



EDPNC | WILSON FORWARD | KEYS TO ECONOMIC DEVELOPMENT EAST OF I-95

October 11, 2018

Frank E. Emory, Jr.

Chairman of the Board

PEOPLE TO DO THE WORK

1. Education
2. Health
3. Neighborhoods
4. Population of
Workers/Potential
Workers



Places Where the Work is to Be Done

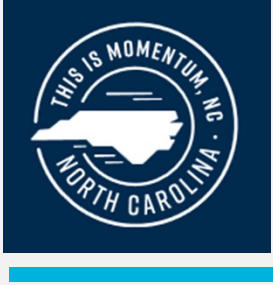
1. Buildings
2. Sites/Megasites
3. Electricity,
Natural Gas, Rail
4. Robust
Broadband



Public Policy & Leadership

1. Consistently Business Friendly
2. Worker Policies that Support and Value Workers
3. Engaged Community Leadership & Progressive Leadership





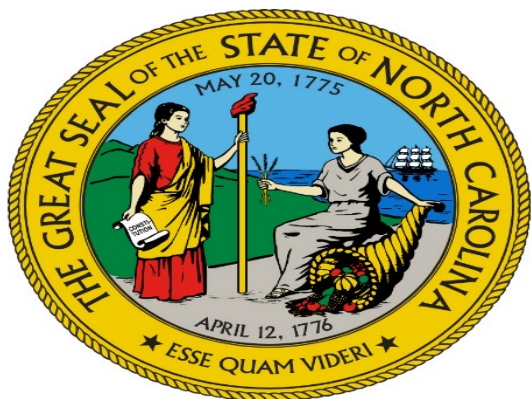
WHAT MAKES WILSON SPECIAL?





Questions?





NC Department of Health and Human Services

The Opportunity for Health and the Importance of Partnerships for the Future

Elizabeth Cuervo Tilson, MD, MPH
State Health Director
Chief Medical Officer

2018 Wilson Forward
October 11, 2018

All North Carolinians should have the
opportunity for health

The opportunity for health begins in our
families and communities

The opportunity for health begins where we
live, learn, work, and play

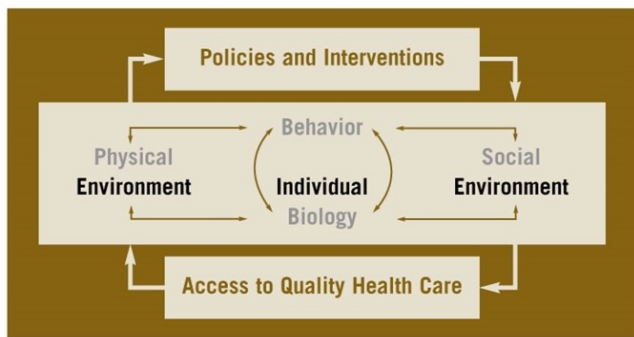
Health then gives the opportunity for learning, work, well being, and contributing back to a community

Vibrant, thriving communities support health and benefit from it

The Opportunity for Health

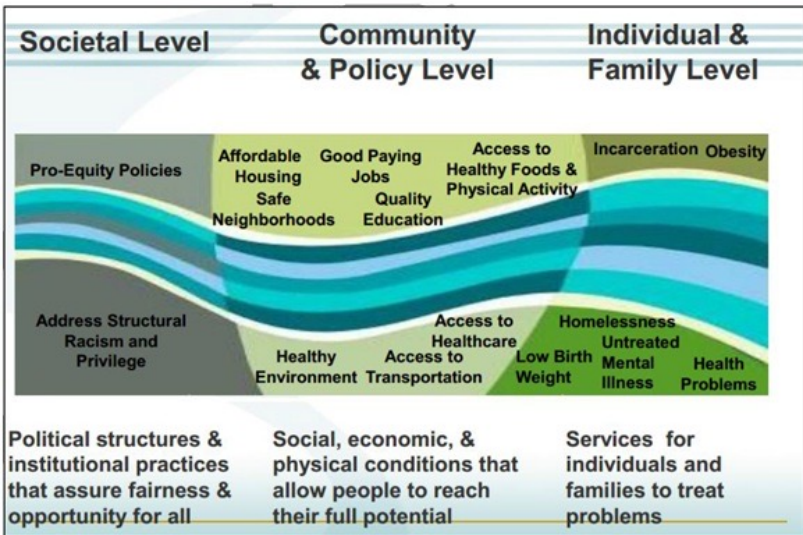
- Access to high-quality medical care is critical to a person's health, but....
 - Up to 80% of a person's health is determined through social and environmental factors and the behaviors that are influenced by them
 - The opportunity for health lies in how we define health
 - And therefore how we partner creatively and invest innovatively in health across sectors
-

DETERMINANTS OF HEALTH

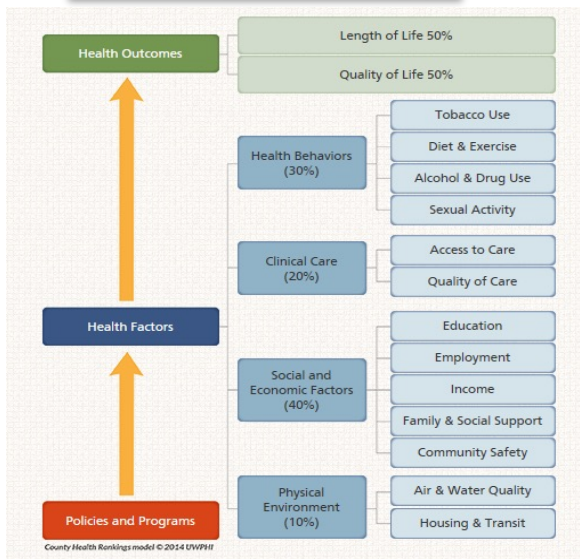


IOM, *Healthy People 2010*

Social and Structural Determinants of Health



Social Determinants of Health (RWJ County Health Rankings)



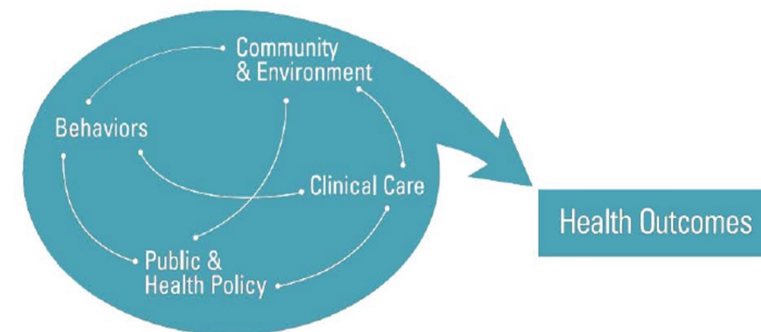
Social Determinants of Health

- Conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels and are mostly responsible for health inequities.

20 World Health Organization

Healthcare in the 21st Century: Age of the New Morbidities

Components of Health



10

Joseph L. Wright, MD, MPH. DC Baltimore Research Center on Child Health Disparities

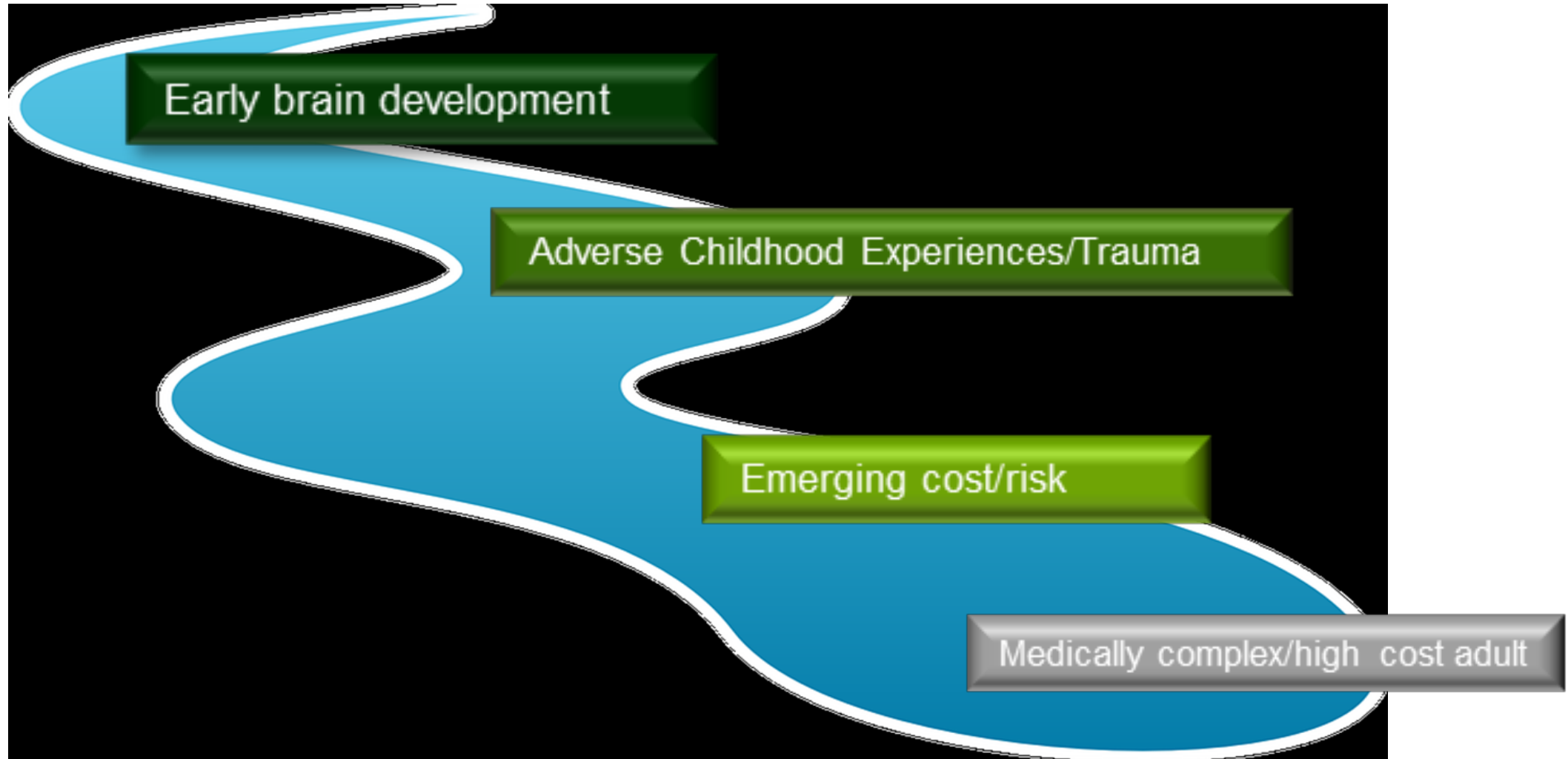
Abraham Flexner:
A Medical Education in the United States and Canada 1910

The physician has a duty to promote social conditions that conduce to physical well-being.

