

Data Integration for Policy and Program Improvement

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When we talk about Integrated Data Systems, what do we mean?

- We're talking about people, not tech solutions.
- Efforts that link administrative data across domains/agencies
- Efforts that curate data that is relevant and high quality
- Efforts that serve as a public utility (not research for research's sake)
- Efforts that have defined governance structures (data is only used for approved



AISP'S Role



We are:

Data evangelists

Connectors, community builders,
thought partners, cheerleaders, and
data sharing therapists

Focused on ethical data use for policy
change

We are not:

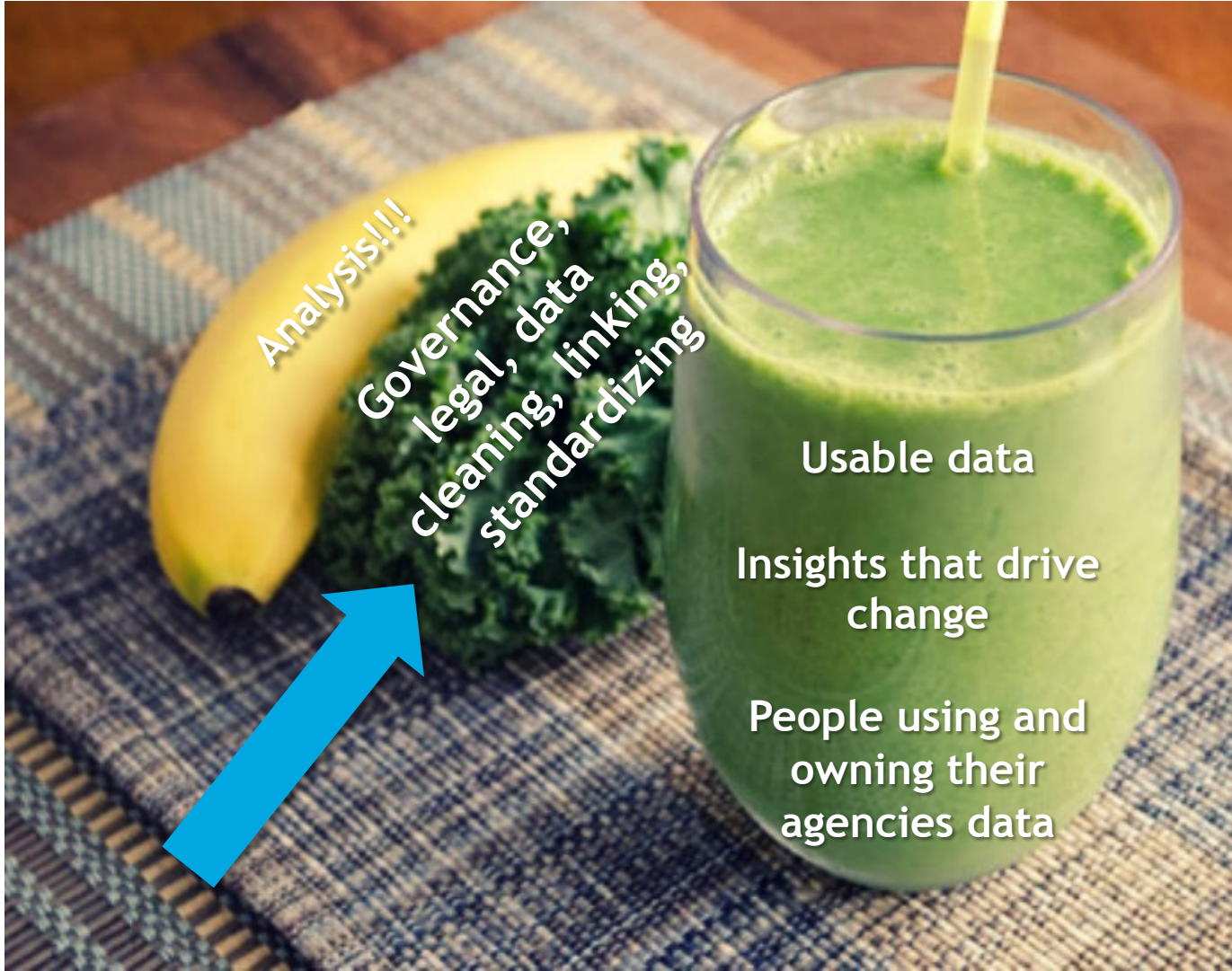
Data holders or intermediaries

A vendor or vendor recommender

Focused on academic research

What We Do

- Convene a [professional network](#) for local and state governments working on data integration to share best practices and problem-solve together
- Engage in [advocacy](#) on behalf of data sharing at the federal, state, and local level
- Provide [resources and sample documents](#) on data governance, legal considerations, data standards, and linkage technologies
- Offer [training and technical assistance](#) to help interdisciplinary teams increase state data capacity and use



Analysis!!!

