarceration of a parent
- Mental illness in the household
- Substance use in the household
- Parent divorce/separation

## Abuse

- Physical
- Emotional
- Sexual

## Neglect

- Emotional
- Physical

## Community Disadvantage

- Neighborhood violence
- Discrimination
- Lack of economic mobility
- Poverty



# Three Keys to Resilience



**Positive  
Self-view**

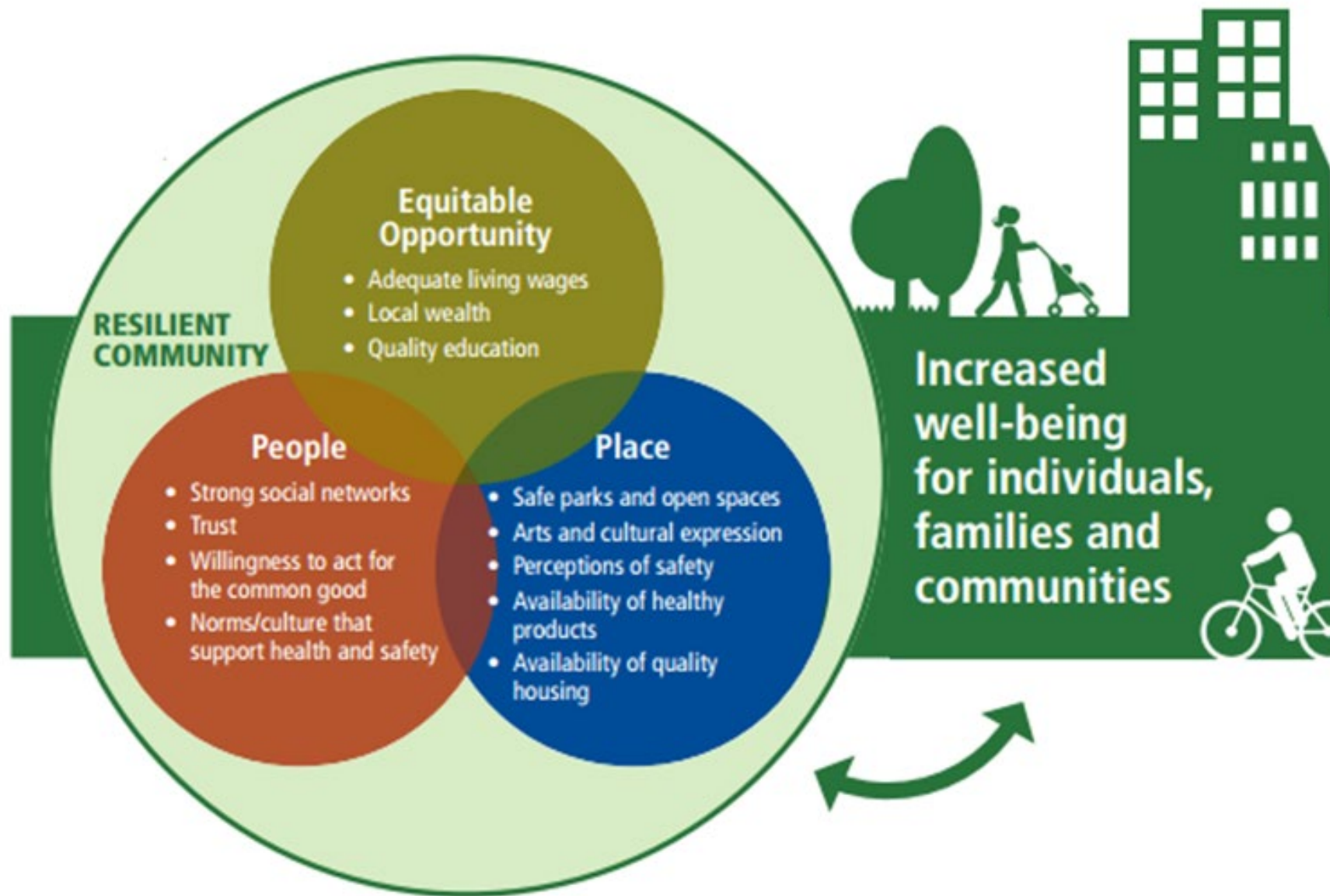


**Safe, stable,  
nurturing  
Relationships**



