Population Health for Children: Changes in Practice and Payment Policy

Robert S. Kahn, MD MPH

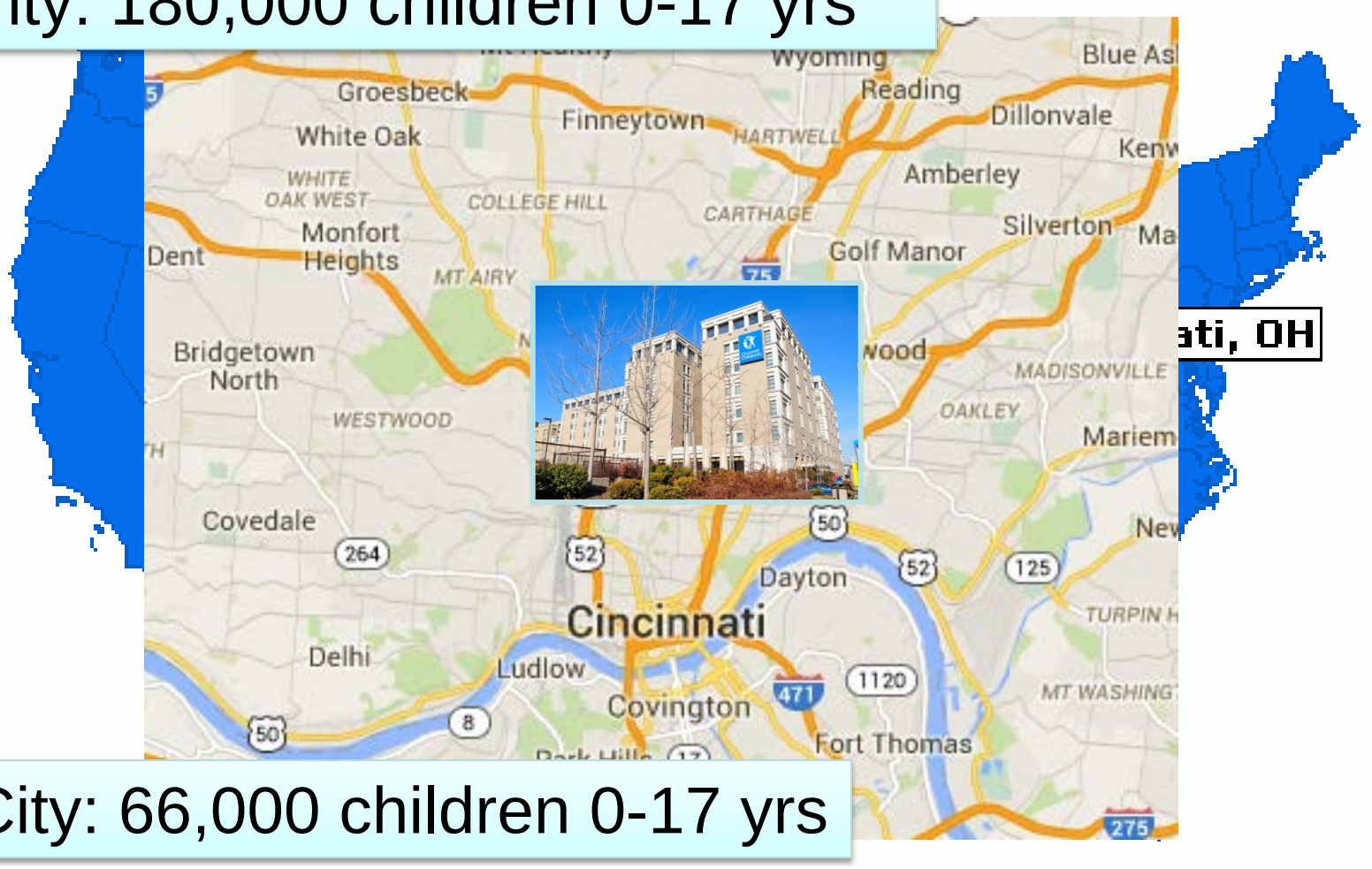
Cincinnati Children's Hospital Medical Center

INRICH 7th Annual Workshop

June 27, 2015

Cincinnati, Ohio

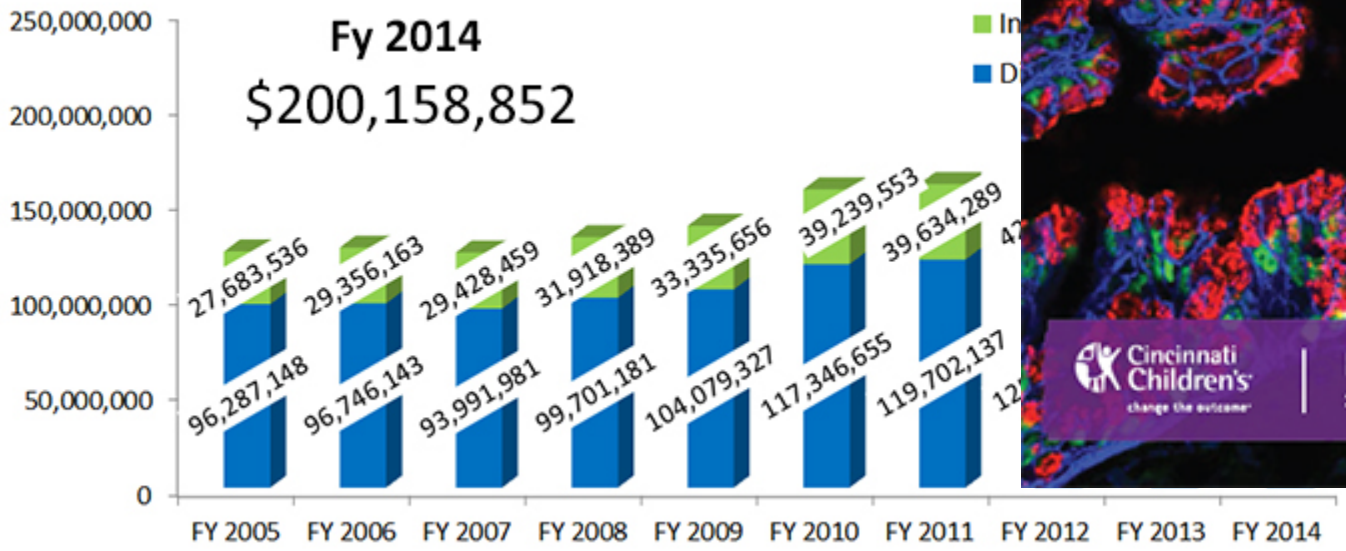
County: 180,000 children 0-17 yrs



City: 66,000 children 0-17 yrs

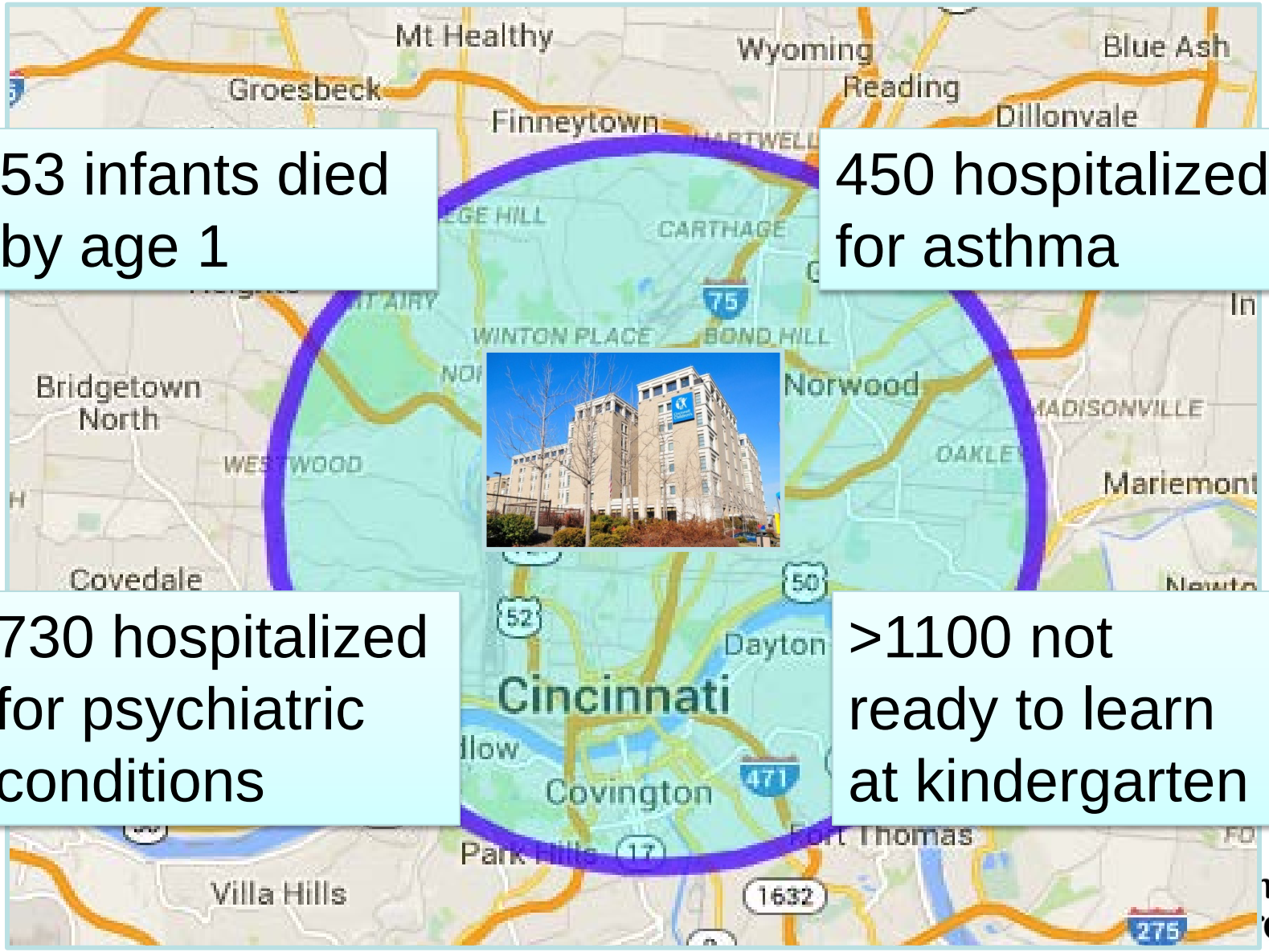
53% of children below poverty line

Cincinnati Children's Hospital Medical Center (CCHMC)



Children's

Cincinnati Children's Hospital Medical Center (CCHMC)



53 infants died by age 1

450 hospitalized for asthma

730 hospitalized for psychiatric conditions

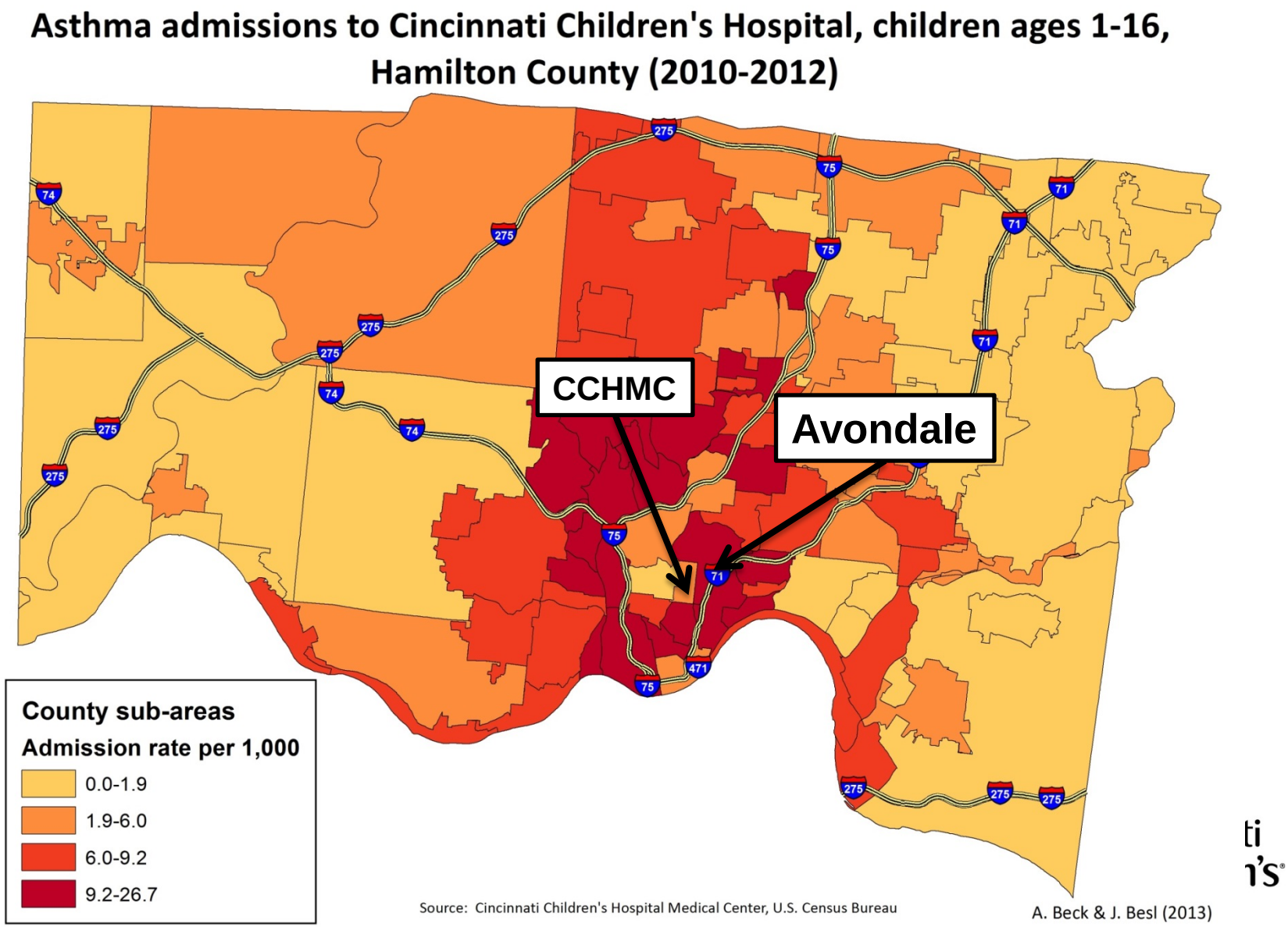
>1100 not ready to learn at kindergarten