Governance,
legal, data
cleaning, linking,
standardizing

Usable data

Insights that drive
change

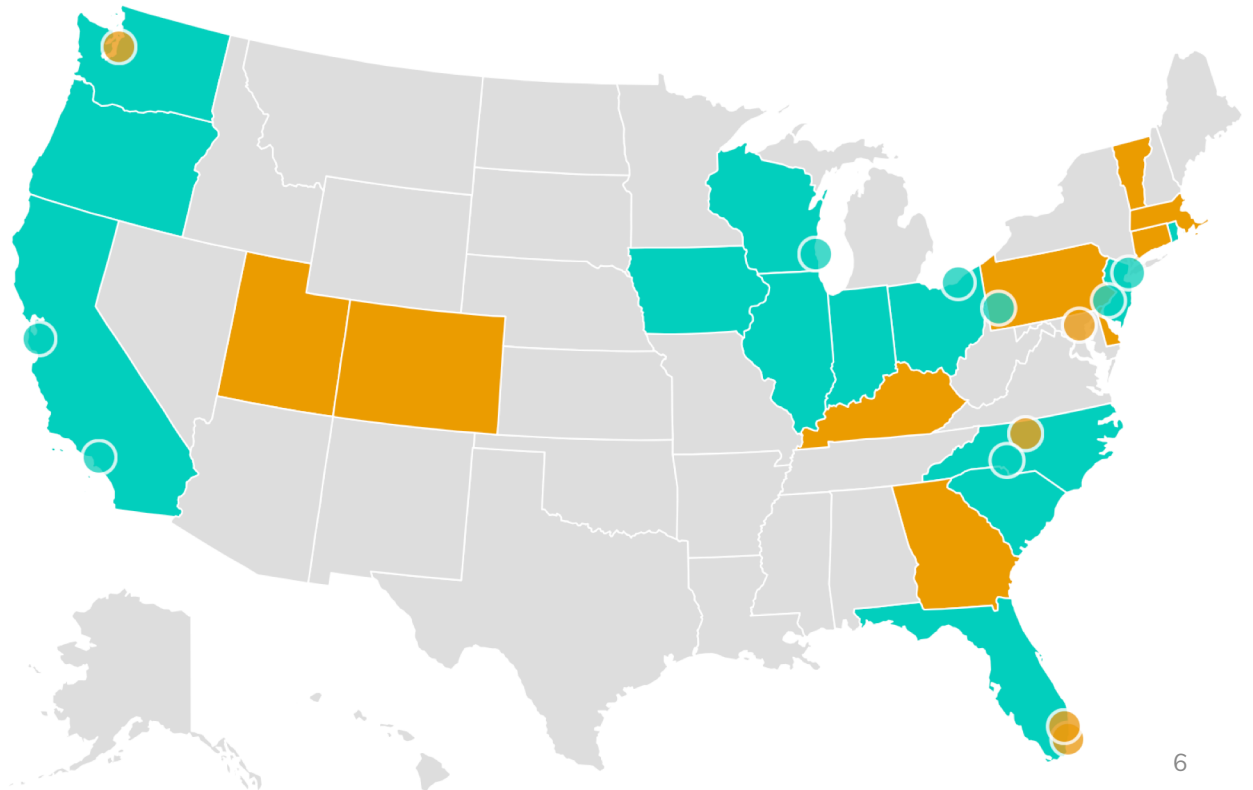
People using and
owning their
agencies data



AISP Network as of 2019

- Network of 22 operational state and local integrated data systems
- Between our three Learning Community cohorts, 12 more sites well on their way

50%
OF THE US
POPULATION



New Resource: 2019 Integrated Data Matrix

	Vital Statistics	All Payer Health Claims	Medicaid	Mental Health	Substance Use	Public Health	Child Welfare	Early Childhood	K-12 Education	Postsecondary Education	Juvenile Justice	Adult Justice	Law Enforcement	UI/Wage Records	Workforce Training Programs	TANF	SNAP	WIC	HHS	PHA	Education Homeless Records	Federal Data	Nonprofit Organizations	Other
Allegheny County DHS IDS <i>Allegheny County, PA</i>	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	
ARC Longitudinal Data System <i>Arizona</i>								X	X	X				X	X	X	X							
Broward Data Collaborative <i>Broward County, FL</i>				X			X		X		X			X							X		X	
California Policy Lab <i>California</i>				X		X				X	X	X	X	X	X	X	X	X	X					
Camden ARISE <i>Camden, NJ</i>			X				X	X	X		X	X				X	X				X		X	
CARESDMO <i>Pittsburgh, PA</i>	X		X	X	X	X	X	X	X		X	X	X						X	X				
CIDI <i>New York, NY</i>		X					X	X	X		X	X	X	X	X	X	X	X	X	X	X			
Chugh Hill* <i>Illinois</i>			X				X	X	X		X	X	X	X	X	X	X	X	X	X	X			Childcare Subsidy
CHS Client-Centered Collaboration & CDN <i>California</i>			X	X		X	X	X								X	X	X						
CHILD <i>Cuyahoga County, OH</i>	X		X			X	X	X	X	X	X	X		X	X	X	X	X	X	X	X			X
Data Warehouse <i>Palm Beach County, FL</i>	X			X		X	X	X	X	X	X			X	X		X	X	X	X	X	X	X	X
DataShare* <i>Mississippi, MS</i>			X			X			X			X												
DHS RDA* <i>Washington, State</i>	X		X	X			X	X			X	X	X	X	X	X	X			X	X			
Early Childhood Results Count <i>Texas County, TX</i>			X	X				X	X								X	X	X	X	X			Childhood Diagnostic EMR Data
eICM <i>Montgomery County, MD</i>	X		X	X		X										X	X	X	X	X				
Enterprise Linkages Project <i>Los Angeles County, CA</i>		X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X			
Georgia CACDS <i>Atlanta, Georgia</i>						X	X	X																
Georgia Policy Labs <i>Georgia</i>							X	X	X	X						X	X							
Institute for Social Capital <i>Charlottesville, VA</i>				X	X	X	X	X	X		X								X	X	X	X	X	
Integrated Client Services Data Warehouse <i>Oregon</i>	X	X	X	X		X	X		X					X	X	X	X	X						
Iowa's Early Childhood IDS <i>Iowa</i>	X					X		X	X															Childcare Subsidy, Head Start, Child Support, Childcare Subsidy
WI Administrative Data Core <i>Wisconsin</i>			X				X	X	X		X	X		X		X	X							
IRS <i>Ann Arbor, MI</i>										X				X	X							X		
KY Longitudinal Data System <i>Kentucky</i>			X					X	X	X				X	X	X	X				X	X		
King County Integrated Data Hub <i>King County, Washington</i>			X	X	X	X						X							X	X				
MA IDS <i>Massachusetts</i>							X	X	X	X				X	X	X	X			X				
NC ECIDS <i>North Carolina</i>							X	X																
Phillis County Data Collaborative <i>Phillis County, FL</i>	X		X	X	X		X				X	X												
RI DataHUB <i>Rhode Island</i>	X					X	X	X	X	X	X	X	X	X	X									Voter Data, DMV Data
RI EOHHS Ecosystem <i>Rhode Island</i>	X		X	X			X	X						X	X	X	X							
SC IDS <i>South Carolina</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
State of Indiana MPH <i>Indiana</i>	X		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
SVIRT <i>Silicon Valley, CA</i>				X			X		X	X	X										X			
Texas Education Research Center <i>Texas, TX</i>							X	X	X	X	X			X								X		
Pre-Sentencing Investigations <i>Idaho</i>										X	X	X												

What can an integrated data system do?