Life course perspective

- Health and development are lifelong processes
- Way of looking at life not as disconnected stages, but as an integrated continuum
- What happens in one stage of life is influenced by the stages that came before it and in turn influences the stages that follow it
- Opportunities to reduce risk factors and enhance protective factors at every stage of life

Go as far upstream as we can





Early Brain Development

Early Childhood and Brain Development

- **The foundation for future learning, health and well-being is built during early childhood**
- **Early experiences build brain architecture through a dynamic, interactive process that is not predetermined**

Early Childhood is a Time of Neural Growth and Connections

36 weeks gestation

Newborn

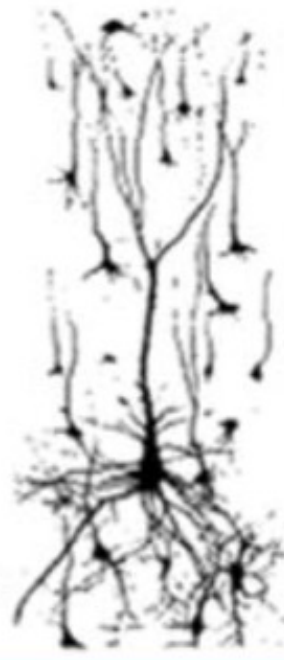
3 months

6 months

2 years

4 years

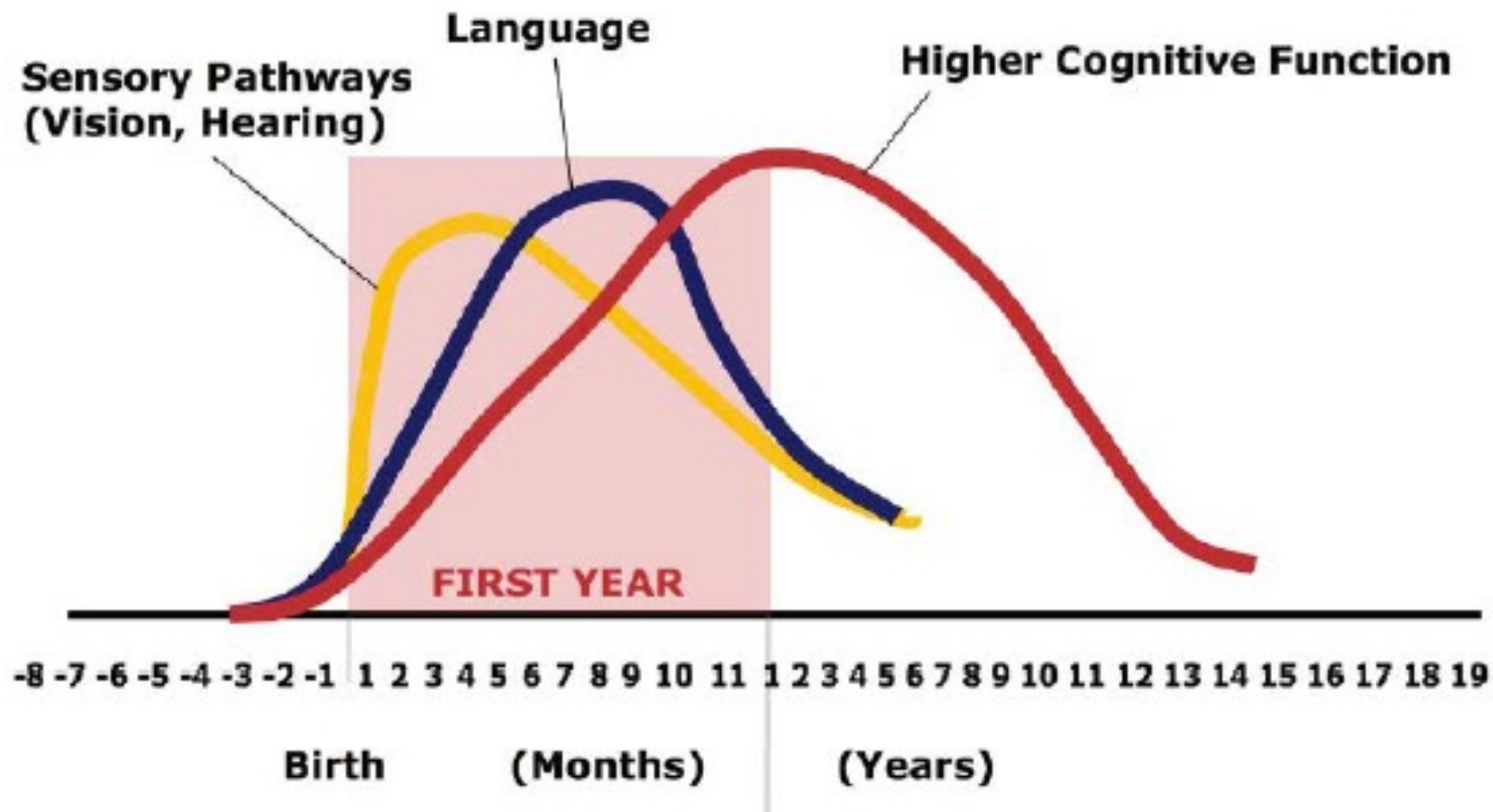
6 years



Synapse formation

Synapse pruning

Neural Connections for Different Functions Develop Sequentially



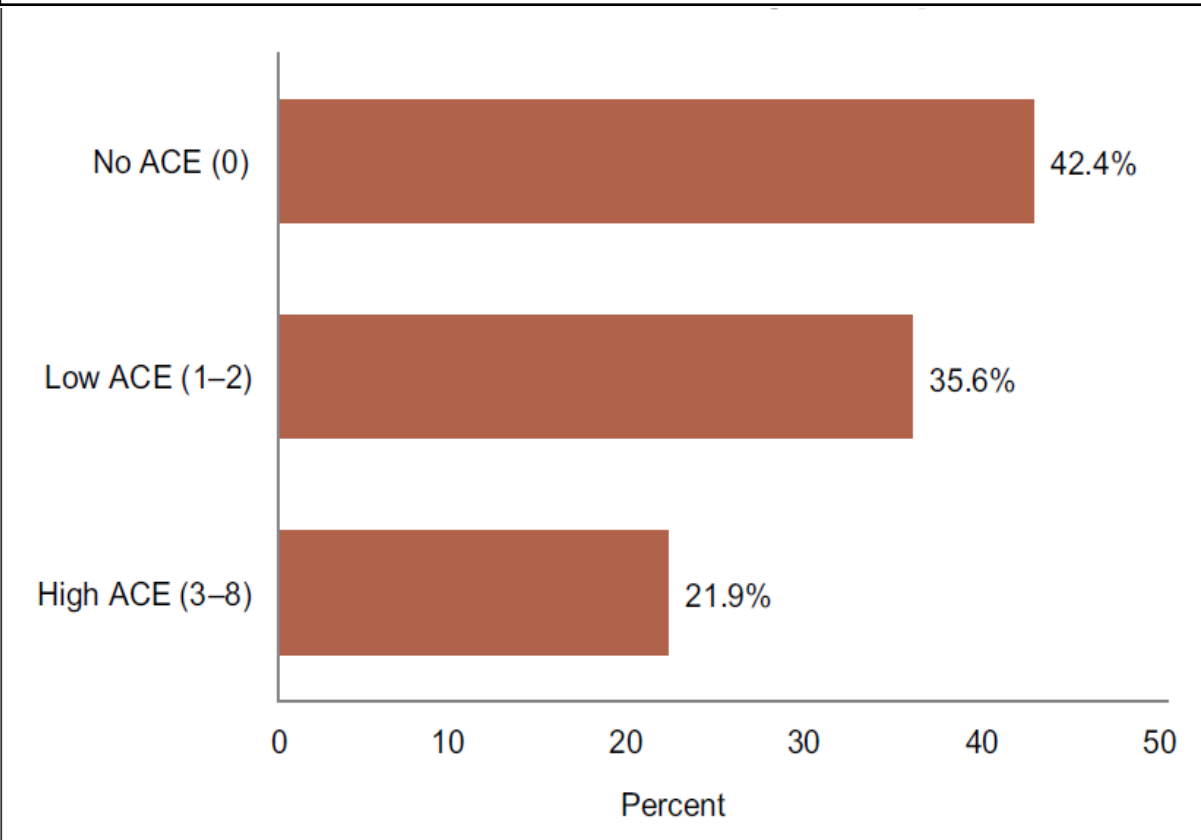
Threats to Healthy Brain Development

- Lack of Stimulation/Neglect
- Poverty
- Poor nutrition and food insecurity
- Environmental exposures (e.g. lead)
- Unstable Housing
- Adverse Childhood Experiences/Toxic Stress

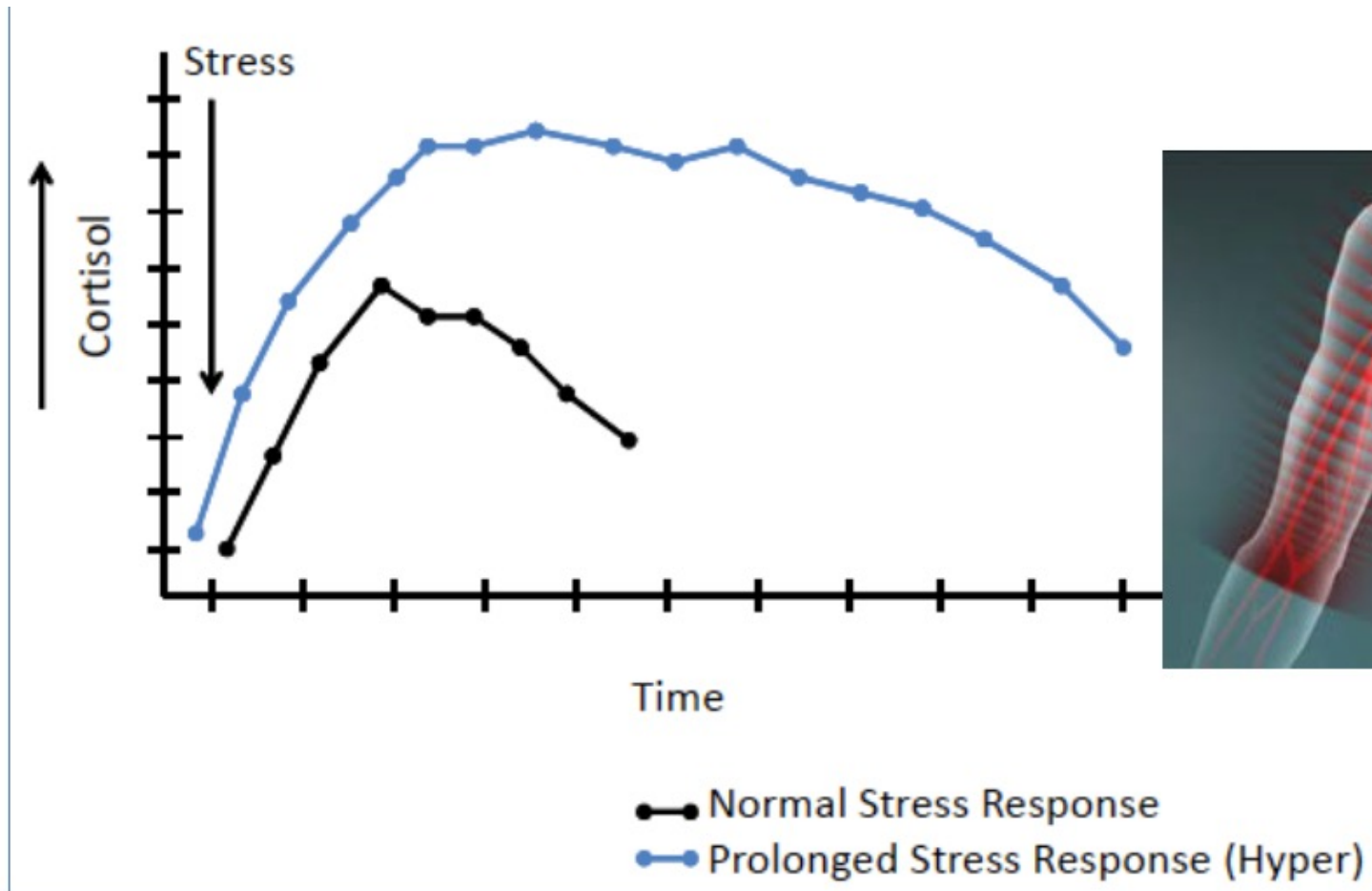
Adverse Childhood Experiences (ACEs)

