

# Building & Using IDS to Promote Cross-Agency Problem-Solving in Human Services

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NAWRS Workshop

July 29, 2019

# Research Academy

## **Moderator:**

Della Jenkins, AISP, University of Pennsylvania

## **Presenters:**

Kristina Trastek, Wisconsin Dept. of Children & Families

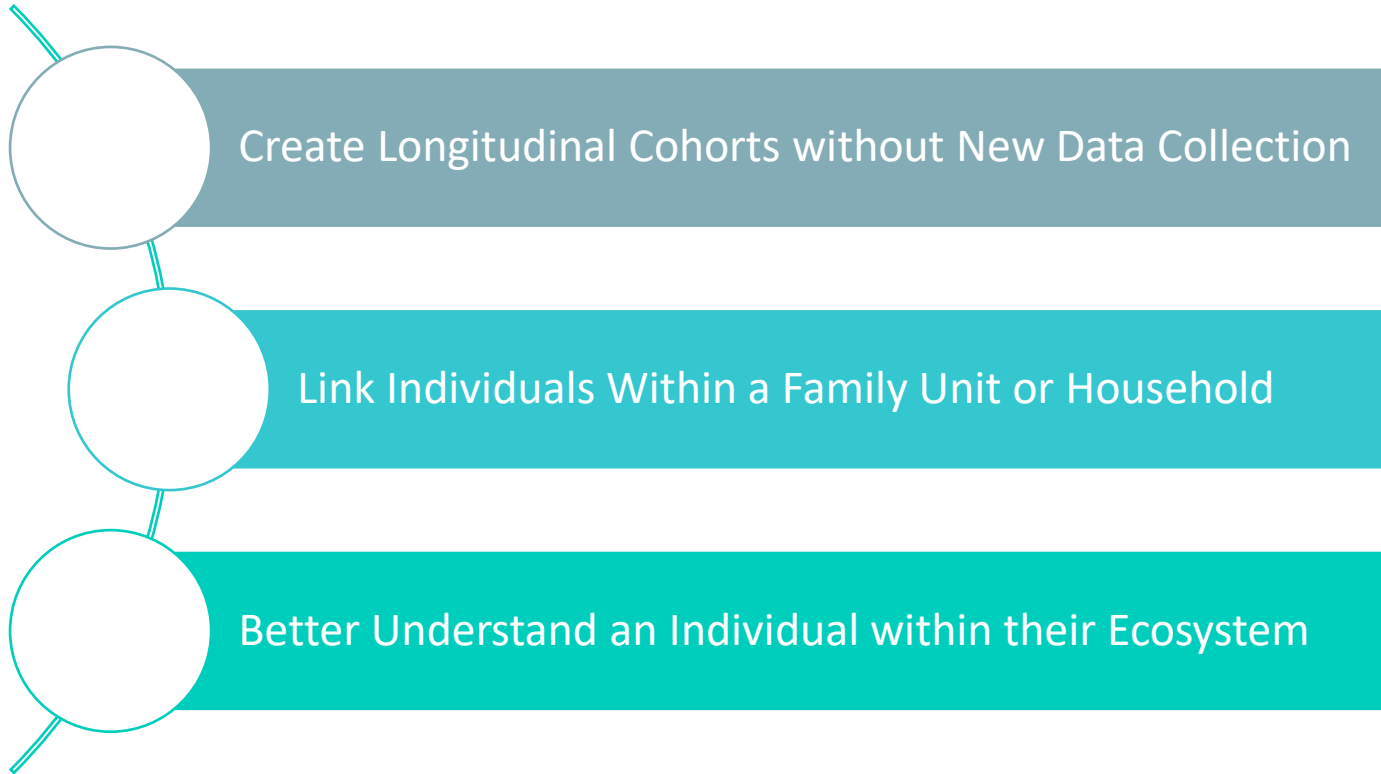
Hilary Shager, University of Wisconsin Institute for Research on Poverty (IRP)

Erin Dalton, Allegheny County Dept. of Human Services

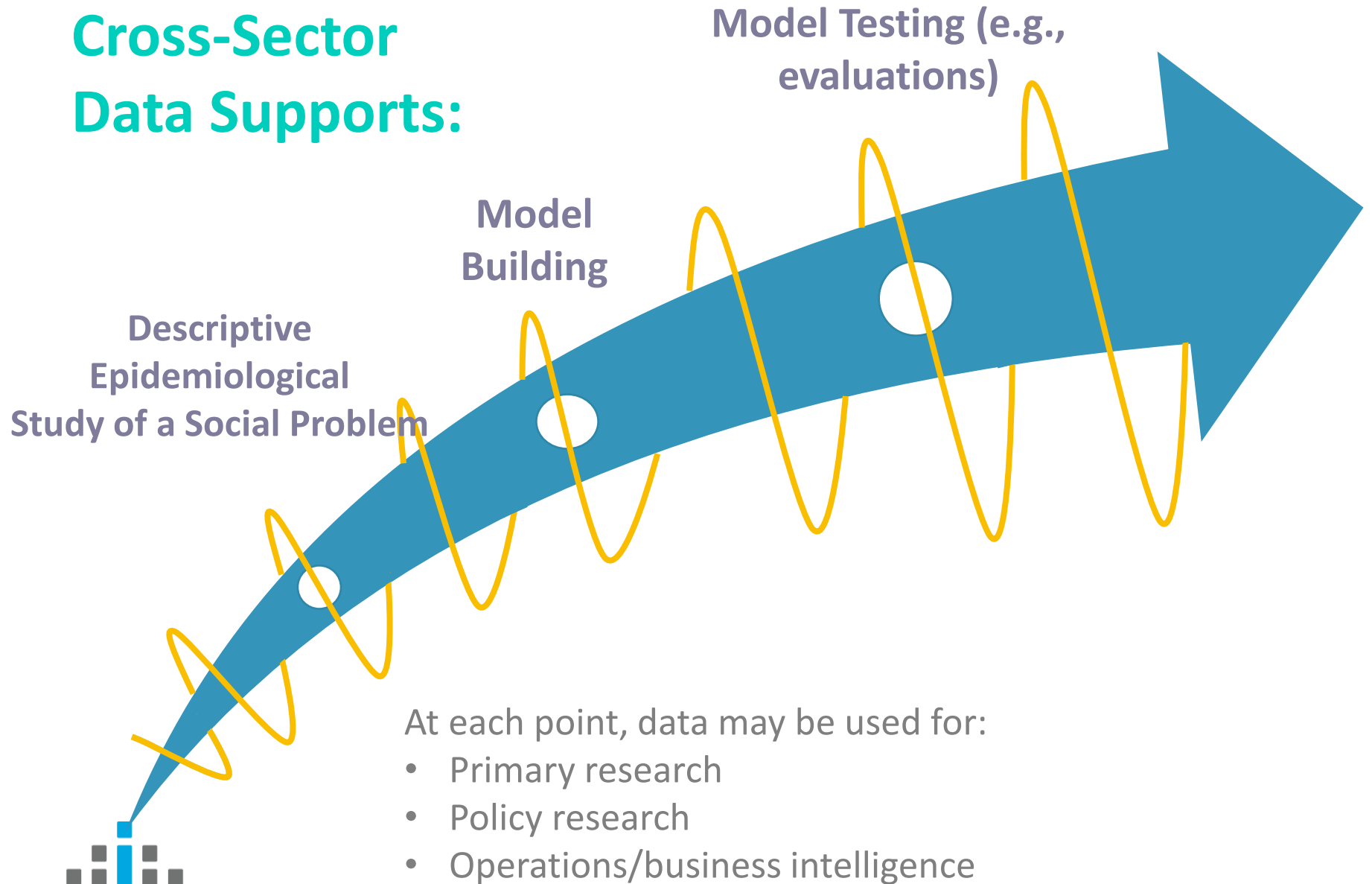
# Actionable Intelligence for Social Policy (AISP)

| <b>We are:</b>   | <b>We are not:</b>                  |
|--|-------------------------------------|
| Data sharing enthusiasts   | A data holder or intermediary       |
| Connectors, community builders, thought partners                                       | A vendor or vendor recommender      |
| Focused on ethical data use for program evaluation, resource allocation, policy change | Focused on purely academic research |