Complex Social Problems States are Addressing with IDS

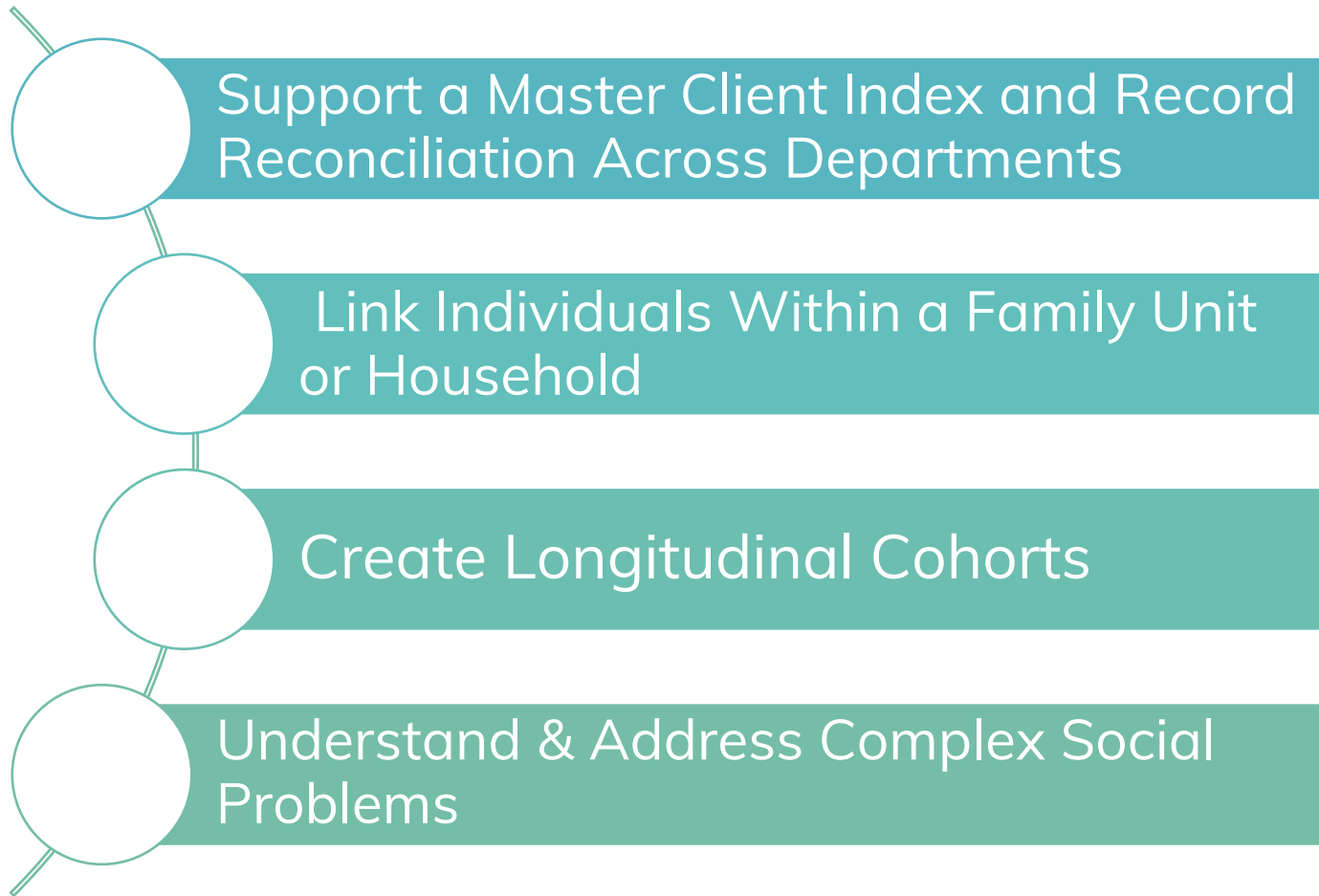
Superutilizers in
Healthcare

Educational
Achievement Gaps

The Opioid Crisis

Two-Generational
Poverty

IDS Help Governments & Research Partners:



Uses of IDS

Model Testing (e.g.,
evaluations)

Model
Building

Descriptive
Epidemiological
Study of a Social
Problem

At each point along arch, IDS may be uses may be for:

