

Pursuing Child Health *Excellence and Equity*: A Community Systems Approach

Robert Kahn, MD MPH @docrob64

Michael Fisher Child Health Equity Center

Cincinnati Children's Hospital Medical Center

April 9, 2025

Child Health Equity Center Mission

To address social, environmental & health care factors that influence child health so that **all children in our region** can reach their full potential and thrive.

Work that follows is the work of many, many outstanding folks – both at the hospital and in the community

Learning Objectives

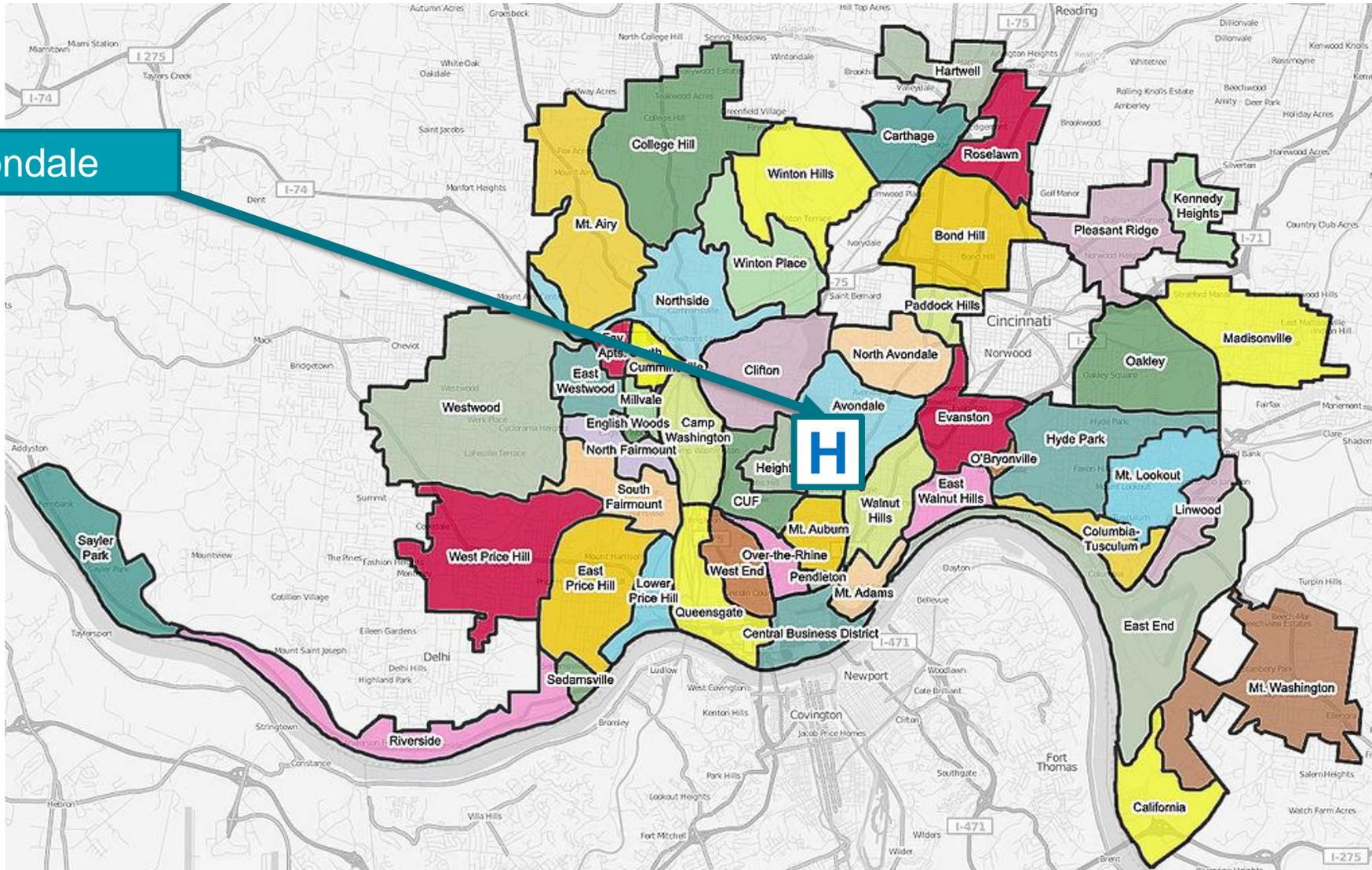
- Characterize an institutional approach to health equity outcomes
- Learn how improvement science can be applied to address child health equity
- Expand traditional improvement to take a learning network approach to the community level

Wrestling with....

- Measurable impact?
- Reach and scale?
- Programs or complex/adaptive interventions?
- Trust, credit, leadership, turf?
- Sustainability and resilience?

Cincinnati, Hamilton County

Avondale



Cincinnati

- 45 neighborhoods
- 75,000 children

Hamilton County

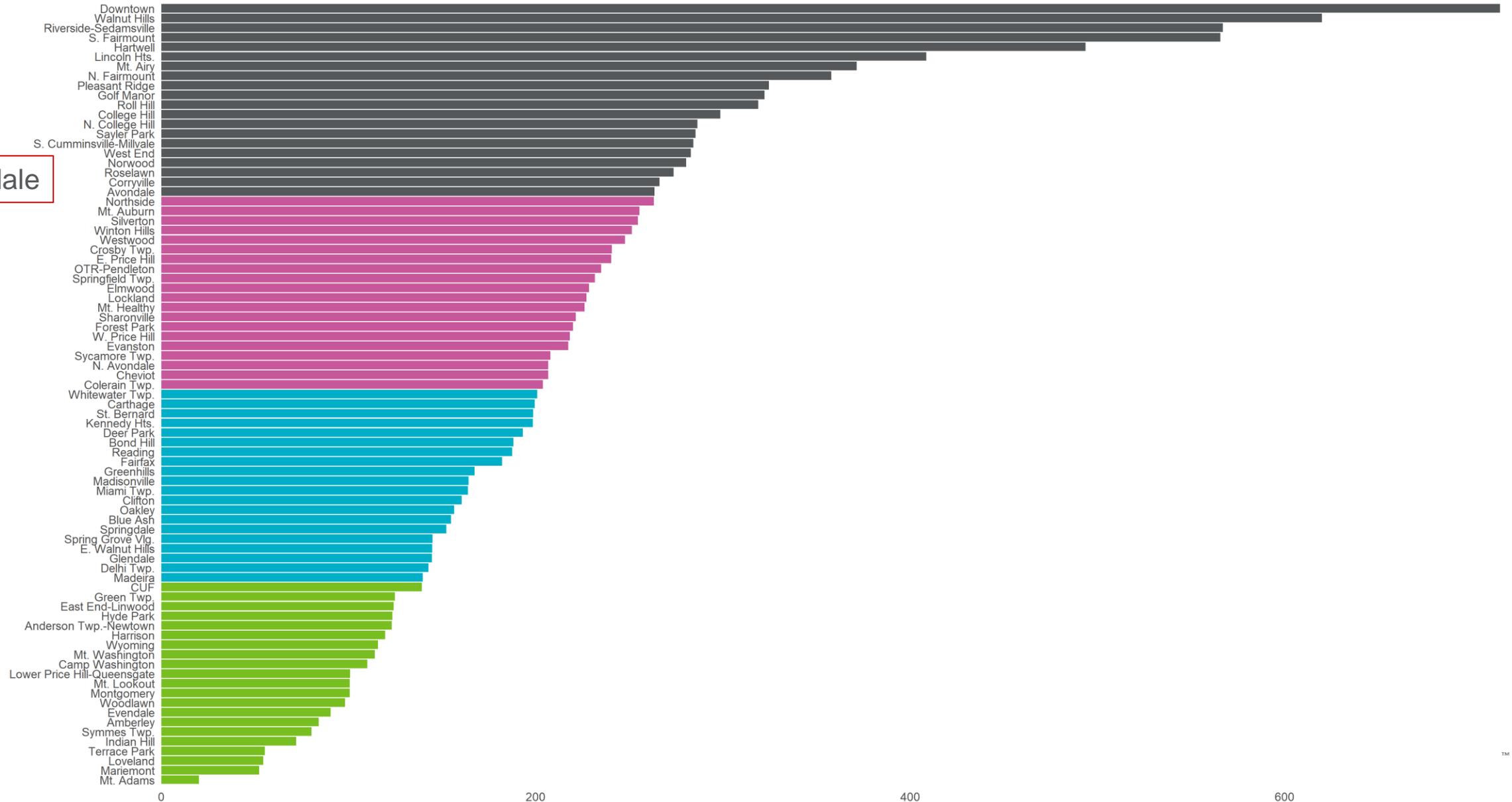
- 80+ neighborhoods
- 180,000 children

Procter & Gamble home
Cincinnati Reds baseball

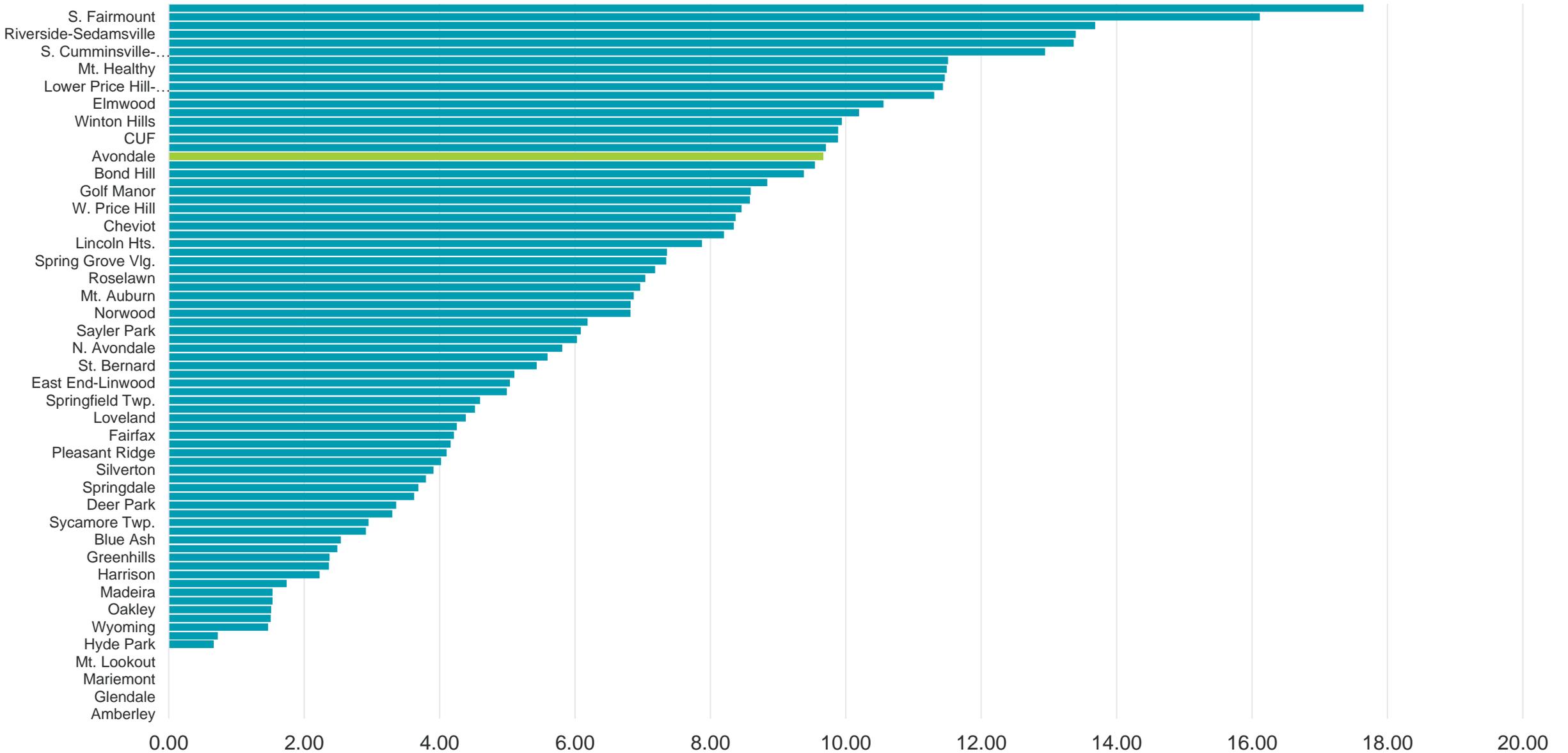
Child poverty top 10 cities
in the US

Days In the Hospital, Annual Rate per 1000 Population, Hamilton County, Age 0-18 Years, 2014 - 2019

Avondale



Child abuse and neglect intake calls per 100 children, by neighborhood, Hamilton County, 2020



Cincinnati Child Health-Law Partnership

Child HeLP



Improving Asthma Outcomes with Help from Legal Aid Society

CINCY URBAN APARTMENTS

1003 Lincoln Avenue

Cincinnati, Ohio 45206

(513) 221-1212

(513) 221-4121 FAX

NOTICE TO ALL RESIDENTS

May 24, 2010

At this time all residents are not permitted to install any a/c units for your apartment.

Anyone with an a/c unit will be evicted immediately.



Thank you
Management

Improving Asthma Outcomes with Help from Legal Aid Society

- 16 Child HeLP referrals
 - Pests, mold, A/C complaints
 - High rates of asthma, developmental delay, lead
- 19 buildings; 670 units
- One absentee landlord
 - Properties in foreclosure
 - Outstanding code violations



PEDIATRICS
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Identifying and Treating a Substandard Housing Cluster Using a Medical-Legal Partnership
Andrew F. Beck, Melissa D. Klein, Joshua K. Schaffzin, Virginia Tallent, Marcheta Gillam and Robert S. Kahn

The New York Times U.S.

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION
POLITICS EDUCATION

When Doctor Visits Lead to Legal Help

By ERIK ECKHOLM
Published: March 23, 2010

It was not the normal stuff of a pediatric exam. As a doctor checked the growth of Davon Cade's 2-month-old son, he also probed about conditions at home, and what he heard raised red flags.

[Enlarge This Image](#)  Ms. Cade's apartment had leaky windows and plumbing and was infested with roaches and mold, but the city, she said, had not responded to her complaints. On top of that, the landlord was evicting her for falling behind on the rent.

Kirk Irwin for The New York Times
Ciera Jones and her son, Jamari, 4, in a meeting with the Legal Aid Society of Greater Cincinnati at Cincinnati Children's Hospital this week. Ms. Jones said she was looking for a day-care facility for her son, who has asthma.

[Enlarge This Image](#)  Help came through an unexpected route. The doctor referred Ms. Cade to the legal aid office right inside the pediatric clinic at Cincinnati Children's Hospital.

Within days, a paralegal had secured an inspection that finally forced the landlord to make repairs, and also got the rent reduced temporarily while Ms. Cade searched for less expensive housing.

"It got done when the lawyers got involved," Ms. Cade said.

Doctors and social workers have long said that medical care alone is not enough to address the health woes of the poor, which are often related to diet, living conditions and stress.