- ACEs are traumatic or stressful life events experienced before age 18
- ACEs include:
 - Childhood abuse (i.e. physical, sexual, emotional)
 - Household dysfunction (i.e. household member with mental illness or substance use disorder, violence in home, parental divorce, incarcerated household member)

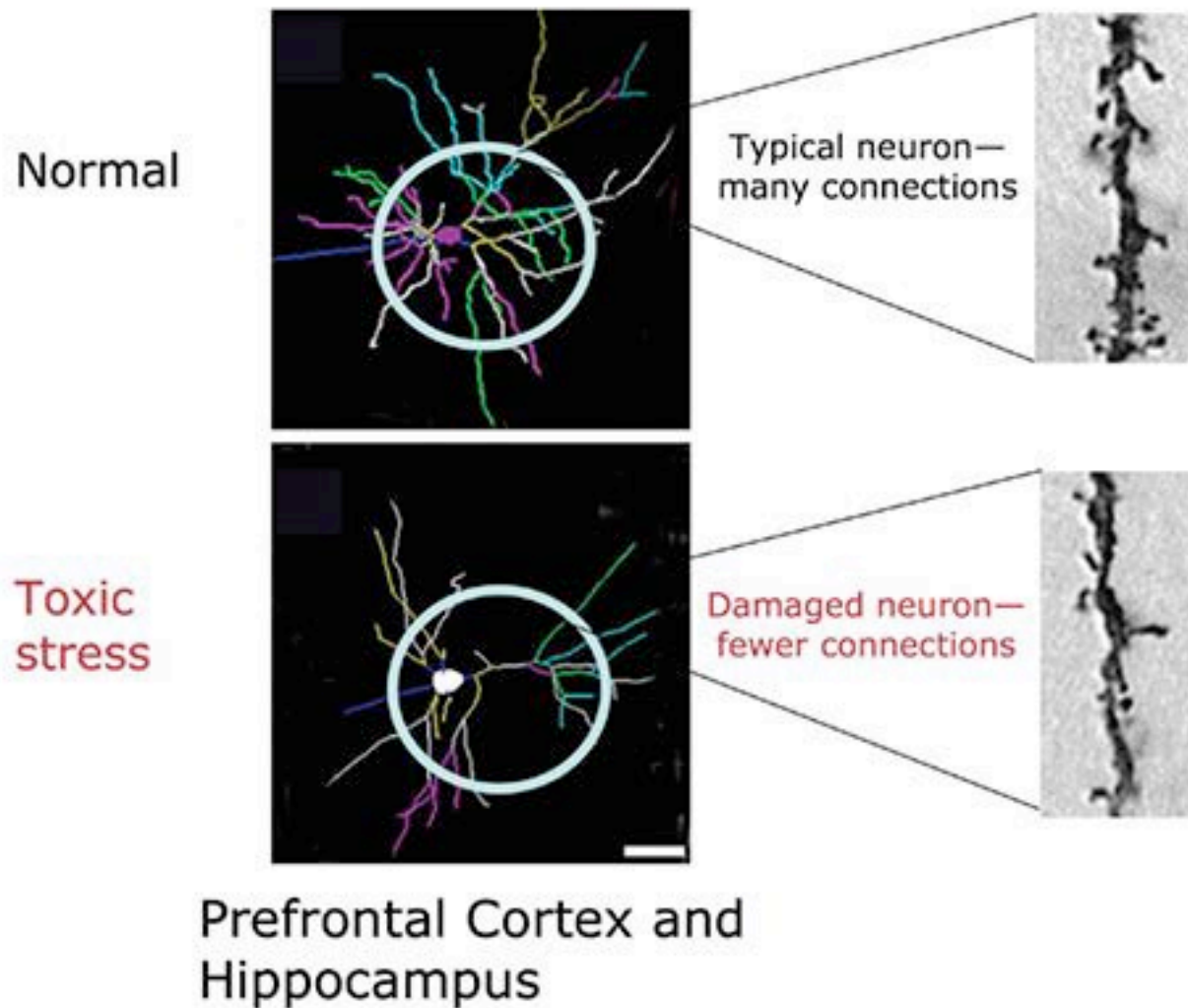
Prevalence of ACE Groups among NC Adults



Toxic Stress Alters Normal Cortisol Response



Persistent Stress Changes Brain Architecture



Healthy Brain

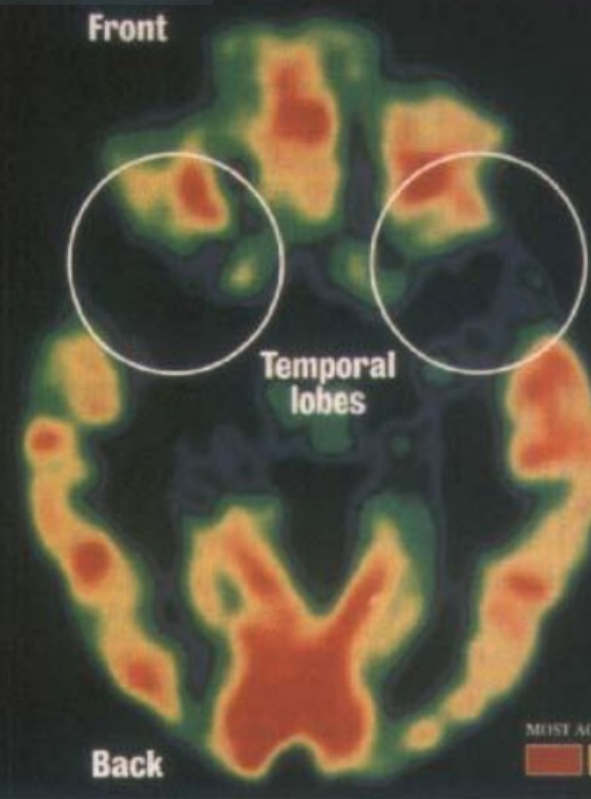
This PET scan of the brain of a normal child shows regions of high (red) and low (blue and black) activity. At birth, only primitive structures such as the brain stem (center) are fully functional; in regions like the temporal lobes (top), early childhood experiences wire the circuits.



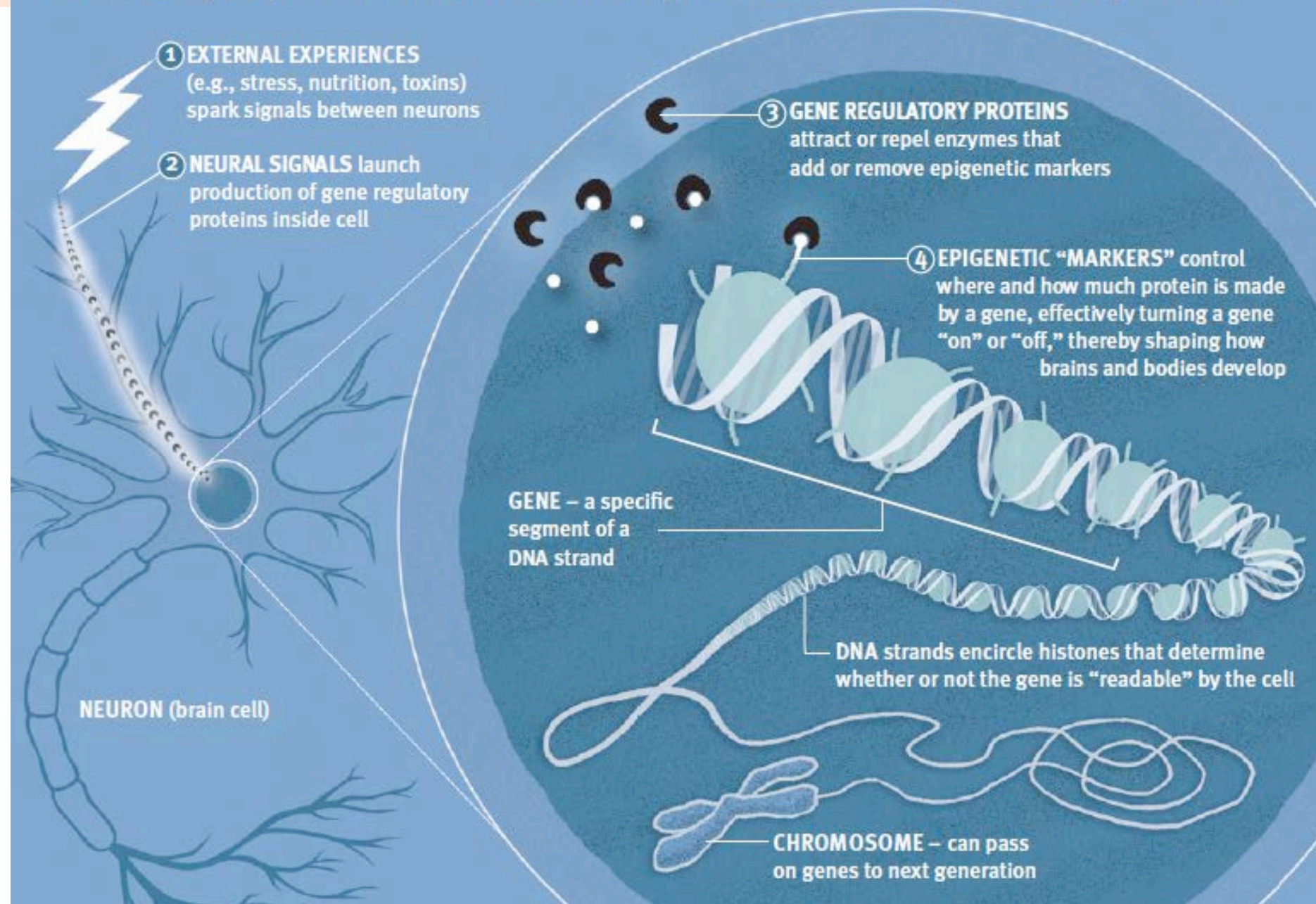
Rectangular Strip

An Abused Brain

This PET scan of the brain of a Romanian orphan, who was institutionalized shortly after birth, shows the effect of extreme deprivation in infancy. The temporal lobes (top), which regulate emotions and receive input from the senses, are nearly quiescent. Such children suffer emotional and cognitive problems.



How Early Experiences Alter Gene Expression and Shape Development



ACES can have lasting effects on....