- Primary research
- Policy research
- Operations/business intelligence

Example: IDS in Action

Homeless vs. Housed

Pre/Post, Propensity Score-matched Groups

N≈10,000

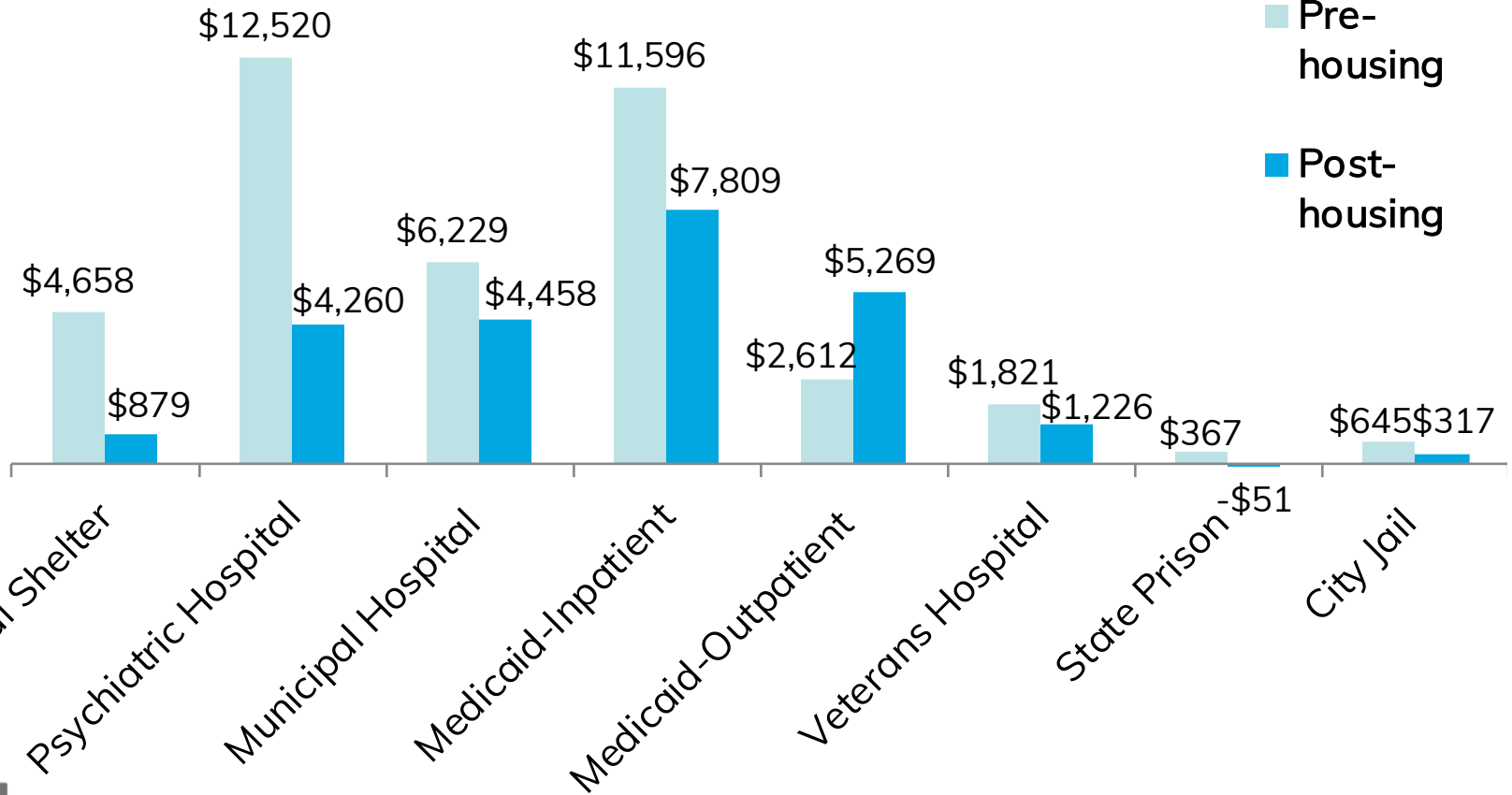
10 years of data covered

Project Timeline: 2 years

Total Project Cost: \$200,000

PRE-HOUSING COST = \$40,449

POST-HOUSING COST = \$24,167



Iowa's Preschool Development Grant “Pilot”

Thank you to Heather Rouse, from Iowa State University use of these slides.

Policy-Related IDS Analytic Questions:

- Who are the children participating in our programs, and how do these **characteristics** differ for children NOT participating?
- What are the **unduplicated counts** of children across B-5 programs?
- Who are our **underserved populations**, including those vulnerable children who are eligible but are not participating in our programs and children living in rural areas?
- How does program participation relate to **kindergarten outcomes** including literacy, attendance, and behavior?
- What are the experiences and outcomes for **children with disabilities** (i.e., IDEA Parts B and C)?

Step 1: Birth-to-Kindergarten Match



IDPH Birth Records

- Child demographics
(gender, race, birth order)
- Low birthweight
- Preterm birth
- Prenatal care
- Low maternal education (<12y)
- Teen mother
- Single mother
- Poverty
(e.g., Medicaid-paid birth)



Department of Education

- Child demographics
(age, gender, race/eth)
- FRPL status
- ELL status
- K enrollment *(location & dates)*
- K attendance rate
- FAST K literacy assessment

Step 1: Birth-to-Kindergarten Match



IDPH
Birth Records

39,200

Born in Iowa
(age eligible for
K in SY1718)



Department of
Education

27,219

Born & Attend K
in Iowa

34,813

enrolled in
Kindergarten
SY1718

Step 1: Birth-to-Kindergarten Match



IDPH
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Born & Attend K
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69%

of those born in Iowa
attend K in Iowa



**Department of
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Step 1: Birth-to-Kindergarten Match



IDPH
Birth Records

39,200

Born in Iowa
(age eligible for
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27,219

Born & Attend K
in Iowa

69%

of those born in Iowa
attend K in Iowa

78%

of kindergarteners
were born in
Iowa



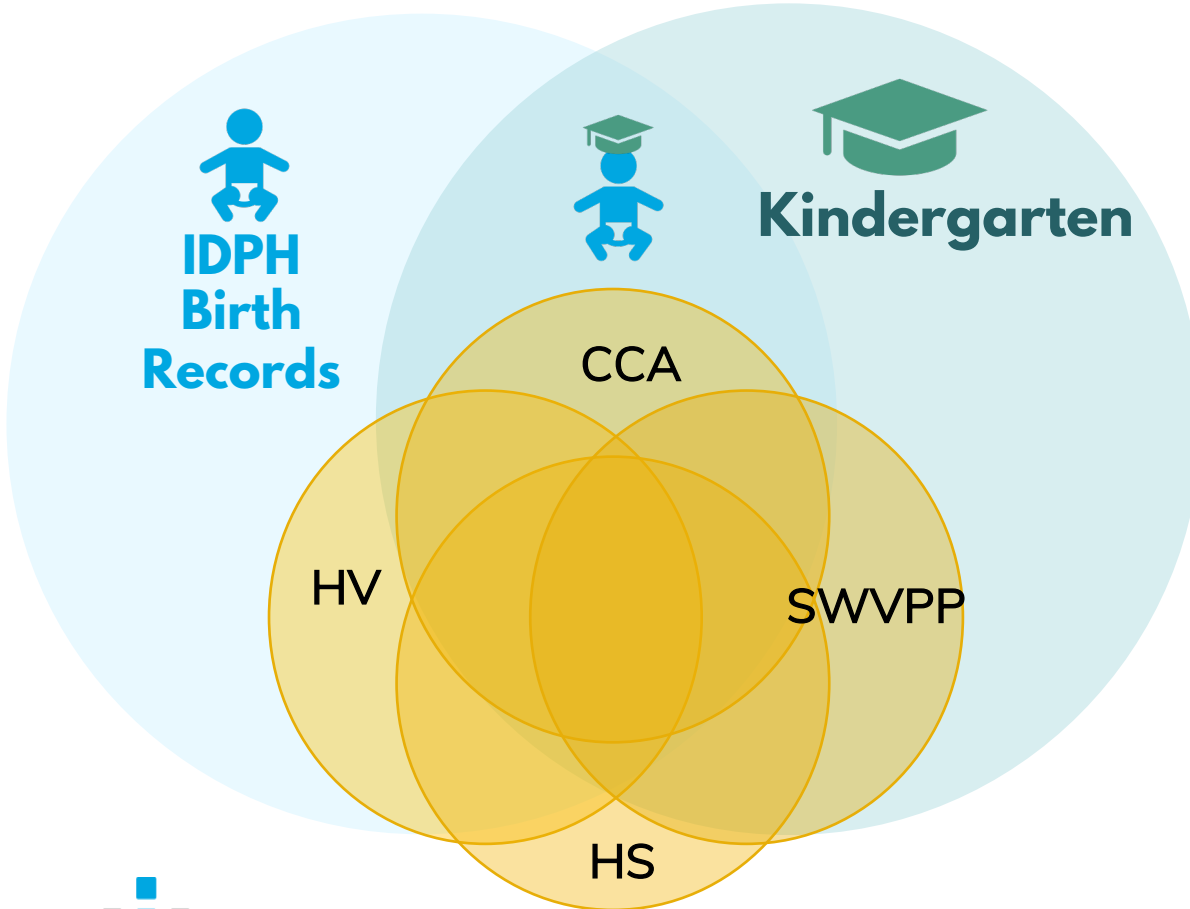
**Department of
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34,813