CYRUS
JUNE 18

Child HeLP Impact (January 2009 – December 2024)

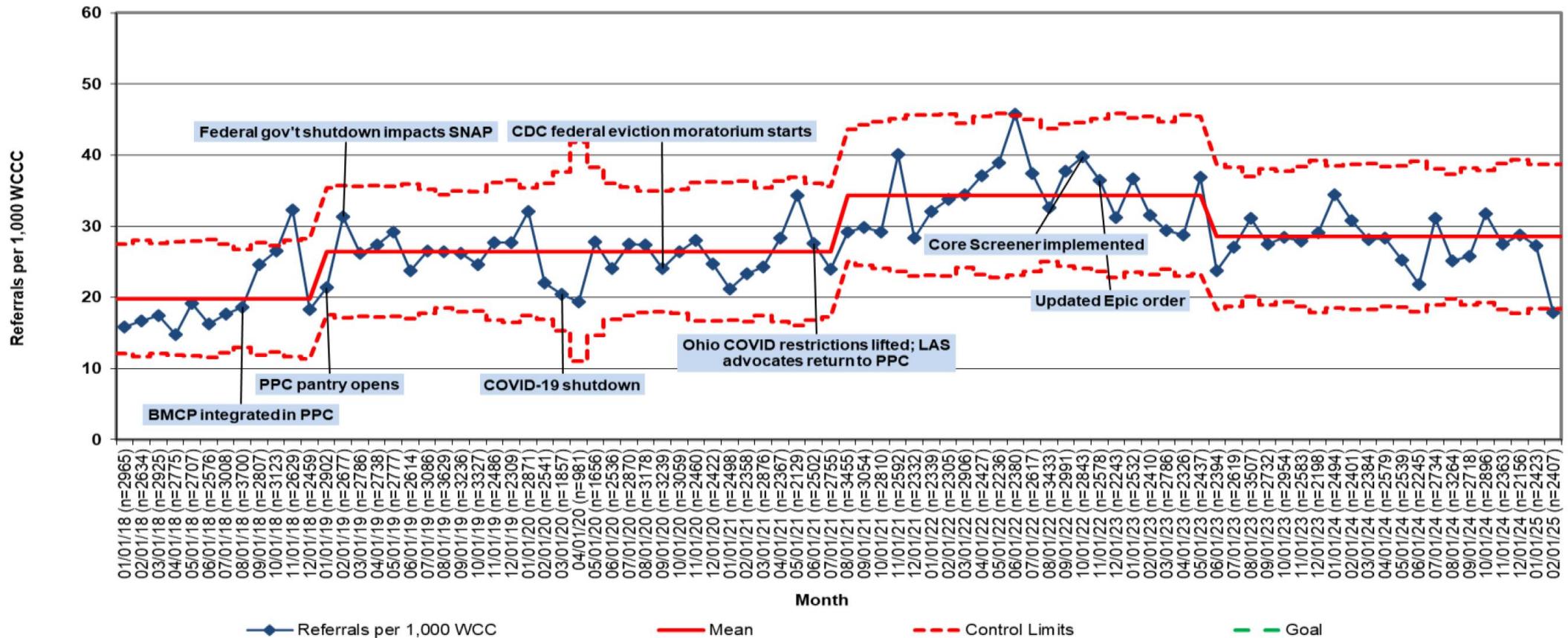


Shared goals, communication, problem solving



Cincinnati Children's
changing the outcome together

Child HeLP Referrals Per 1,000 Well Child Visits January 1, 2018 to date



Cincinnati Children's reduced hospital admissions 38% by offering legal help to remedy poor living situations

91.7 WVXU | By Ann Thompson
Published March 7, 2022 at 4:00 PM EST



▶ LISTEN • 0:45



DETERMINANTS OF HEALTH

By Andrew F. Beck, Adrienne W. Henize, TingTing Qiu, Bin Huang, Yin Zhang, Melissa D. Klein, Donita Parrish, Elaine E. Fink, and Robert S. Kahn

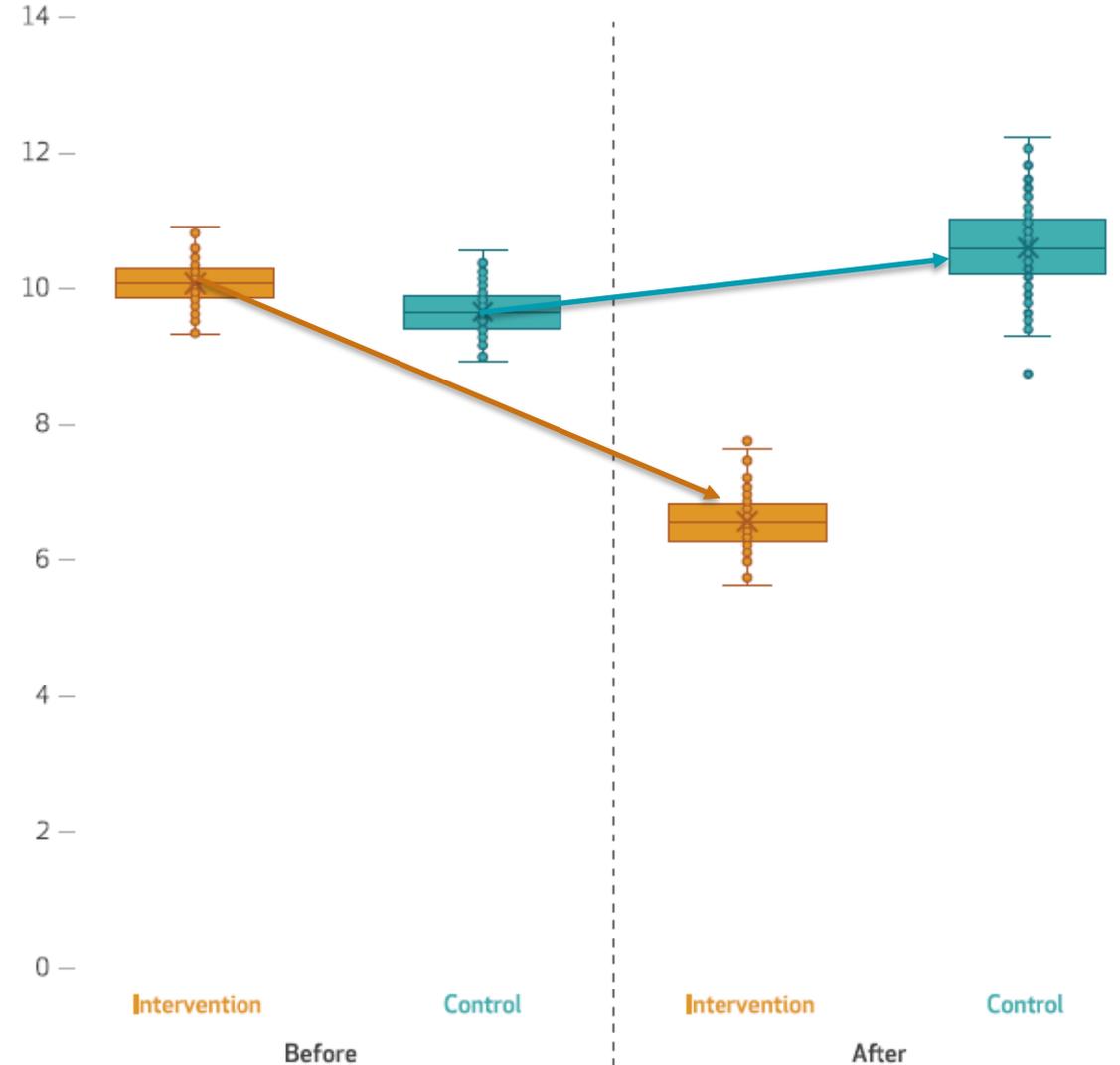
Reductions In Hospitalizations Among Children Referred To A Primary Care-Based Medical-Legal Partnership

DOI: 10.1377/hlthaff.2021.00905
HEALTH AFFAIRS 41,
NO. 3 (2022): 341-349
©2022 Project HOPE—
The People-to-People Health
Foundation, Inc.

EXHIBIT 3

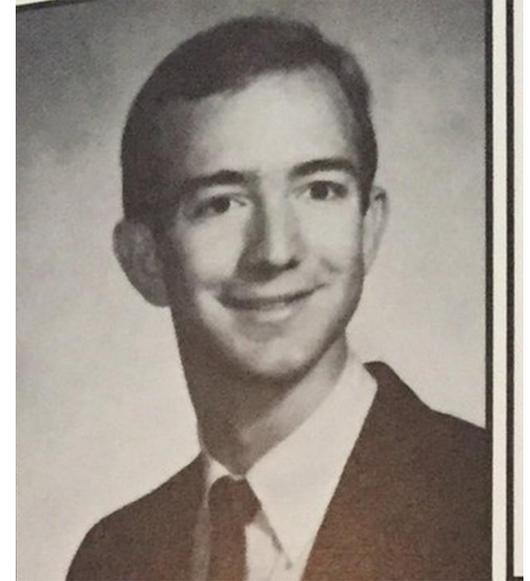
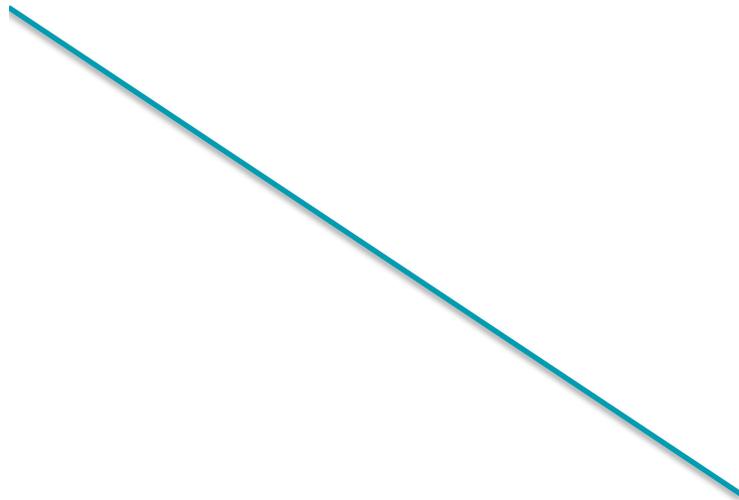
Distribution of estimates of 12-month hospitalization rates per 100 children from before to after intervention (or matched visit) for intervention and synthetic matched controls over all 100 bootstrap samples, evaluation of the Cincinnati Child Health-Law Partnership

Hospitalization rate
(per 100 child-years)