# Cross-Sector Data Help Agencies & Research Partners:



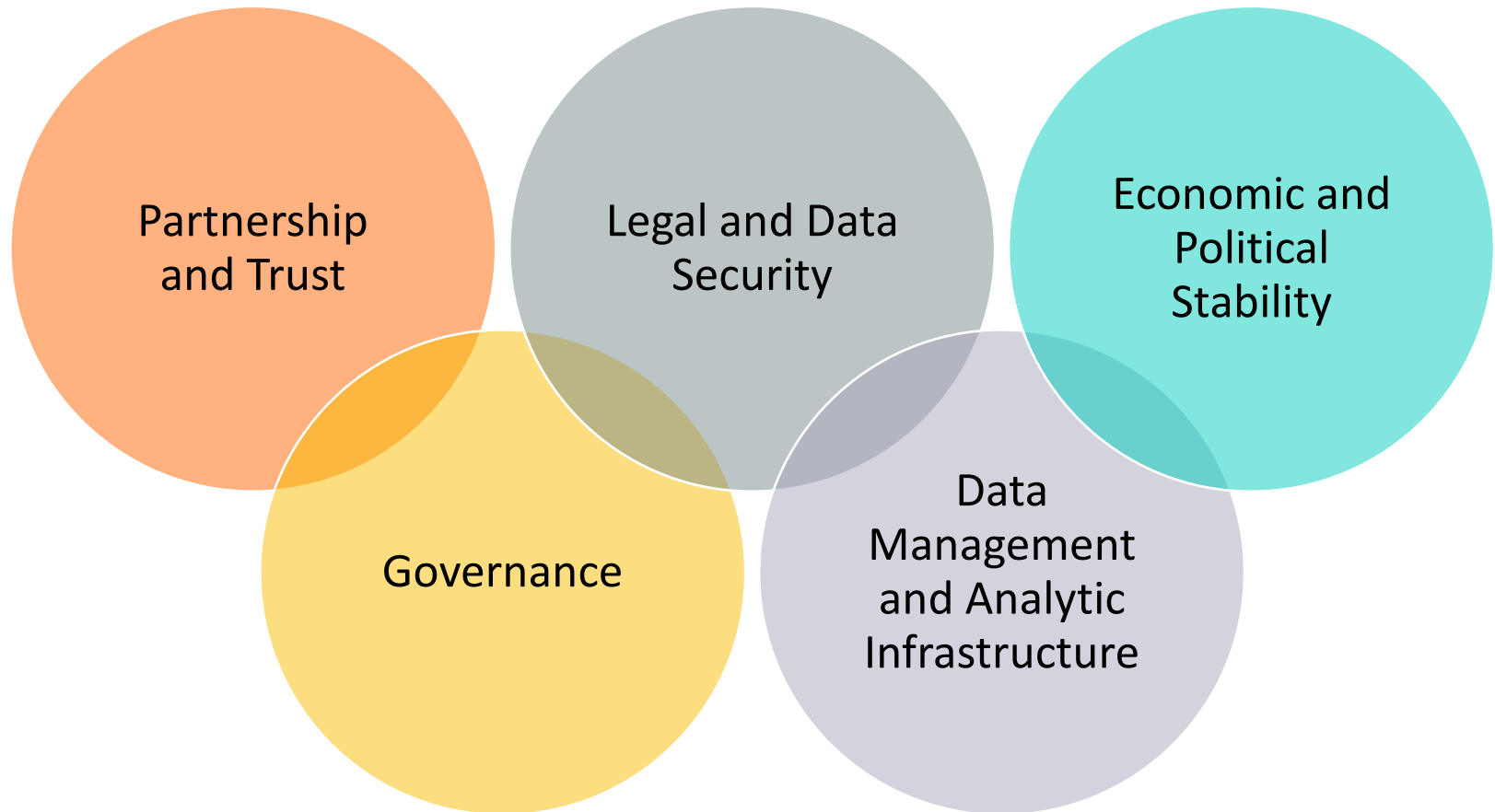
# Cross-Sector Data Supports:



At each point, data may be used for:

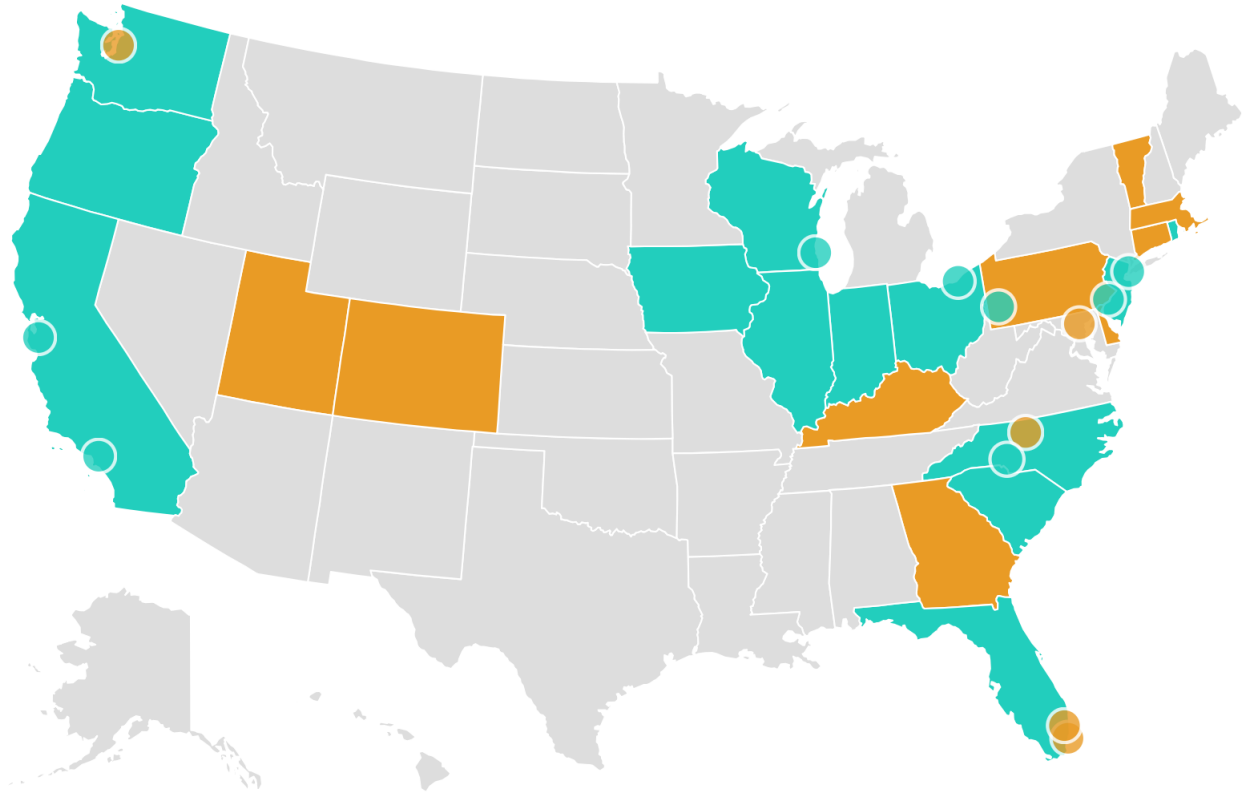
- Primary research
- Policy research
- Operations/business intelligence

# Core Components for Success



# Cross-Sector Data Sharing & Integration: National Progress

- Network of 21 operational state and local integrated data systems
- Between our three Learning Community cohorts, 12 more sites well on their way