Questions that we may need to answer

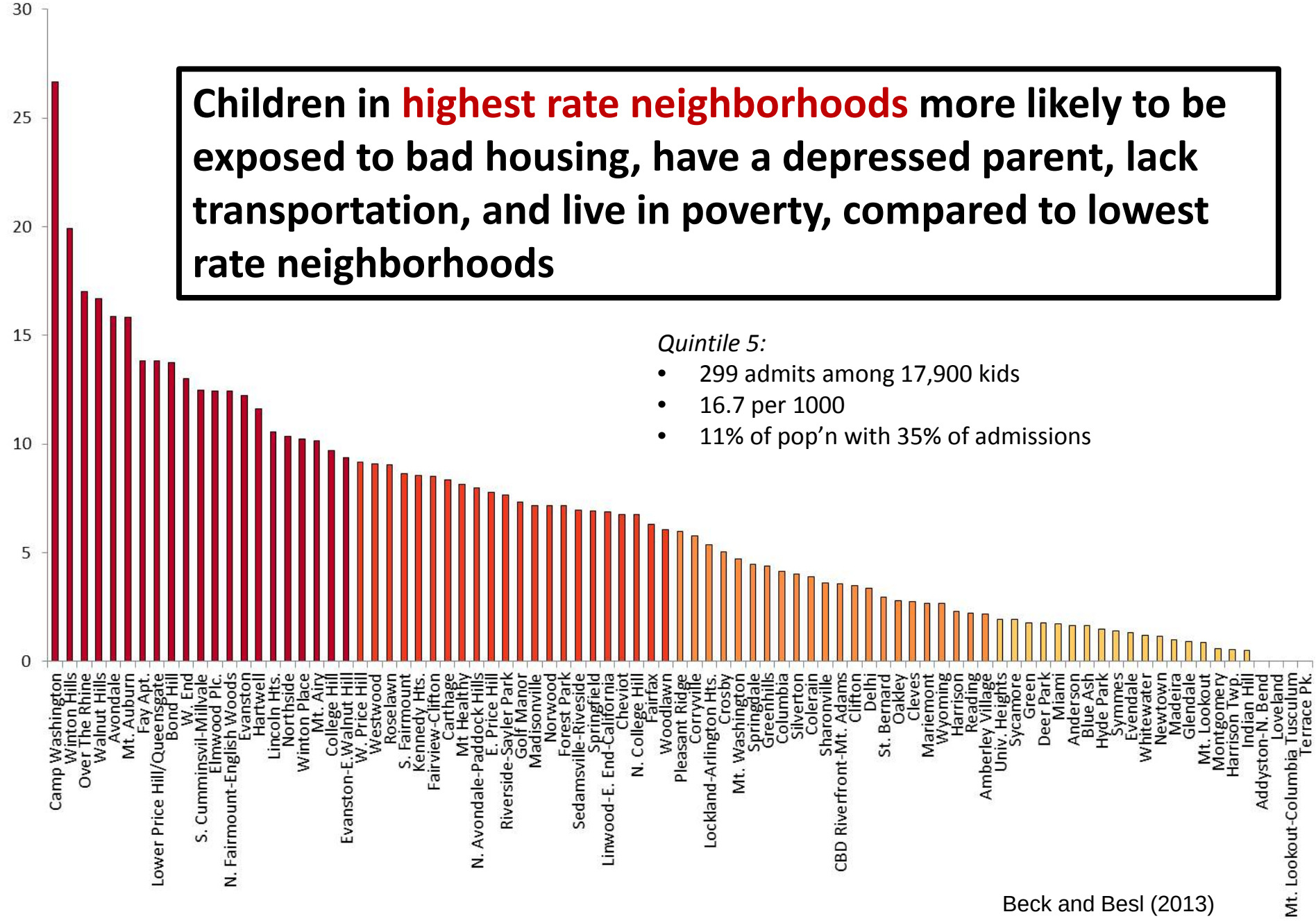
- **Urgency:** Can we create a sense of urgency about child health inequities?
- **Partnerships:** What is the production system for child health equity? Who are the right partners, and how do we build a reliable system?
- **Actionable data:** Can we use data to drive meaningful action? Can we move beyond descriptions and “hotspots”?
- **Co-creation:** Can we build services valued by the hardest to reach families?
- **Scale:** Can we get to scale?
- **Funding:** How do we fund transformation?

Cincinnati Children's

Urgency


Asthma admissions to Cincinnati Children's Hospital, children ages 1-16, Hamilton County (2010-2012)
CCHMC
Avondale
County sub-areas
Admission rate per 1,000
0.0-1.9
1.9-6.0
6.0-9.2
9.2-26.7
Source: Cincinnati Children's Hospital Medical Center, U.S. Census Bureau
A. Beck & J. Besl (2013)

Asthma admission rate per 1000 children, 3 year average (2010-2012)



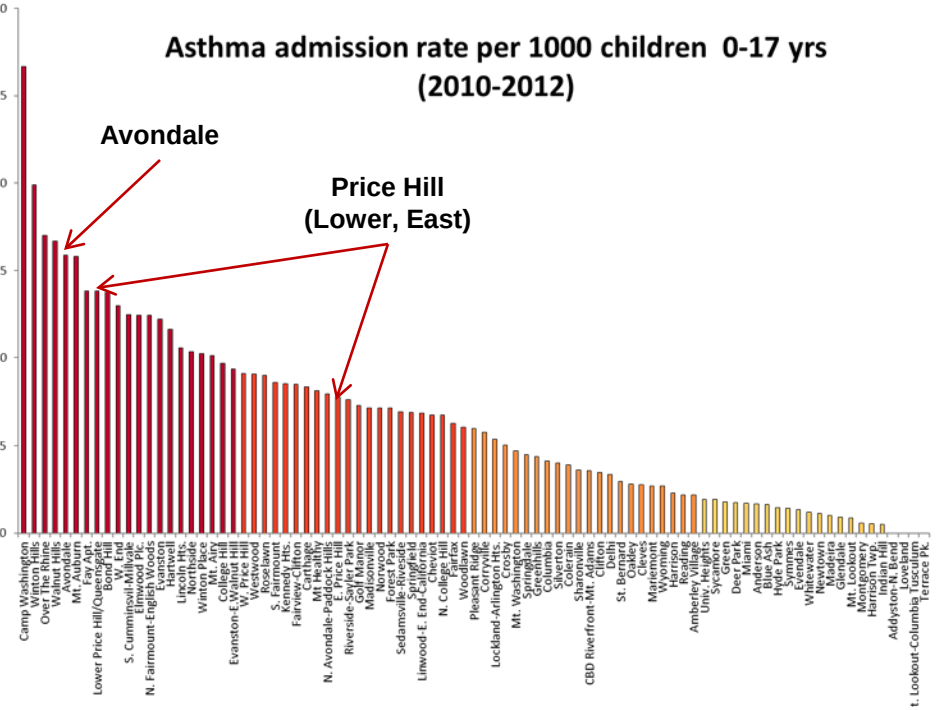
Children in highest rate neighborhoods more likely to be exposed to bad housing, have a depressed parent, lack transportation, and live in poverty, compared to lowest rate neighborhoods

Quintile 5:

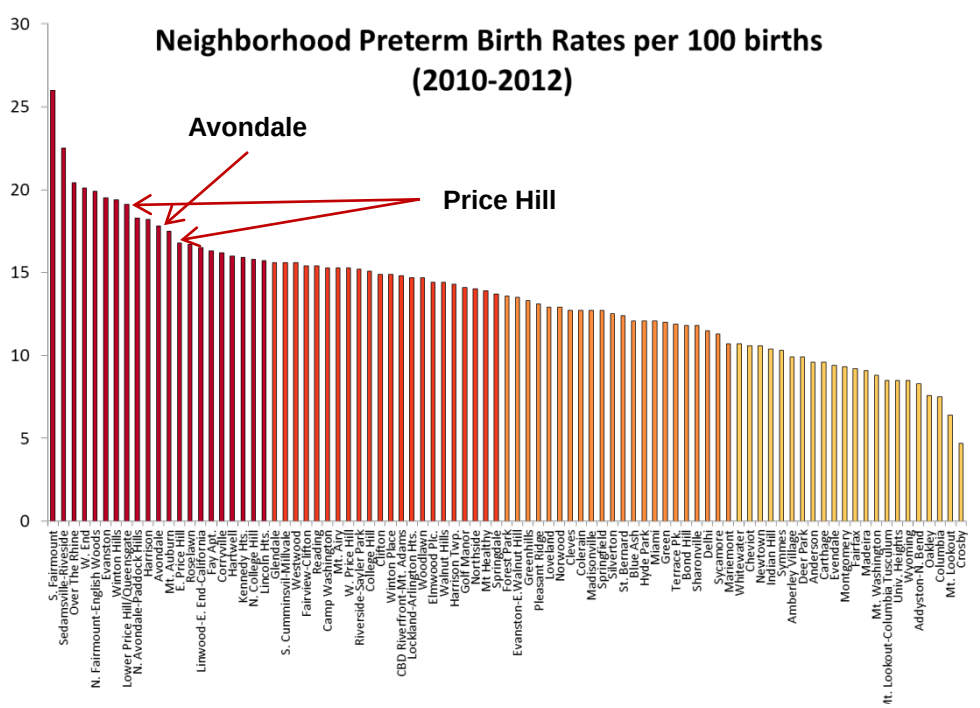
- 299 admits among 17,900 kids
- 16.7 per 1000
- 11% of pop'n with 35% of admissions

Beck and Besl (2013)

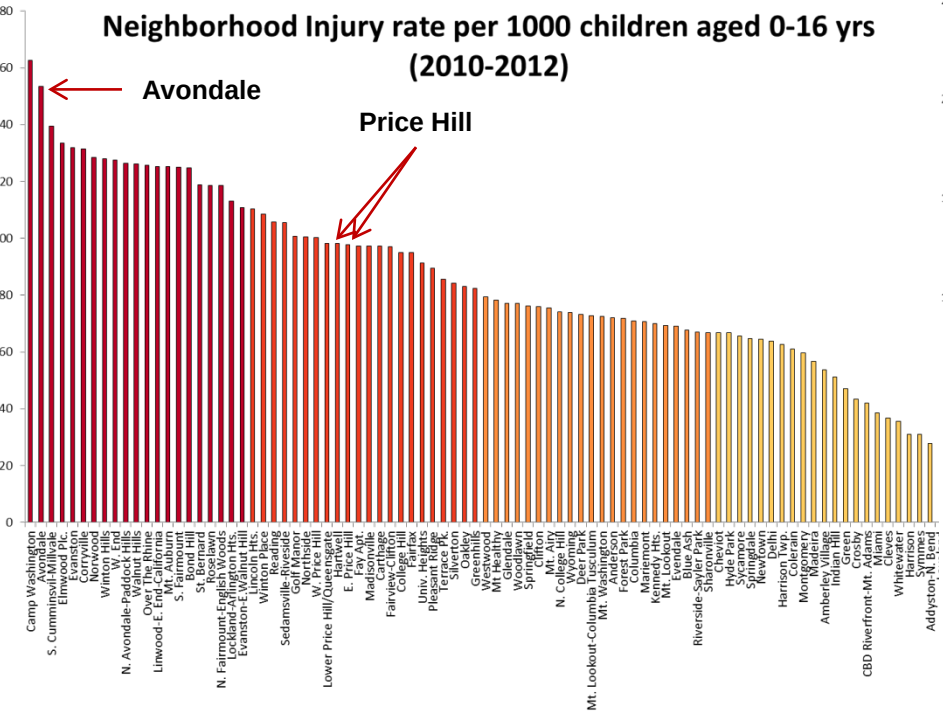
Asthma admission rate per 1000 children 0-17 yrs (2010-2012)



