

Helping Children Succeed: Evidence Based Programs Aimed at Building Children's Futures

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THE HIPPOCRATIC OATH



I swear to fulfill, to the best of my ability and judgment, this covenant:

I will respect the hard-won scientific gains of those physicians in whose steps I walk, and gladly share such knowledge as is mine with those who are to follow.

I will apply, for the benefit of the sick, all measures which are required, avoiding those twin traps of overtreatment and therapeutic nihilism.

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Children in Poverty



U.S. CHILD POVERTY STATUS





Kids Count 2012

ILLINOIS CHILD POVERTY RATES

Child Poverty Rates





Illinois Kids Count 2015 ILLINOIS CHILD POVERTY RATES

Selected Counties with Highest Poverty Rates

		Percent		
	1999	2012	Change	
North				
Cook	19.3	26.0	6.7	
Kankakee	15.9	25.5	9.6	
Stephenson	12.1	29.1	17.0	
Winnebago	13.3	27.1	13.8	
Central				
Coles	11.9	26.8	14.9	
Кпох	17.5	32.5	15.1	
Macon	19.2	28.4	9.1	
Peoria	21.0	28.9	7.9	
Sangamon	13.2	25.2	12.0	
Vermilion	19.3	30.0	10.7	
South				
Franklin	24.4	25.0	0.6	
Jackson	23.6	33.7	10.2	
Marion	17.3	30.5	13.2	
St. Clair	21.9	30.3	8.4	

SOURCES U.S. Census Bureau, Census 2000 and American Community Survey 2011-2013 (3-year pooled data).

Rural America* Children



RURAL AMERICA

Americans living in rural areas are more likely to die from the five leading causes of death than their urban counterparts:

- 1. Heart Disease
- 2. Cancer
- 3. Unintentional Injuries
- 4. Chronic Lower Respiratory Disease
- 5. Stroke



Source: Moy et. al. "Leading Causes of Death in Nonmetropolitan and Metropolitan Areas – United States 1999-2014," *Surveillance Summaries,* January 2017



RURAL AMERICA'S CHILDREN

- A higher percentage of children in rural areas compared with urban areas had parents who experienced financial difficulties meeting basic needs such as food and housing.
- Children in rural areas more often lacked amenities and lived in a neighborhood in poor condition.



Source: Moy et. al. "Leading Causes of Death in Nonmetropolitan and Metropolitan Areas – United States 1999-2014," *Surveillance Summaries,* January 2017



RURAL AMERICA'S CHILDREN



- In rural areas, 1 in 6 children had a mental, behavioral, or developmental disorder (MBDD).
- Children with MBDD more often lacked a medical home, had a parent in poor mental health, lived in families with financial difficulty than children without MBDD.
- After adjusting for poverty and race/ethnicity among children with MBDD, those in rural areas more often had a parent with poor mental health and lived in resourcelow neighborhoods than those in urban areas.



Source: Robinson et. al. "Differences in Health Care, Family, and Community Factors Associated with Mental, Behavioral, and Developmental Disorders Among Children Aged 2-8 in Rural and Urban Areas," *Surveillance Summaries,* March 2017





THE ACHIEVEMENT GAP









THE ACHIEVEMENT GAP

Low-Income Students Fall 2.5 to 3 Years Behind by Fifth Grade



Source: Cooper, H., Borman, G., & Fairchild, R. (2010). "School Calendars and Academic Achievement." In J. Meece & J. Eccles (Eds.), Handbook of Research on Schools, Schooling, and Human Development (pp. 342-355). Mahwah, NJ: Erlbaum.





The Developing Child





EXPERIENCES BUILD BRAIN ARCHITECTURE







BRAIN ARCHITECTURE



The brain goes through rapid changes in the first three years of life:

- The brain doubles in size in its first year of life.
- By age 3, it has reached 80% of its brain volume.







BRAIN ARCHITECTURE







1 Month



9 Months



2 Years









BRAIN ARCHITECTURE



Executive Functioning



Frontal lobe is responsible for much of the executive functioning of the brain.

These functions include: Attention Working memory Planning, organizing Forethought Impulse control



Adverse Childhood Experiences



POSITIVE STRESS VS. TOXIC STRESS



Positive

Brief increases in heart rate, mild elevations in stress hormone levels.

Tolerable

Serious, temporary stress responses, buffered by supportive relationships.

Toxic

Prolonged activation of stress response systems in the absence of protective relationships.





TOXIC STRESS IN EARLY CHILDHOOD









ADVERSE CHILDHOOD EXPERIENCES











ADVERSE CHILDHOOD EXPERIENCES



ILLINOIS HEALTH OUTCOMES







Southern Illinois University School of Medicine Distribution of General Pediatricians State of Illinois

Population Aged 17 and Under per General Pediatrician by County

A

Number of Counties: 46 Aggregate Pediatric Population: 161,883 Pediatric Population Range: 749 - 11,625 No General Pediatrician practicing in the County

Number of Counties: 7 Aggregate Pediatric Population: 79,475 Pediatric Population Range: 7,364 - 25,386 Aggregate Number of General Pediatricians: 11 Distribution of General Pediatricians - Range per County: 1 - 4 1 General Pediatrician per 7,225 Pediatric Population Population per General Pediatrician Range: 6,283 - 9,813

Number of Counties: 18

Aggregate Pediatric Population: 314,434 Pediatric Population Range: 3,035 - 145,943 Aggregate Number of General Pediatricians: 90 Distribution of General Pediatricians - Range Among Counties: 1 - 44 1 General Pediatrician per 3,494 Pediatric Population Population per General Pediatrician Range: 3,035 - 4,939