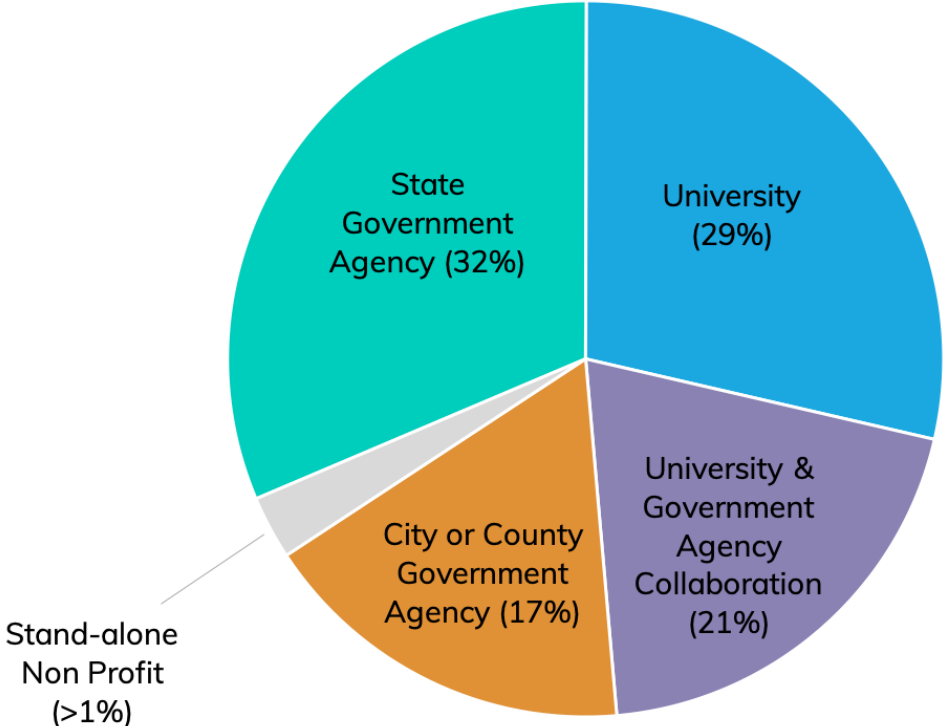
# Goals of 2019 Field Building Survey

- ❑ Better understand the national landscape of cross-sector data efforts and how it's changed since our last national scan in 2013
- ❑ Document who is leading data sharing efforts, what data they are linking, and how linked data are currently being used
- ❑ Create a centralized data matrix and contact list
- ❑ Support cross-site learning, projects and analyses



# Survey Findings

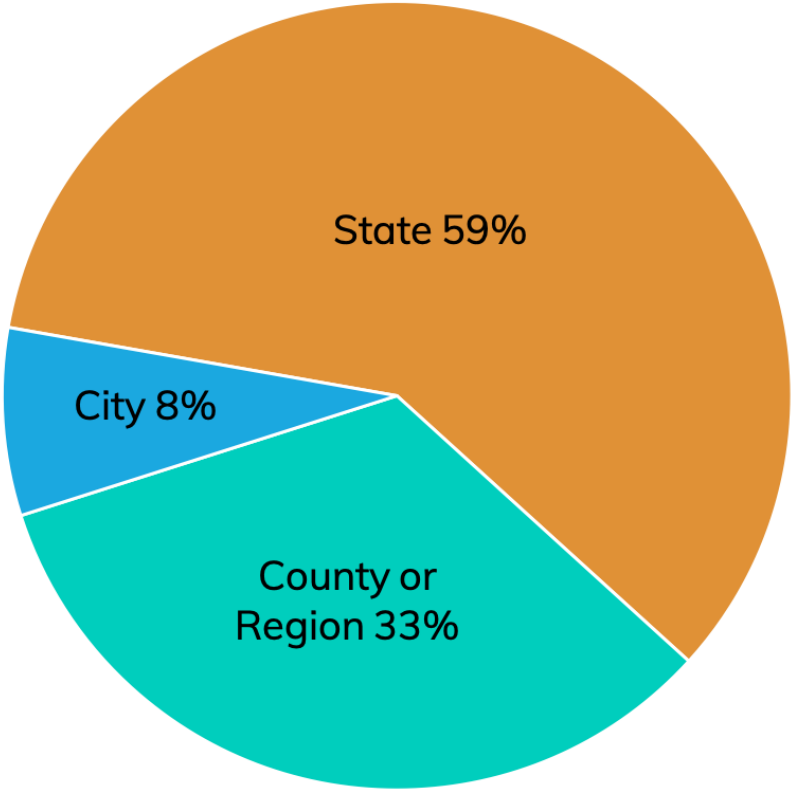
Lead Organization For Data Sharing Effort



N = 35

# Survey Findings

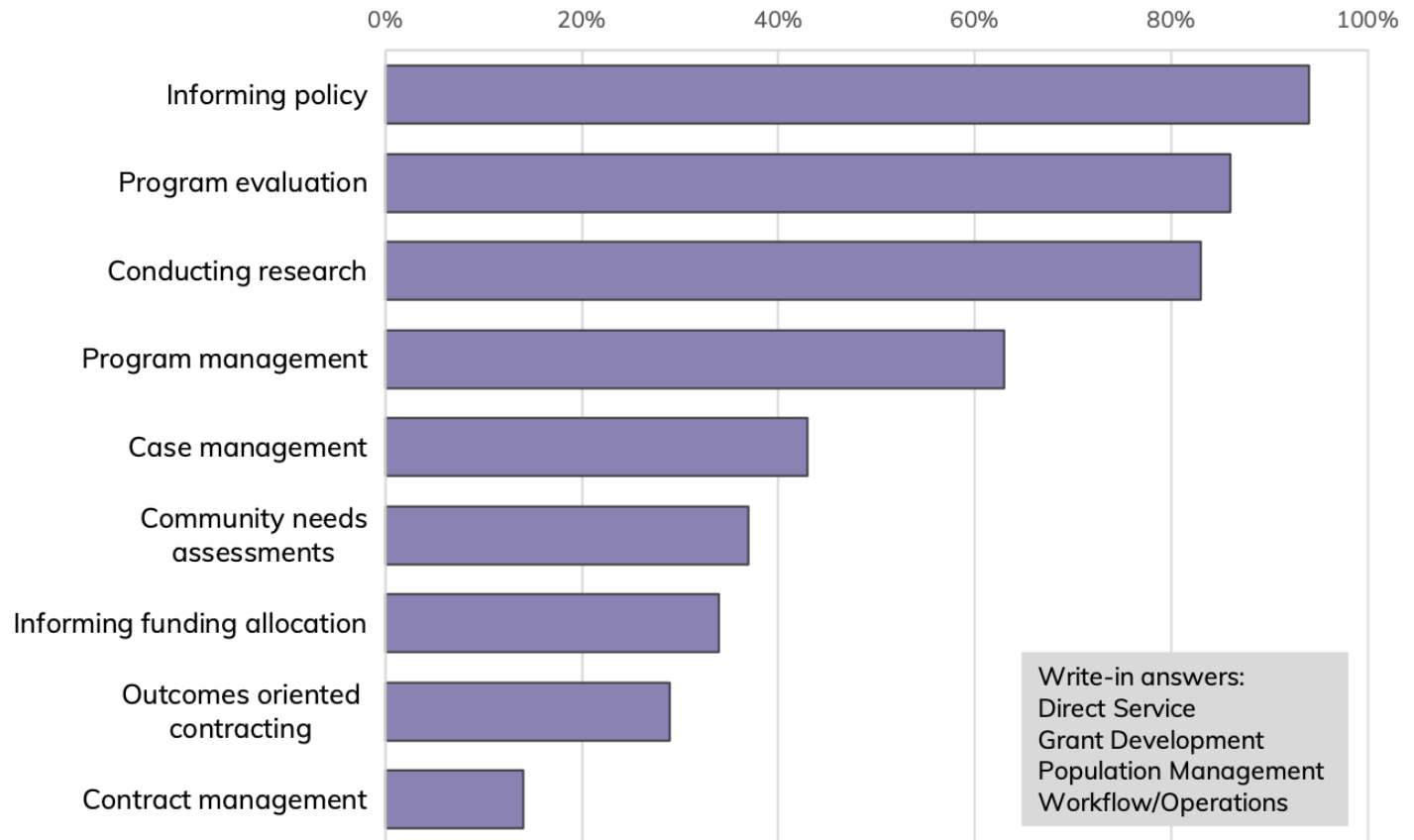
What level of data do you integrate?