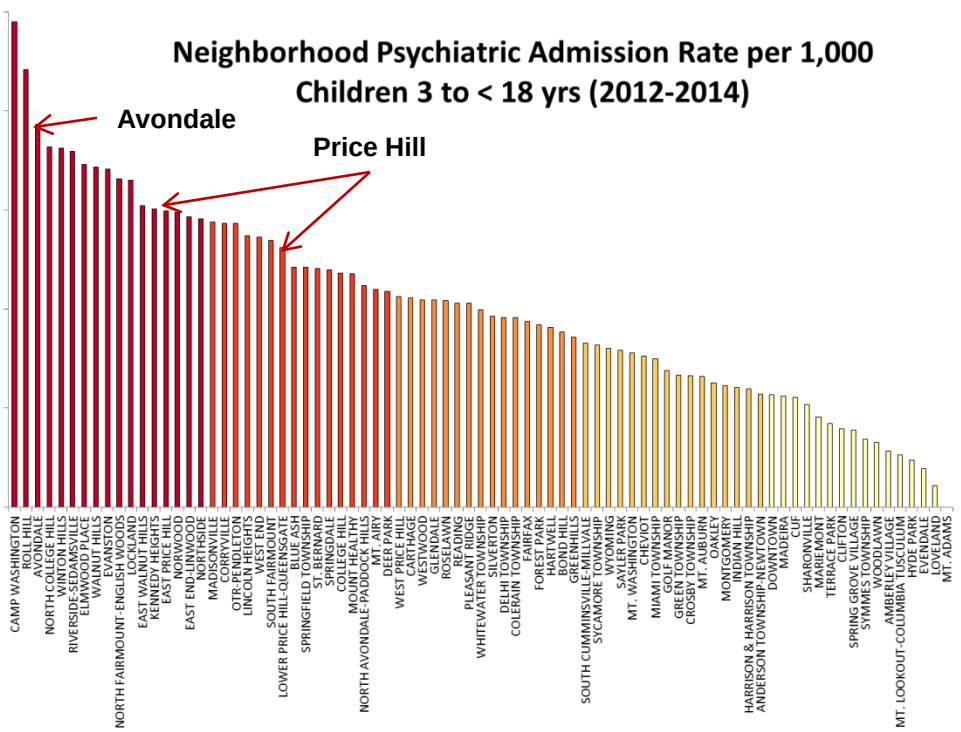
Neighborhood Preterm Birth Rates per 100 births (2010-2012)

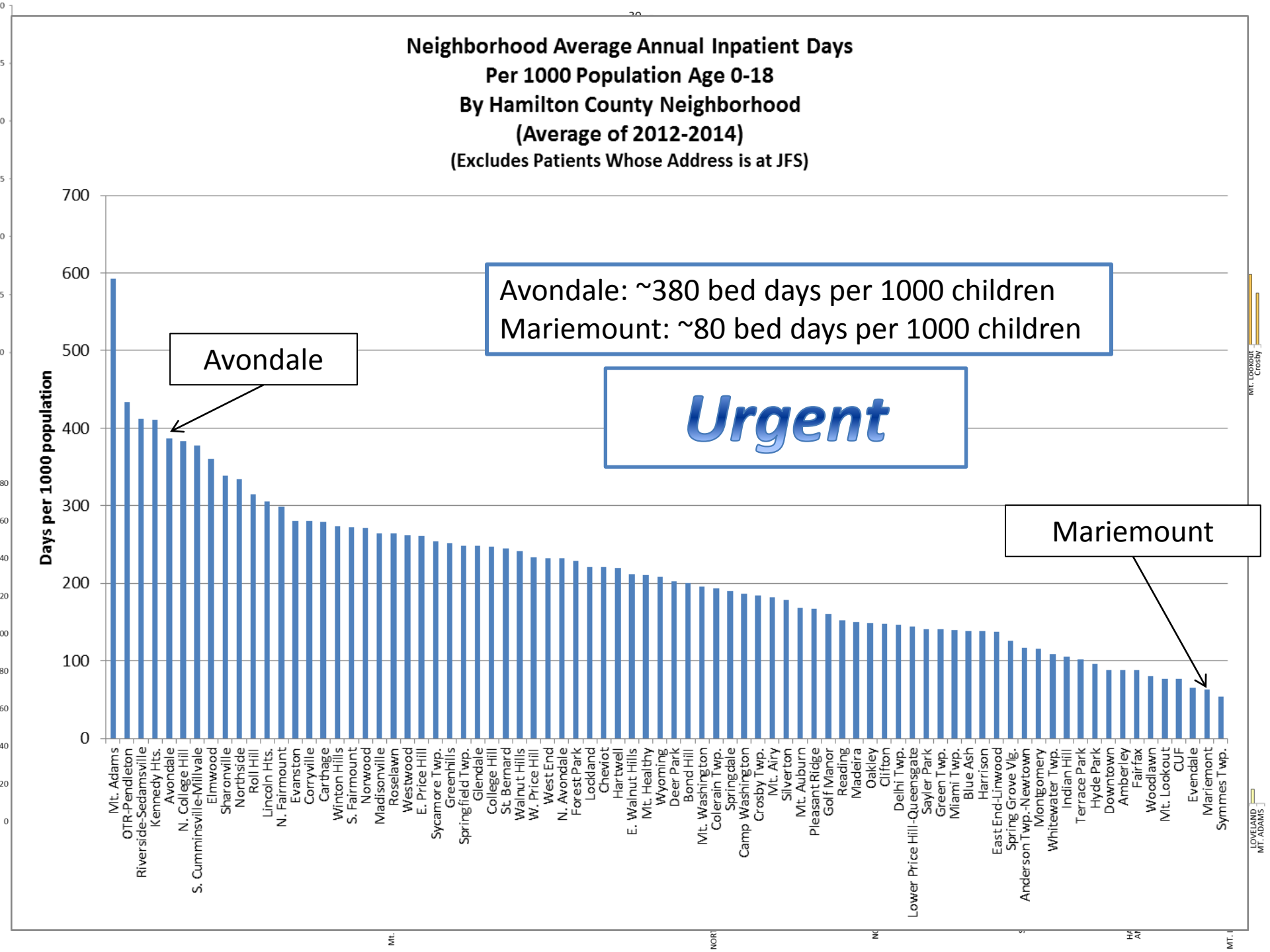


Neighborhood Injury rate per 1000 children aged 0-16 yrs (2010-2012)



Neighborhood Psychiatric Admission Rate per 1,000 Children 3 to < 18 yrs (2012-2014)



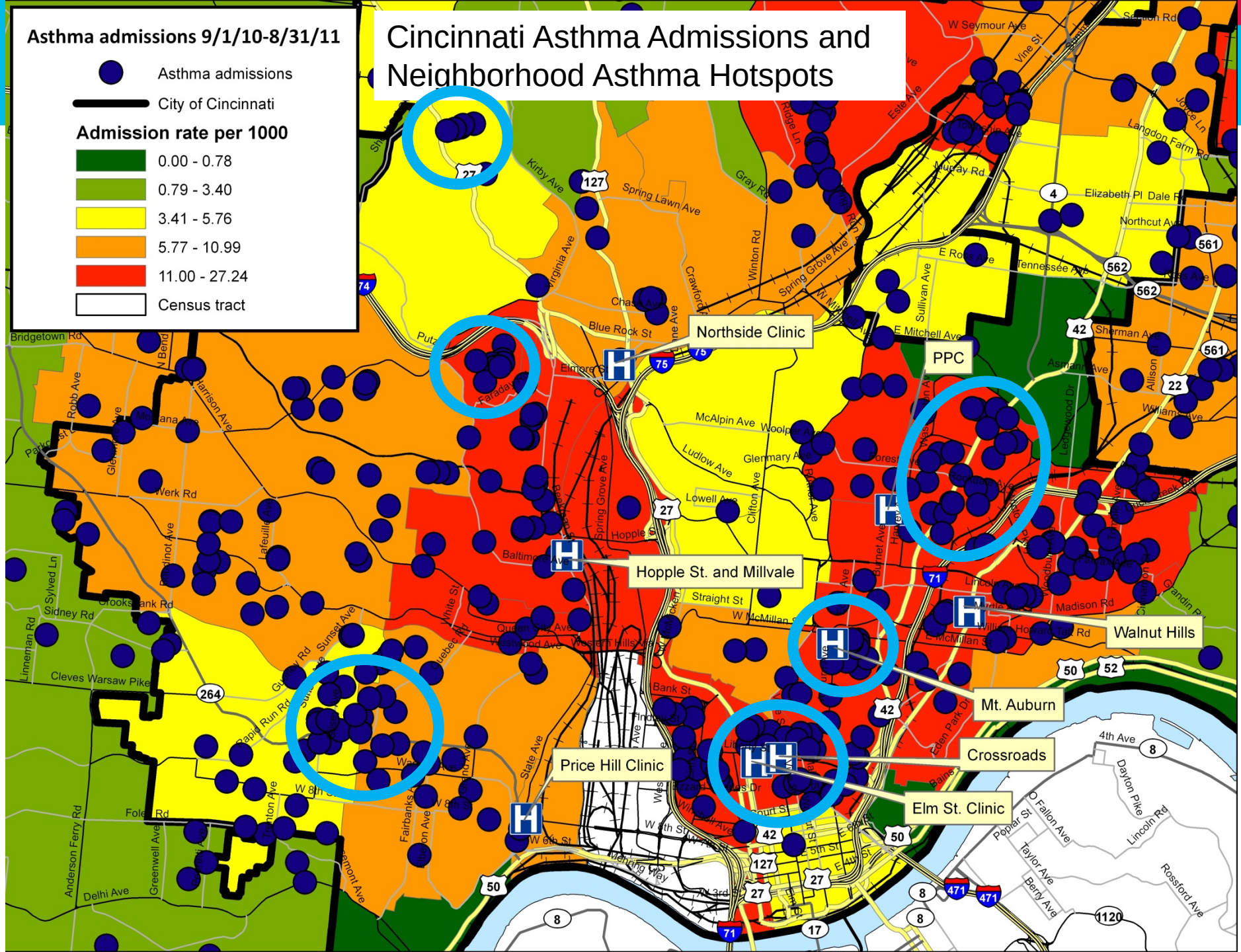

Neighborhood Average Annual Inpatient Days
Per 1000 Population Age 0-18
By Hamilton County Neighborhood
(Average of 2012-2014)
(Excludes Patients Whose Address is at JFS)
Days per 1000 population
700
600
500
400
300
200
100
0
Avondale: ~380 bed days per 1000 children
Mariemount: ~80 bed days per 1000 children
Avondale
Urgent
Mariemount
Mt. Adams
OTR-Pendleton
Riverside-Sedamsville
Kennedy Hts.
Avondale
N. College Hill
S. Cumminsville-Millvale
Elmwood
Sharonville
Northside
Roll Hill
Lincoln Hts.
N. Fairmount
Evanston
Corryville
Carthage
Winton Hills
S. Fairmount
Norwood
Madisonville
Roselawn
Westwood
E. Price Hill
Sycamore Twp.
Greenhills
Springfield Twp.
Glendale
College Hill
St. Bernard
Walnut Hills
W. Price Hill
West End
N. Avondale
Forest Park
Lockland
Cheviot
Hartwell
E. Walnut Hills
Mt. Healthy
Wyoming
Deer Park
Bond Hill
Mt. Washington
Colerain Twp.
Springdale
Camp Washington
Crosby Twp.
Mt. Airy
Silverton
Mt. Auburn
Pleasant Ridge
Golf Manor
Reading
Madeira
Oakley
Clifton
Delhi Twp.
Lower Price Hill-Queensgate
Sayler Park
Green Twp.
Miami Twp.
Blue Ash
Harrison
East End-Linwood
Spring Grove Vlg.
Anderson Twp.-Newtown
Montgomery
Whitewater Twp.
Indian Hill
Terrace Park
Hyde Park
Downtown
Amberley
Fairfax
Woodlawn
Mt. Lookout
CUF
Evendale
Mariemont
Symmes Twp.