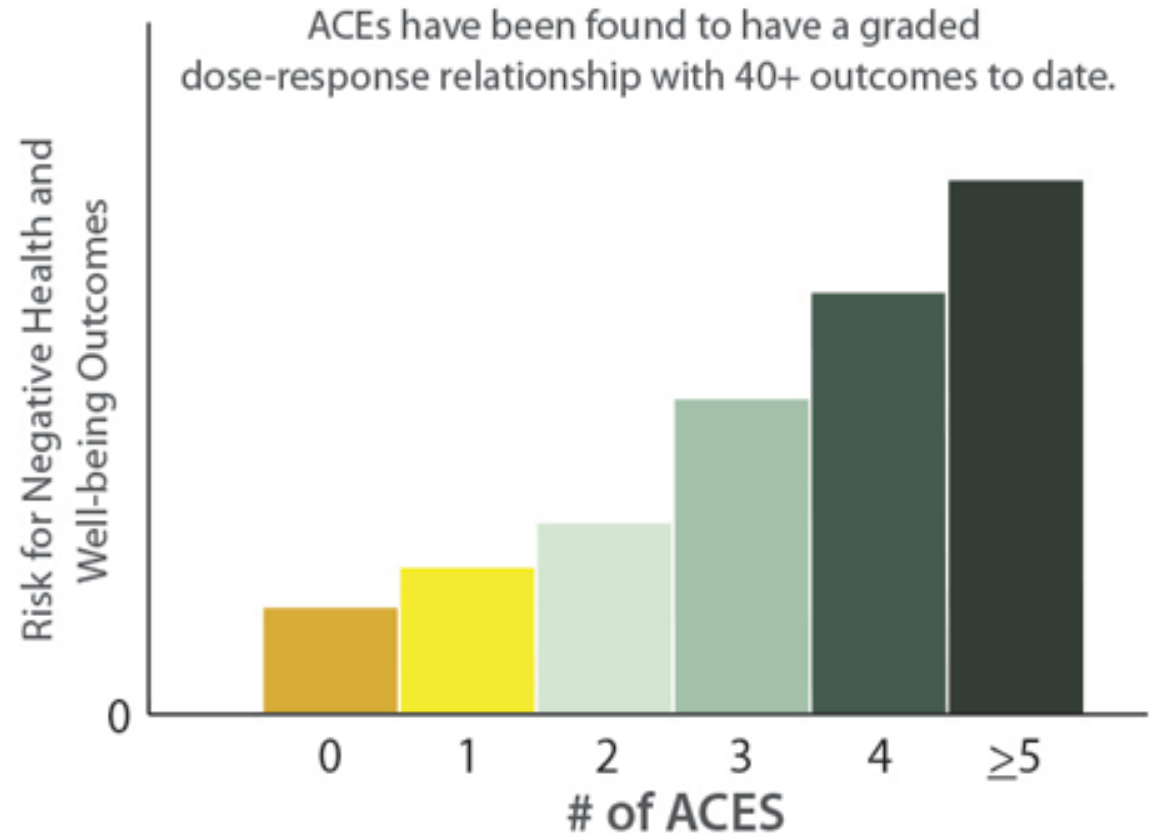
Health (obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)



Behaviors (smoking, alcoholism, drug use)



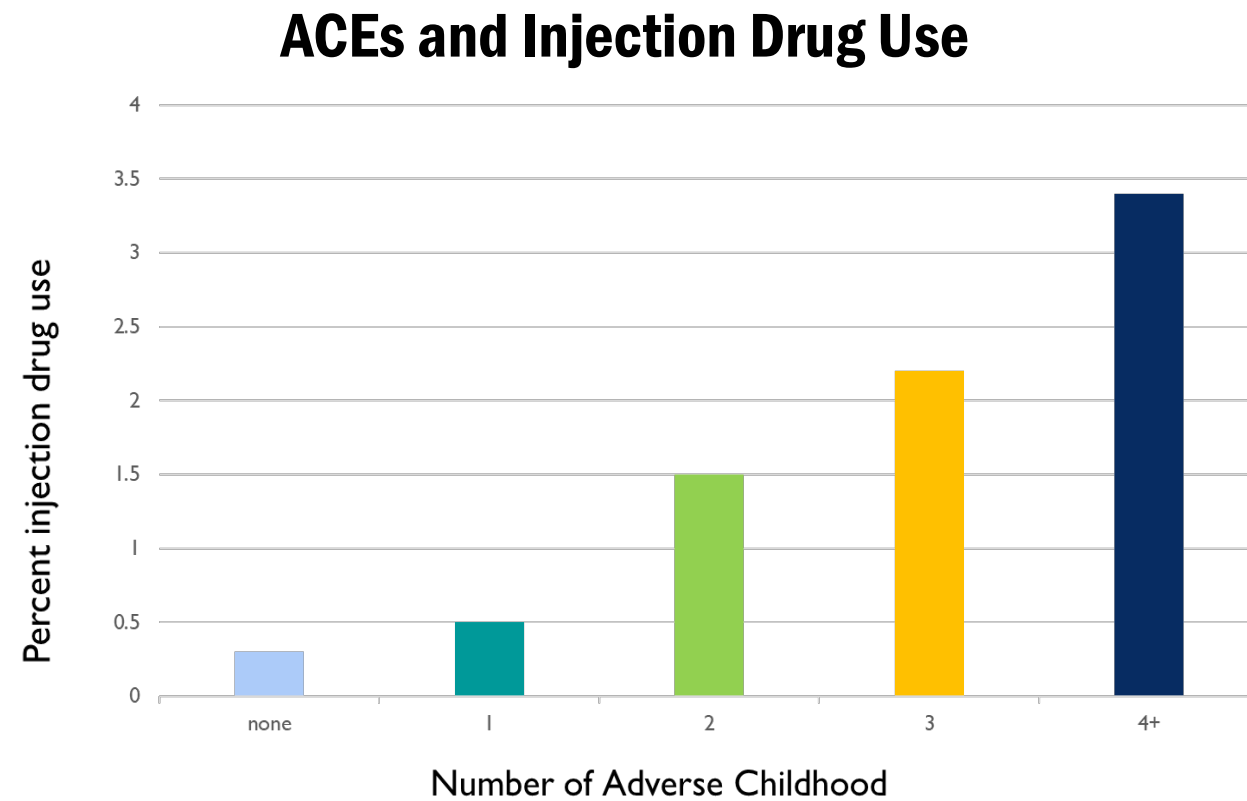
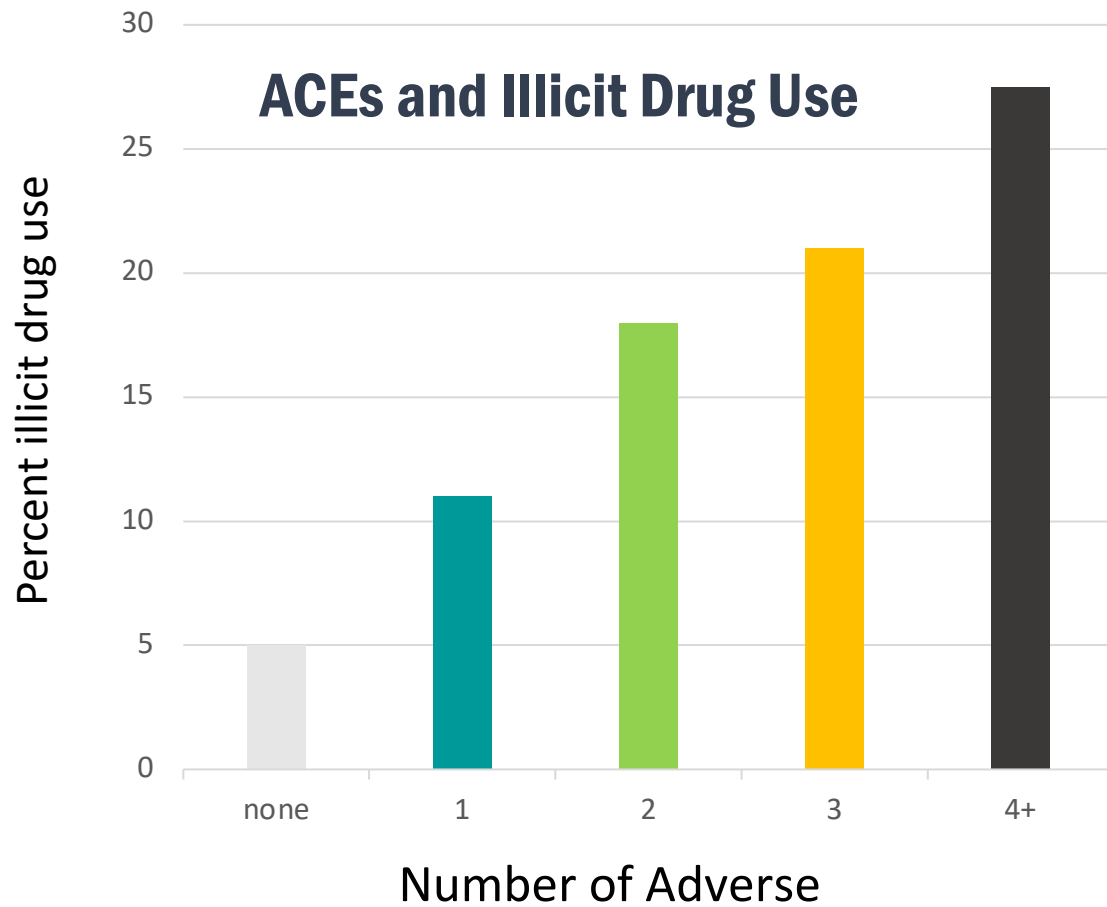
Life Potential (graduation rates, academic achievement, lost time from work)



*This pattern holds for the 40+ outcomes, but the exact risk values vary depending on the outcome.

Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study.

Dube SR¹, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF.