Delivery System for Child Healthcare

Pediatrics



Legal Aid
Housing, Education, Domestic violence



Home visiting

Government

Obstetrics

Public health

Jobs, financial literacy

Pediatrics

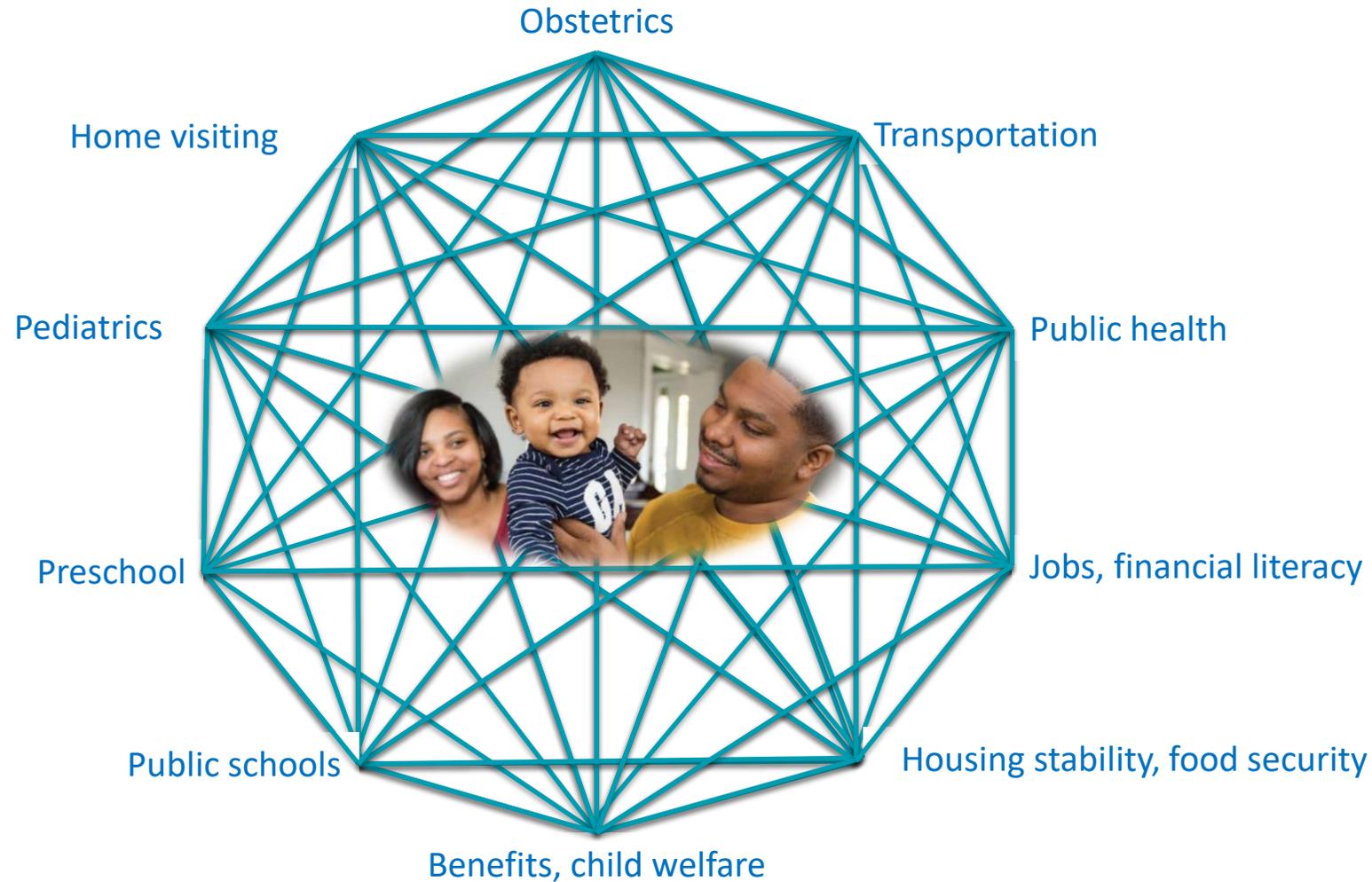
Preschool

Benefits, child welfare

Public schools

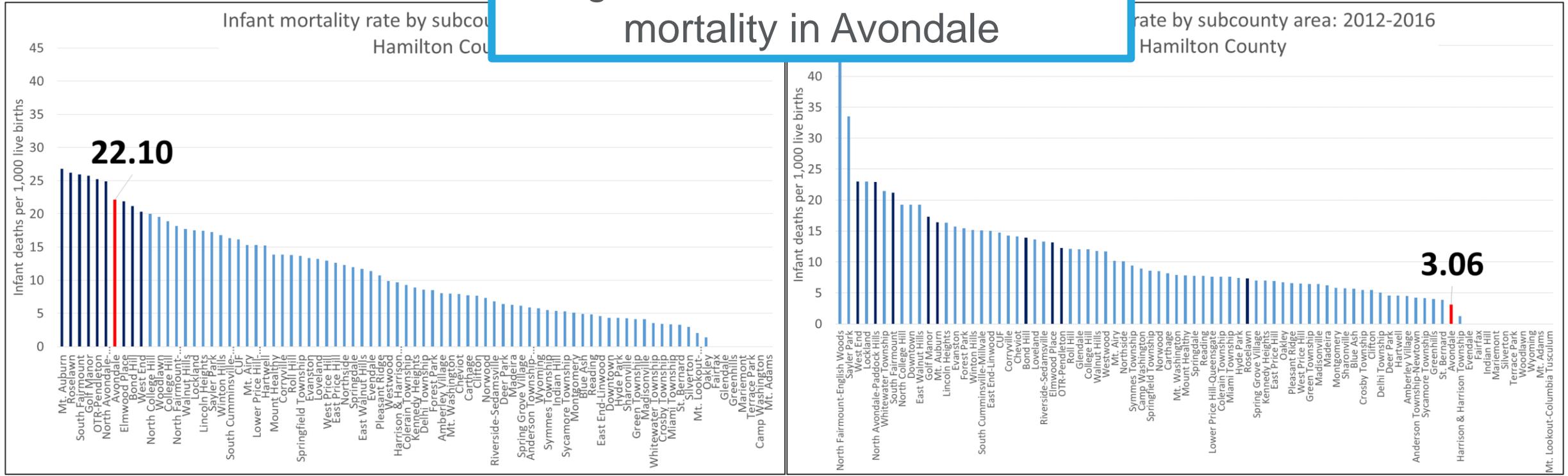
Housing stability, food security

Delivery System for Child Healthcare



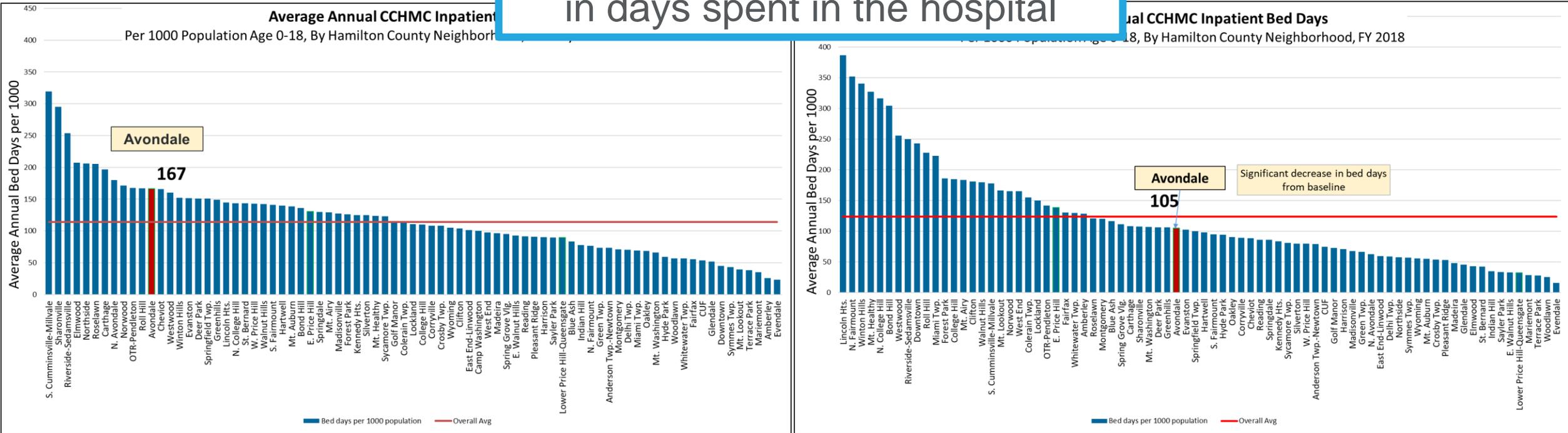
Results

Significant reduction in infant mortality in Avondale



Results

Significant reduction in disparity in days spent in the hospital



By Andrew F. Beck, Kristy L. Anderson, Kate Rich, Stuart C. Taylor, Srikant B. Iyer, Uma R. Kotagal, and Robert S. Kahn

Cooling The Hot Spots Where Child Hospitalization Rates Are High: A Neighborhood Approach To Population Health



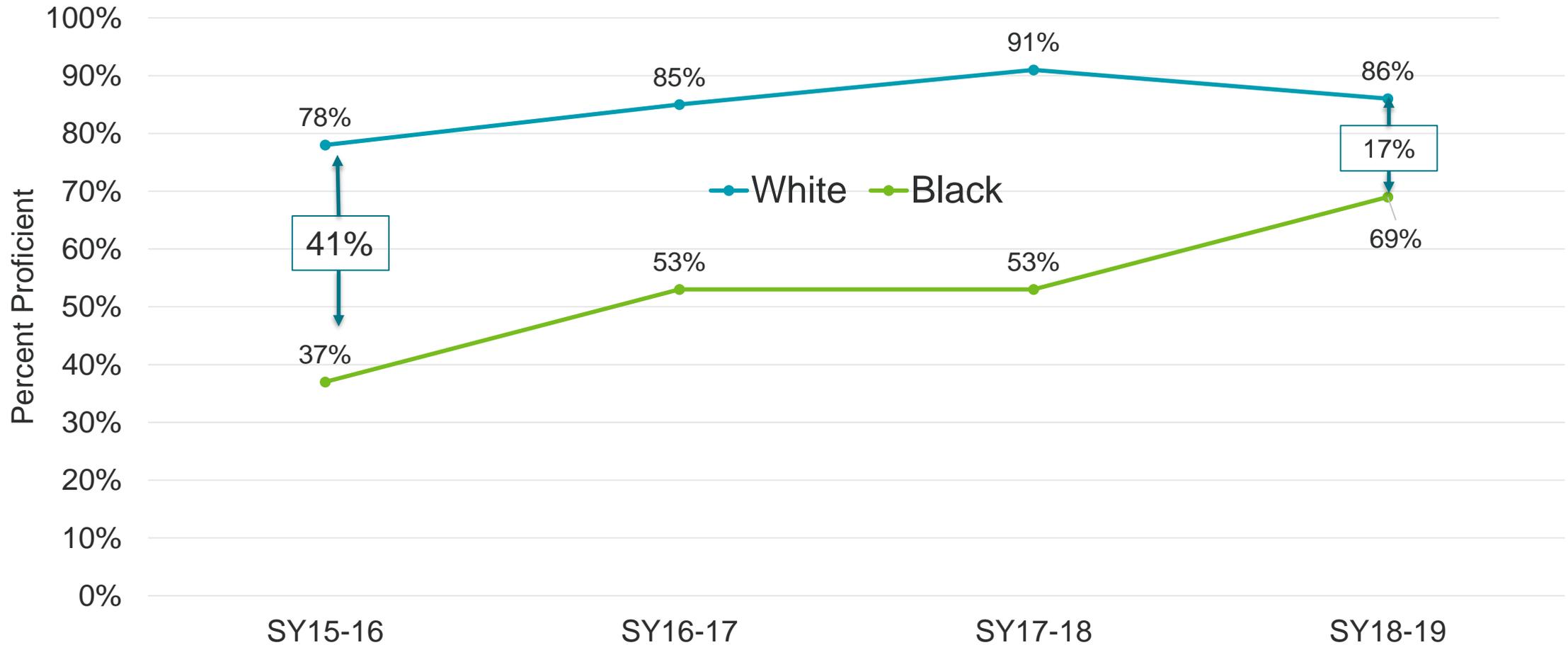
Cincinnati Public Schools

Grade 3 English Language Arts Proficiency Rates

Schools using QI, Equity Gap between White and Black Children



All improved, closed the gap by 24% points (41% to 17% difference)



What strategies have we been using?

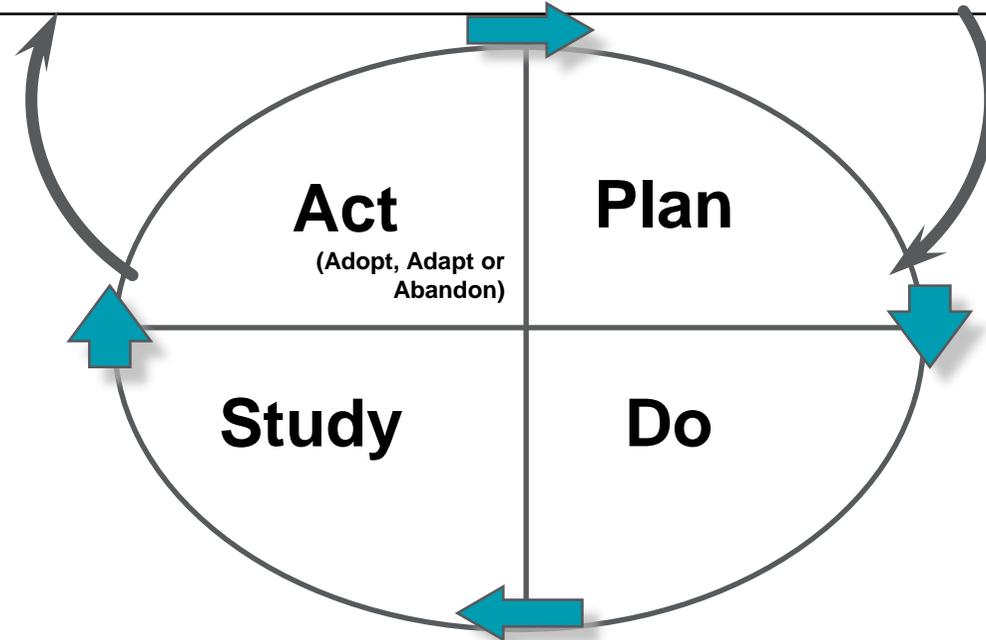
1. Community Quality Improvement
2. Family Centered Systems Design
3. Community Learning Network

Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?



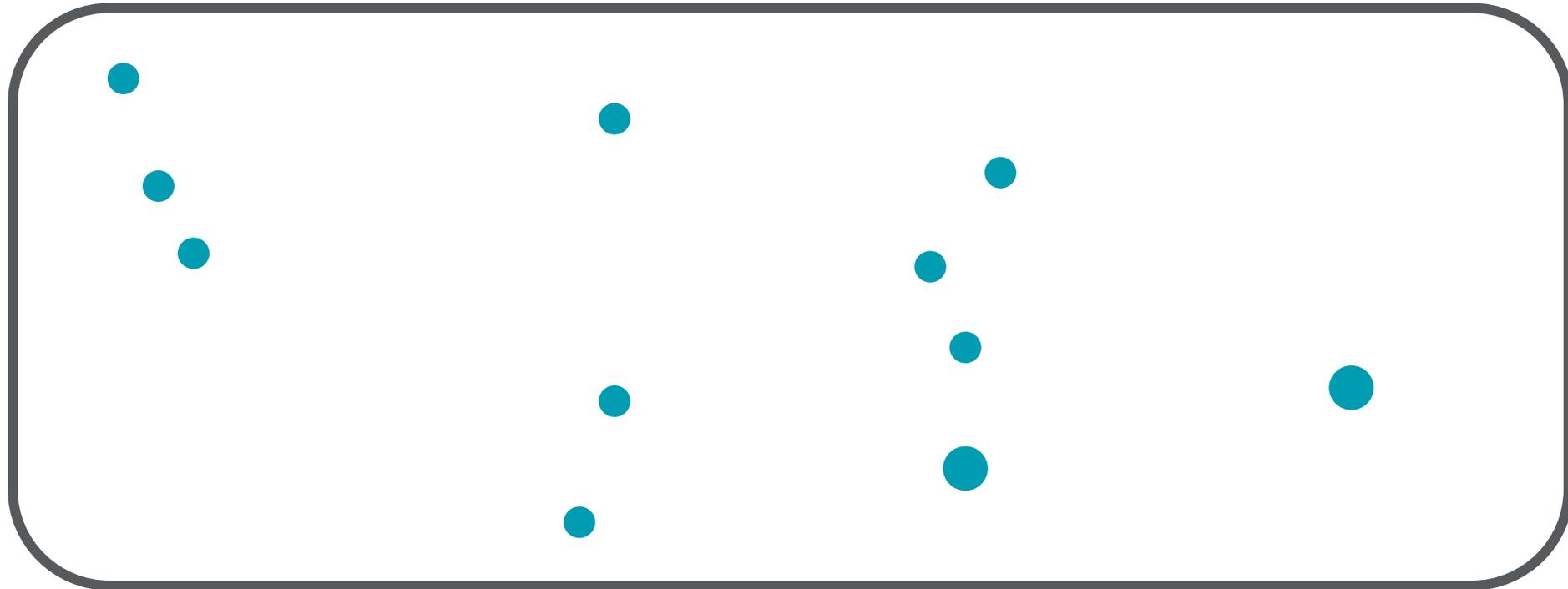
ImpactU: Community QI Training

- To develop community of improvement leaders
- Core methodology is the Model for Improvement



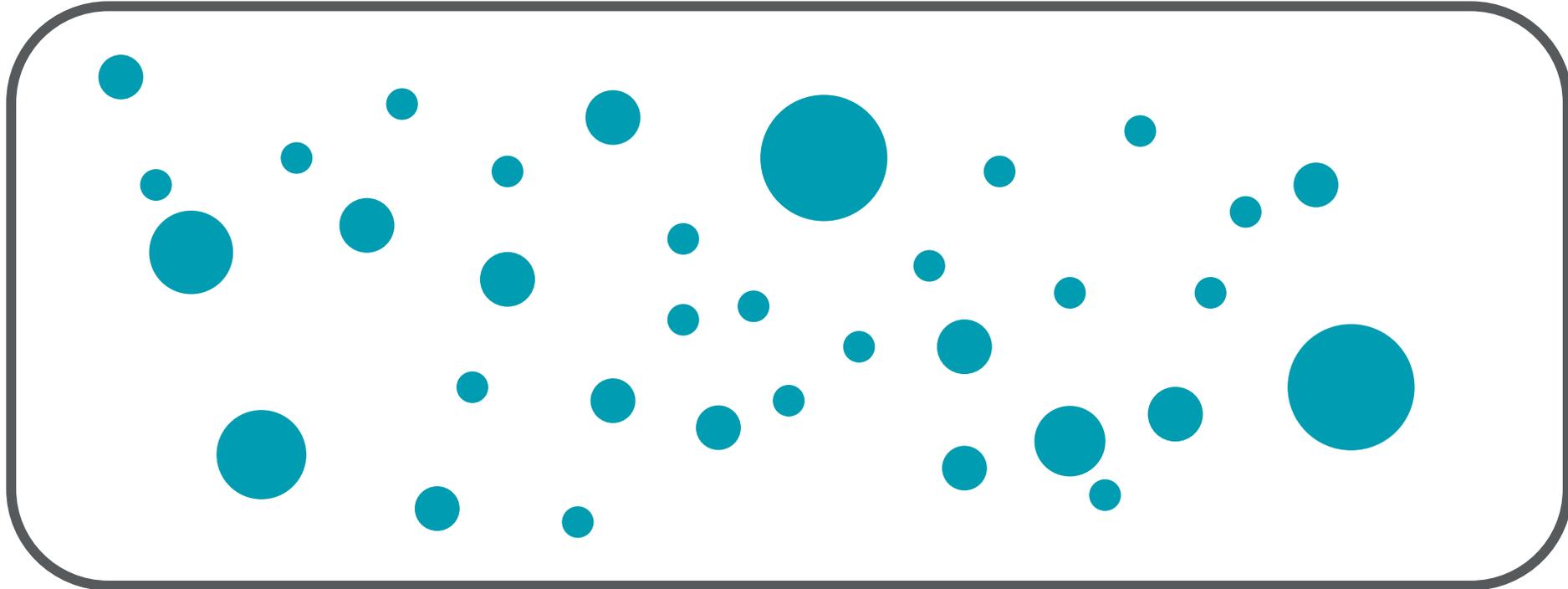
Sharing the Model: ImpactU

2016: 11 organizations, 15 individuals



Sharing the Model: ImpactU

2021: 34 organizations, 105 individuals



Sharing the Model: all courses

**Nearly 400 community leaders in
over 45 organizations trained in
Improvement Science**

Family Centered Systems Design



Family Centered Systems Design



Guiding Principle: **TRUST**

Trust is essential to establishing healthy relationships, whether between service providers, neighbors, or families. In order to engage meaningfully with one another and impact all in need, we must acknowledge the barriers that currently exist and actively work to build trust. By nurturing our relationships with each other, we can begin to collaborate on real solutions for thriving children.