enrolled in
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SY1718



Step 2: Enrollment Patterns



State-funded Pre-K (DE)
SWPVV & SV Enrollment
(location & dates)

Head Start (HS)
HS enrollment (location & dates)

DHS Child Care Bureau:
CCA applied & receipt
(dates)

IDPH/ECI Home Visiting
Enrollment (dates & duration)

Birth-to-K Match



39,200

Born in Iowa
(age eligible for
K in SY1718)



27,219

Born & Attend K
in Iowa

CCA

- 24% of B-to-K cohort applied for CCA (n=6,557)
- 6% of B-to-K cohort used a CCA subsidy in AY1617 (n=1,718)

DE
Prek

- 68% of B-to-K cohort had a DE-funded PreK Experience AY1617 (n=18,388)

TS
GOLD

- 67% of B-to-K cohort had a TS GOLD Assessment in AY1617 (n=18,314)

Any
Prek

- 73% of B-to-K cohort had “any of the above” PreK experiences AY1617 (n=19,944)

The So What

DoE PreK Data
(18,388; 68%)

1,489 DE only (5.5%)

15,522 DE + GOLD (57%)

1,235 GOLD only (4.5%)

Unduplicated Counts:
73% of Children had AT LEAST 1 experience across systems (27% had NONE)

Preschool Assessment Data
(18,314; 67%)

Underserved Children:
Children born to mother with <HS degree & with inadequate prenatal care are SIGNIFICANTLY LESS LIKELY to have a preschool experience

1,310 DE+GOLD+CCA (4.9%)

Vulnerable Children:
Children born to teen mothers are SIGNIFICANTLY MORE LIKELY to receive a child care subsidy and SIGNIFICANTLY LESS LIKELY have a DE-funded or Private PreK experience

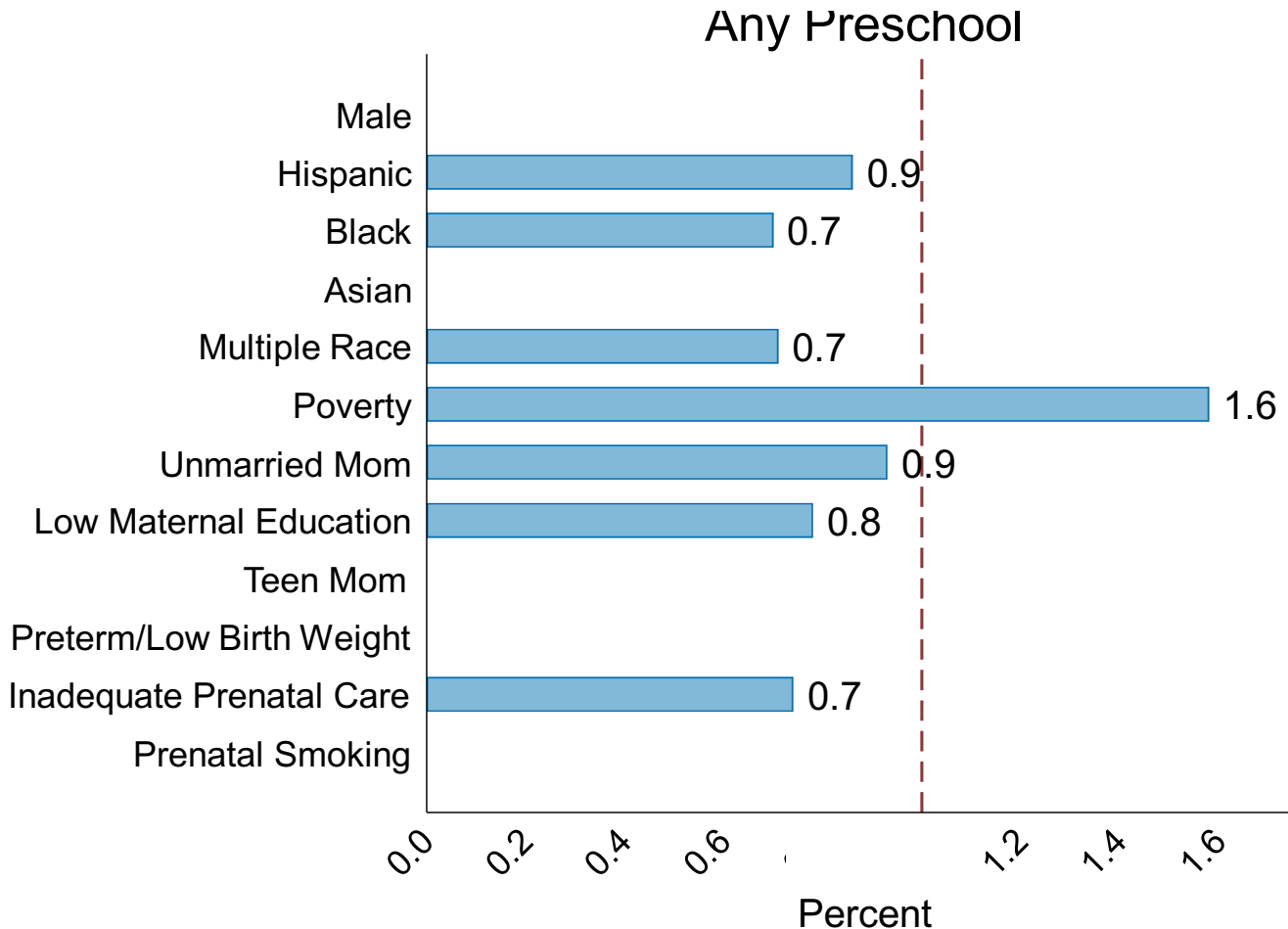
97 CCA+DE (0.2%)