Estimates of the Population Attributable Risk* of ACEs for Drug Use Problems

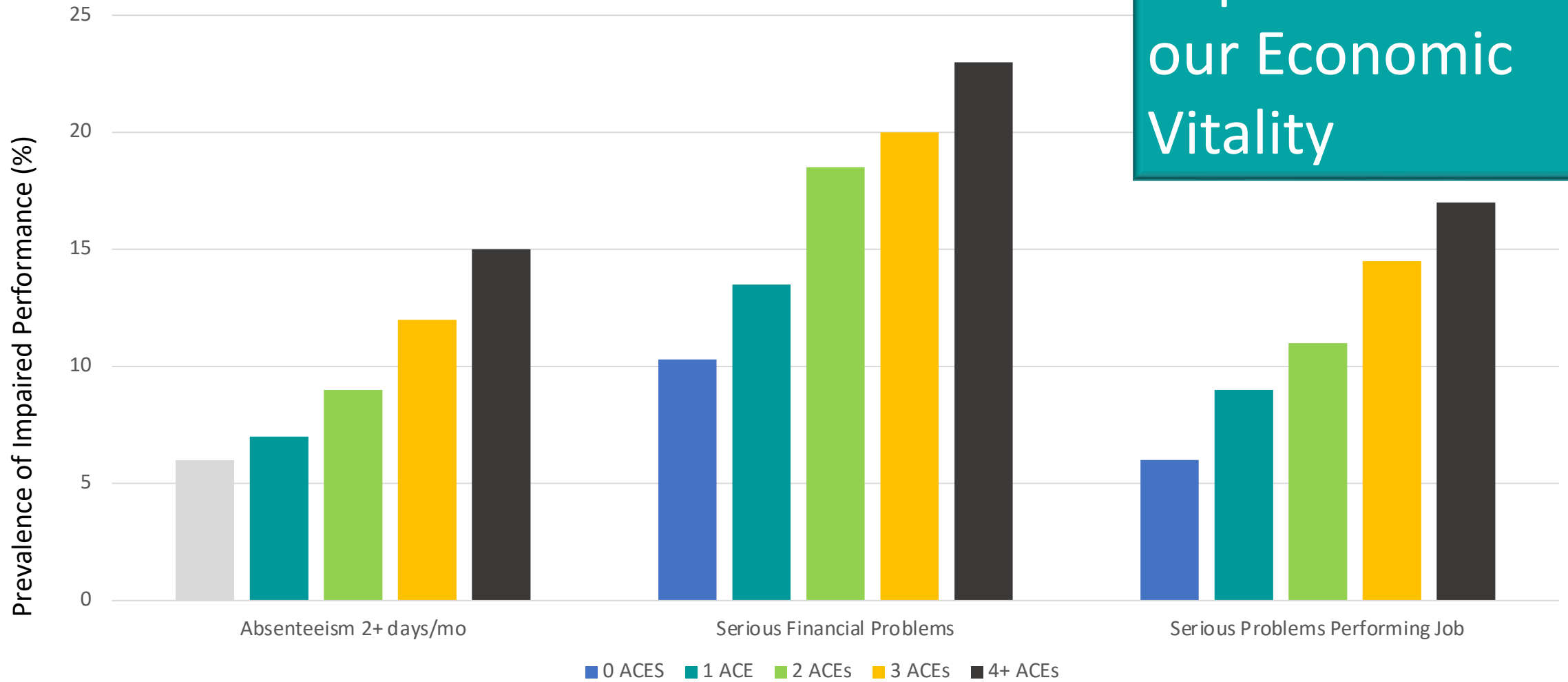
Drug Use Problem	PAR
Drug misuse	56%
Addiction	64%
IV drug use	67%

Implications
for our Opioid
Epidemic

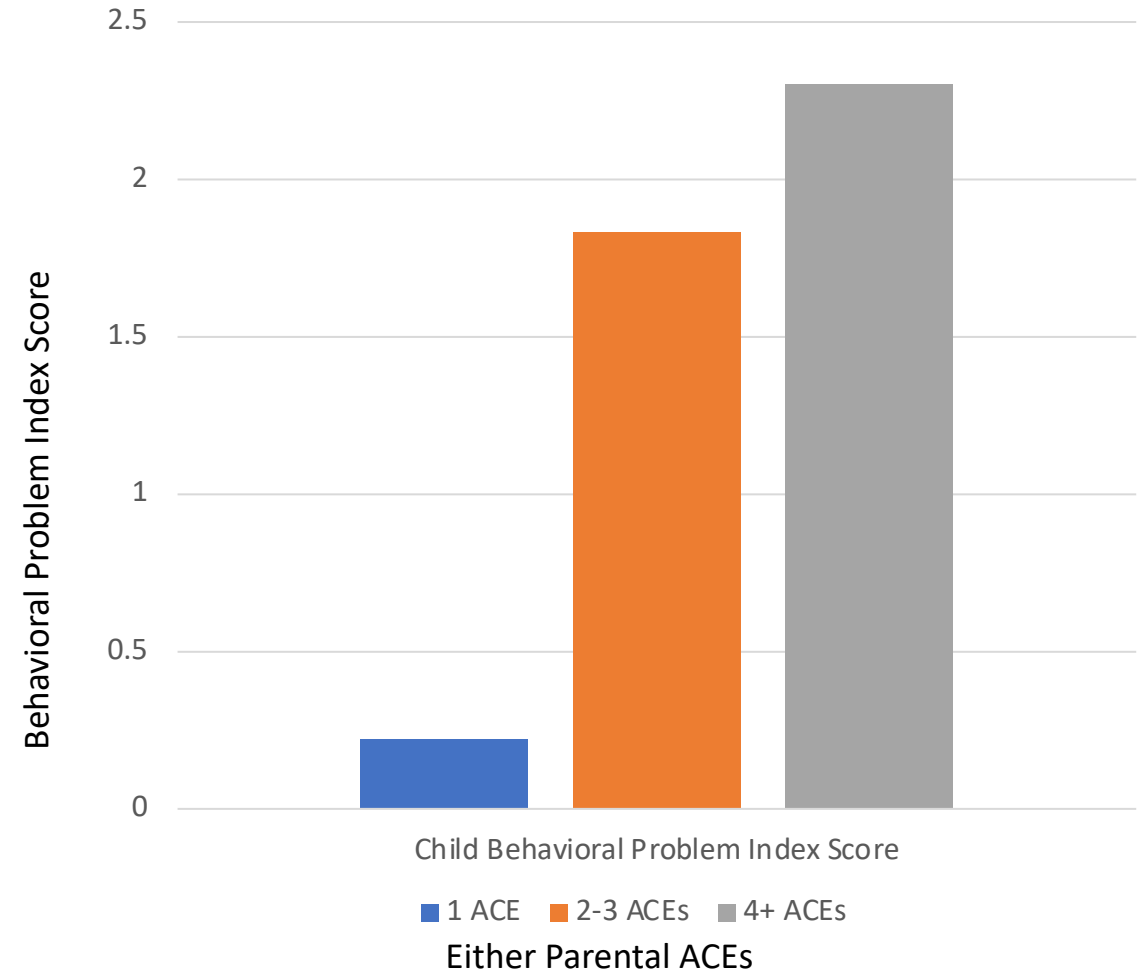
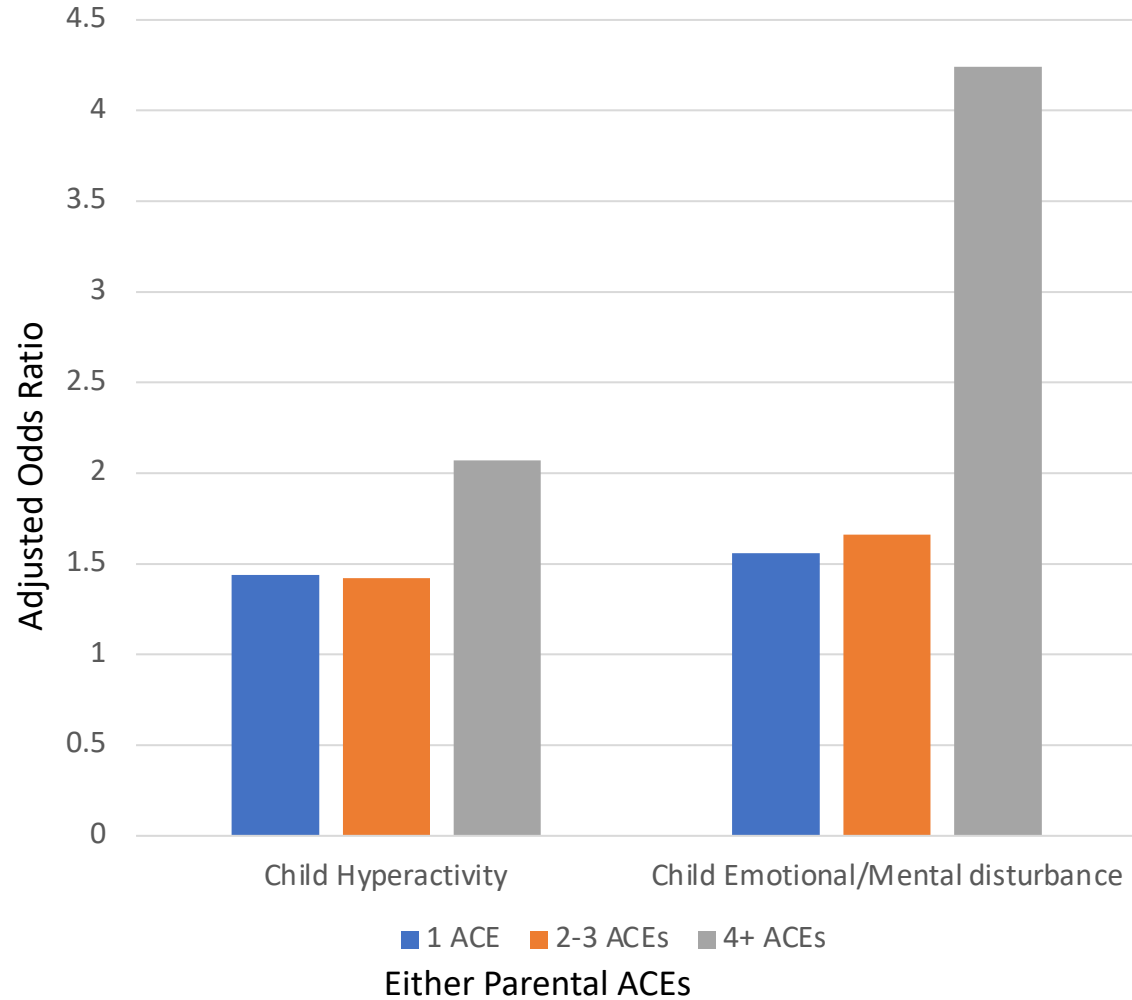
*The portion of a condition attributable to specific risk factors