HOW MIGHT WE build trust across service providers and between service providers and families?



HOW MIGHT WE build trust to tackle fear and violence in the community by leveraging everyday acts of compassion?



HOW MIGHT WE support and strengthen bonds that can be sources of healing and love?



ANITA

NEIGHBORHOOD: Avondale

AGE: 27

FAMILY: Mother of Tamara (4), Antoine (9)



I've been living in Avondale for about 21 years now. My mom, sister, and I moved into an apartment right down the street from my grandmother when I was eight years old. She helped raise me—my mom worked long hours as a health care aid. When she was home, she was tired and lost her patience a lot—sometimes she was too rough with us and gave us bruises or a black eye. When 241-KIDS came, my grandmother took us in.

I got pregnant the summer before my senior year in high school. I dropped out and got a job at Burger King so that I could take care of my son. My grandmother watched him while I worked. Looking back, I was real lucky to have her support. I worked my way up to manager and eventually got a job downtown at the IRS. I plan on going back to school but I'm waiting until my kids are grown.

Raising young kids on your own can be tough. I tried going to those mom groups but I don't relate well to the other women in my neighborhood. So many kids these days are getting into trouble—parents just aren't raising them right. Kids need structure. I make sure Tamara and Antoine keep busy. Tamara takes dance classes at the Boys and Girls Club and Antoine is learning Karate at a school up on Senator Place.

Life in this neighborhood can be hard. About a month ago, there was a shooting right in front of our apartment building. The body was lying out there in the street for hours while the police conducted their investigation. The kids saw it when they got home from school. I think Tamara is too young to understand, but I'm worried about Antoine, especially as a young black man.

He struggles sometimes—he acts out and can be violent at school. He goes to counseling, but they're threatening to expel him. Last week the school called and said they had some free bikes for the kids—he was so excited! When I called back they said he couldn't have one because he was suspended. He was crushed. It broke my heart. Thank goodness for Ms. Butler, Tamara's pre-school teacher. I told her about what happened and she helped get my kids "adopted" for Christmas so they got some really nice gifts.

I'm not worried about Tamara. She's a real bright kid and does well in pre-school. She likes to read and is very active. Last year she fell off a swing and broke her arm. She was screaming and crying and I was so scared—I brought her to the ER right away. When I got there, they had me meet with a social worker. I was mad—I'm a good mother! They can't take my kids from me. I refused to speak to anyone but the doctor.

My grandmother passed away last October. I miss her so much. I'm trying real hard to get along with my mom. I need her help picking up the kids from school and practice sometimes. I don't like it, but I think it's good for my kids to know their grandmother. Now that she doesn't work such long hours, I'm hoping she's got more patience. I told her that she's not allowed to discipline the kids.

I know things will get better in the future. I just got a raise at work and I'm saving to leave this place.



All Children Thrive Cincinnati

- Unassailable goal
- Relentless focus on results
- Proven methods
- Families at the center
- Strategic partnerships



<https://www.actcincy.org/>



All Children Thrive Cincinnati



Enablers	Co-design with families	Quality Improvement - Capability Building	Data and analytics
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All Children Thrive Learning Session

Integration, Celebration, Learning



All Children Thrive Initiatives:

Every Newborn to Kindergarten

Health Equity Network

Firearm-Related Injuries

Transportation

The bottom right corner of the slide features a decorative graphic consisting of several thick, wavy, light blue lines that create a sense of movement and depth against the dark blue background.

Enhanced 18-Month Well-Baby Visit

Early Development Instrument Vulnerable on 1 or more domains

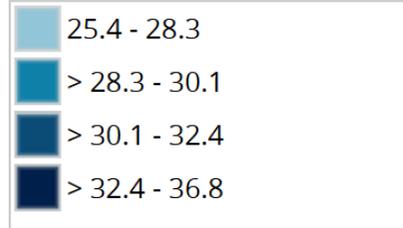
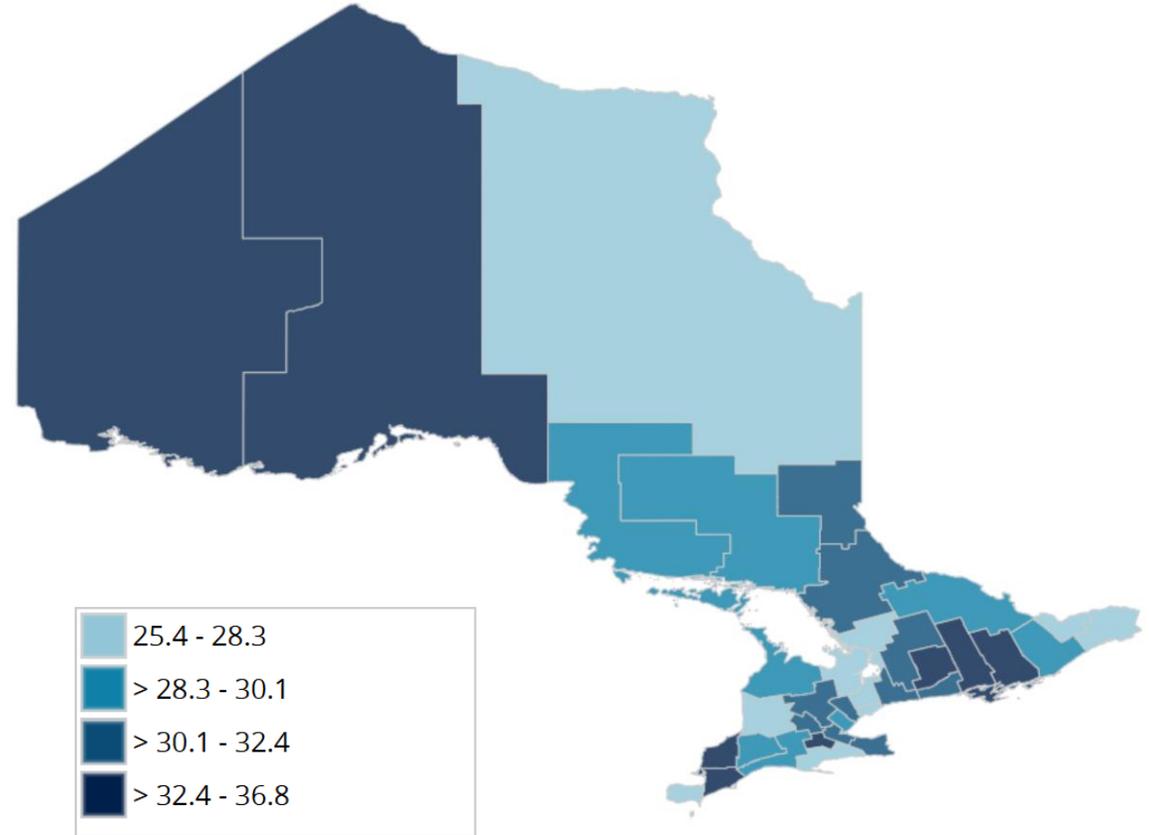
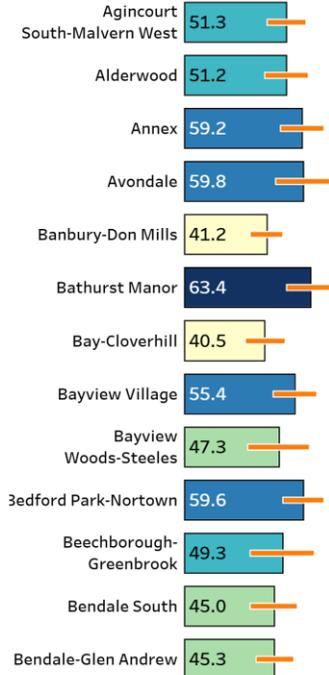
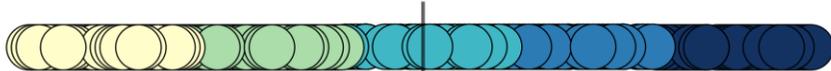
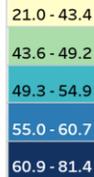
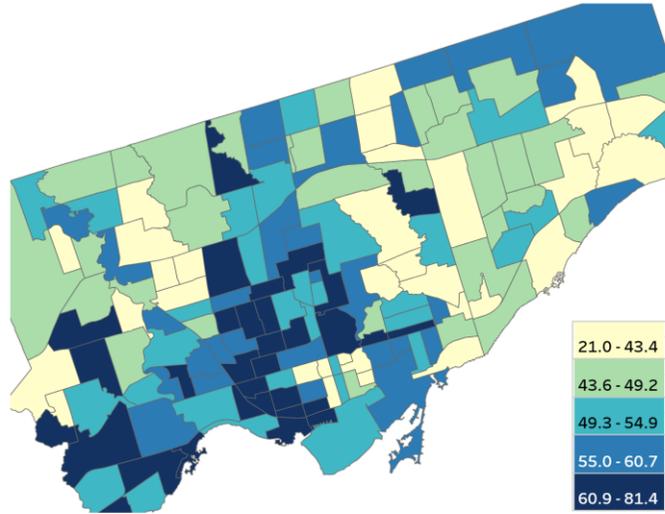
Sub-Toronto Geography: Toronto Neighbourhoods

[More Info](#)

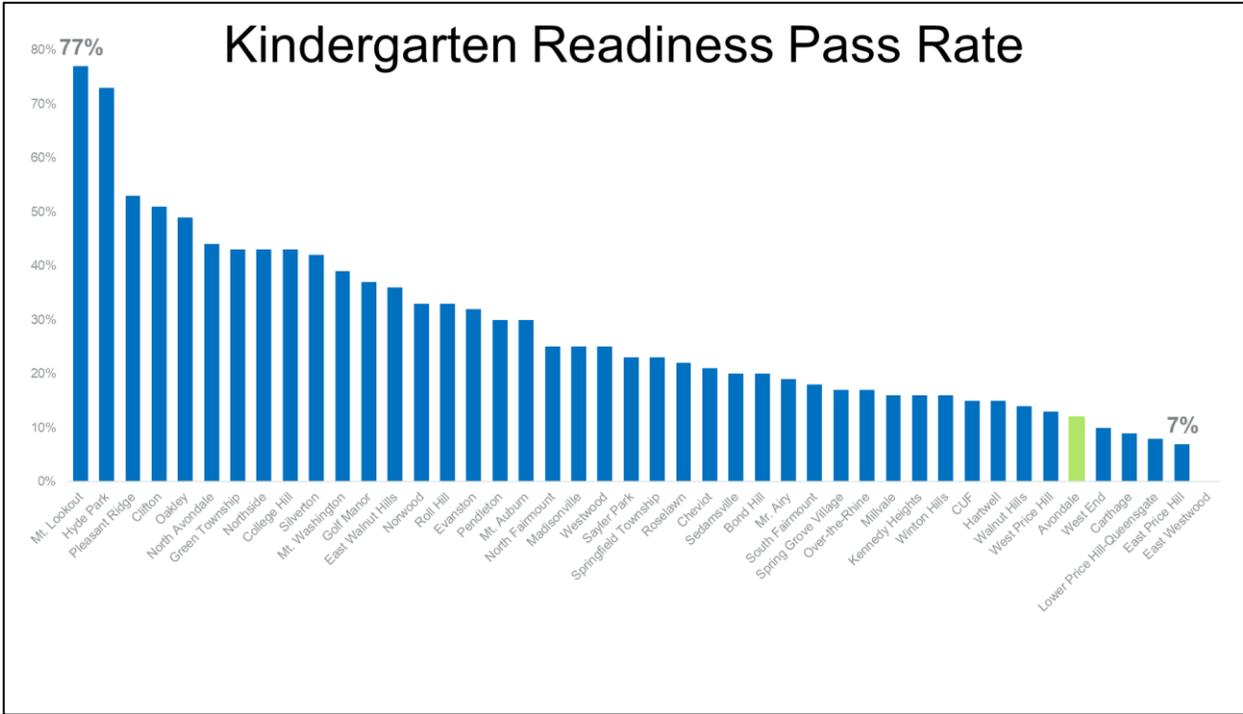
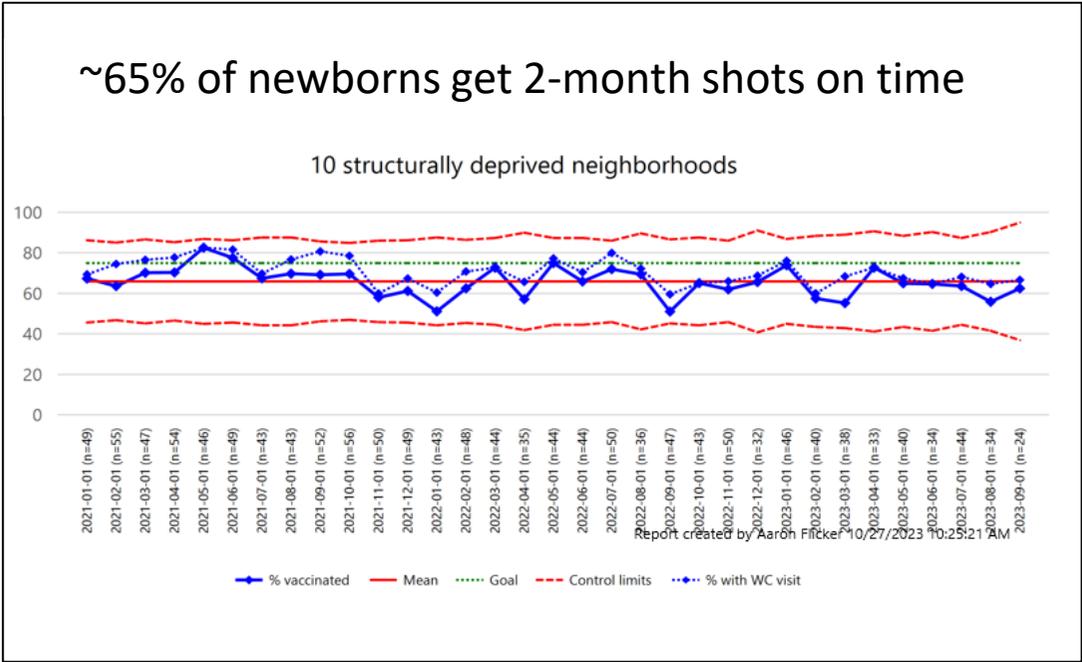
The City of Toronto is divided into 158 neighbourhoods to support social service planning, data collection and analysis. Click on each Neighbourhood or bar for more information.