N = 39

# Survey Findings

## Integrated data are being used for...

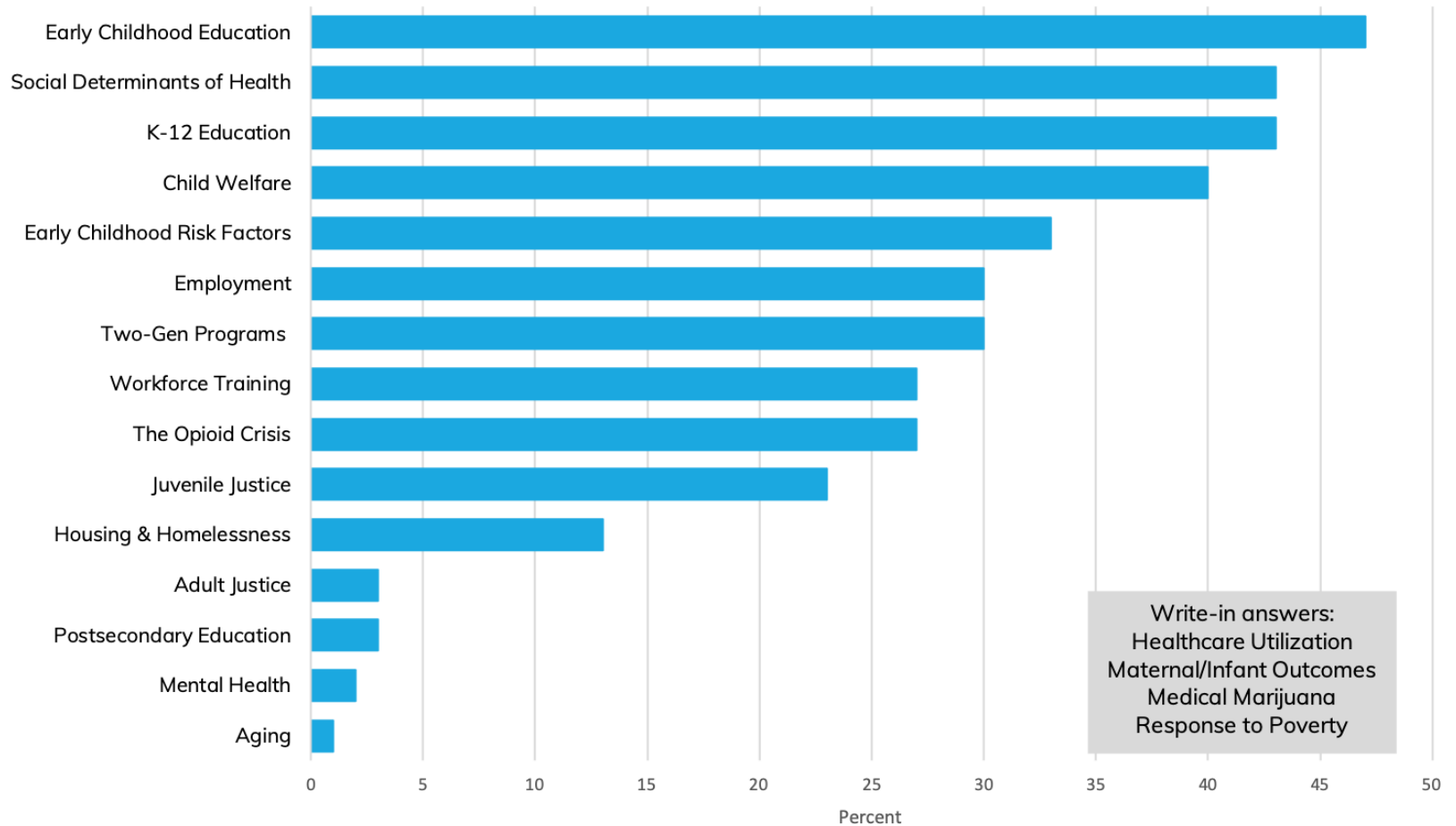


# Survey Findings

- ❑ Most common uses of integrated data are informing policy, program evaluation, and research
- ❑ 1 in 6 sites use data for case management of some kind
- ❑ Resource allocation is increasingly informed by integrated data

# Survey Findings

## What policy areas are you interested in exploring?

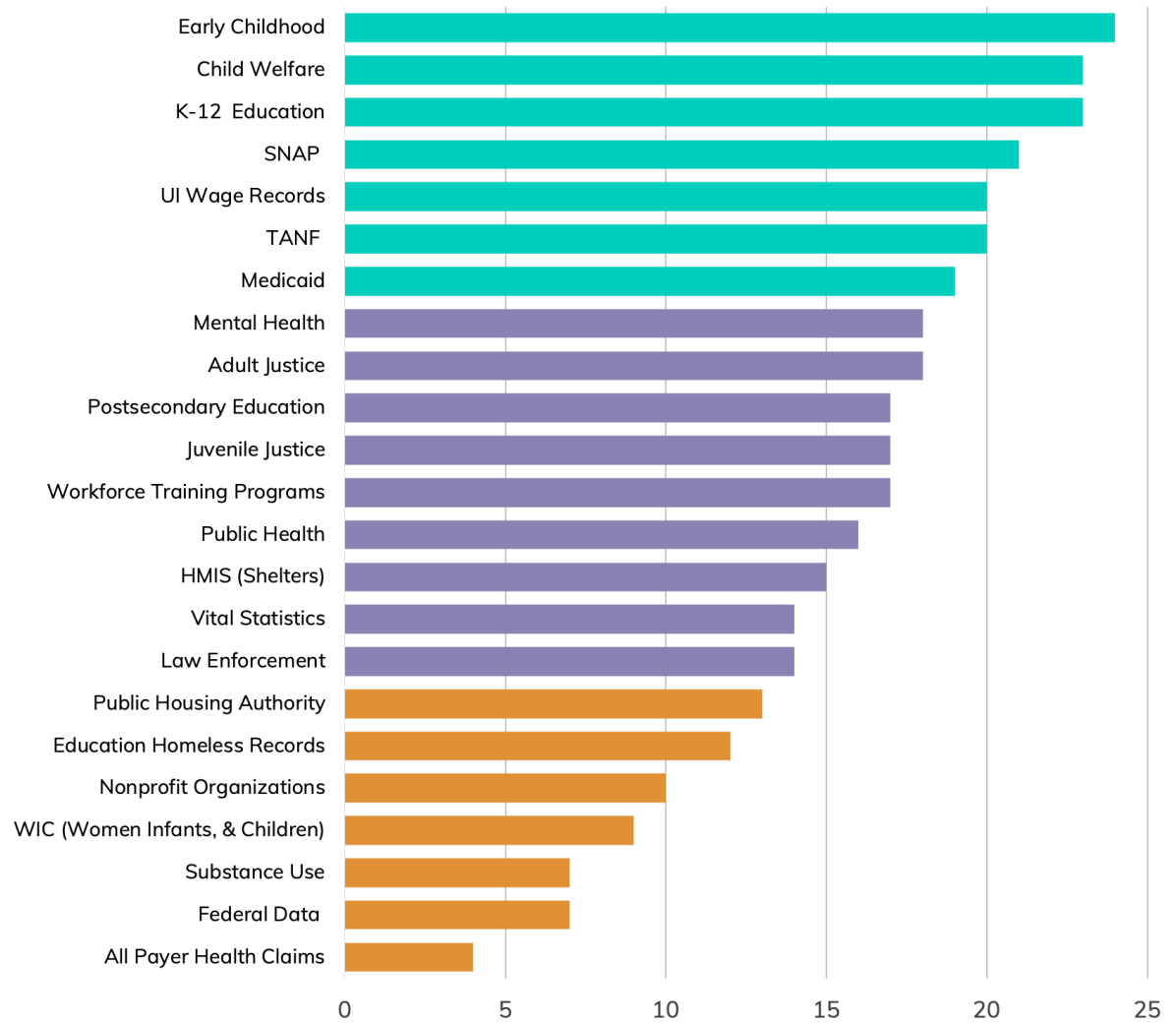


# Survey Findings

- Early childhood is the most common area of interest
- Other common areas of interest include social determinants of health, K-12 education, and child welfare
- 1 in 3 sites surveyed is interested in using integrated data to inform two-gen programs