ACE Score and Impaired Worker Performance

Implications for our Economic Vitality



Multi-generational: Parental ACEs and Child Behavioral Problems

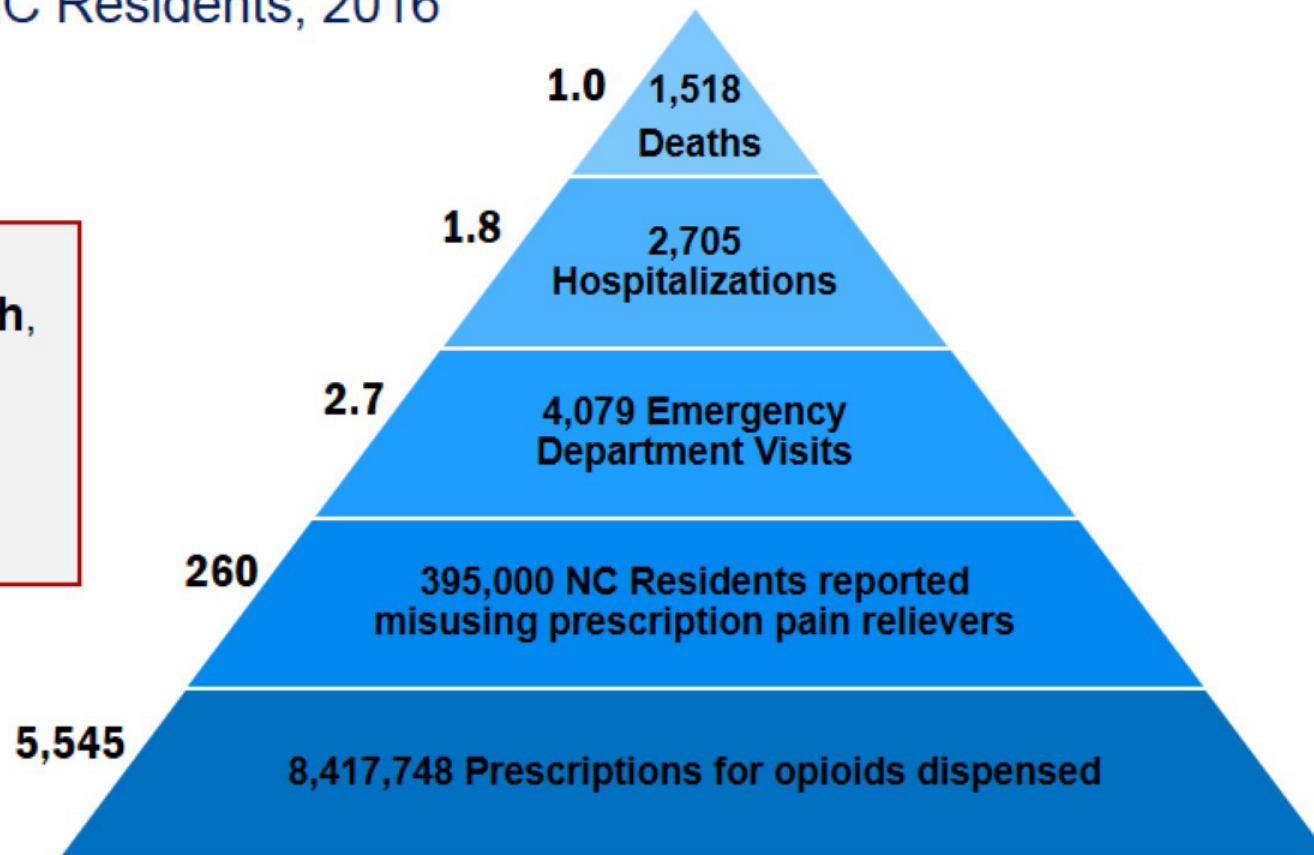


Opioid Crisis

**4 PEOPLE DIE EACH DAY FROM OPIOID
OVERDOSE IN NC**

Opioid Deaths, Hospitalizations, ED Visits, Misuse & Dispensing, NC Residents, 2016

In 2016, for every **1 opioid overdose death**, there were just under **2 hospitalizations** and nearly **3 ED visits** due to opioid overdose.



Overdose Pyramid

Source: Deaths-N.C. State Center for Health Statistics, Vital Statistics, 2016/ Hospitalizations-N.C. State Center for Health Statistics, Vital Statistics, 2016/ED-NC DETECT, 2016/ Misuse-NSDUH, 2012-2014 applied to 2016 population data/Prescriptions-CSRS, 2016.
Analysis by Injury Epidemiology and Surveillance Unit

North Carolina Opioid Action Plan

Prescription Drug Abuse Advisory Committee (PDAAC)

Public education

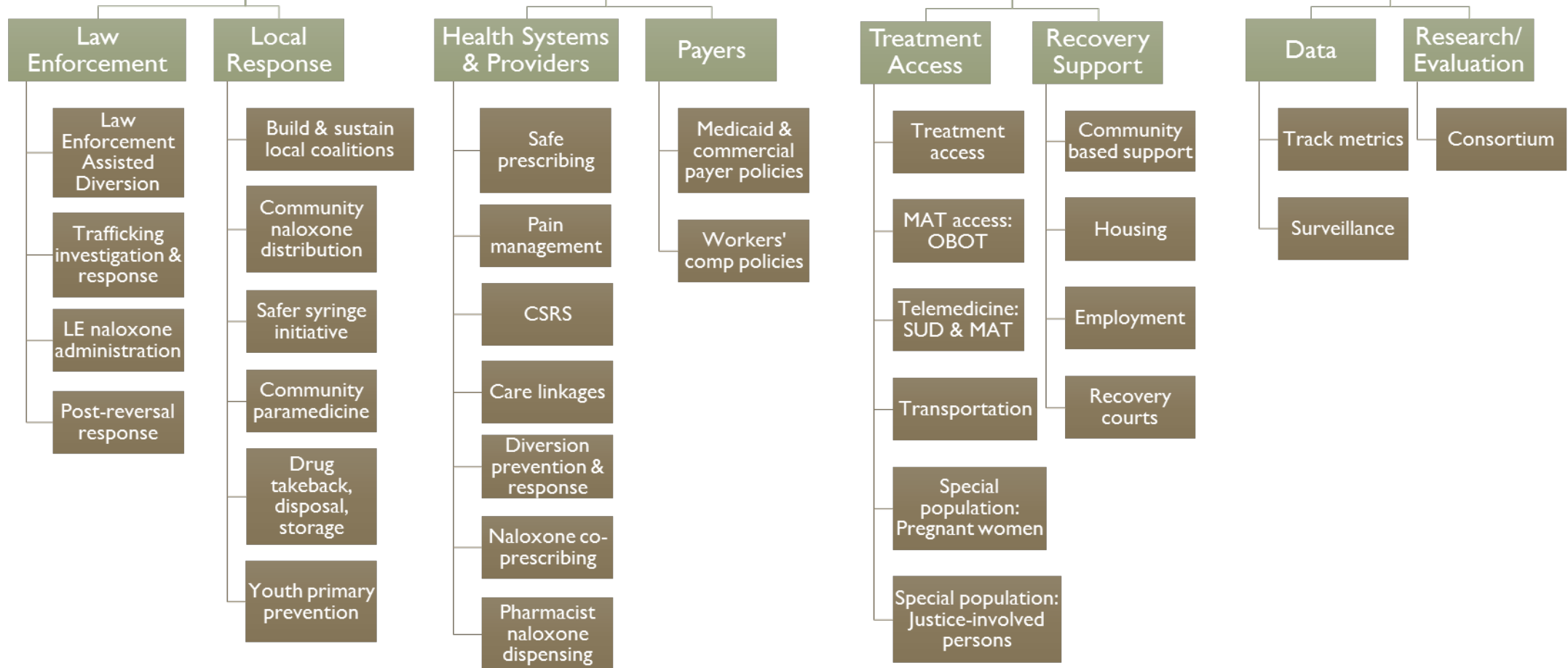
Advisory council

First Responders/ Communities

Health Care

Treatment and Recovery Providers

Data, Surveillance, & Research Teams





Early Childhood Action Plan



GUIDING PRINCIPLES

- **Brain and developmental science** serve as the foundation for the Action Plan
- **Children and families** are at the center of our work
- Builds upon and expands **existing strengths and partnerships**
- Goals are **ambitious and achievable**
- Focus is on **all** of North Carolina's children reaching their full potential, intentional about **eliminating disparities**
- Reflects the values of **transparency, good stewardship, and accountability**



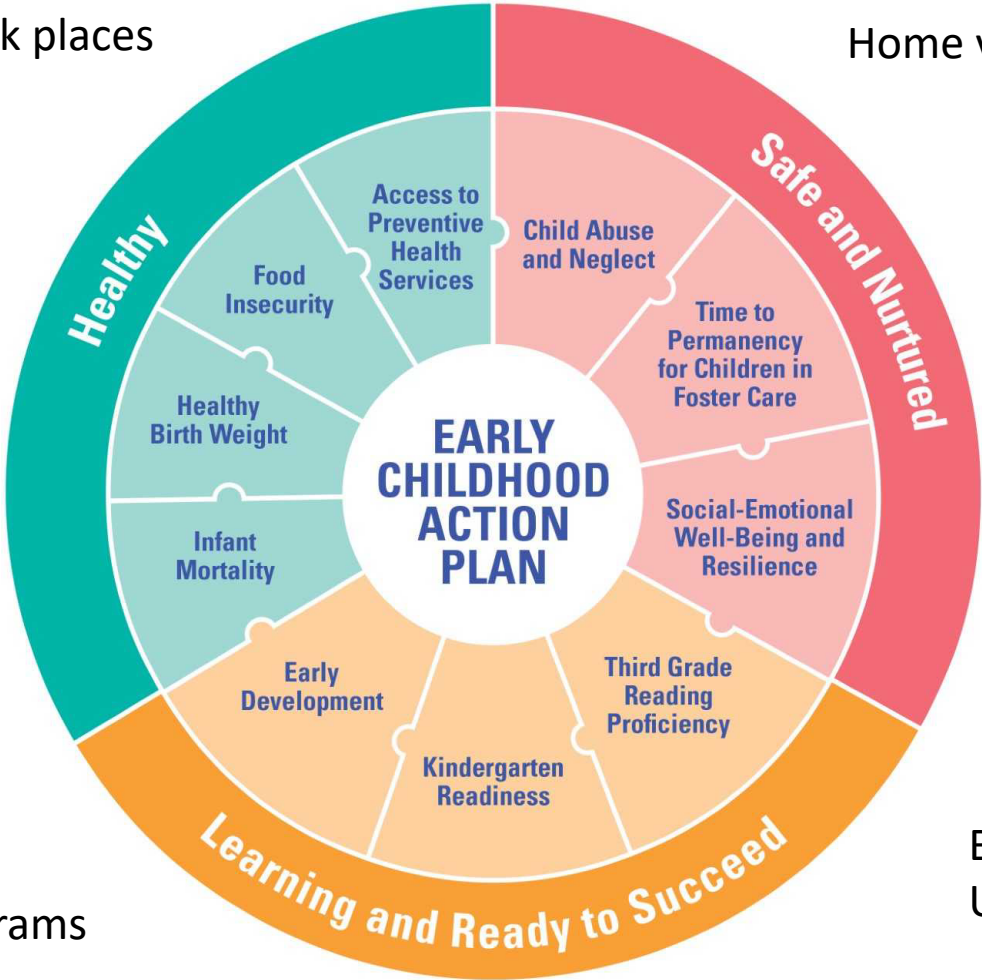
Vision and Goals

North Carolina Early Childhood Action Plan - Vision

All North Carolina children get a healthy start and develop to their full potential in safe and nurturing families, schools and communities.

- 1) Healthy and Safe:** Children are healthy at birth and thrive in safe environments that support their optimal health and well-being
 - 2) Nurtured:** Children grow confident, resilient and independent in stable and nurturing families, schools and communities
 - 3) Learning and Ready to Succeed:** Children experience the conditions they need to build strong brain architecture and school readiness skills that support their success in school and life
-