Partnerships

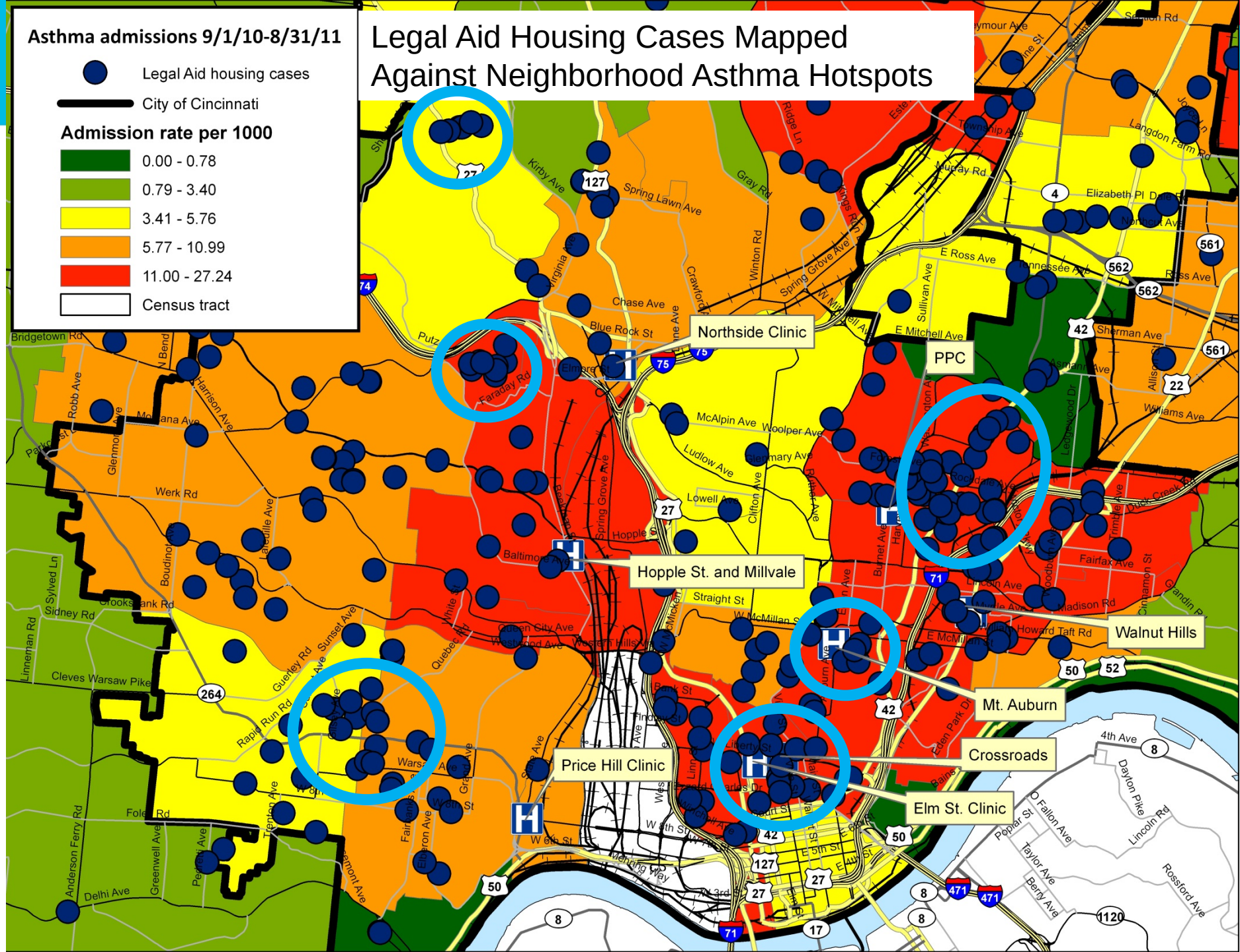
- Care Coordinators
- Community Health Workers
- Home health care
- Pharmacies
- Cincinnati Public Schools, School Nurses
- Cincinnati Public Health Department
- Foodbank
- Job training
- *Legal Aid Society*

Cincinnati Children's

Cincinnati Asthma Admissions and Neighborhood Asthma Hotspots



Legal Aid Housing Cases Mapped Against Neighborhood Asthma Hotspots



Partnership re: housing with Legal Aid

Keeping sick buildings from making children sick

SAVING AVONDALE

11:19 PM, Oct 24, 2012 | Comments

Recommend 17 Tweet 2 +1 0

Reginald Liddell, 10, left, and his younger brother, Jaylijah, 8, both suffer from asthma that was made worse by mold in their former Avondale home. / The Enquirer/Jeff Swinger

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

Pediatrics; originally published online October 22, 2012;
DOI: 10.1542/peds.2012-0769

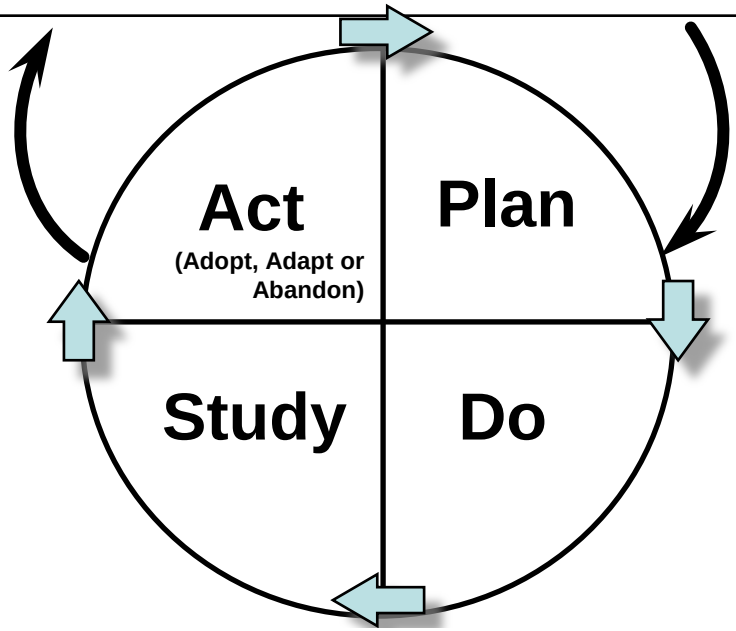
Model for Improvement

What are we trying to accomplish? **AIM**

How will we know that a change is an improvement? **MEASURES**

What change can we make that will result in improvement? **IDEAS**

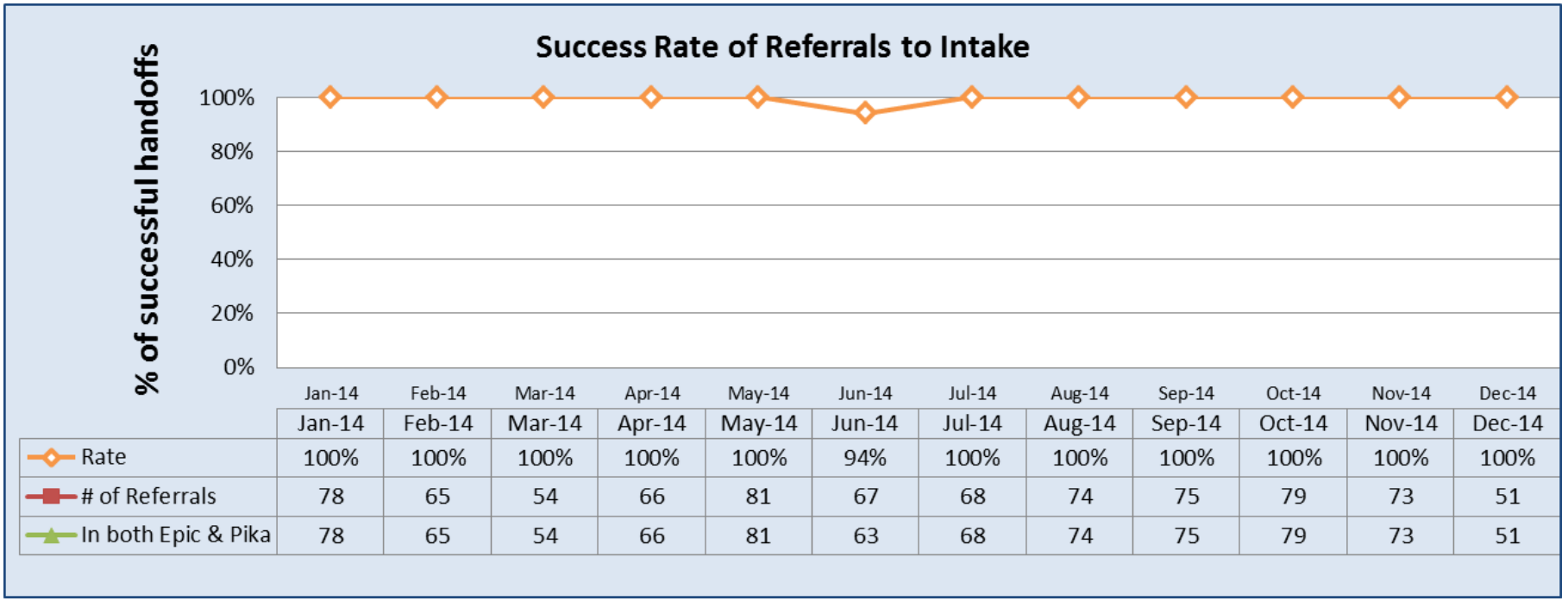
SMART
Specific
Measurable
Action Oriented
Realistic
Timely



Langley et al. 1996

Building a reliable system

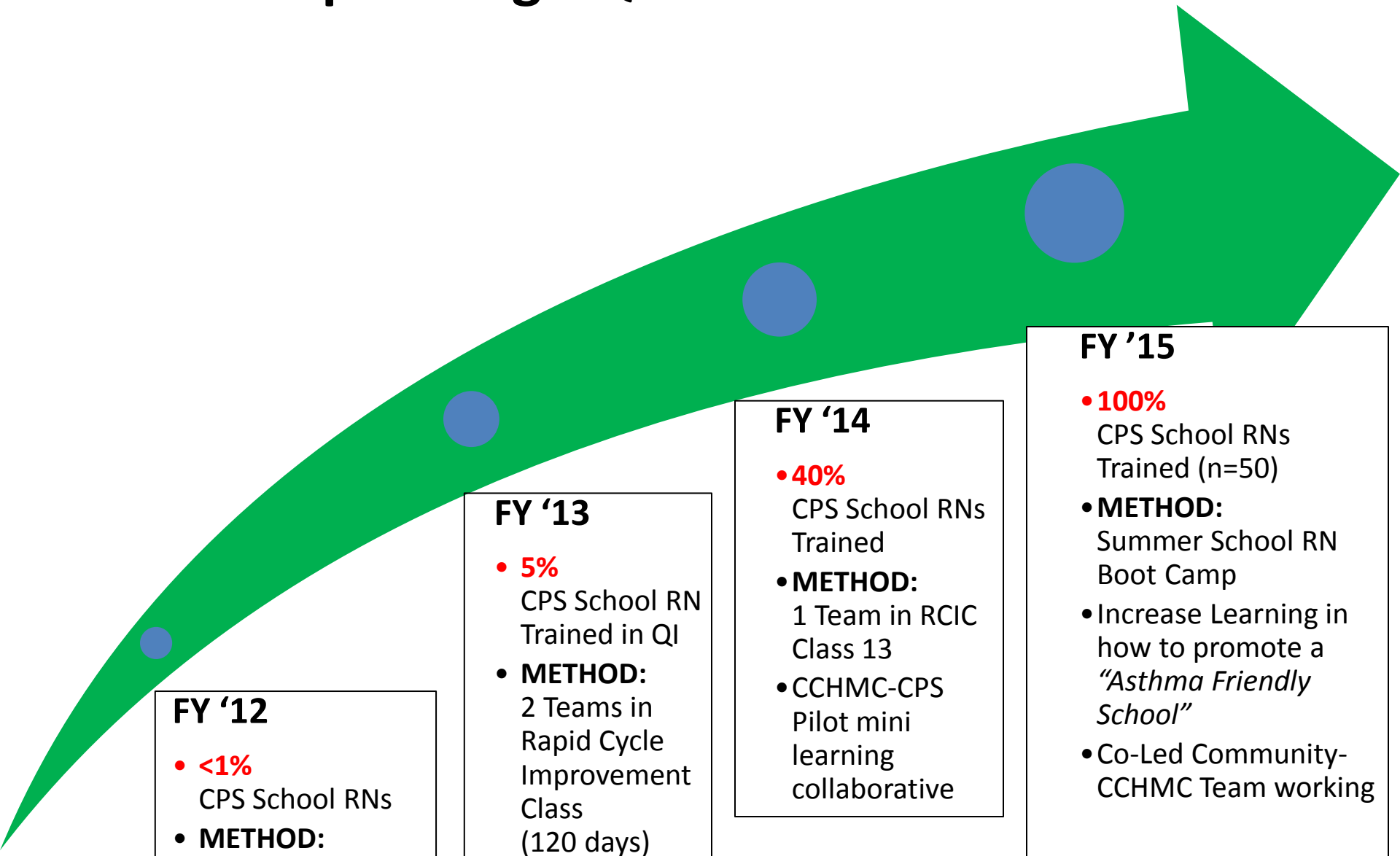
Partnership through QI: Medical and Legal