Toronto
(2021)
51.0 cases per 100 people
(CG)
LL: 50.1 | UL: 51.8

Legend:
CG -Comparator Group



Infant Vitality: Getting it right at the start for every newborn in Cincinnati



Infant Vitality: Getting it right at the start for every newborn



Obstetric Care

- Good Sam
- UC Health
- Christ
- Bethesda North

Perinatal Institute Nurseries - NICUs

Births by Month 2024
Last Refreshed: 1/13/2025 9:44:29 PM

Download View | Level II | Level III | All Sites

FACILITY_NAME	January	February	March	April	May	June	July	August	September	October	November	December	Total
TRIUMF MEDICAL CENTER	206	192	248	208	257	228	248	270	244	274	222	207	2804
BETHESDA NORTH HOSPITAL	71	69	68	57	89	69	80	74	82	72	61	62	854
CINCINNATI CHILDRENS HOSPITAL MEDICAL CENTER	354	340	342	373	379	378	393	399	361	349	324	345	4337
CHRIST HOSPITAL	11	17	10	10	10	12	14	16	18	15	22	14	169
CHRIST HOSPITAL MEDICAL CENTER - LIBERTY TOWNSHIP	271	253	294	275	261	275	296	290	258	286	254	271	3284
CLINTON MEMORIAL HOSPITAL	65	69	56	56	60	60	65	72	73	75	68	63	782
FORT HAMILTON HOSPITAL	30	35	21	26	21	35	23	33	32	25	25	25	331
GOOD SAMARITAN HOSPITAL - CINCINNATI	62	75	71	59	79	57	61	65	66	68	48	50	761
MCCULLOUGH HYDE HOSPITAL	361	319	360	372	398	360	377	385	396	376	342	389	4435
MERCY HEALTH - ANDERSON HOSPITAL	27	24	31	33	33	27	26	39	29	38	39	33	379
MERCY HEALTH - FAIRFIELD HOSPITAL	129	124	126	134	131	126	148	125	129	125	115	120	1532
MERCY HEALTH - WEST HOSPITALS	28	22	23	20									93
UNIVERSITY OF CINCINNATI MEDICAL CENTER	45	45	67	54	49	55	66	69	73	64	53	40	680
WEST CHESTER HOSPITAL	237	230	228	238	223	235	245	251	241	257	214	263	2862
KETTERING MEDICAL CENTER	70	67	58	70	76	87	80	91	73	77	65	84	898
KETTERING HEALTH WASHINGTON TOWNSHIP	212	206	209	202	223	204	211	204	212	230	188	214	2515
SOIN MEDICAL CENTER	160	157	154	153	150	157	209	205	194	172	171	194	2076
ADENA REGIONAL MEDICAL CENTER	72	64	84	68	62	64	68	67	58	61	46	62	776
AKRON GENERAL MEDICAL CENTER	100	79	99	107	98	90	93	105	106	111	98	95	1181
AULTMAN HOSPITAL	131	163	157	119	159	150	155	175	152	154	126	141	1782
AULTMAN ORRVILLE HOSPITAL	225	207	205	228	229	217	250	228	219	222	194	220	2644
AVITA ONTARIO HOSPITAL	44	43	59	55	54	47	45	60	55	37	42	64	605
BAINBRIDGE CARE CENTER	39	27	38	35	50	39	35	36	35	39	41	36	450
Total	10283	10036	10510	10388	10879	10670	11316	11361	10710	10966	9910	10180	127209

Primary Care

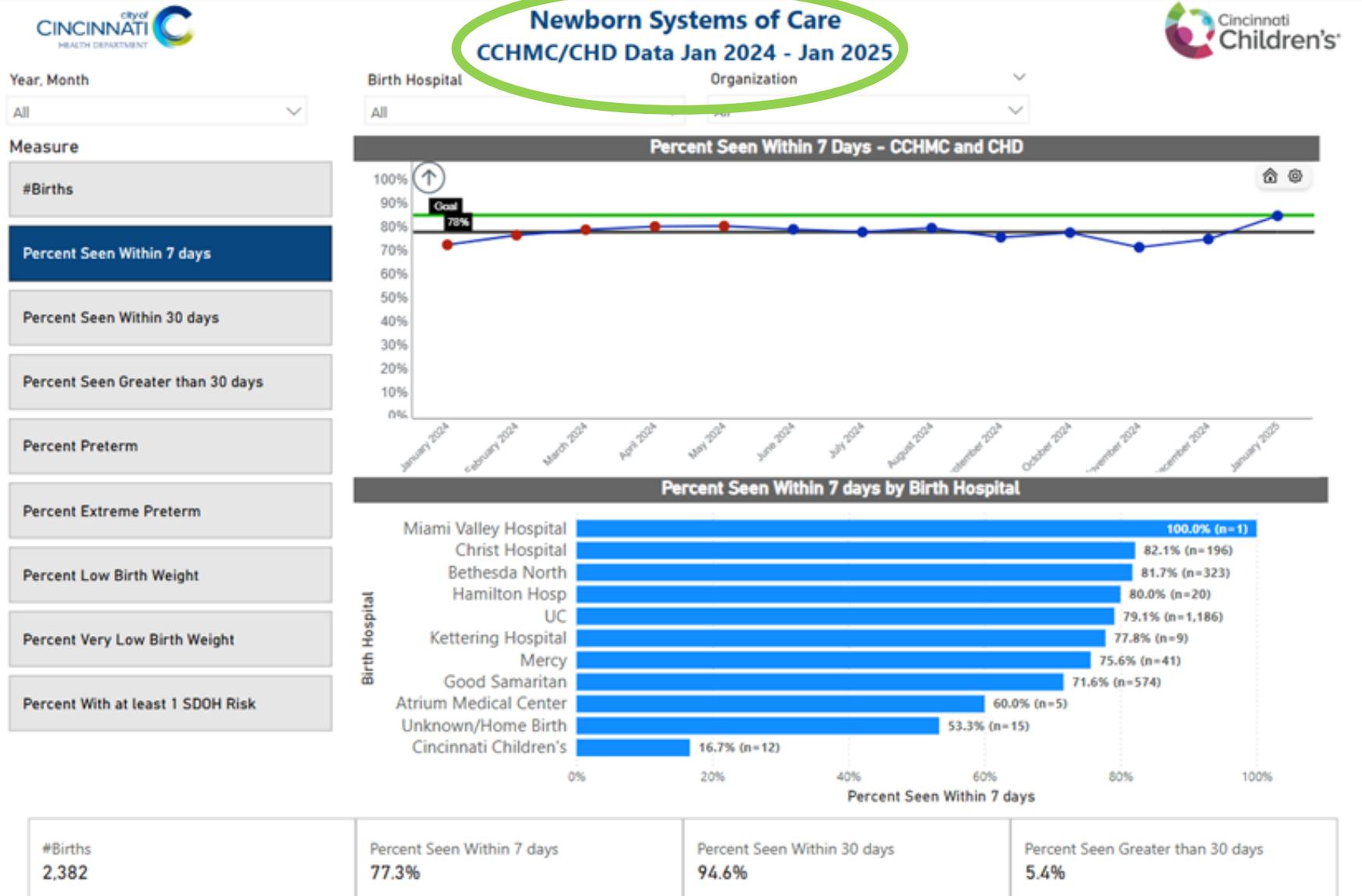
- CCHMC
- Cincinnati Health Dept.
- UC Hoxworth

Infant Vitality: Getting it right at the start for every newborn



Dr. Grant Mussman, Andrew Lovell,
Stephanie Courtney

Cyndi White, Allison Reyner, Joe
Michael, Jenn Ross, Alicia Bond-Lewis



Prenatal to 5: Early Development and Social Emotional Health Dashboard: 11,775 Children in Gen Peds Registry

OUTCOME KPI's- Predictors to Kindergarten Readiness

Preterm Births	Social Emotional	Social Emotional	Developmental	Kindergarten Readiness
<i>Prenatal</i>	<i>Age 6 months & 15 months</i>	<i>Age 24 months to 71 months</i>	<i>Age 6 months to 68 months</i>	<i>Kindergarten</i>

Lead Improvement Measures and Data to Drive Action

Respectful, Trusted Early
High Quality Care

Systems and Neighborhood Approach to
Every Pregnant Mother and Newborn

Skilled, Equipped,
Healthy Parents

% ECS Parent Responsivity to Child Cues

Nurturing
Environments

% Enrolled in Preschool in 60 Days

Family Needs Met
Economic Stability

% 0-6 months Food Insecurity- Avondale

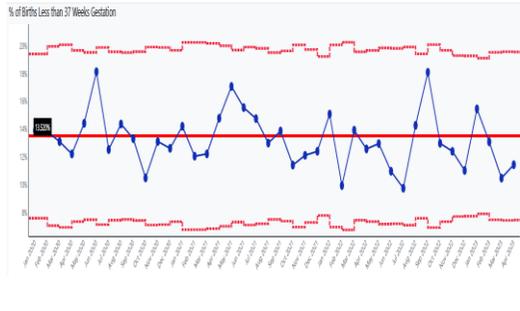
Nurturing
Environments

% Age 3-5 with Developmental concern
Assessed for Education supports

Prenatal to 5: Early Development and Social Emotional Health Dashboard: 11,775 Children in Gen Peds Registry

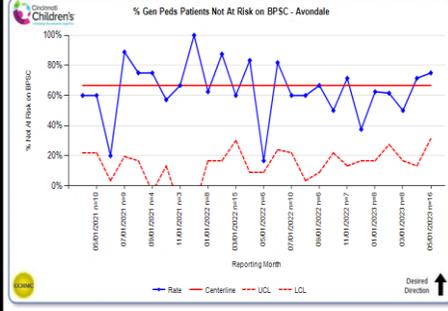
OUTCOME KPI's- Predictors to Kindergarten Readiness

Preterm Births



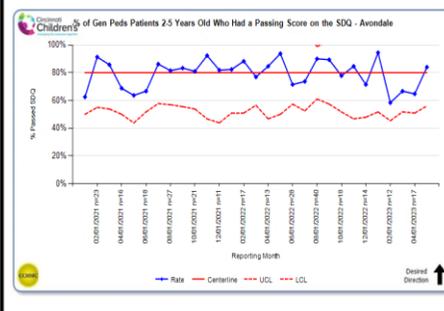
Prenatal

Social Emotional



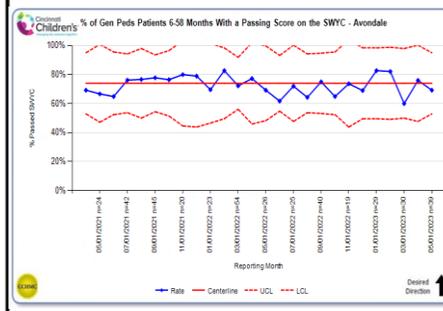
Age 6 months & 15 months

Social Emotional



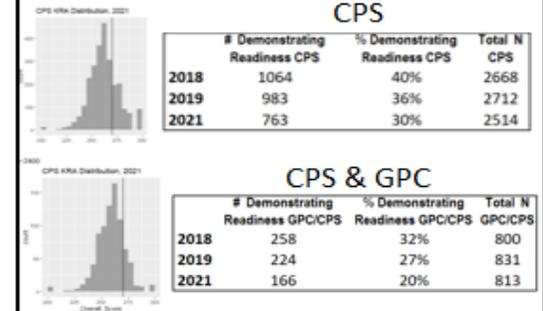
Age 24 months to 71 months

Developmental



Age 6 months to 68 months

Kindergarten Readiness



Kindergarten

Lead Improvement Measures and Data to Drive Action

Systems and Neighborhood Approach to Every Pregnant Mother and Newborn

Skilled, Equipped, Healthy Parents

Family Needs Met Economic Stability

% ECS Parent Responsivity to Child Cues

% 0-6 months Food Insecurity- Avondale

Nurturing Environments

Nurturing Environments

% Enrolled in Preschool in 60 Days

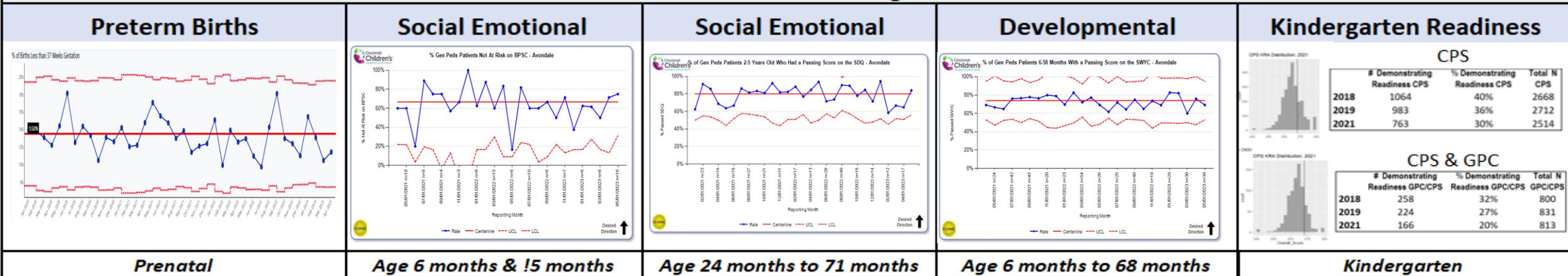
% Age 3-5 with Developmental concern Assessed for Education supports



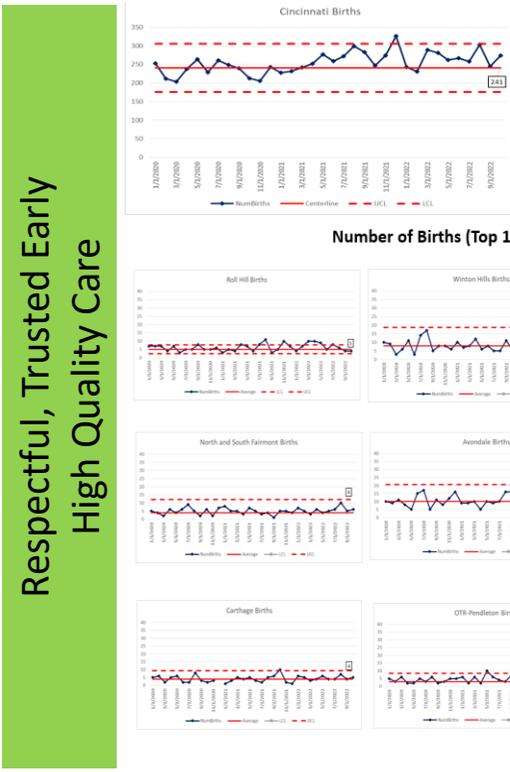
Respectful, Trusted Early High Quality Care

Prenatal to 5: Early Development and Social Emotional Health Dashboard: 11,775 Children in Gen Peds Registry