# Survey Findings

## What data sources do you integrate?



# Survey Findings

- ❑ The most commonly integrated data sources (early childhood, child welfare, and K-12 education) align with common interest areas
- ❑ Medicaid, TANF, SNAP, and UI Wage Records have also been integrated by over 50% of sites surveyed
- ❑ Most common lingering challenges reported by sites:
  - ❑ Sustainable funding model
  - ❑ Sustainable staffing model
  - ❑ Process for ensuring data quality



# Advice for peers

- ❑ “Get executive sponsorship as soon as possible, and remember a long journey begins with the first step”
- ❑ “Use good governance process to set transparent guardrails to your decision-making”
- ❑ “Establishing trust with data owners/providers requires continual communication and reassurance that their data is being used securely, and in the interest of their programs”
- ❑ “Engage front-line workers early and give them the opportunity to own the result”
- ❑ “Lead with specific policy purposes, but build something that can change/expand over time”

# Examples from the Field

- Wisconsin
- Allegheny County, PA

# Discussion Questions

- ❑ What are the biggest barriers to cross-agency problem solving in human services?
- ❑ How can we break down those barriers and build the necessary culture, capacity and relationships?
- ❑ What are some bright spots, examples of success that we should lift up, learn from, or replicate?
- ❑ How can the AISP Network help?

Allegheny County Department of Human Services

# Using Integrated Data to Support Practice



# Integrated Data Systems



## Childhood & Education Services

Early Intervention  
HeadStart  
Homevisting  
Family Support Centers  
Child Welfare  
Family Court  
Pittsburgh Public Schools + 10 additional School Districts



## Basic Needs

Homeless  
Housing Supports  
Public Benefits  
Public Housing  
Employment/Unemployment  
Transportation (for medically fragile)  
Aging services & supports



## Physical & Behavioral Health

Mental Health Services (Medicaid & Uninsured)  
Substance Use Services (Medicaid & Uninsured)  
Physical Health Services (Medicaid)  
UPMC Health Plan (Commercial)  
Intellectual Disabilities



## Juvenile & Criminal Justice

Juvenile Probation  
Delinquency  
Pittsburgh Bureau of Police  
Criminal Court  
Allegheny County Jail  
911 Dispatches



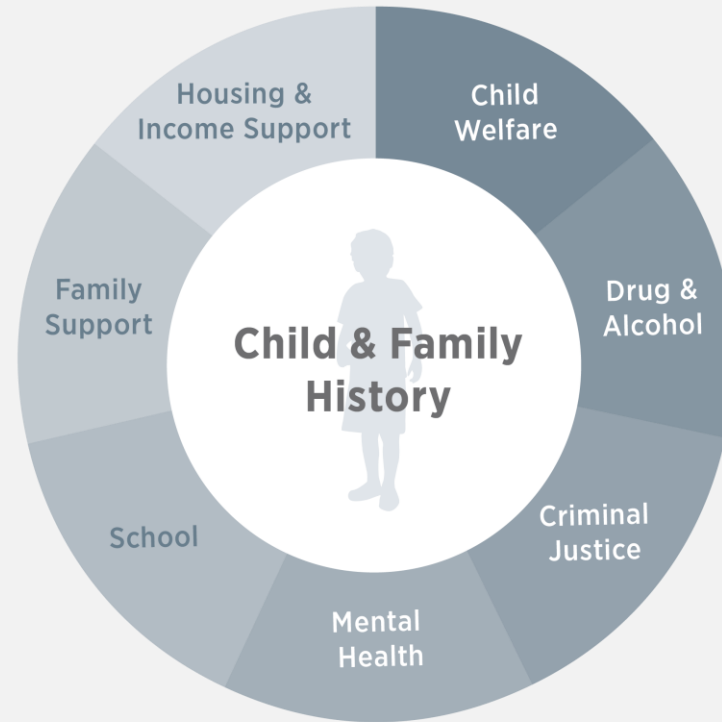
## Vital Records

Birth Records  
Autopsy Records

# Data to Support Coordinated Care

**In Allegheny County,  
rich data are  
available to:**

- DHS staff (for 15 years)
- Provider network
- Clients themselves



# Timelin e

**Timeline**

34 years old, Female

**Timeline Display Options**

View Monthly  View Yearly

View Involved Program Areas  View All Program Areas

Filter Program Areas

Print Timeline

|                                   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Life Event                        | ●    |      | ●    |      |      | ●    |      | ●    |      |      |      |      | ●    |      |
| CYF Parent (Mainframe/KIDS Merge) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ▶ Community Services              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| DHS Housing Supports              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ▶ Drug / Alcohol                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ▶ Mental Health                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HealthChoices Eligibility         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ▶ Jail                            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ▶ Public Benefit                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Life Event Key  
● = Birth of Child

Please Note: Information being displayed is based upon data that is available for this client

# A Few Insights

- Over half (53%) the children attending Pittsburgh Public Schools were involved in the human services systems, 30% had child welfare involvement.
- Half of the children who had an arrest with the school police experienced an adult arrest by age 21, 32% had a jail booking. Nearly 80% African American.
- 43% of women who aged-out of child welfare had a baby by age 21, but this has decreased significantly in the last few years (last 3 years, 35%). But more of these young adults seem to be experiencing homelessness (16% last year compared to previous average of 8%).
- 32% percent of Pittsburgh Bureau of Police arrestees had previously received treatment for substance use disorders.
- Unexpected traumatic death (homicide, suicide, overdose) of parents leaves behind several hundred children per year. Spikes in receipt of services, particularly mental health services and need for child protection, seen in two years after death but after return to baseline. Children of homicide and suicide victims more likely to chronically absent than children of parents who died of overdose.
- Predictive risk modeling can improve key decisions: prior to implementation we were screening out 27% of the highest risk cases and screening in 48% of the lowest risk cases; finding similar results in homeless services
- Permanent supportive housing has no protective effect for people with low risk scores
- Nothing that can be measured with administrative data needs to be collected: earnings, births, re-admission etc.





# Allegheny County Analytics

- Home
- Topics ▾
- Visualizations
- Publications
- Datasets
- Videos
- Resources ▾
- Tools

## Featured

### Opioid-Related Overdose Deaths in Allegheny County, 2015–2016 Update



### Opioid-Related Overdose Deaths in Allegheny County: Report and Data Visualizations

Allegheny County is experiencing opioid-related overdose rates higher than in the state and in the U.S. In 2016, 93 percent of overdose deaths in the County were opioid-related and 2016 represented the third consecutive year in which the number of fatal overdoses was higher than in any prior year. An increase in the presence of

## Browse by Tag

- child abuse
- client
- perspective
- court
- foster care
- homelessness
- jail
- jail
- collaborative
- mental
- health
- needs
- assessment
- police
- prevention
- probation
- substance use
- system
- integration

## Recent Publications

Youth Who Ran Away from Allegheny County Child

Single Mothers Living in Poverty

Youth Perspectives on Out-of-Home Placement

[www.alleghenycountyanalytics.us](http://www.alleghenycountyanalytics.us)

# Information for Public Use

The screenshot displays the QuickCount web application interface. At the top left is the QuickCount logo, and at the top right are links for "Contact Us" and "Help". Below the header is a navigation bar with five filter categories: "TIME PERIOD\*", "PROGRAM\*", "DEMOGRAPHICS OPTIONAL", "GEOGRAPHY OPTIONAL", and "POLITICAL DISTRICT OPTIONAL". Under "PROGRAM\*", there are sub-options for "PRIMARY PROGRAM\*", "COMPARISON PROGRAM", and "PROGRAM FILTER".