	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14
Rate	100%	100%	100%	100%	100%	94%	100%	100%	100%	100%	100%	100%
# of Referrals	78	65	54	66	81	67	68	74	75	79	73	51
In both Epic & Pika	78	65	54	66	81	63	68	74	75	79	73	51

Cincinnati Children's

Partnership through QI: Medical and School RN's



FY '12

- **<1%**
  CPS School RNs
- **METHOD:**
  One-off project with 1-2 RNs

FY '13

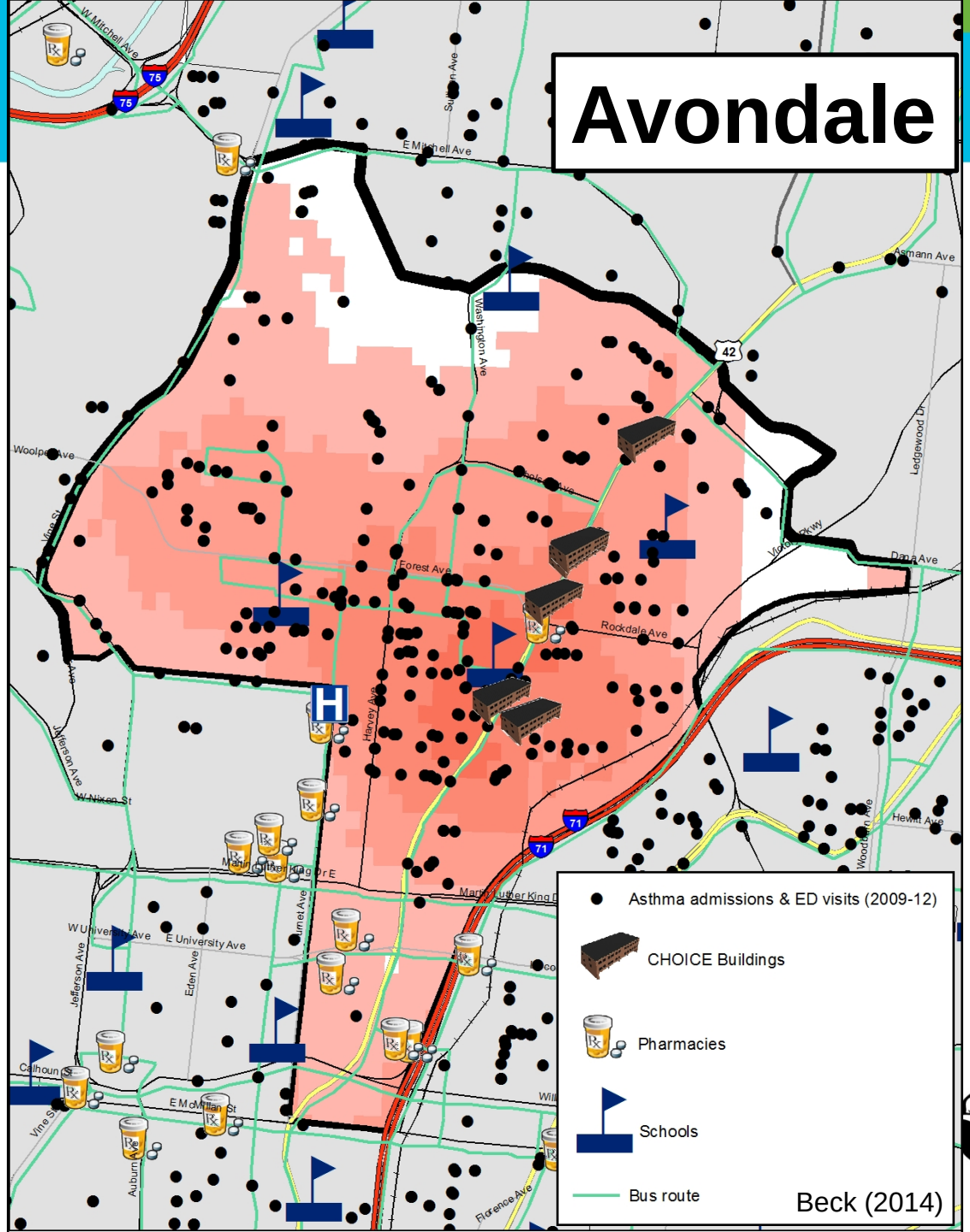
- **5%**
  CPS School RN Trained in QI
- **METHOD:**
  2 Teams in Rapid Cycle Improvement Class (120 days)

FY '14

- **40%**
  CPS School RNs Trained
- **METHOD:**
  1 Team in RCIC Class 13
- CCHMC-CPS Pilot mini learning collaborative

FY '15

- **100%**
  CPS School RNs Trained (n=50)
- **METHOD:**
  Summer School RN Boot Camp
- Increase Learning in how to promote a *"Asthma Friendly School"*
- Co-Led Community-CCHMC Team working



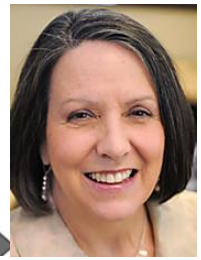
Cincinnati Children's

Neighborhood network to produce health

Community health worker

Legal Aid

Pediatric Practices



Schools

Pharmacy

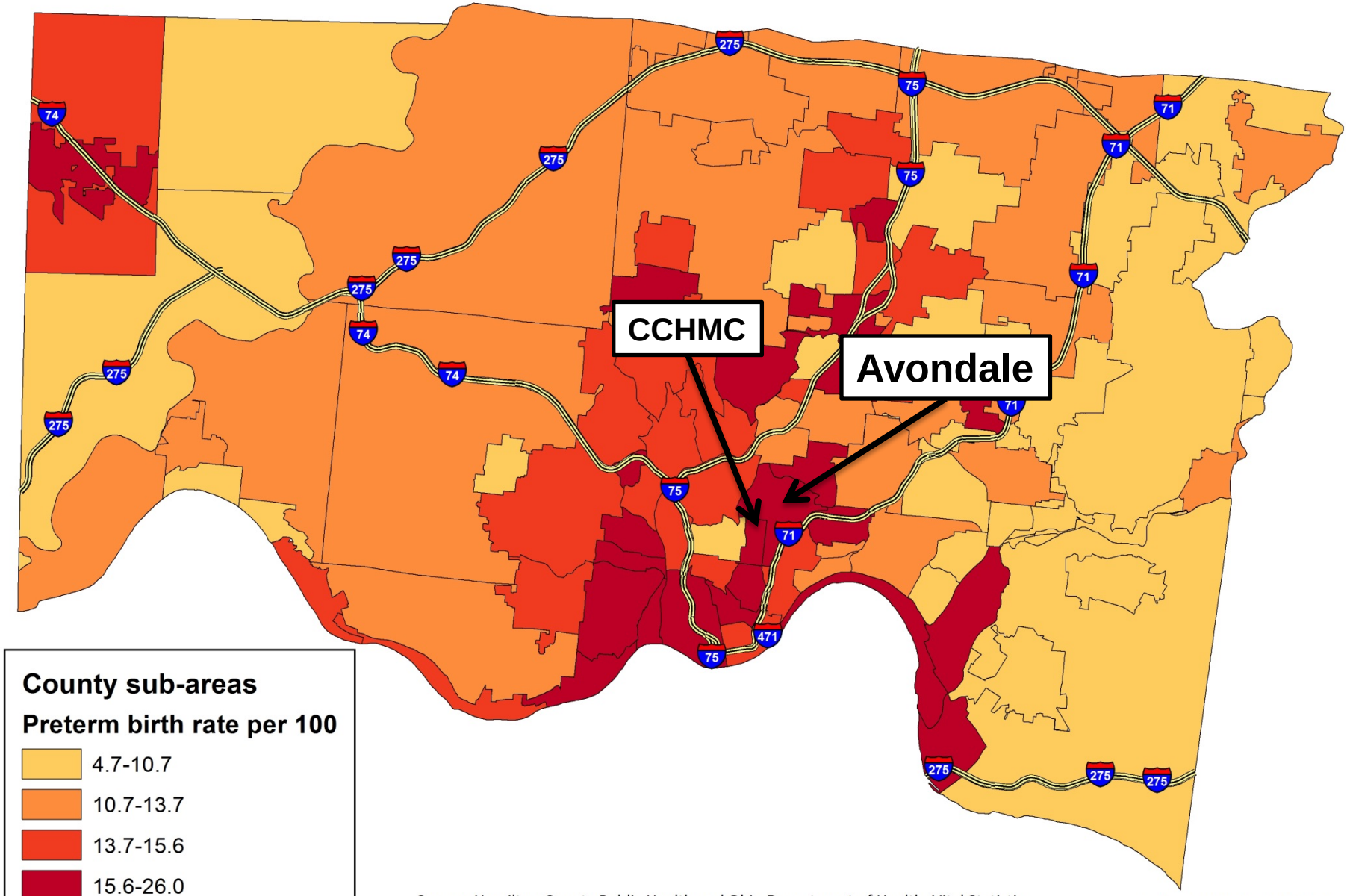
Nursing Agencies

Housing remediation

Agency Collaboration in the Care of Children with Complex Chronic Conditions. Nageswaran et al. Acad Ped 2012

Cincinnati Children's

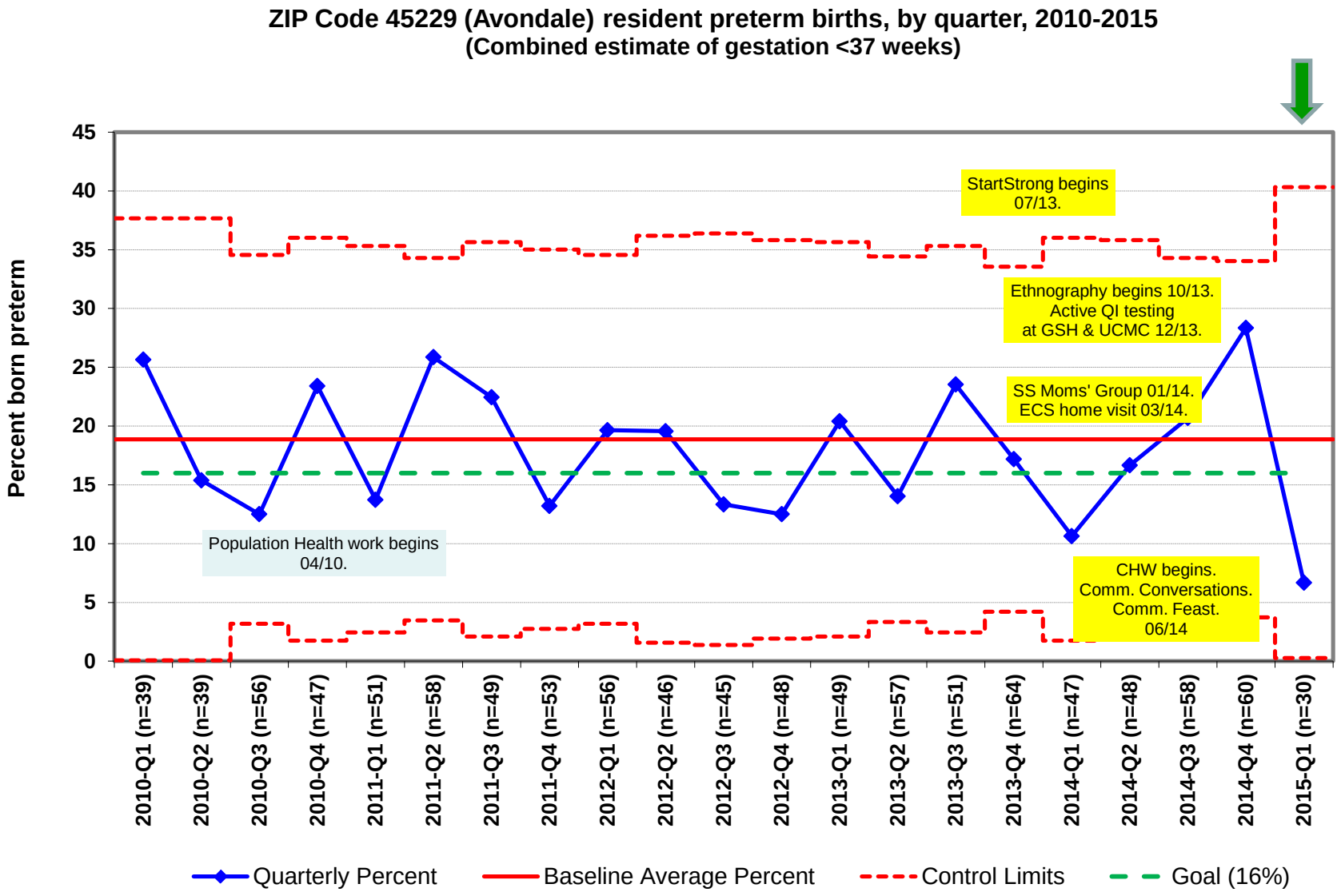
Preterm birth rate, Hamilton County (2010-2012)