VISION and GOALS



Family Forward Work places

Home visiting programs for young families

Job training and availability

Parenting Programs with transportation and child care support

Access to Healthy Food

Food and Nutrition Support

Intensive Family Support and Therapy

Income support for lower income families

Intimate Partner Violence Prevention and Intervention

Stable, healthy housing

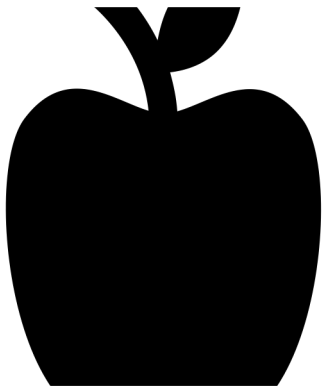
Trauma Informed Schools and Communities

High Quality early child care and pre-school

Early Literacy Programs

Behavioral Health and Substance Use Prevention and Treatment

Broader Lens of Health



Food
Security



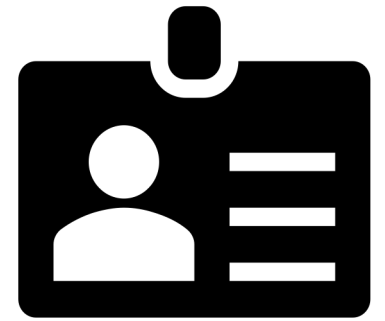
Housing
Stability



Transportation

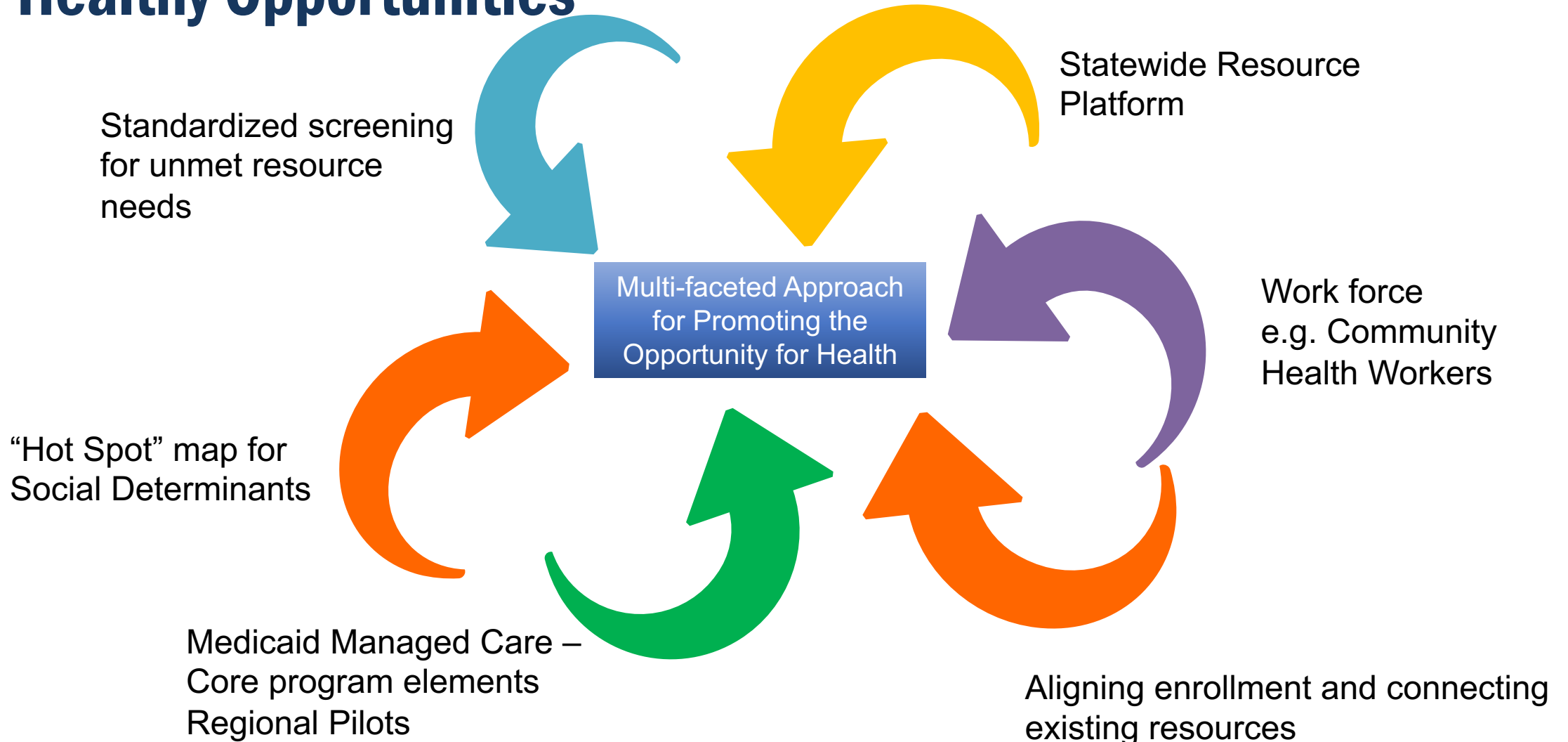


Inter-
personal
Violence



Employment

Creating the Statewide Framework and Infrastructure for Healthy Opportunities



<https://www.ncdhhs.gov/about/department-initiatives/healthy-opportunities>



“Hot Spot” Map

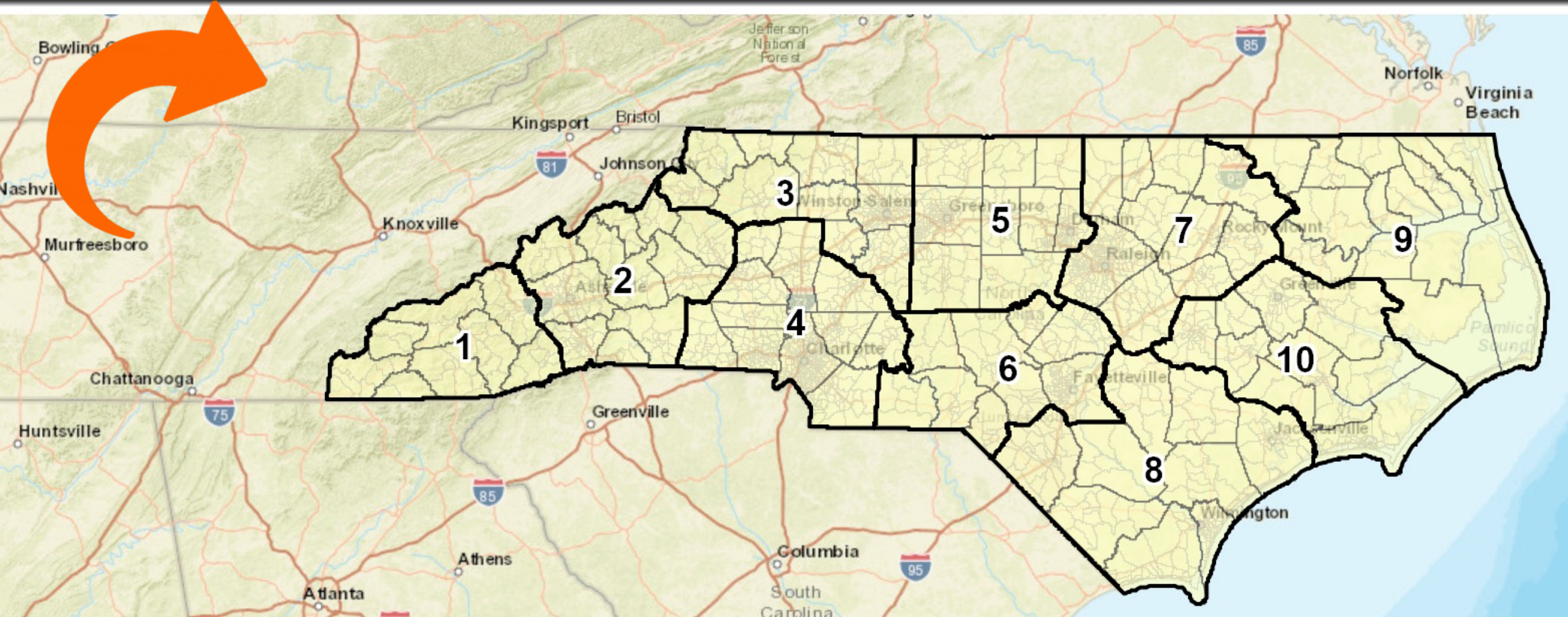
- Statewide map now live: <http://www.schs.state.nc.us/data/hsa/>
- GIS/ESRI Story mapping of 14 SDOH indicators with a summary statistic
- Displays geographical health & economic disparities

Social and Neighborhood	Economic	Housing and Transportation
% < HS Diploma	Household Income	% Living in Rental Housing
% Households with Limited English	% Poverty	% Paying >30% of Income on Rent
% Single Parent Households	Concentrated Poverty	% Crowded Household
Low Access to Healthy Foods	% Unemployed	% Households without a Vehicle
Food Deserts	% Uninsured	

North Carolina Social Determinants of Health by Regions

- About
- Region 1
- Region 2
- Region 3
- Region 4
- Region 5
- Region 6
- Region 7
- Region 8
- Region 9
- Region 10

Overview



- About
- Region 1
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NC Social Determinants of Health - Local Health Departments Region 7

Social and Neighborhood Resources

People with higher incomes, more years of education, and who live in a safe environment have better health outcomes and generally have longer life expectancies (1). Persons without a high school diploma, non-English speaking households, single-parent households and limited access to healthy food are key social and neighborhood indicators.

[Percent with No High School Diploma](#)

[Percent of Households Speaking Limited English](#)

[Percent Single Parent Households](#)

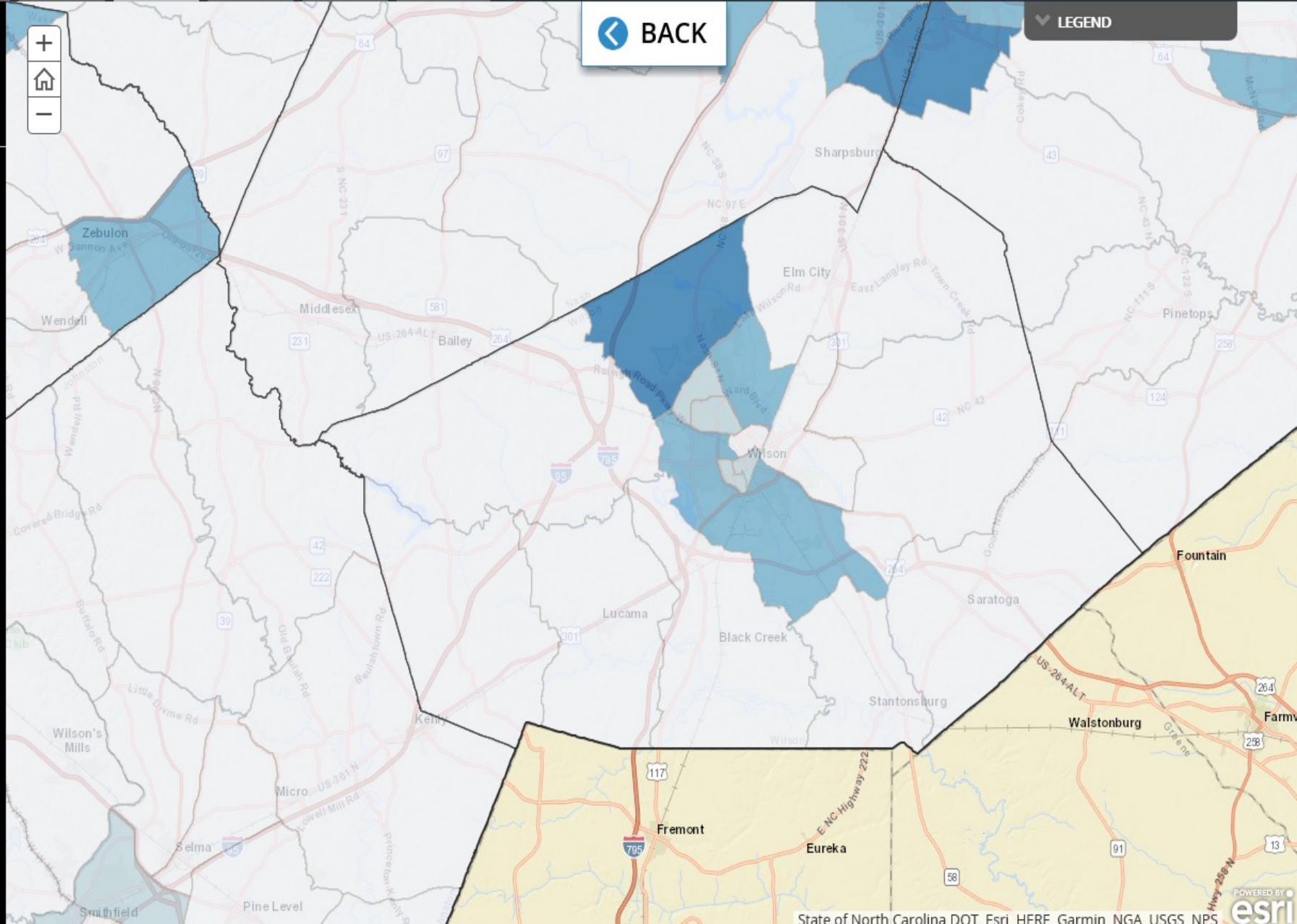
[Low Access to Healthy Foods](#)