The main content area is divided into three sections:

- Left Sidebar:** A list of program categories including "Child Welfare", "Criminal and Juvenile Justice", "Early Childhood and Education Services", "Homelessness and Housing", "Older Adults", "Physical and Behavioral Health" (which is selected and highlighted with a blue bar and a right-pointing arrow), "Self Sufficiency", "Vital Statistics", and "All Human Services".
- Center Panel:** Displays details for the selected "Physical and Behavioral Health" category. It includes radio buttons for "Active" and "Ever Active" (selected), a "Download" button, and a description: "Includes publicly-funded mental health, substance use and physical health services, as well as justice-related and intellectual disability services." Below this, there are two sub-sections: "Physical Health (Medicaid Funded)" with a list of services (Emergency, Inpatient, Long Term Care, Primary Care, Other Outpatient) and "Behavioral Health" with a list of services (Mental Health Services (All) - highlighted in blue, Mental Health Services (Medicaid), and Mental Health Services (uninsured)).
- Right Panel:** Titled "Filters Applied", it shows a list of selected filters: "Time Period" (Calendar Year 2018), "Primary Program" ((Active) Allegheny County Jail Booking), and "Comparison Program" ((Ever Active) Mental Health Services (All)).

At the bottom of the interface, there are navigation buttons: "Previous Step Time Period" (with a left arrow), "Get Count" (in an orange button), "Reset Selection" (in a grey button), and "Next Step Demographics" (with a right arrow).

### RESULTS

| PROGRAM | LEGAL SEX | AGE | RACE |
|---------|-----------|-----|------|
|---------|-----------|-----|------|

**Results Summary**  
\*Only results with a value of 6 or greater are displayed.

|  |         |   |
|--|---------|---|
|  (Active) Allegheny County Jail Booking<br><a href="#">View Breakdown</a>     | 13,071  |  |
|  (Ever Active) Mental Health Services (All)<br><a href="#">View Breakdown</a> | 256,582 |   |
|  Participating in Both Programs<br><a href="#">View Breakdown</a>             | 9,082   |   |
|  Participating in Either Program<br><a href="#">View Breakdown</a>            | 260,571 |   |

See the panel below for an explanation of the results.

 Explanation of Results SHOW ▼

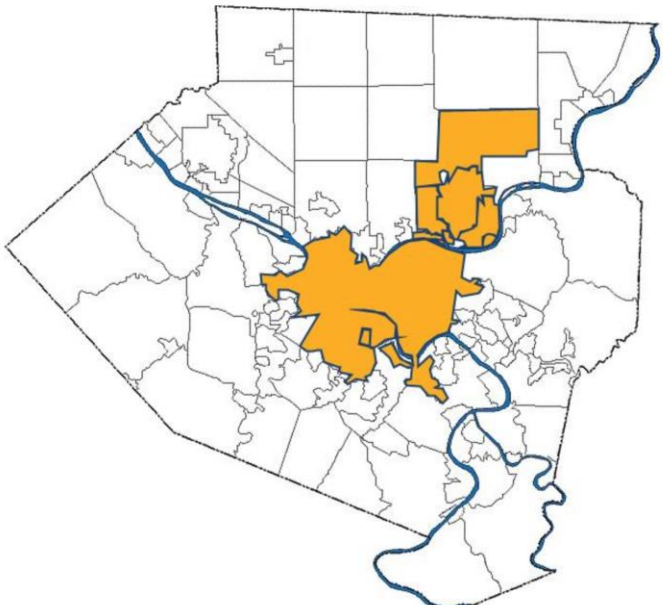
 What else should I know about this data. SHOW ▼

TIME PERIOD\* PROGRAM\* DEMOGRAPHICS OPTIONAL GEOGRAPHY OPTIONAL POLITICAL DISTRICT OPTIONAL

MUNICIPALITY SCHOOL DISTRICT NEIGHBORHOOD PITTSBURGH ZIP CODE

(selected)

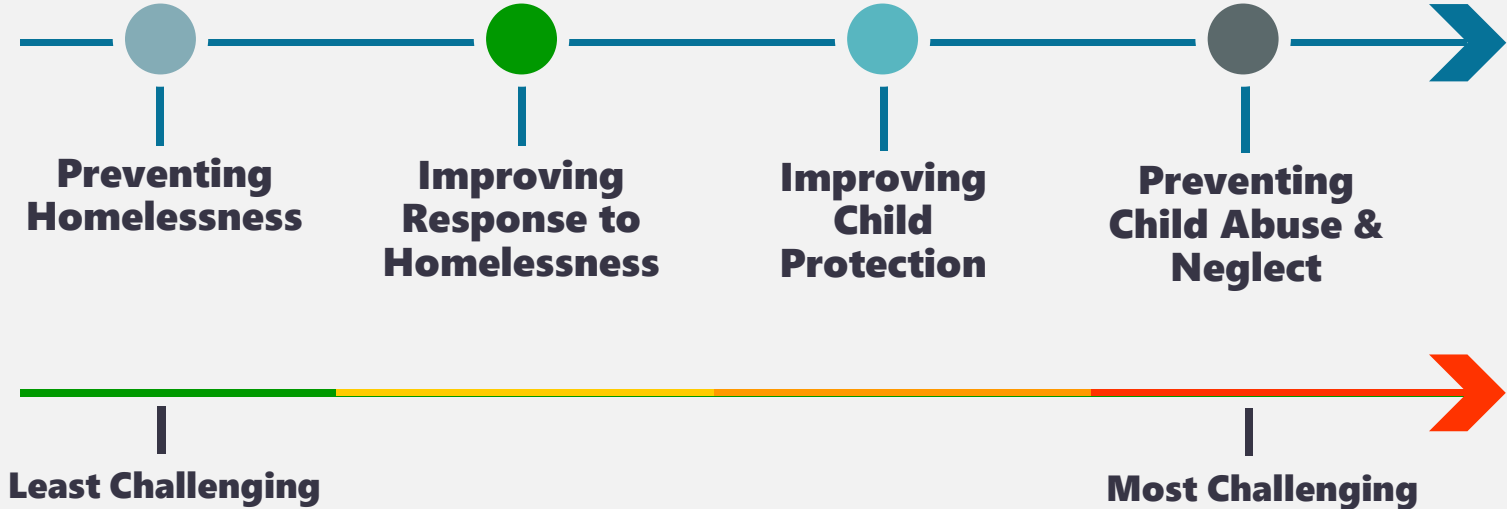
- City of Pittsburgh (selected)
- Fox Chapel Area (selected)



Filters Applied

- Time Period
  - Calendar Year 2018
- Primary Program
  - (Active) Allegheny County Jail Booking
- Comparison Program
  - (Ever Active) Mental Health Services (All)
- School District
  - City of Pittsburgh
  - Fox Chapel Area

# Improving Key Decisions with Predictive Risk Modeling



# Process Non-Negotiables

- Commitment to Implement
- Competitive Procurement (modeling, intervention & evaluation)
- Ethical Review (independent for most challenging approaches)
- Model Fairness & Discrimination Review
- External Validation
- Stakeholder Input
- Community Engagement
- Willingness to Modify
- Evaluation
- Commitment to Improve
- Transparency