Source: Hamilton County Public Health and Ohio Department of Health, Vital Statistics

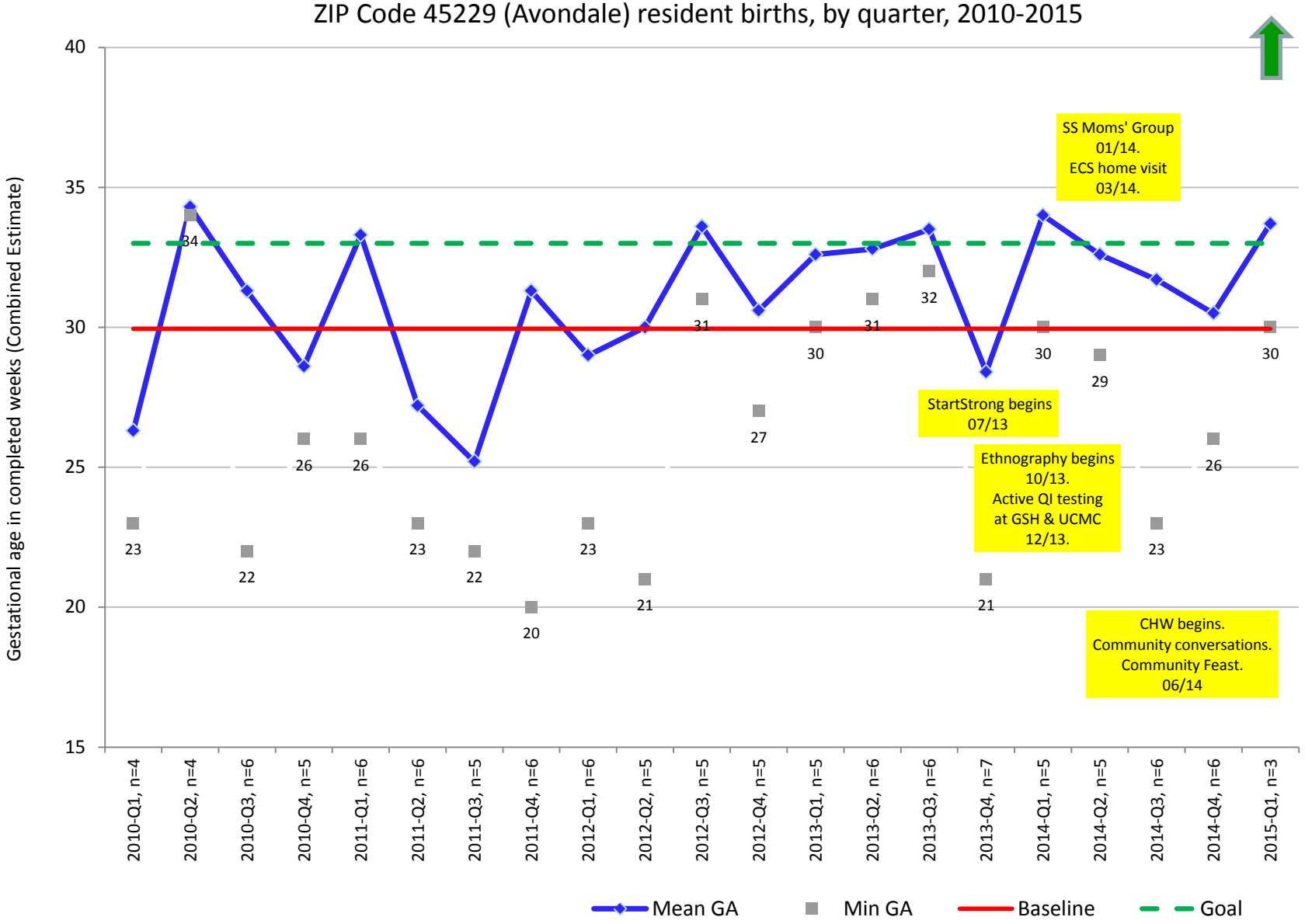
A. Beck & J. Besl (2013)

Local Actionable Data



Source: Hamilton County Public Health. Updated by J. Besl 4/6/15

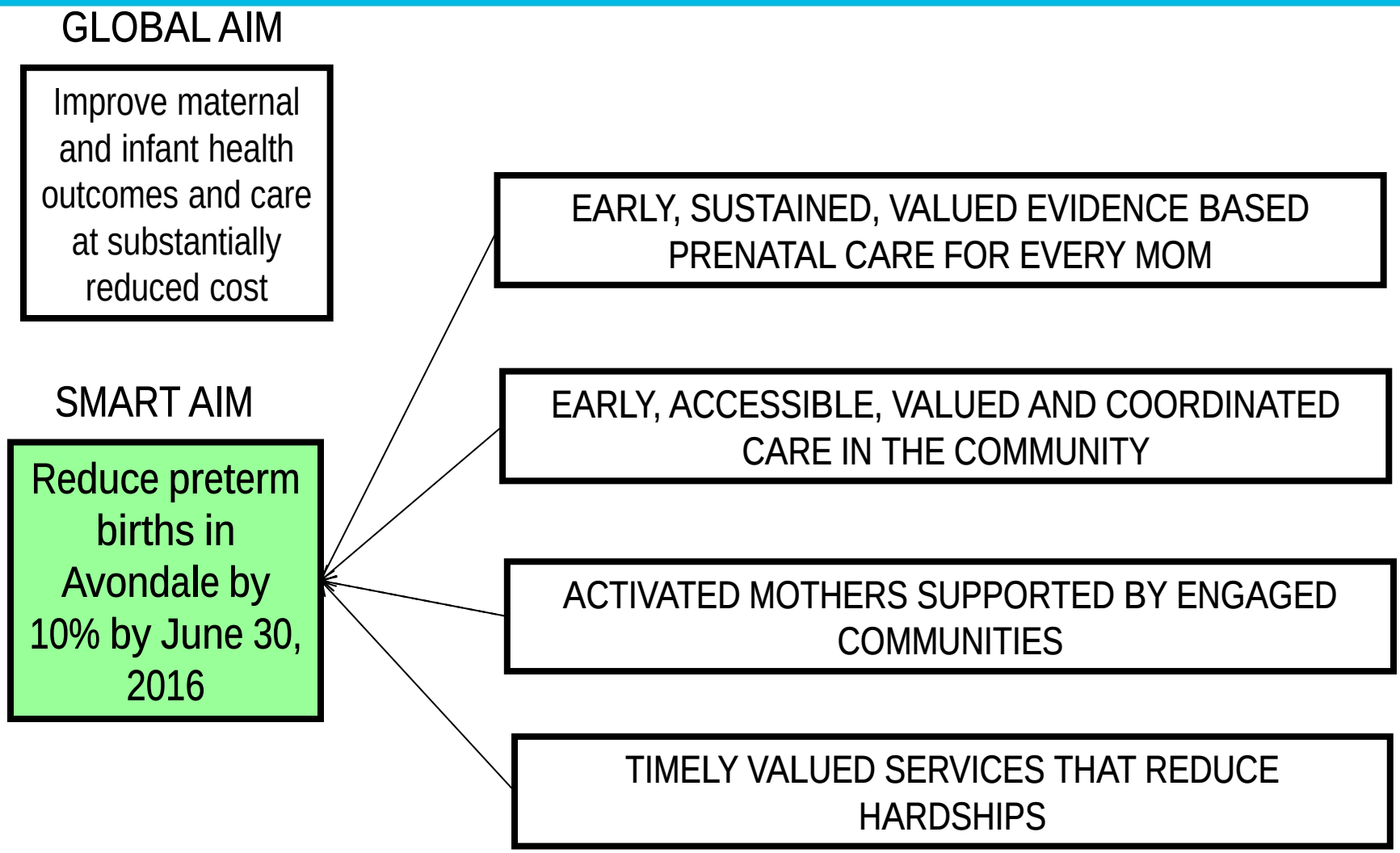
Mean and Minimum Gestational Age among 10th percentile of ZIP Code 45229 (Avondale) resident births, by quarter, 2010-2015



Source: Hamilton County Public Health. Updated by J. Besl 4/6/15

StartStrong KDD

KEY DRIVER DIAGRAM



Cincinnati Children's

Revision Date: _6 – 10– 14_

Co-Creation: Design with families

StartStrong™
A partnership for healthy babies and families

FUTURECASTING

The ability to imagine one's self in the future, and discover the proactive steps necessary to get there

TRUSTED KNOWLEDGE

Quality information that is qualified and delivered by a trusted source, making it relevant, tangible, and actionable

COMMUNITY LOVE

The strong, social network that provides resources, knowledge, advice, and support;

PERSONAL POWER

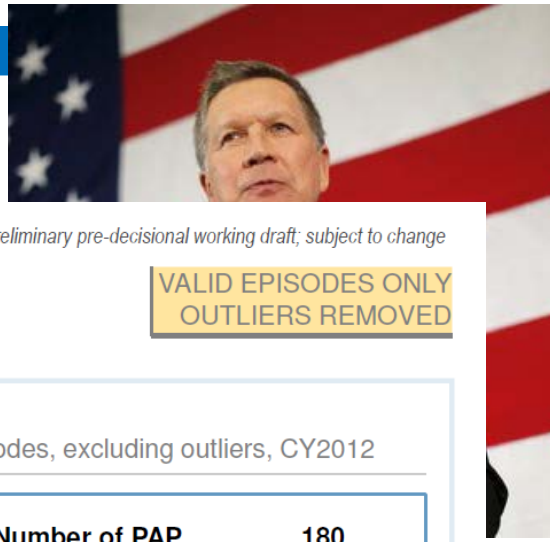
The ability to advocate for one's self, feeling confident that your decisions will lead to beautiful outcomes.

Cincinnati Children's®

Scale: Successful Learning Networks

Care Network	Goals	Outcomes
CF Care Network	• Drive adherence to CF treatment regimens and improve life expectancy	• Rate of improvement in life expectancy increased (7 years added)
ImproveCareNow	• Improve care in pediatric inflammatory bowel disease	• % remission from 50% to 80% in 5 years. No new drugs
Ohio Solutions for Patient Safety	• Reduce pediatric adverse events	• 60% reduction in surgical site infections • 34.5% reduction in AEs • Saved >7,700 children from unnecessary harm, $12.3m in unnecessary costs
	Reduce pre-term births	• 30,000 births shifted to 39-41 wks • $36m savings in 4 years • % pre-term births on steroids up from <30% to 75%
	mprove care of asthma patients	• % patients receiving “perfect care” from 5% to 90% in <4 years • 50% reduction in asthma related admissions

Funding: Payment reform



Shift to population-based and episode-based payment

Payment ap

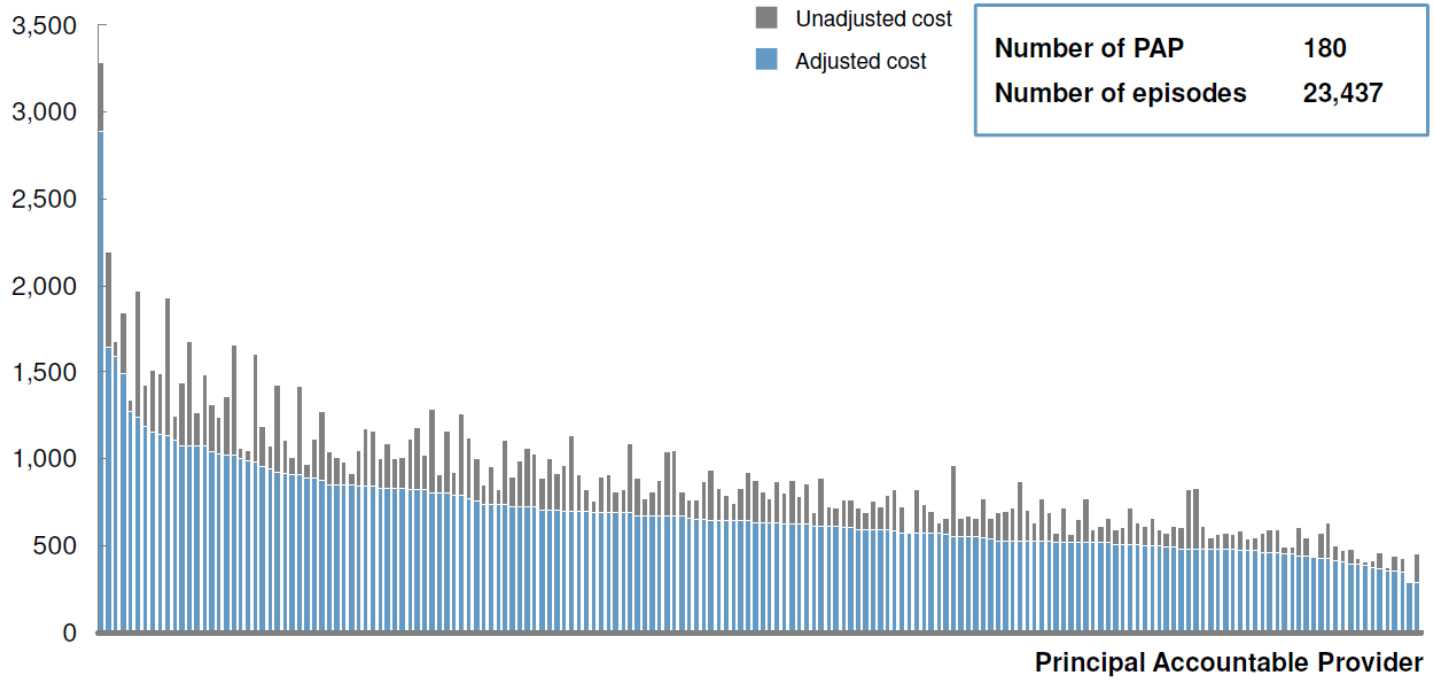
Preliminary pre-decisional working draft; subject to change