[Food Deserts](#)

[Turn All Layers Off](#)

Education

An estimated 125,818 (11.7%) adult residents age 25 or





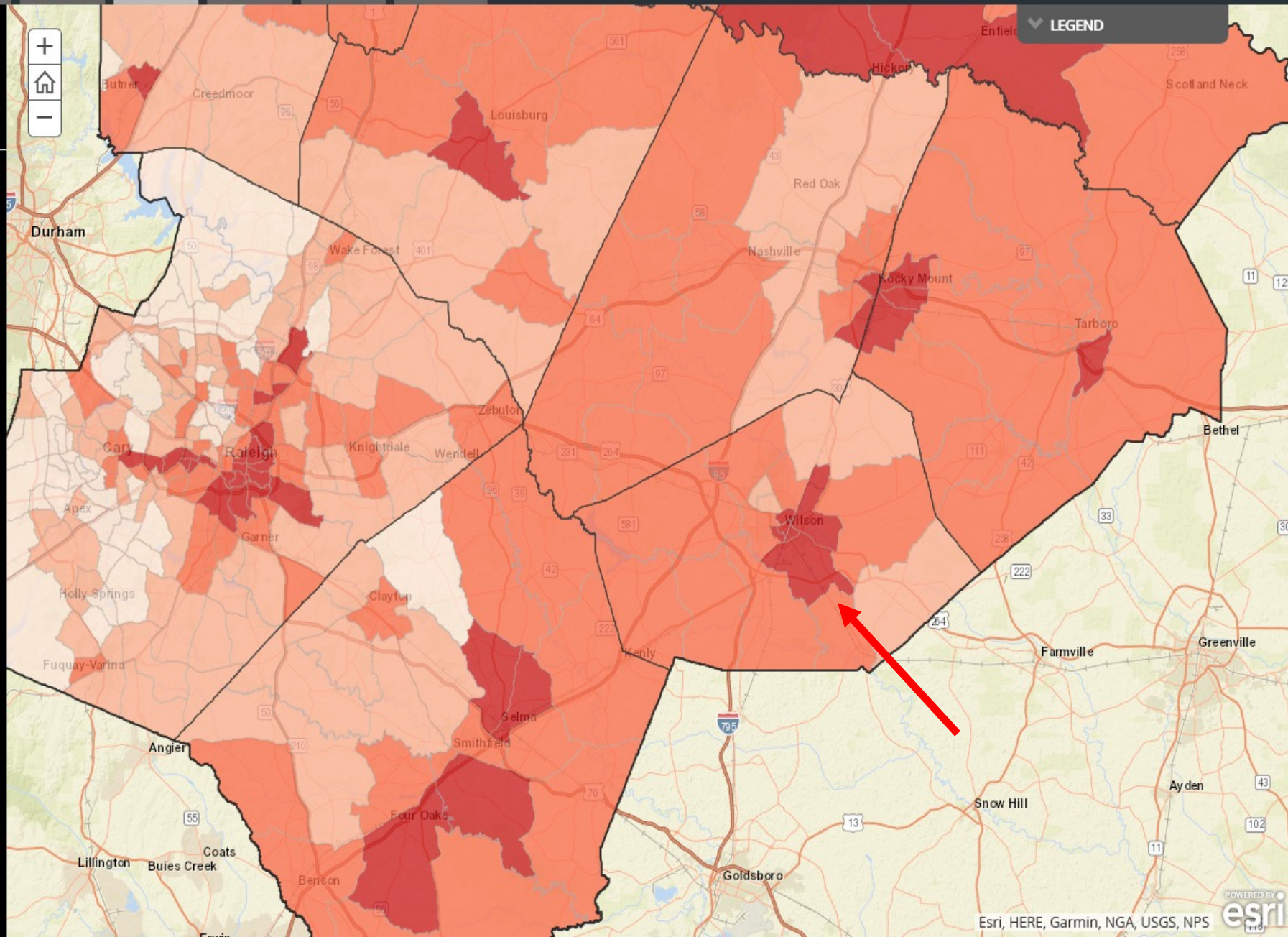
NC Social Determinants of Health - Social Health Departments Region 7


Putting it Together

Looking at the 12 different maps of the Social Determinants of Health (SDOH) at the same time can be difficult. By using an index, the maps can be combined into one map in order to view the indicators together. The SDOH index combines the indicators within the three domains: Social & Neighborhood Resources, Economic, and Housing & Transportation. The overall index is an average of the three domains.

Z-scores were used to create the index, which allows for standardization among all of the indicators. A z-score is a measure of how many standard deviations above or below an estimate is from an overall mean. So, the index is a metric of whether the SDOH in a census tract are above or below the regional average and by how much. High values indicate the census tracts with the highest disparities among the social determinants of health.

(1) NC Institute of Medicine. Healthy North Carolina 2020: A Better State of Health. Morrisville, NC: NC Institute of Medicine; 2011.





Health Screening

We believe everyone should have the opportunity for health. Some things like not having enough food or reliable transportation or a safe place to live can make it hard to be healthy. Please answer the following questions to help us better understand you and your current situation. We may not be able to find resources for all your needs, but we will try and help as much as we can.

Food

1. Within the past 12 months, did you worry that your food would run out before you got money to buy more? (Y/N)
2. Within the past 12 months, did the food you bought just not last and you didn't have money to get more? (Y/N)

Housing/Utilities

3. Within the past 12 months, have you ever stayed: outside, in a car, in a tent, in an overnight shelter, or temporarily in someone else's home (i.e. couch-surfing)? (Y/N)
4. Are you worried about losing your housing? (Y/N)
5. Within the past 12 months, have you been unable to get utilities (heat, electricity) when it was really needed? (Y/N)

Transportation

6. Within the past 12 months, has a lack of transportation kept you from medical appointments or from doing things needed for daily living? (Y/N)

Interpersonal Safety

7. Do you feel physically and emotionally unsafe where you currently live? (Y/N)
8. Within the past 12 months, have you been hit, slapped, kicked or otherwise physically hurt by anyone? (Y/N)
9. Within the past 12 months, have you been humiliated or emotionally abused by anyone? (Y/N)

Optional to Add

10. Would you like help with any of the needs that you have identified? (Y/N)
11. Are any of your needs urgent? For example, you don't have food for tonight, you don't have a place to sleep tonight, you are afraid you will get hurt if you go home today. (Y/N)
12. Do you have problems with pests (bugs, ants, mice), mold, lead and/or water leaks at the place where you stay? (Y/N)

Statewide Resource Platform



**Foundation for Health
Leadership & Innovation**
Moving people and ideas into action.

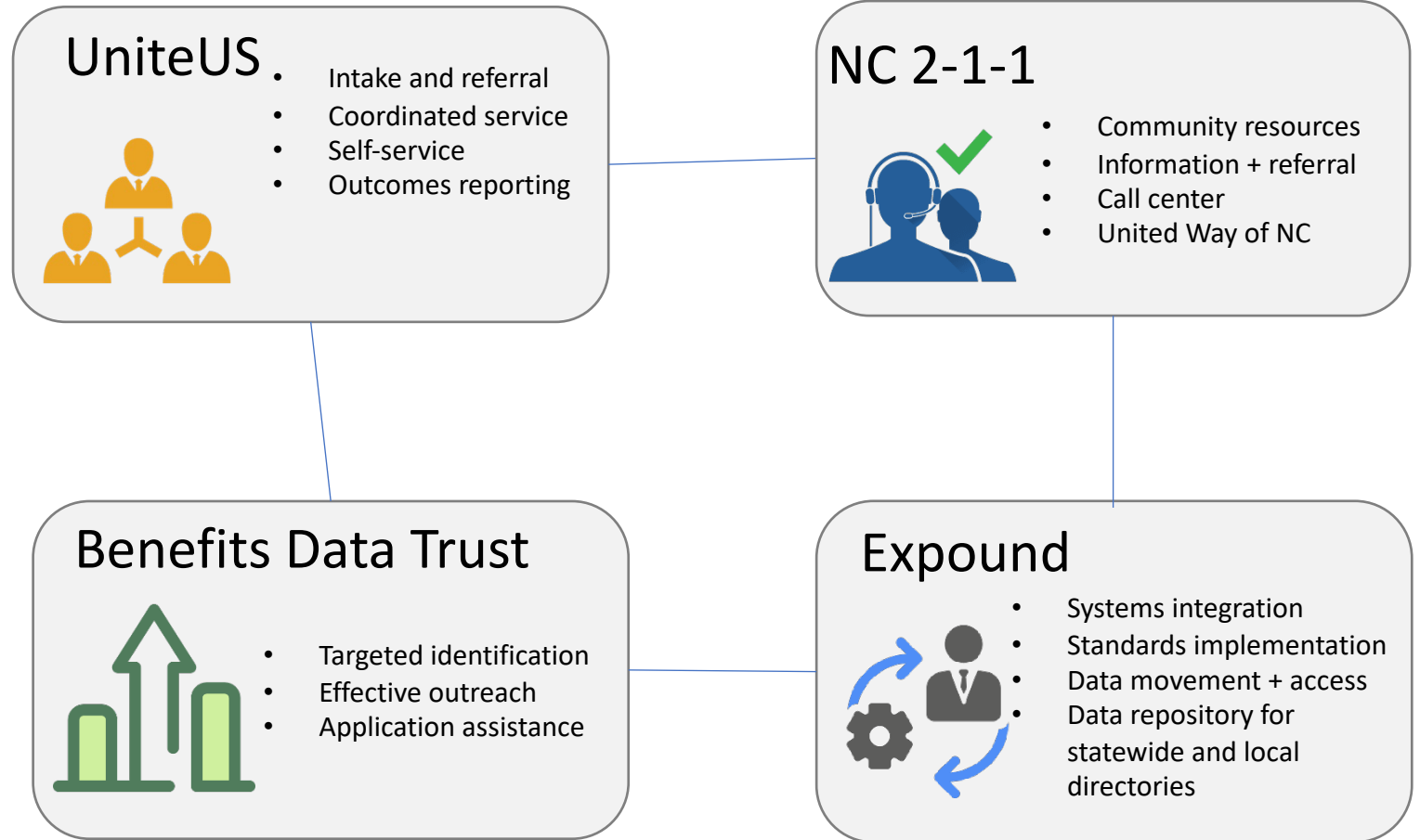
- **Public-Private Partnership**
- **One statewide, shared public utility**
- **Open to all communities, people, providers, care managers, social service agencies, payers, health systems**
- **Knit together healthcare and community services to create a **Health System****



NCCARE360 NC Resource Platform

Four Partners –

One Solution



Roll out to start in end of 2018 with ready communities

Questions?