OUTCOME KPI's- Predictors to Kindergarten Readiness

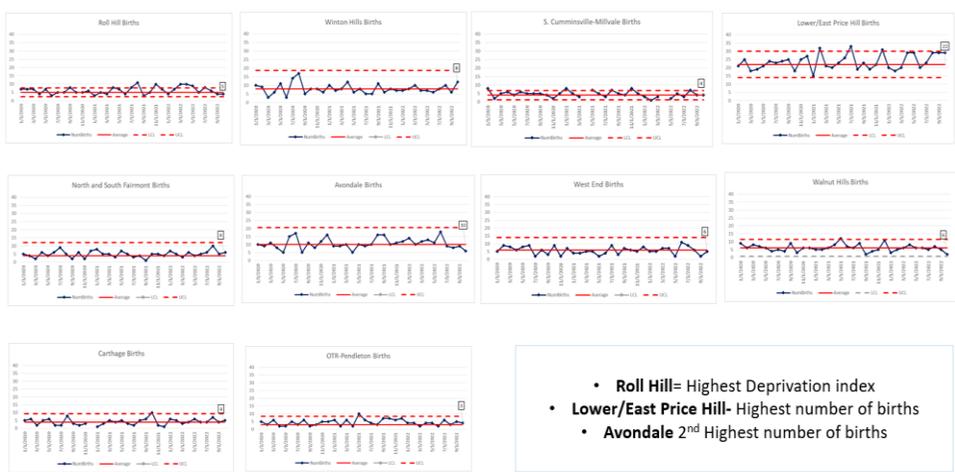


Lead Improvement Measures and Data to Drive Action



Systems and Neighborhood Approach to Every Pregnant Mother and Newborn

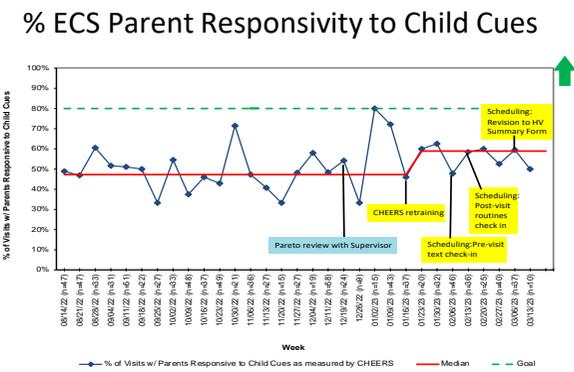
Number of Births (Top 10 Neighborhoods with Highest Deprivation Index)



- Roll Hill= Highest Deprivation index
- Lower/East Price Hill- Highest number of births
- Avondale 2nd Highest number of births

Skilled, Equipped, Healthy Parents

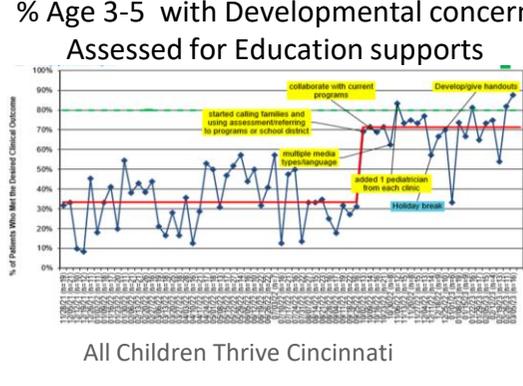
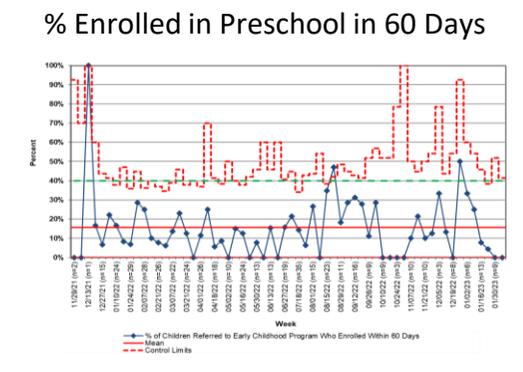
Family Needs Met Economic Stability



Nurturing Environments



Nurturing Environments



All Children Thrive Cincinnati

Respectful, Trusted Early High Quality Care

Lifting Infant to Age 5 Developmental Trajectories

White, Ammerman, Anyigbo,
Copeland, Reyner, Schutter, King,
Shah, and more

Sample 2023-4 publications

JAMA Pediatrics | [Original Investigation](#)

Household Health-Related Social Needs in Newborns and Infant Behavioral Functioning at 6 Months

Chidiogo Anyigbo, MD, MPH; Chunyan Liu, MS; Shelley Ehrlich, MD, ScD, MPH; Allison Reyner, MS; Robert T. Ammerman, PhD; Robert S. Kahn, MD, MPH

We now have potential to track ‘every newborn’ through to school entry – by linking EHR data to school district data

JAMA Pediatrics | [Original Investigation](#)

Behavior Problems in Low-Income Young Children Screened in Pediatric Primary Care

Robert T. Ammerman, PhD; Constance A. Mara, PhD; Chidiogo Anyigbo, MD, MPH; Rachel B. Herbst, PhD; Allison Reyner, MS; Tiffany M. Rybak, PhD; Jessica M. McClure, PsyD; Mary Carol Burkhardt, MD, MHA; Lori J. Stark, PhD; Robert S. Kahn, MD, MPH

Actively optimizing connections with critical community sectors, including WIC, home visiting, Head Start, Special Education, Public Schools, and more

JAMA Pediatrics | [Original Investigation](#)

Early Correlates of School Readiness Before and During the COVID-19 Pandemic Linking Health and School Data

Kristen A. Copeland, MD; Lauren Porter, PhD; Michelle C. Gorecki, MD, MPH; Allison Reyner, MS; Cynthia White, MSc, RRT-NPS, CPHQ; Robert S. Kahn, MD, MPH

All Children Thrive Initiatives:

Every Newborn to Kindergarten

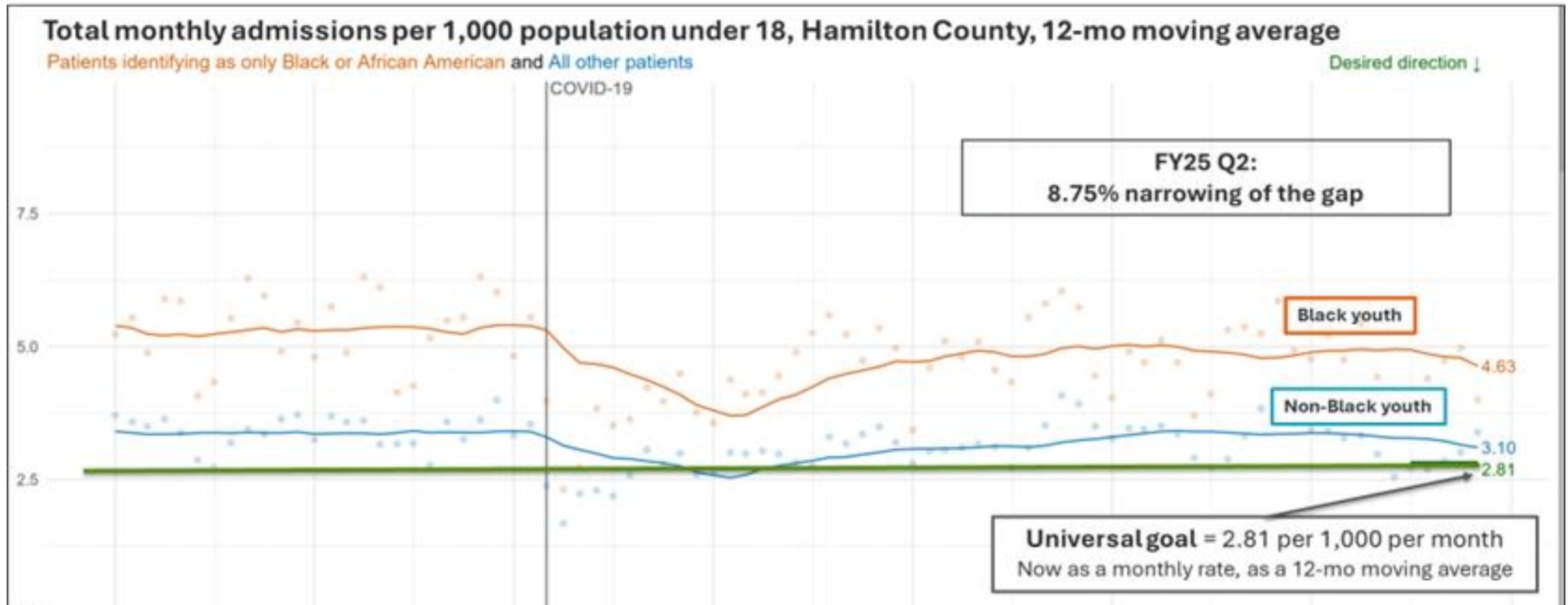
Health Equity Network

Firearm-Related Injuries

Transportation

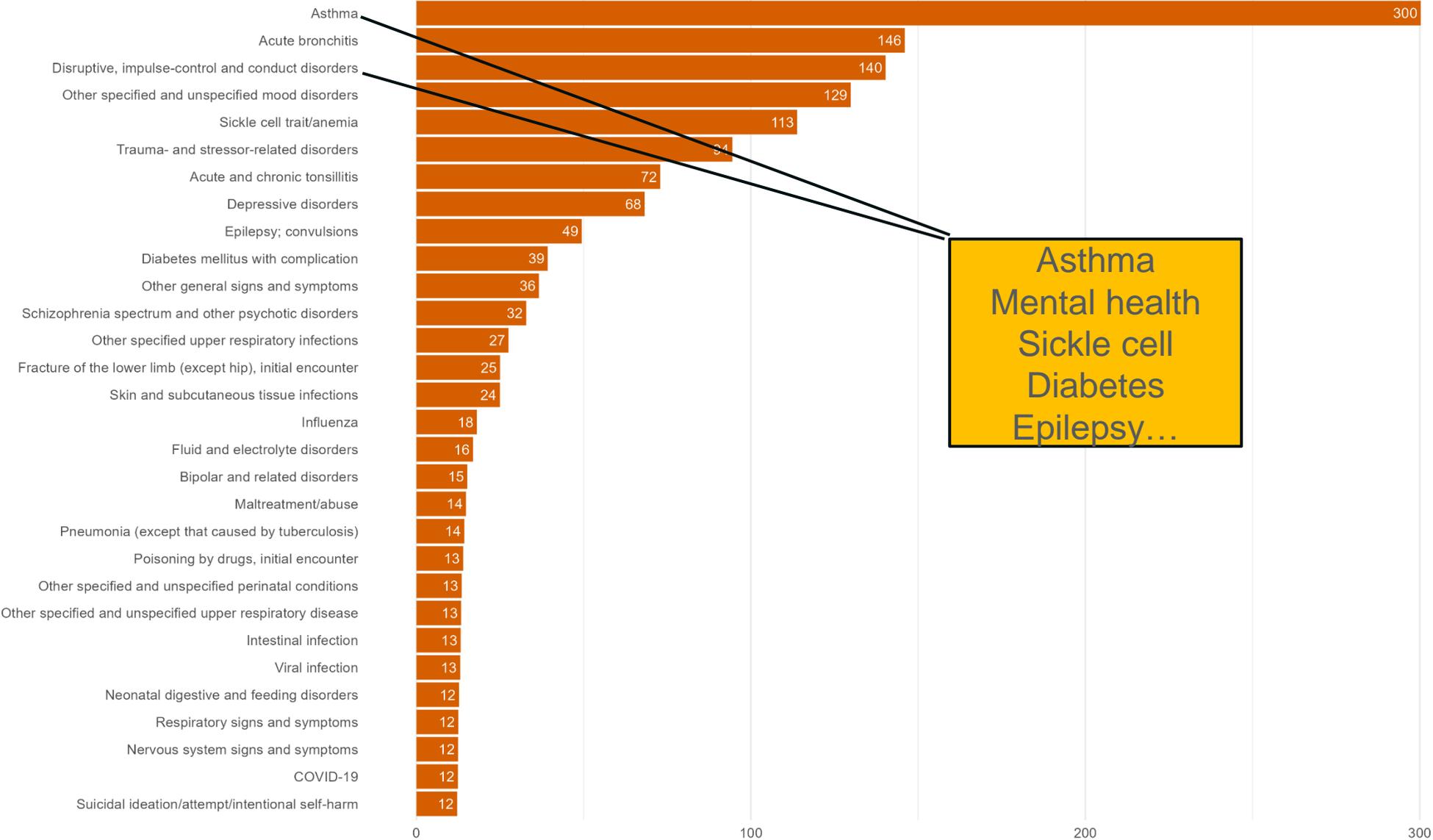
The bottom right corner of the slide features a decorative graphic consisting of several thick, wavy, horizontal lines in a lighter shade of blue, creating a sense of movement and depth.

Preventable Admissions



What conditions drive excess admissions?

Number of fewer admissions per year if Black youth in Southwestern Ohio had the same rate of admission per population as Non-Black youth



Asthma
Mental health
Sickle cell
Diabetes
Epilepsy...

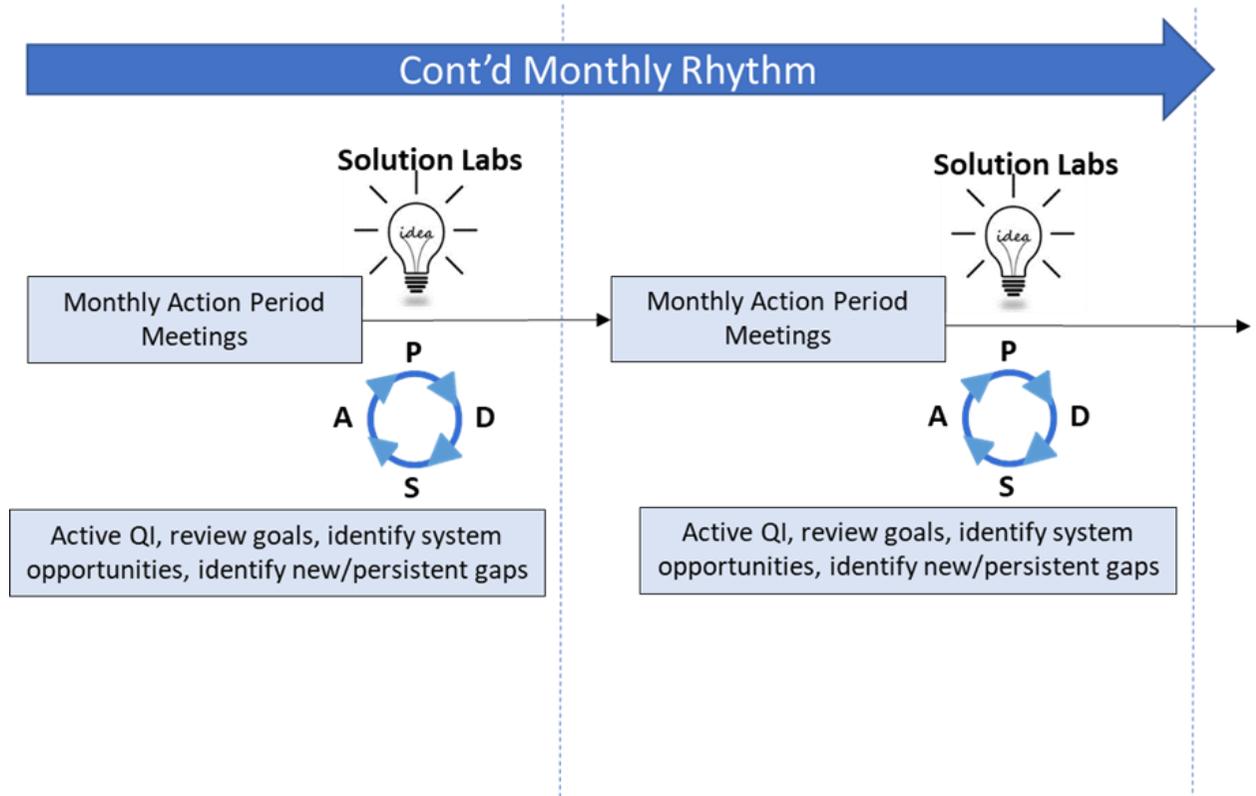
Top 30 conditions with excess admissions by primary diagnosis for 2017-2021