Number of Counties: 20

Aggregate Pediatric Population: 723,756 Pediatric Population Range: 1,822 - 189,479 Aggregate Number of General Pediatricians: 336 Distribution of General Pediatricians - Range Among Counties: 1 - 81 1 General Pediatrician per 2,154 Pediatric Population Population per General Pediatrician Range: 1,812 - 2,779

Number of Counties: 6

Aggregate Pediatric Population: 67,549 Pediatric Population Range: 5,263 - 19,575 Aggregate Number of General Pediatricians: 39 Distribution of General Pediatricians - Range Among Counties: 5 - 11 1 General Pediatrician per 1,732 Pediatric Population Population per General Pediatrician Range: 1,629 - 1,800

Number of Counties: 5

Aggregate Pediatric Population: 1,707,869 Pediatric Population Range: 44,783 - 1,208,585 Aggregate Number of General Pediatricians: 1,623 Distribution of General Pediatricians - Range Among Counties: 41 - 1,099 1 General Pediatrician per 1,052 Pediatric Population Population per General Pediatrician Range: 865 - 1,130

Sources:

1, Area Health Resources File (AHRF); 2014-2015 Release; USDHHS; HRSA; Bureau of Health Workforce; National Center for Health Workforce Analysis; June, 2015.

 US Census Bureau, American Fact Finder, ACS Demographic and Housing Estimates; 2010 - 2014 American Community Survey 5-Year Estimates; Table DP05 - ACS Demographic and Housing Estimates.



Adams

Evidence Based Solutions



SERVE AND RETURN INTERACTIONS









HOME VISITING PROGRAMS











EARLY CHILDHOOD EDUCATION



Brain Building Oregon







SCHOOL BASED PROGRAMS



Education



PARTNERS IN SCHOOL TRANSFORMATION





Medicine's Role







The IHI Triple Aim

Population Health

Experience of Care

Per Capita Cost

Berwick DM, Nolan TW, Whittington J. The Triple Aim: Care, health, and cost. Health Affairs. 2008 May/June;27(3):759-769





DEFINITIONS OF POPULATION HEALTH

- "The health outcomes of a group of individuals, including the distribution of such outcomes within a group." (Kindig and Stoddart 2003)
- "The health of a population as measured by health status indicators and as influenced by social, economic, and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services." (Dunn and Hayes 1999)
- "Conceptual framework for thinking about why some populations are healthier than others." (Young 2005)







SOCIAL DETERMINANTS OF HEALTH
















SIU School of Medicine's Response











SIU MEDICINE SERVICE REGION















WHAT IS POPULATION SCIENCE?



Understanding why certain populations are healthier than others and using that knowledge to design programs and interventions to make populations healthier.





WHY POLICY?

To create the systemic change necessary to provide sustainable solutions for the residents of central and southern Illinois.





OUR MISSION

Understanding and advancing the health, development, and wellness of residents in central and southern Illinois.















CHILDREN'\$ - THREE AREA\$ OF FOCU\$

Data Acquisition and Analytics

Big Data Analytics *Collaborator:

University of Illinois -Springfield Department of Computer Science

* Pilot Project

SIU Healthcare Pediatric Big Data Analysis

* Piloting Funding Mechanism UIS/SIU Moy Grant Disease Focused Population Health Strategies

Pediatric Asthma

*Collaborators:

St. John's Community Outreach

Springfield Community Federation

Illinois Department of Public Health

Illinois

* Pilot Project

Home Asthma Action Plans

* Seed Funding Mechanism

Illinois Department of Public Health and HSHS St. John's Hospital Systems Based Population Health Solutions

Baby Brain Development

*Collaborators:

1. Chapin Hall Policy Research Center -University of Chicago

2. Center on the Developing Child -Harvard University

* Pilot Projects

1. Rural Caregiver Reflections on Development

2. Premature Baby Home Visitation Program

3. Hillsboro Hospital Day Care Brain Building

4. Trauma-Informed School Partnerships

* Funding Mechanism

1. Hospital Community and Foundation Funds

2. Seeking Seed Funding Opportunities



ILLINOIS DELTA REGION







dra.gov



STORIES OF RURAL AMERICA



- Focus groups have been created in 6 rural communities in the southern 16 counties of Illinois to gain an understanding of how caregivers view baby brain development.
- Goal is to better understand:
 - Rural caregiver viewpoints on their roles as their children's first teachers
 - Perceptions on the role of building baby's brains through developmentally appropriate activities
 - Role of the doctor in advising parenting practices







HILLSBORO, ILLINOIS











- A day care brain development and parent engagement program aimed at improving developmental outcomes in rural Illinois.
- Partnering with Hillsboro Hospital, intervention will occur in Hillsboro Child Development Center, a day care facility housed within the hospital.
- Program will target parent engagement with a model that incorporates developmental milestones as measured during pediatric well child visits.







MACON AND PIATT COUNTIES, ILLINOIS







TRAUMA INFORMED SCHOOL PARTNER\$HIP\$

- Creating community health care and education coalitions to create trauma sensitive school practices that improve academic achievement and educational outcomes of children.
- Partnering with Illinois Education Association, Illinois Chapter of the American Academy of Pediatrics, and Partnership for Resilience.
- Pilot sites in our service region are in Macon and Piatt Counties. Thankful for the partnership of Macon/Piatt Regional Office of Education, Illinois Education Association – Region 10, and Education Coalition of Macon County.





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OUR OFFICE'S HIPPOCRATIC OATH

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BUILDING CHILDREN'S FUTURES











Improving the health of residents in central and southern Illinois through research, policy, and education.



OFFICE OF POPULATION

SCIENCE & POLICY





Improving the health of residents in central and southern Illinois through research, policy, and education.



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