6 Impact of risk adjustment

VALID EPISODES ONLY
OUTLIERS REMOVED

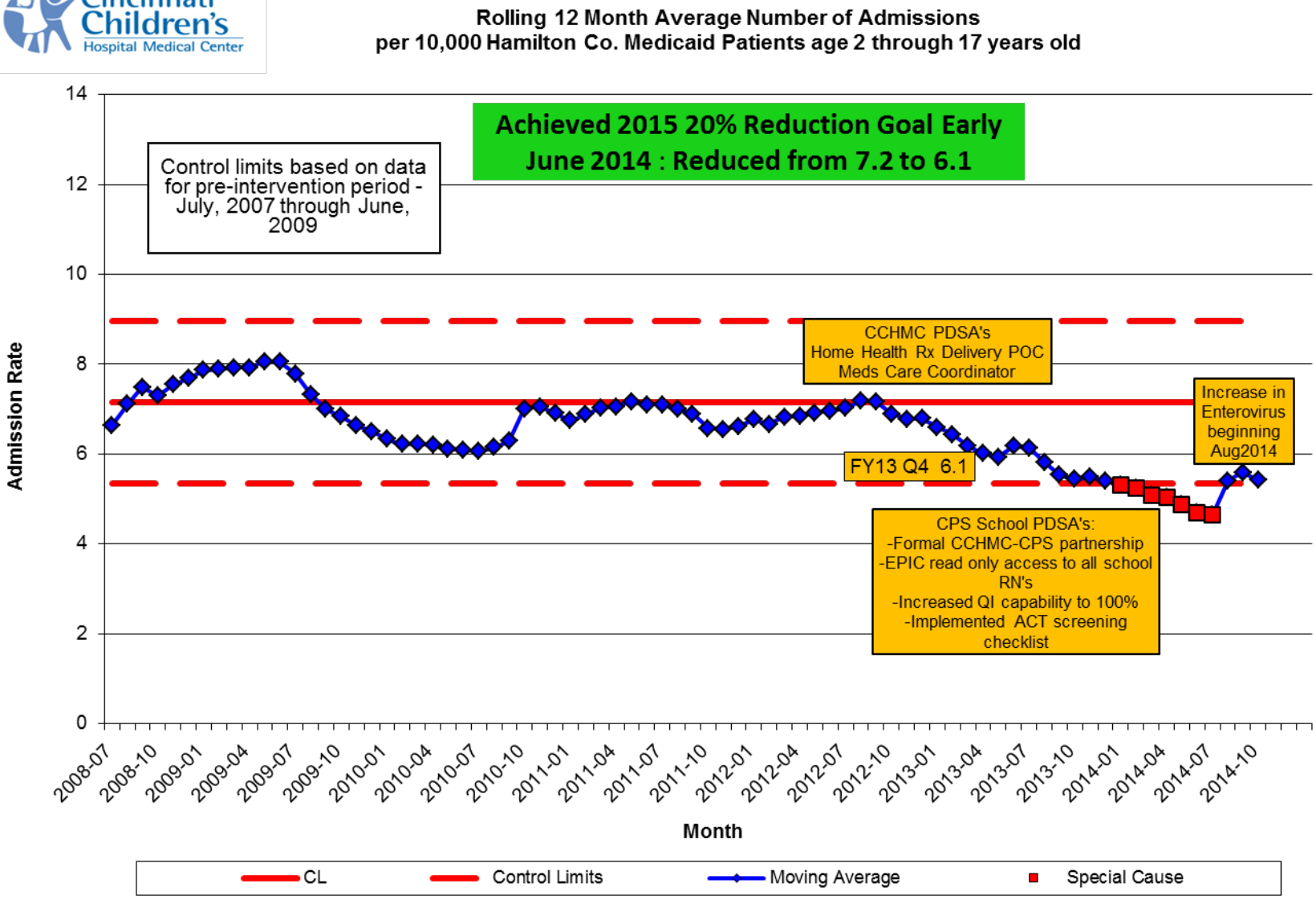
B **Asthma acute exacerbation provider spend distribution**

Unadj. / adj. avg. episode spend per provider[1] in USD, providers w/ at least 5 episodes, excluding outliers, CY2012



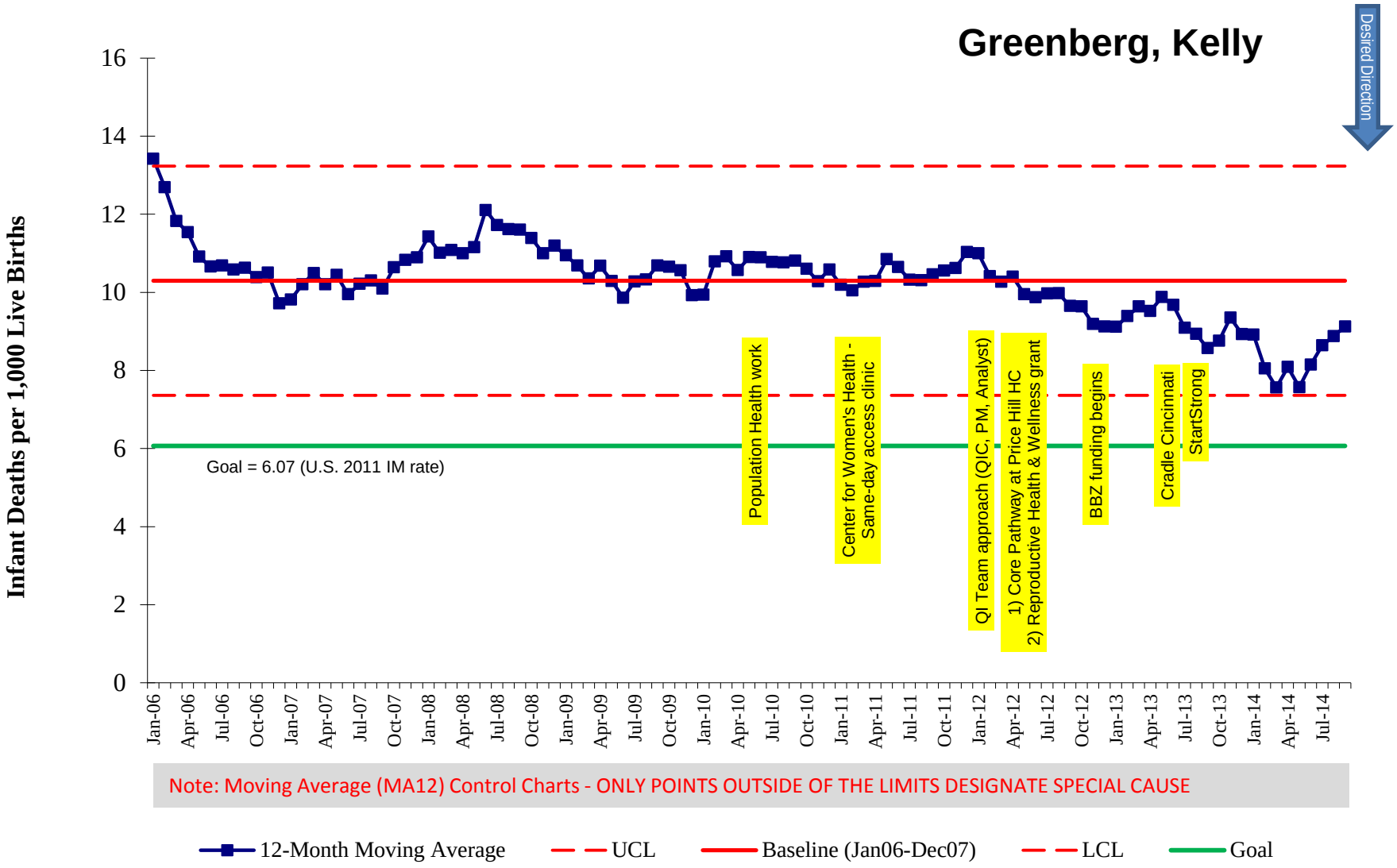
Asthma: Reduce use of the ED and inpatient services by 20% in children with asthma covered by Medicaid - Mansour, Kercsmar

Cincinnati Children's Hospital Medical Center



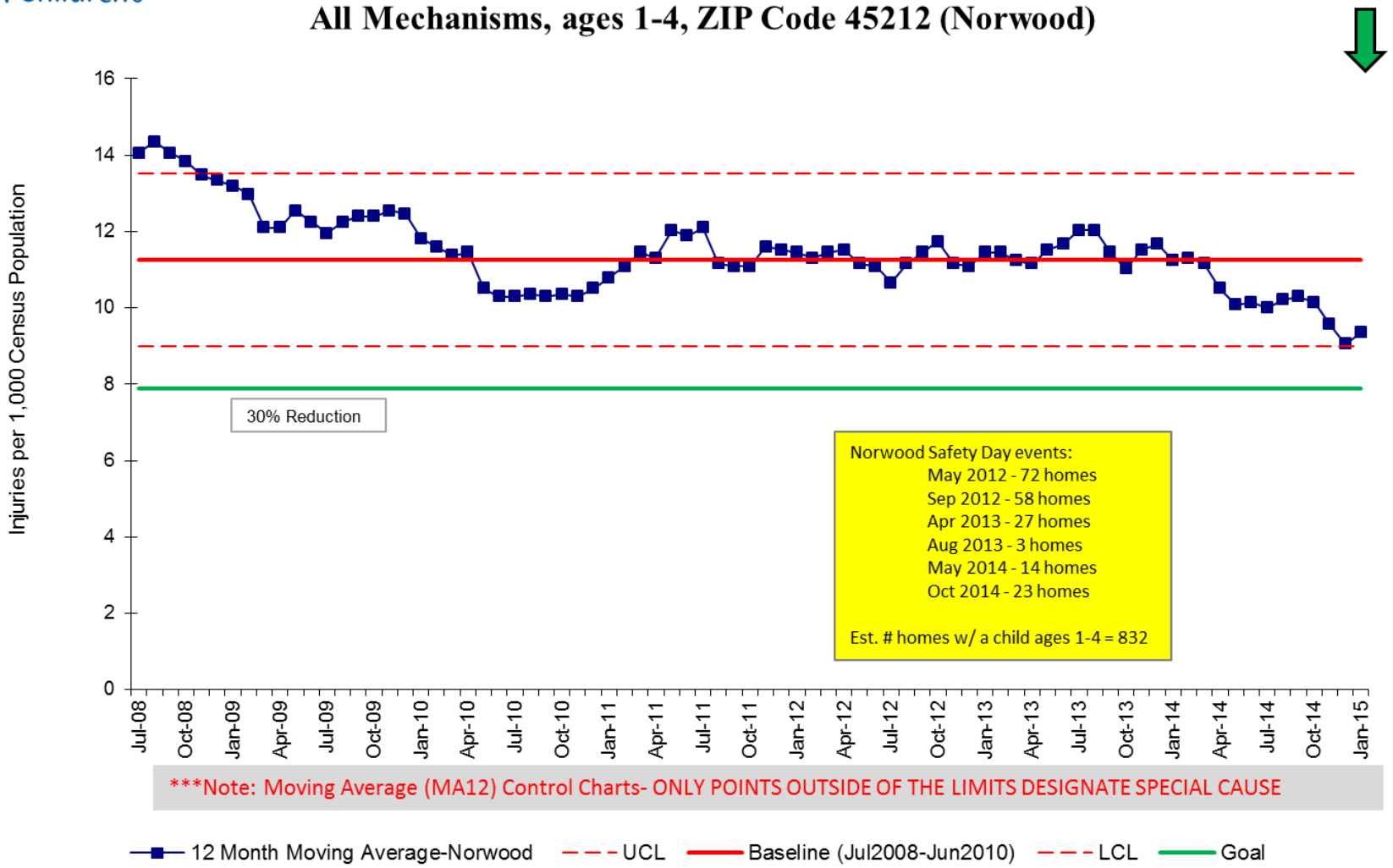
Last update: 12-03-14 by T. Cole Data source: Epic