**Supportive,  
Equitable  
Community**









**“Nothing that is worth doing can be achieved in our  
lifetime; therefore we must be saved by hope.”**

**-Reinhold Neibuhr**



# Thank you!

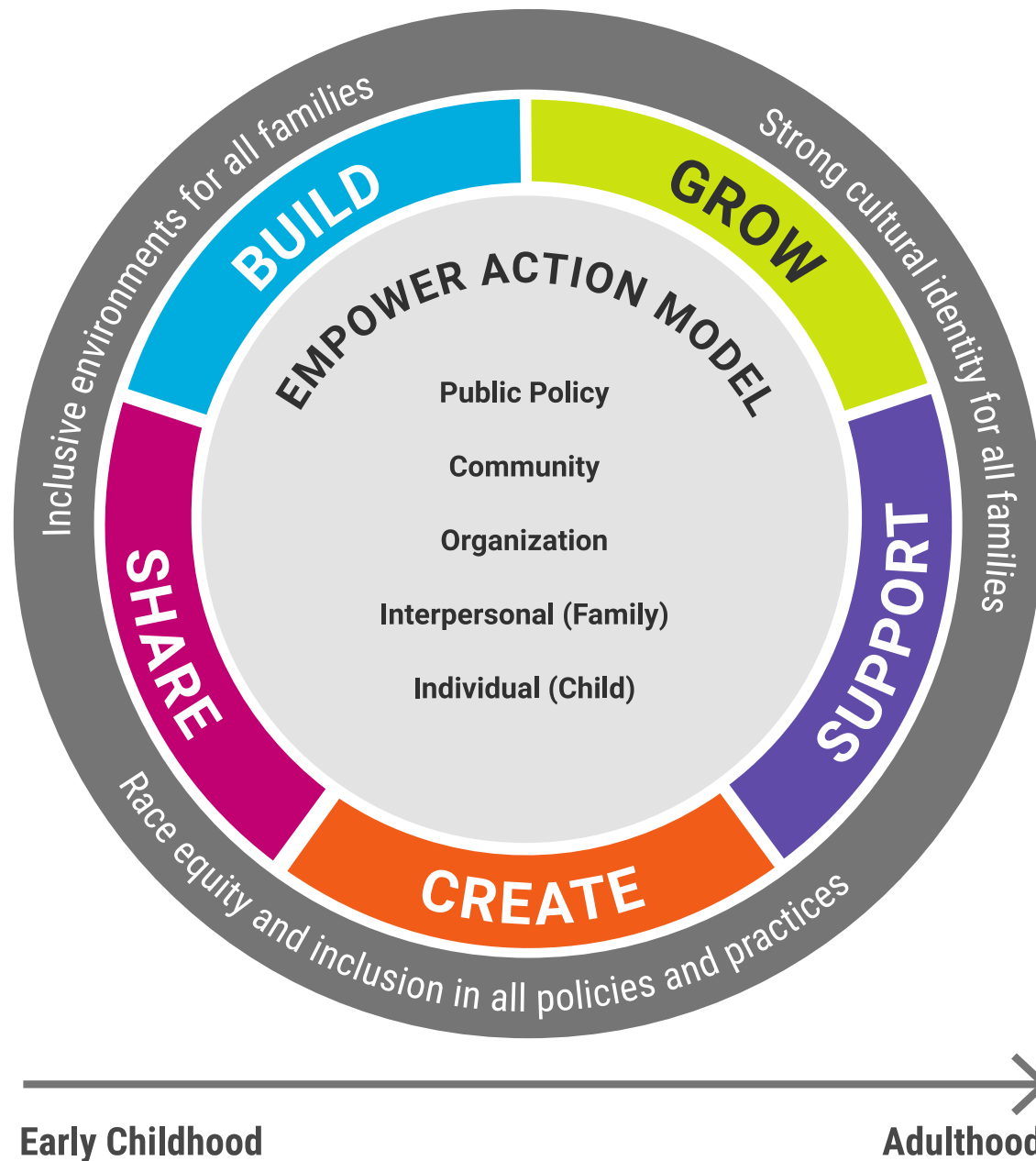
**Dr. Aditi Srivastav Bussells**

*Research and Community Impact Manager*

[asrivastav@scchildren.org](mailto:asrivastav@scchildren.org)

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# Empower Action Model™