94 CCA only (0.3%)

CCAT (0.6%)

Child Care Assistance Data
(1,718; 6%)

Child Characteristics & Risks Related to “Any Preschool” (Odds Ratios)



Examples from Rhode Island

Data Ecosystem Guideposts

MISSION

- Use integrated data to...
- Develop programs that meet people where they are
 - Help Rhode Islanders fulfill their potential
 - Responsibly steward state resources

PRINCIPLES

Integrated at the person-level
Informs agency operations
State-owned and directed
Self-service analytics available
Agile, project-focused design

Uncluttered, cleaned data
Builds on existing assets
Security best practices

Thank you to Kim Paull, from Rhode Island EOHHS for use of these slides.

The Problem

If someone has an opioid addiction, medication assisted treatment (MAT) is one of the best options. But enrollment is spotty.

How do we encourage more people to start and stick with treatment?



How-To

- **Who wants to know:** Opioid Overdose Task Force; Governor
- **Goal:** Show MAT works, especially if you stay with it
- **Why:** Even though MAT is the “gold standard”, it isn’t readily accepted or offered in the medical community. Doctors who are licensed to provide treatment often don’t. When people do enroll, many drop out quickly.
- **How:** Claims data from APCD and Medicaid
 - (buprenorphine = Rx; Methadone = medical claim);
 - Link Medicaid to Medical Examiner

What Do the Data Say?

MAT works! Immediately!

Our data show that ER and IP visits drop immediately.

But only for those who end up staying on for 7+ months

People whose ER, IP use drops immediately are those that *end up* staying on. **80% of those who died of an overdose did not have MAT.**

And drop off one of the drugs very quickly

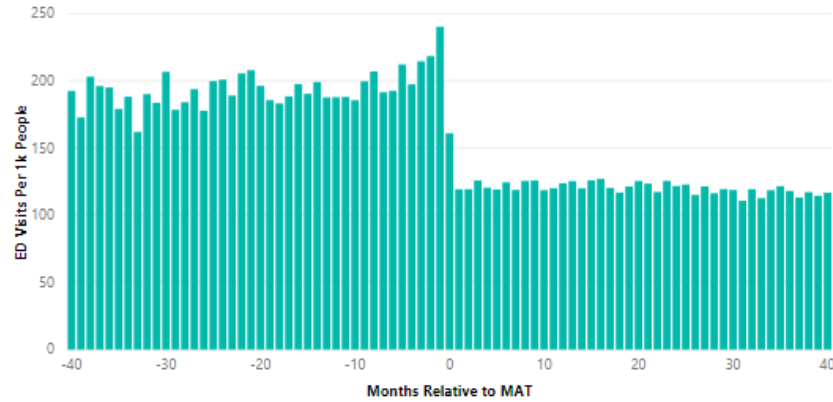
Patients who receive burprenorphine drop off *much* more quickly than those who receive methadone.

2018, RI | Analysis of linked data across APCD, Medicaid and Medical Examiner

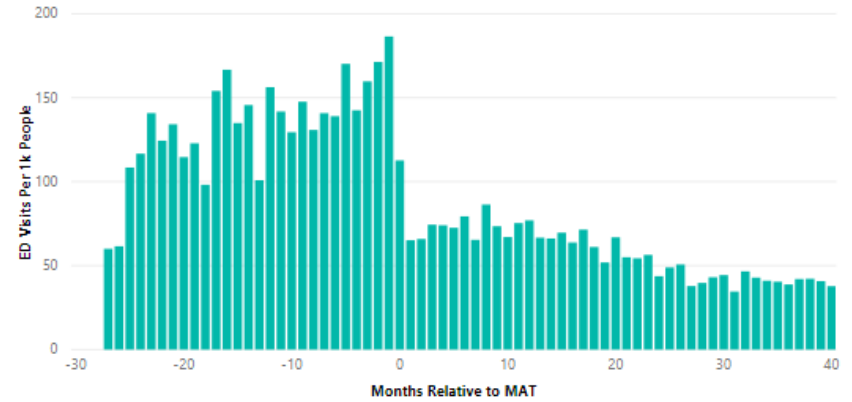
Lesson: Though doctors are now signing up to prescribe Bup, we have to help them improve treatment so patients stay on.

MAT lowers ED visits

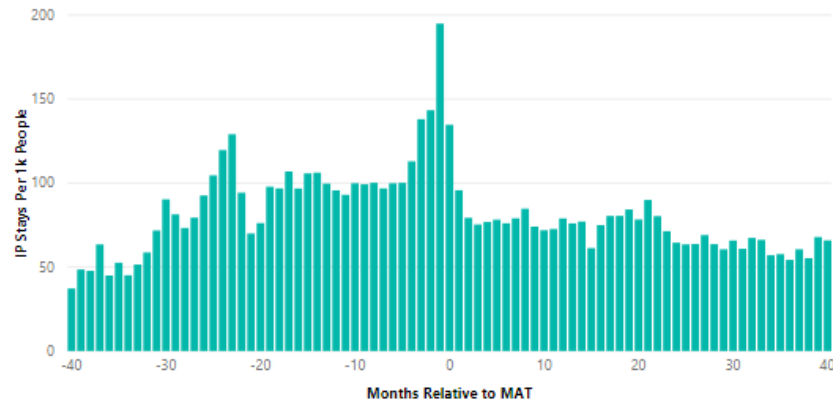
ED Visits Per 1k by Months Relative to First MAT