We bring condition teams together to learn to close gaps *because the root causes of the disparities are the same*

Health Equity Network (HEN) Teams

- Adolescent Medicine (mental health)
- Endocrine (Type 1 Diabetes)
- Asthma
- Neurology (Epilepsy)
- Hematology (Sickle Cell Disease)
- Surgery (Perioperative)
- Patient Harm and Race/Ethnicity (PHARE)
- Pharmacy
- Psychiatry
- Neonatology

All teach, all learn model



An Institutional Approach to Equity and Improvement in Child Health Outcomes

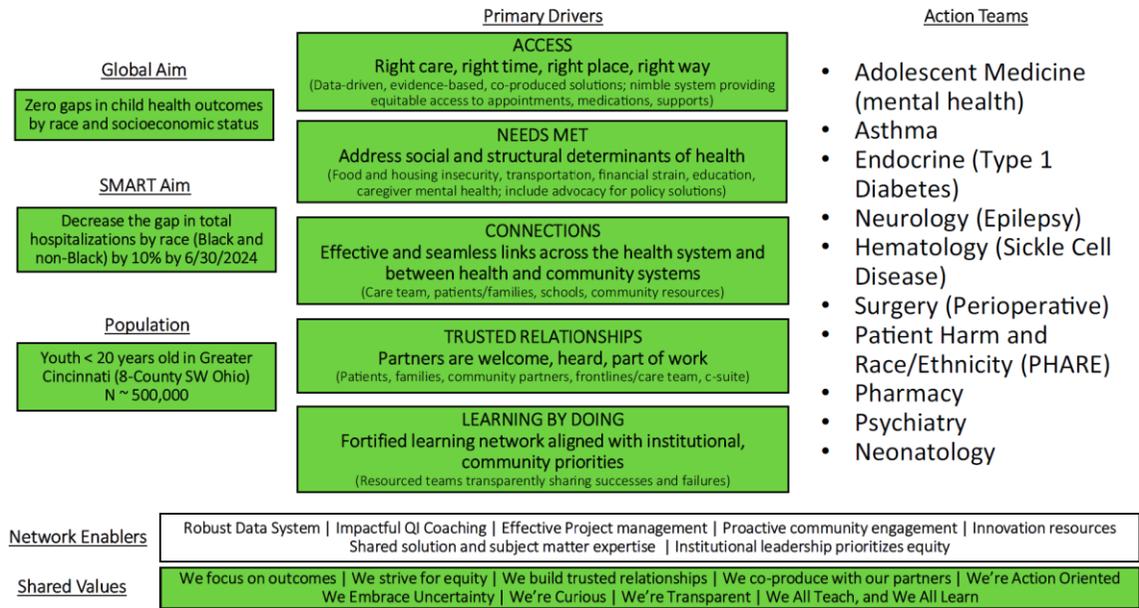


FIGURE 1
Health Equity Network system key driver diagram and list of action teams.

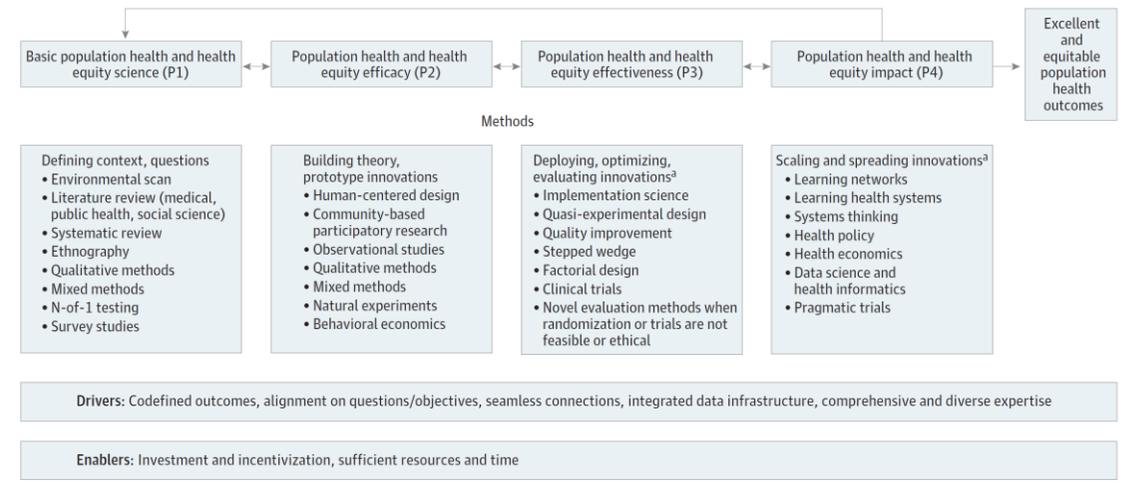


Pediatrics 2024

VIEWPOINT

A Road Map for Population Health and Health Equity Research

Figure. The 4P's Road Map for Translational Population Health and Health Equity Research



Adapted from the "3T's" Road Map⁵ for translational research.

^aInnovations could include interventions, therapies, policies, clinical-community partnerships, and more directed toward the pursuit of better, more equitable population health outcomes.



JAMA Peds 2024



All Children Thrive Initiatives:

Every Newborn to Kindergarten

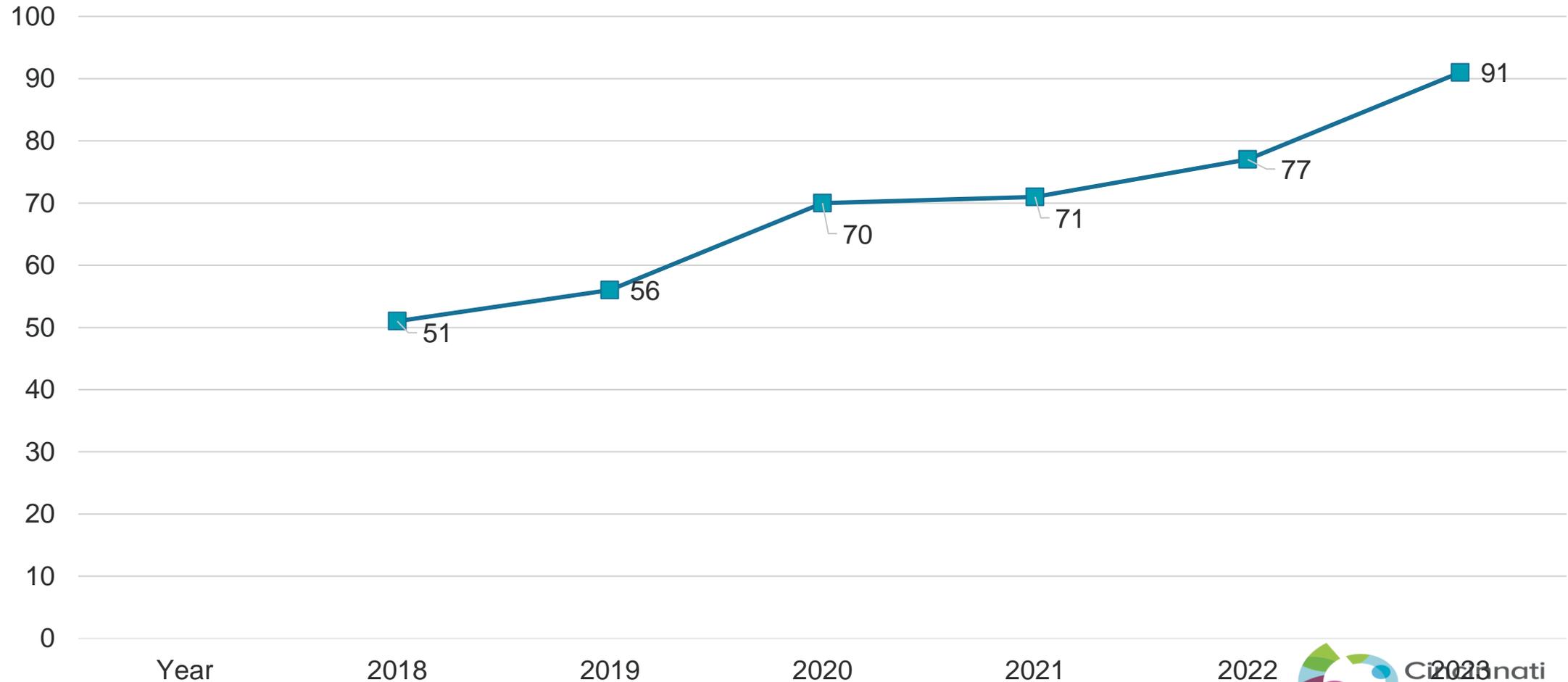
Health Equity Network

Firearm-Related Injuries

Transportation

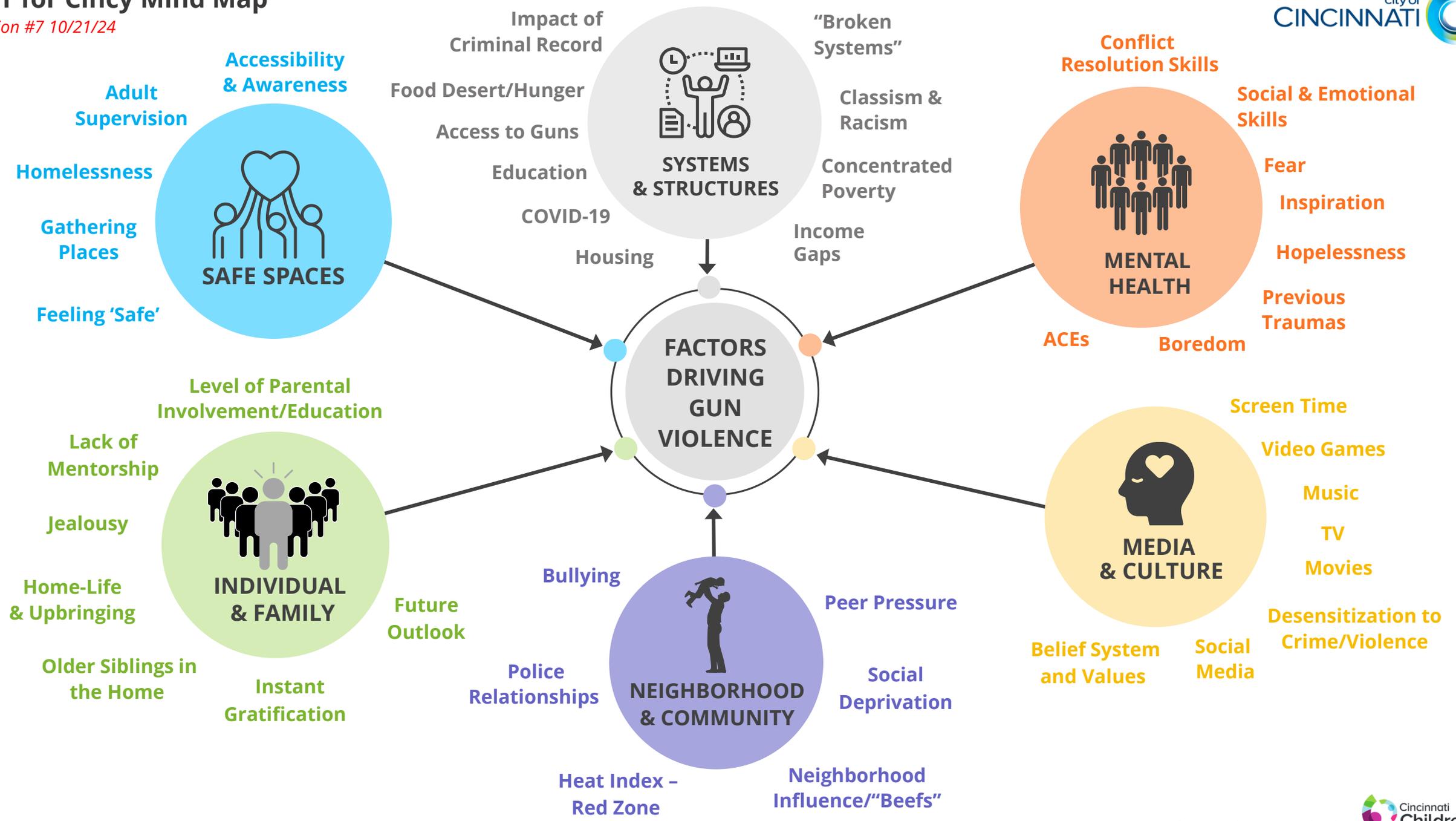
Youth morbidity & mortality: Gun shot wounds

Patients 0-17 Years Old with Gunshot Wounds (UC/CCHMC)



ACT for Cincy Mind Map

Version #7 10/21/24





Same 'KDD'



Ass't City

CCHMC's approach to firearm-related injury

NEJM

Catalyst

| Innovations in Care Delivery

COMMENTARY

Moving Beyond Thoughts and Prayers: Creating a Firearm-Related Injury Task Force

Meera Kotagal, MD, MPH, Robert S. Kahn, MD, MPH, Victor F. Garcia, MD,
Richard A. Falcone, MD, MPH, MMM

All Children Thrive Initiatives:

Every Newborn to Kindergarten

Health Equity Network

Firearm-Related Injuries

Transportation

Buses to CCHMC Base	Total Patients	Medicaid Patients
Direct	4,843	4,267
Two Buses	14,505	12,645
Total	19,348	16,912

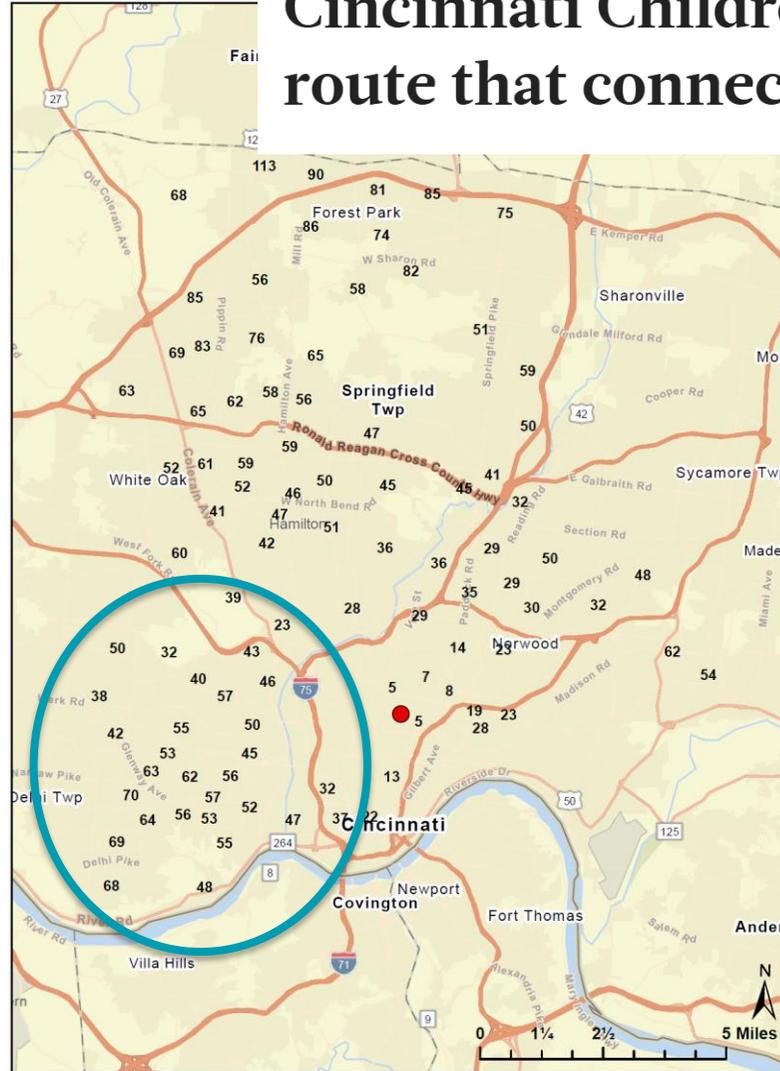
Travel Time to CCHMC Base	Total Patients	Medicaid Patients
15 minutes or less	1,553	1,385
15 - 29 minutes	2,097	1,792
30 - 44 minutes	4,723	4,251
45 - 59 minutes	6,936	6,096
60+ minutes	4,039	3,388
Total	19,348	16,912