Hamilton County Infant Mortality Rate 12-month moving average



Source: Hamilton County Public Health. Updated by J.Besl 10/29/2014

12-month Moving Average of Monthly Rate - All Mechanisms, ages 1-4, ZIP Code 45212 (Norwood)

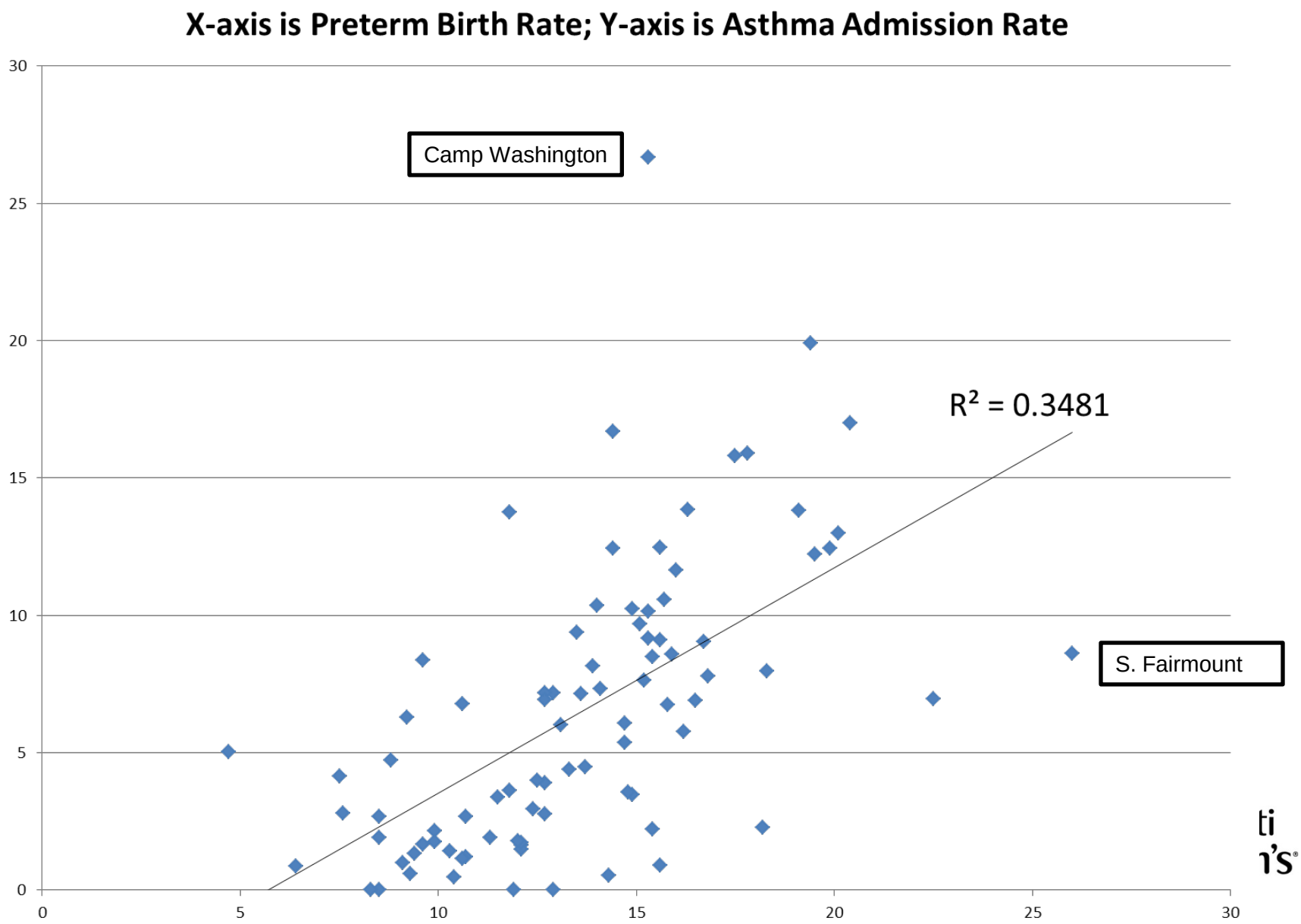


Source: CCHMC Trauma Registry and 2010 Census. Updated by J.Besl 2/12/2015.
Note: Denominator for rate calculation is 1,150, the 2010 Census population at ages 1-4 .

Questions that we may share?

- **Urgency:** Can we create a sense of urgency about child health inequities?
- **Partnerships:** What is the production system for child health equity? Who are the right partners, and how do we build a reliable system?
- **Actionable data:** Can we use data to drive meaningful action? Can we move beyond hotspots?
- **Co-creation:** Can we build services valued by the hardest to reach families?
- **Scale:** Can we get to scale?
- **Funding:** How do we fund transformation?

Cincinnati Children's


X-axis is Preterm Birth Rate; Y-axis is Asthma Admission Rate
30
25
20
15
10
5
0
0
5
10
15
20
25
30
Camp Washington
S. Fairmount
R² = 0.3481

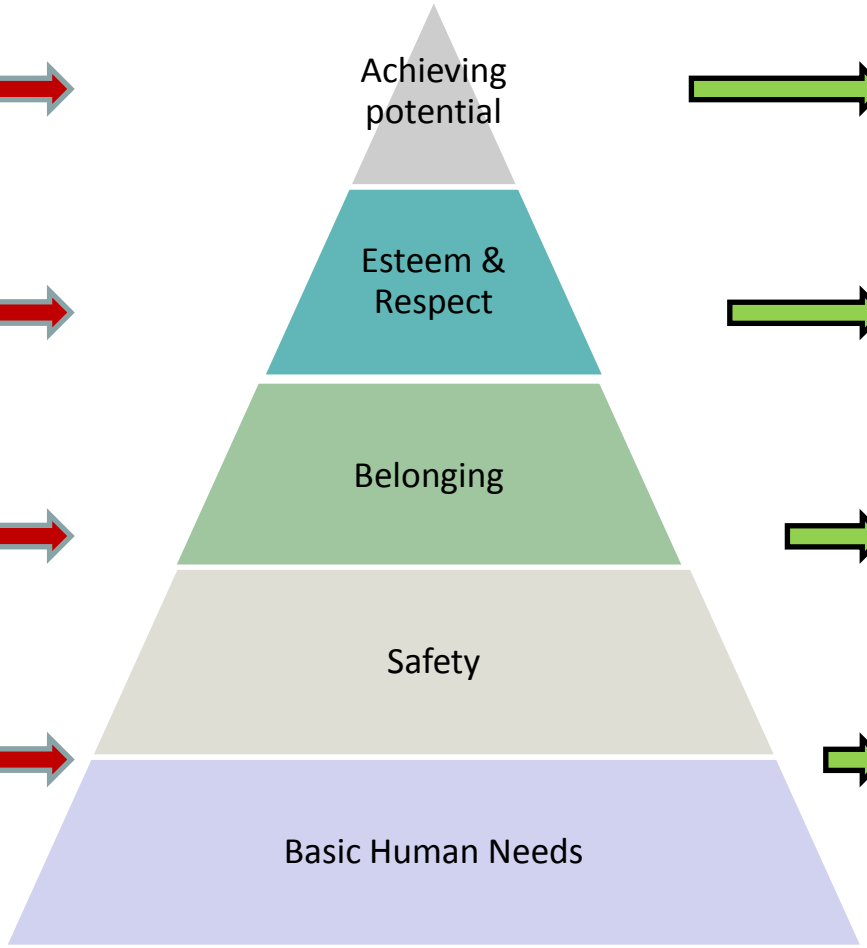
Social Determinants a Clinic Will Detect	Maslow's Hierarchy of Needs	Potential Collaborations

Unemployment; lack of high school degree; ex-offender reentry issues

Overwhelmed new parents; lack of parenting role models

Domestic violence; mental health issues; inadequate education services

Hunger; homelessness; denial or delay of benefits; utility shut offs



United Way • AIRS 2-1-1 Get Connected. Get Answers. United Way of Greater Cincinnati

Cincinnati Works From Potential To Success

Cincinnati-Hamilton County Community Action Agency We help make things happen

Every Child Succeeds

Beech Acres Parenting Center Strengthening Families for Children

Women Helping Women Serving Survivors of Domestic Violence, Sexual Assault & Stalking

eliminating racism empowering women ywca

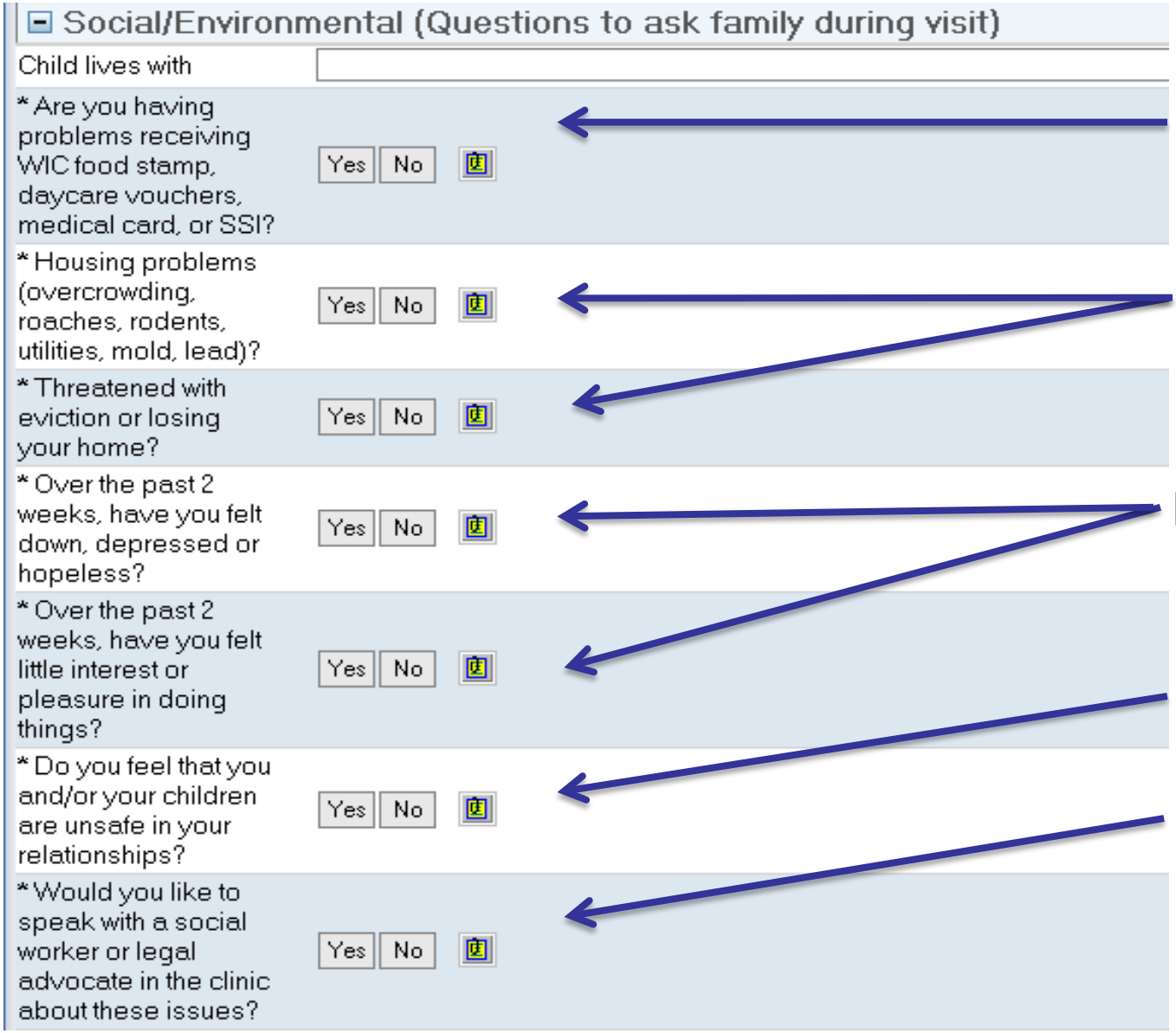
Freestore Foodbank Food • Connection • Hope

Legal Aid Society of Greater Cincinnati

Cincinnati Children's

A. Henize (2013)

Using EPIC to drive social history screening



Benefits

Housing

Depression

Domestic Violence

All others

Cincinnati Children's