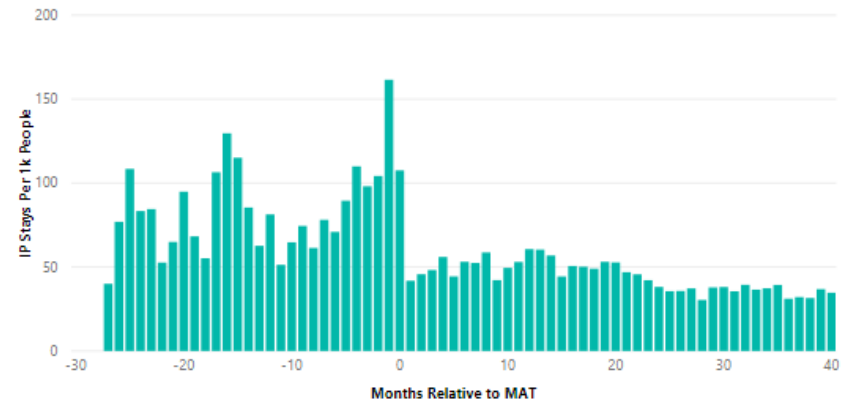
ED Visits Per 1k by Months Relative to First MAT (BH Only)



IP Stays Per 1k by Months Relative to First MAT



IP Stays Per 1k by Months Relative to First MAT (BH Only)

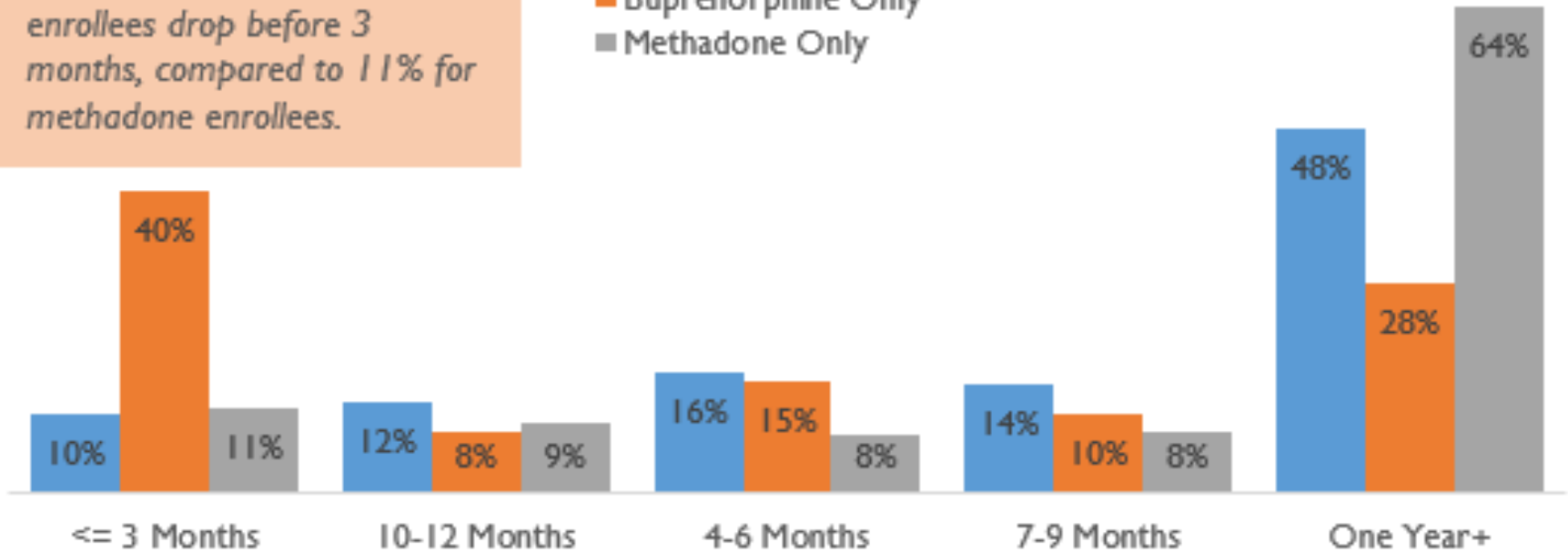


Treatment length matters

Distribution of MAT Enrollees by Drug, by Length of Stay

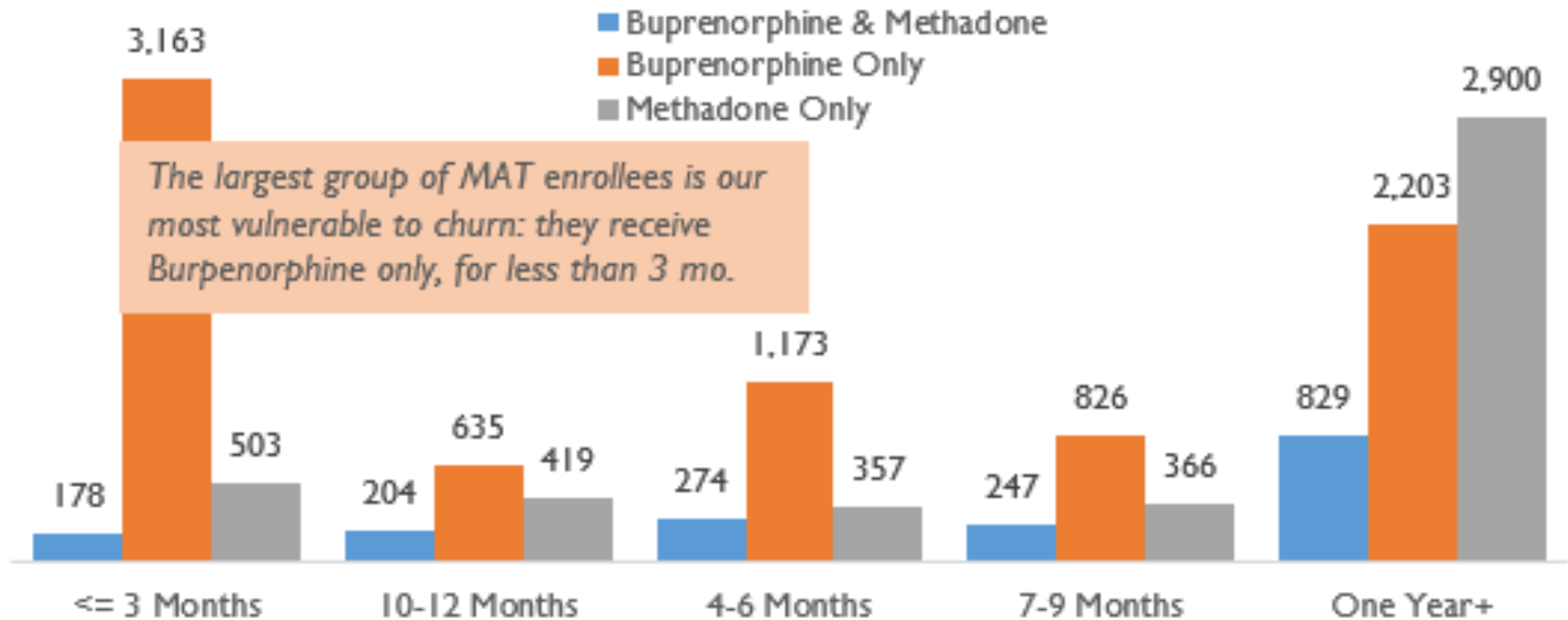
40% of buprenorphine-only enrollees drop before 3 months, compared to 11% for methadone enrollees.