Buses to Hopple Clinic	Total Patients	Medicaid Patients
Direct	4,834	4,330
Two Buses	14,514	12,582
Total	19,348	16,912

Travel Time to Hopple Clinic	Total Patients	Medicaid Patients
15 minutes or less	1,984	1,837
15 - 29 minutes	1,785	1,558
30 - 44 minutes	5,192	4,604
45 - 59 minutes	4,754	4,113
60+ minutes	5,633	4,800
Total	19,348	16,912

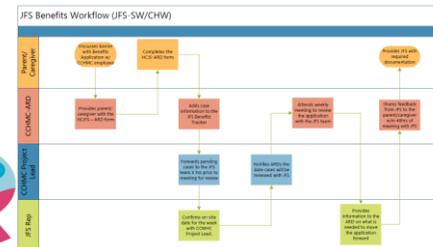
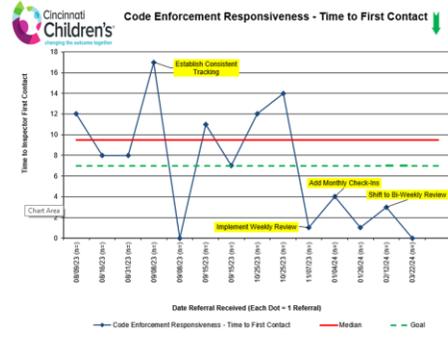
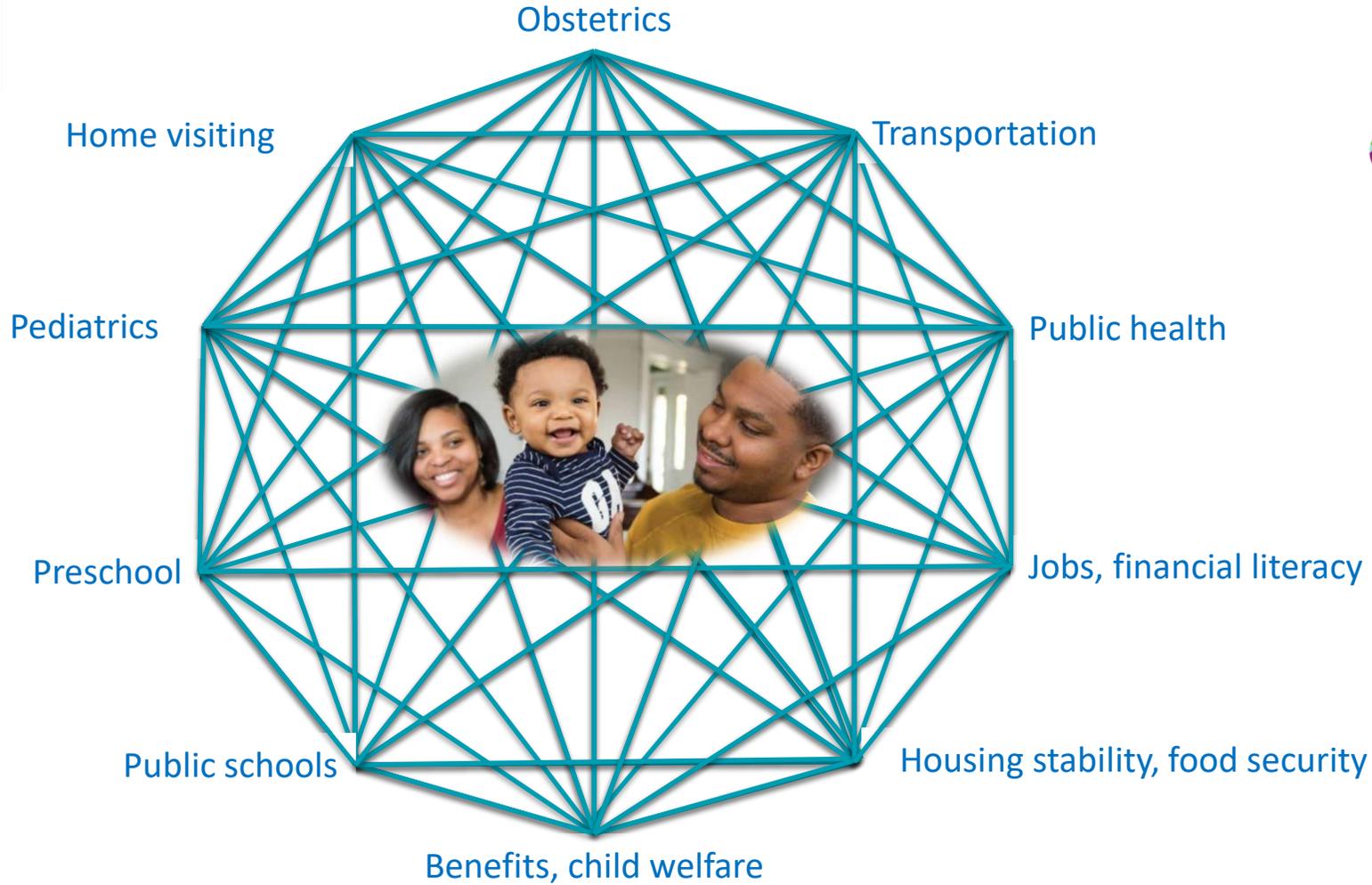
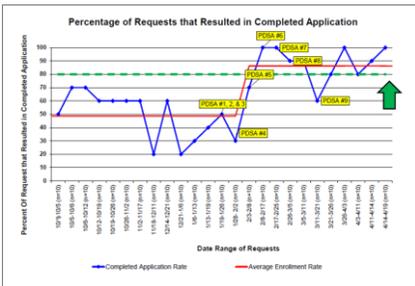
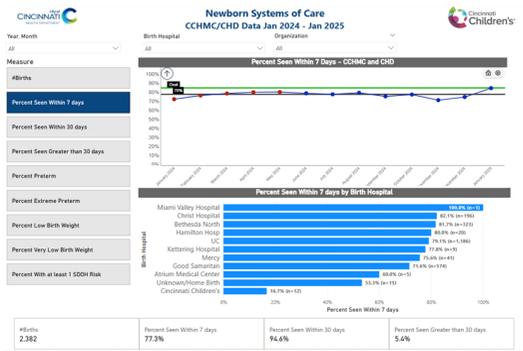
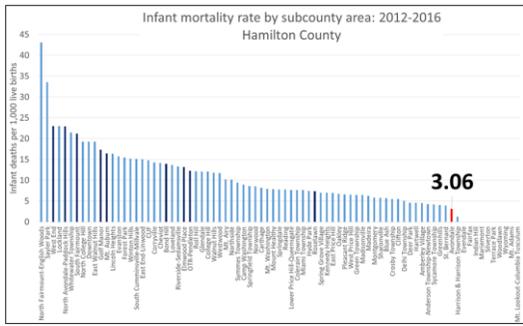
Transportation
CCHMC I

Cincinnati Children's, Metro team up to create bus route that connects the far West Side to Avondale



Delivery System for Child Healthcare

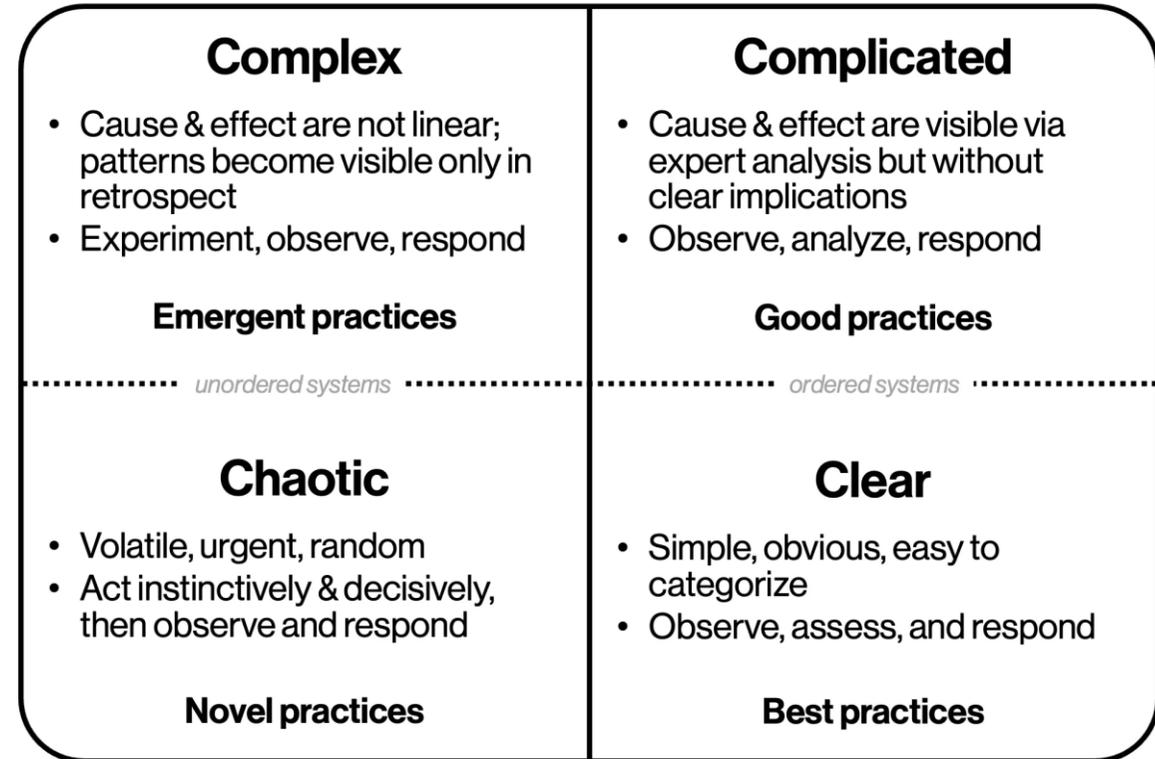
North Star: All 70,000 children in Cincinnati have the food that they need to grow, develop, learn, and thrive.



2 Frameworks for Research on Equity Problems:



Russell Ackoff
Idealized Design



Cynefin Framework

Wrestling with....

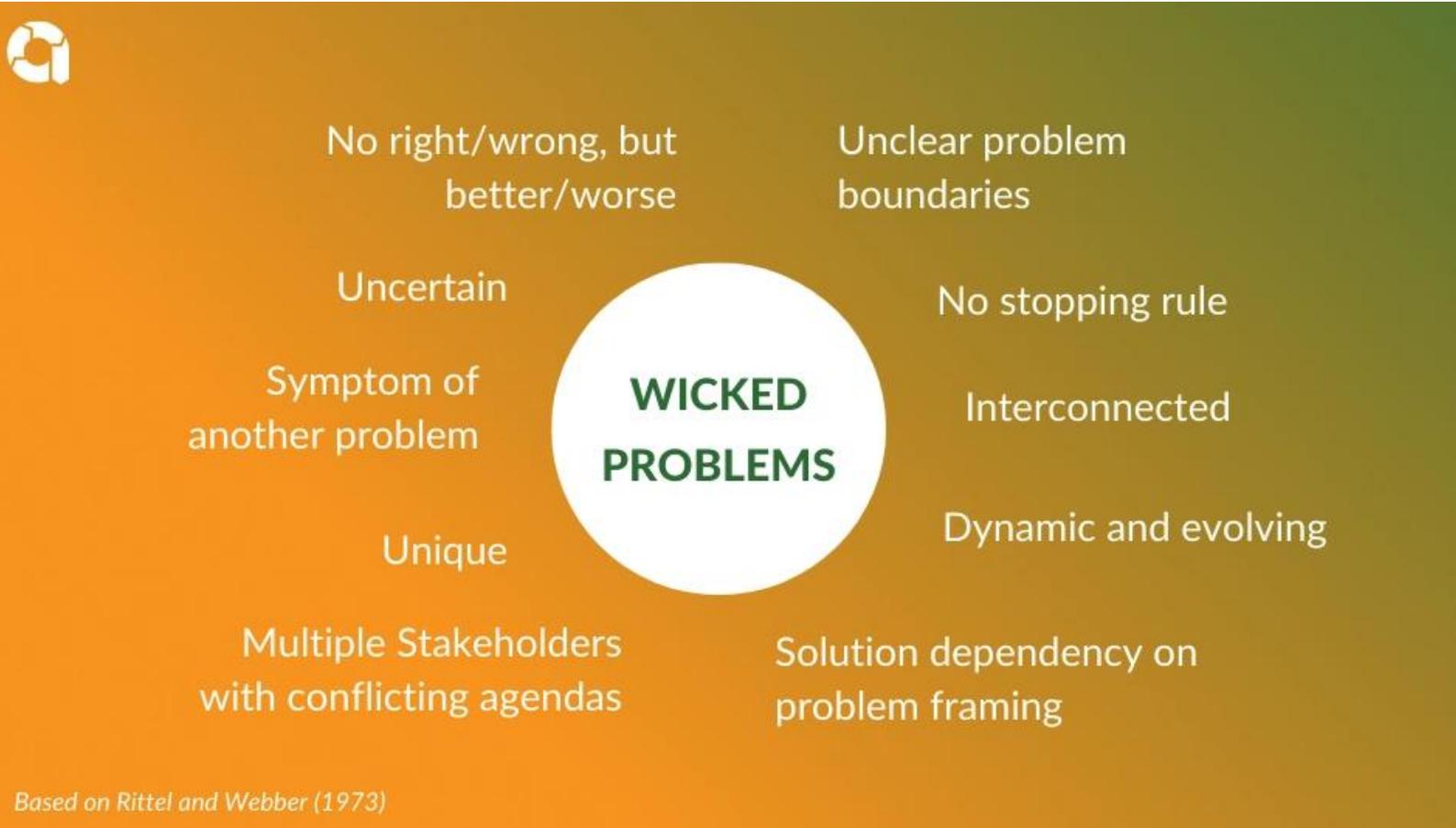
- Measurable impact?
- Reach and scale?
- Bandaid or root causes?
- Simple or complex interventions?
- Trust, credit, leadership, turf?
- Sustainability and resilience?

QUESTIONS?

Robert Kahn

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@docrob64



https://systemsthinkingalliance.org/case-of-systems-thinking/#elementor-toc__heading-anchor-1