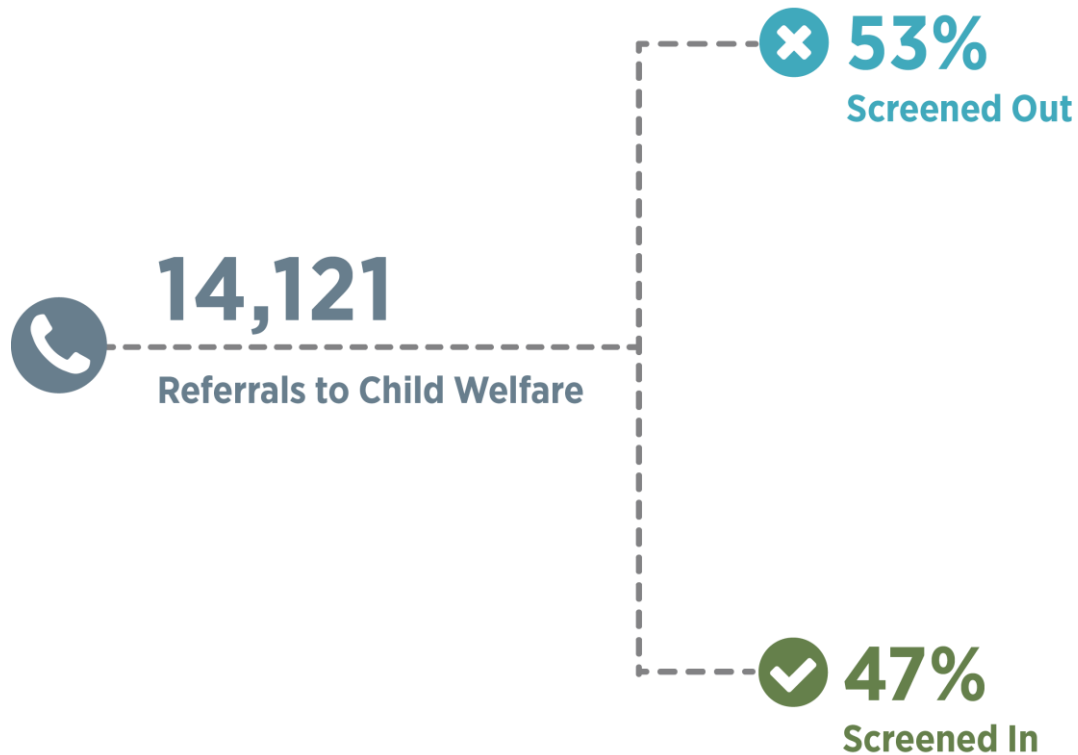
**A report of child abuse is made every 10 seconds in the US, involving 6.6 million children per year**

**37% of children in the US will experience a child abuse investigation at some point in their childhood**

**We are not the police. We don't have resources to respond to every report**

**Consequences are tremendous**

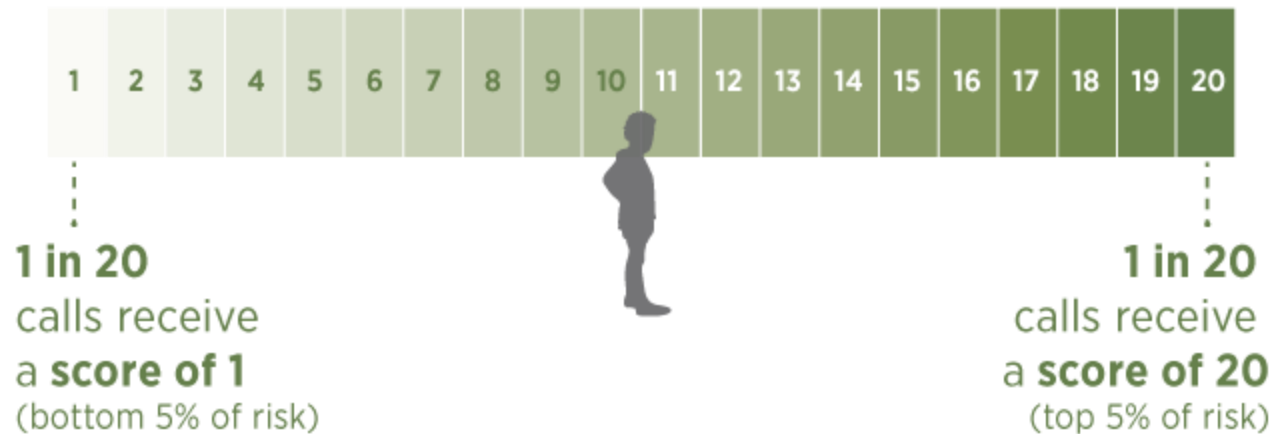
# Improving Hotline Decision-Making





# Developing a Screening Score

- **The screening score is from 1 to 20**
- **The higher the score, the higher the chance of the future event** (e.g., abuse, placement, re-referral) according to the data



# Researchers built a screening model based on information that we already collect

They identified more than 100 factors that predict future referral or placement

To test if the model might improve the accuracy of screening decisions, we scored thousands of historical maltreatment calls and then followed the children in subsequent referrals to see how often the model was correct...

# The Results: Out-of-Home Placements



**1 in 100 children** .....  
who received a **score of 1** were placed  
**out-of-home** within 2 years of the call



**ACTIONABLE INTELLIGENCE**

FOR SOCIAL POLICY

## The Results: **Out-of-Home Placements**





***Under previous practice:***

**27% of highest risk cases  
were screened out**

**48% of lowest risk cases  
were screened in**



**ACTIONABLE INTELLIGENCE**

FOR SOCIAL POLICY

# External Validation

Children with a score of 20 vs 1 were

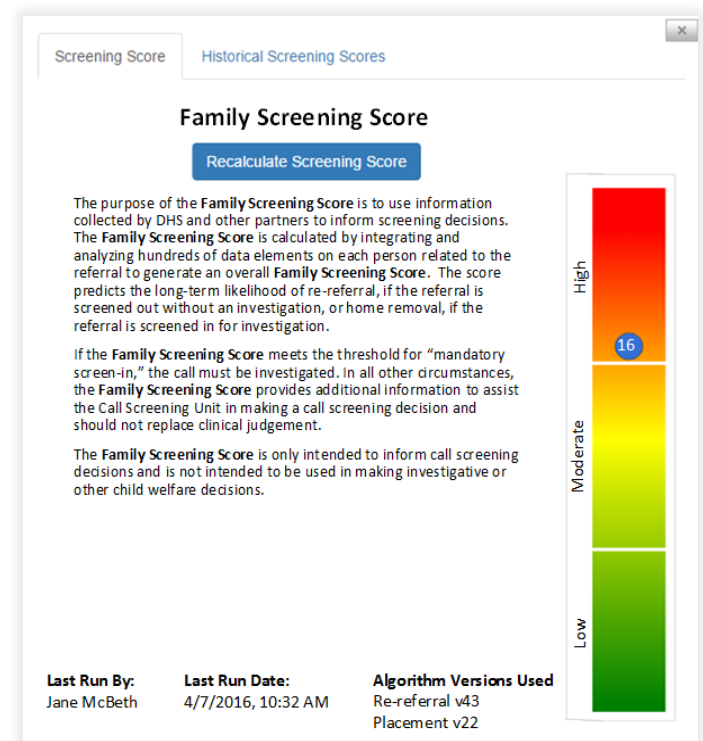
- 21 times more likely to have an ED visit or hospitalization for a self-inflicted injury
- 17 times more likely to have an ED visit or hospitalization for physical abuse
- 1.4 times more likely to have an ED visit or hospitalization for an accidental fall

# Implementation

- **Live since August 2016**
- **Fixed bugs in November, 2016**
- **Major changes to model, business processes & policies, November, 2018**

## So far:

- Viewed in 100% of cases
- Caseworkers not as impressed as the New York Times Magazine
- No increase in investigations but an increase in cases opened
- Not replacing clinical judgement: Concurrence with the score: 31% of low risk cases being screened in; ~61% of high risk cases screened in; recent changes



The screenshot displays a web interface for the Family Screening Score. At the top, there are two tabs: "Screening Score" (selected) and "Historical Screening Scores". Below the tabs is the title "Family Screening Score" and a blue button labeled "Recalculate Screening Score".