- Buprenorphine & Methadone
- Buprenorphine Only
- Methadone Only



Treatment length matters

Number of MAT Enrollees by Drug, by Length of Stay



The Problem

In Rhode Island, there were 39 fatalities or near fatalities from abuse or neglect between 2017-18, almost all under age 6.

But DYCF had no interaction with almost half of these children before the event.

What does data tell us about the best ways to help? How can other agencies help prevent child abuse?



What Do the Data Say?

Poverty is important!

Income is highly correlated with maltreatment, and so are specific neighborhoods – *communities* matter.

But not all poor families experience child abuse.

Higher correlation:
Geography (Woonsocket);
parental substance use (5x) or severe mental illness (4.5x);
children who miss doctors visits or childcare

So what do we do?

Support, don't punish, families at risk.

- Family-based approach to child safety (opioids, mental health)
- Incentives to coordinate

2018, RI | Analysis of linked data across Medicaid, DCYF, DHS, BHDDH, RIDOH

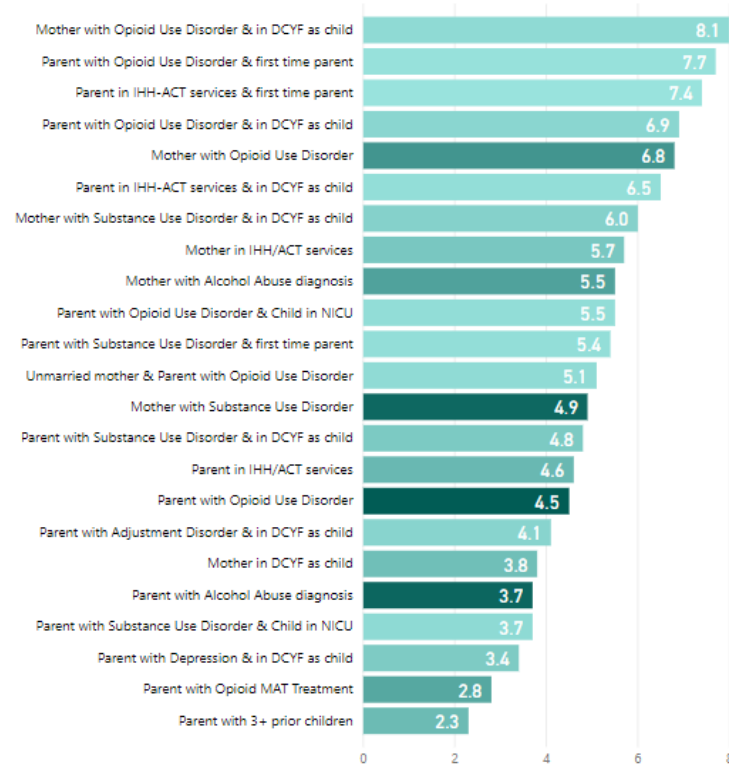
Lesson: Though our findings support the literature, we know more about how they play out in RI, in EOHHS. And we have data to drive action.

Ecosystem Findings: Relative Risk for Selected Risk Factors

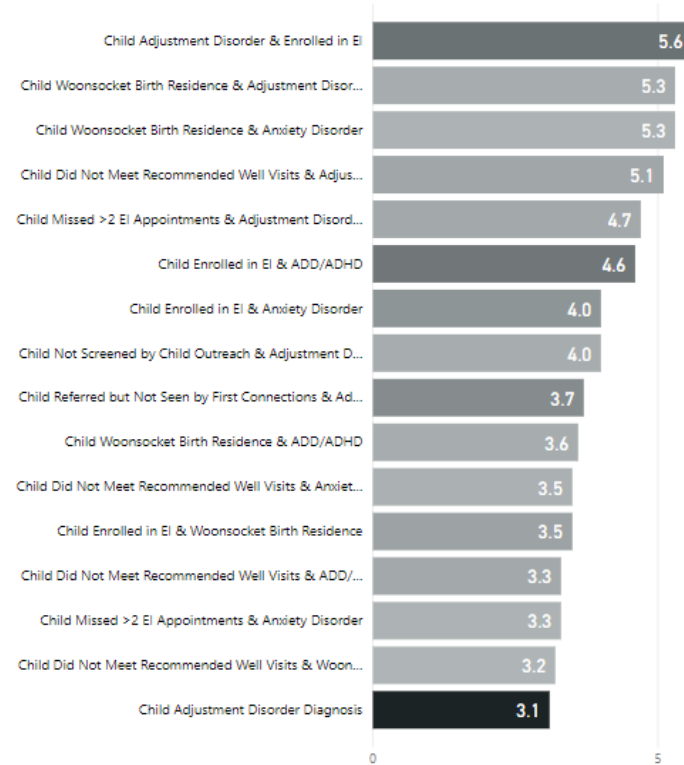
2013 - 2017	Maltreatment Indicated	No maltreatment indicated
RiteCare Children	9,041 (15.6% of children)	46,671
RiteCare Parents	10,051 (16.2% of parents)	54,334

Color = Number of individuals with risk factor(s)

Relative Risk for Parent-Specific Factors



Relative Risk for Child-Specific Factors



Questions?

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