The main content area contains the following text:

The purpose of the **Family Screening Score** is to use information collected by DHS and other partners to inform screening decisions. The **Family Screening Score** is calculated by integrating and analyzing hundreds of data elements on each person related to the referral to generate an overall **Family Screening Score**. The score predicts the long-term likelihood of re-referral, if the referral is screened out without an investigation, or home removal, if the referral is screened in for investigation.

If the **Family Screening Score** meets the threshold for "mandatory screen-in," the call must be investigated. In all other circumstances, the **Family Screening Score** provides additional information to assist the Call Screening Unit in making a call screening decision and should not replace clinical judgement.

The **Family Screening Score** is only intended to inform call screening decisions and is not intended to be used in making investigative or other child welfare decisions.

On the right side, there is a vertical color scale legend with three levels: "High" (red), "Moderate" (yellow), and "Low" (green). A blue circle with the number "16" is positioned in the "Moderate" section of the scale.

At the bottom of the interface, there are three columns of text:

- Last Run By:** Jane McBeth
- Last Run Date:** 4/7/2016, 10:32 AM
- Algorithm Versions Used:** Re-referral v43, Placement v22

# Impact Evaluation

*“Implementation of the AFST saw no adverse consequences and increased the accurate identification of children who needed further intervention services, without increasing the workload on investigators.”*



# Impact Evaluation

- Increased the identification of children determined to be in need of further child welfare intervention.
- Led to reductions in disparities of case opening rates between black and white children.
- Did not lead to increases in the number of children screened-in for investigation.
- No evidence that the AFST resulted in greater screening consistency.

hello baby

# Preventing Child Abuse & Neglect

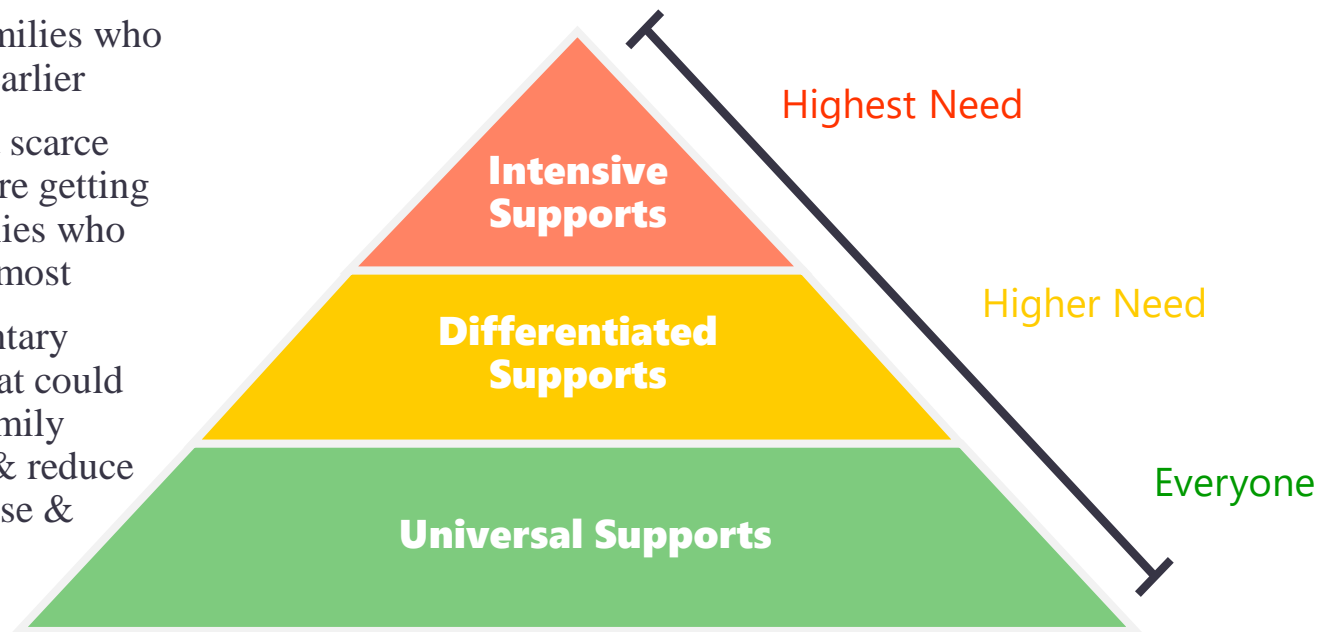
**In over half of the cases where a child died or nearly died as a result of abuse & neglect, there had not been a child welfare referral prior to the critical incident...meaning we had no opportunity to support the family.**



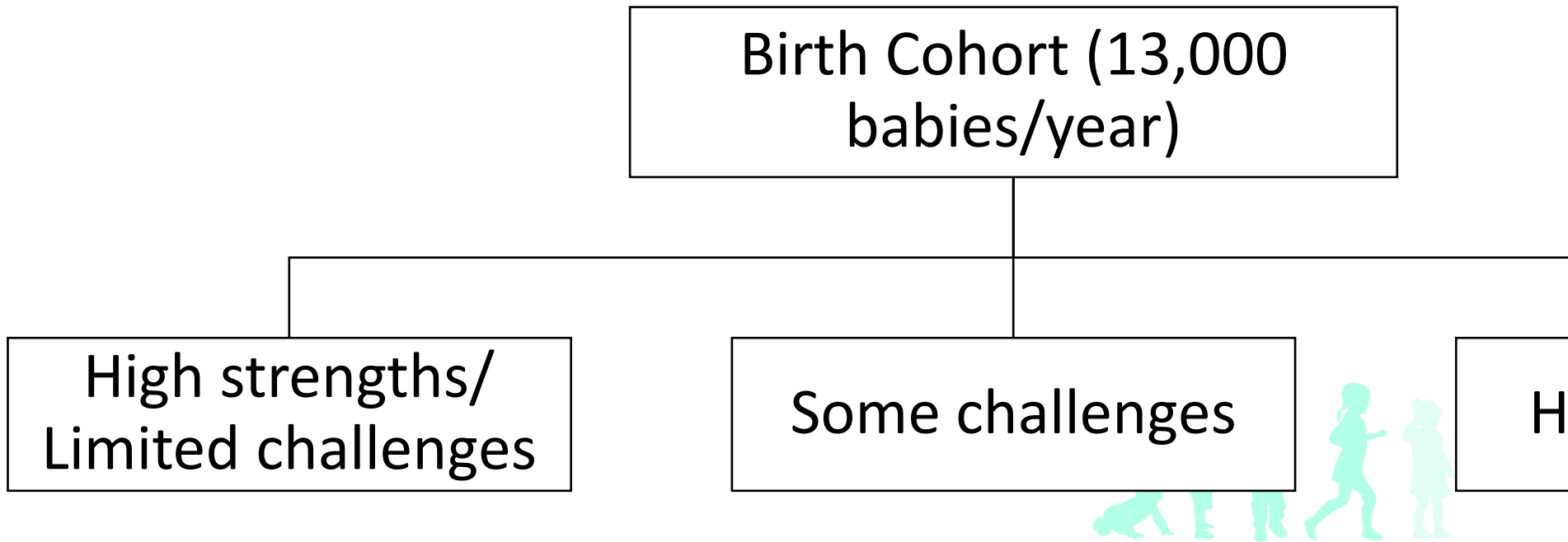
# Hello Baby Program Approach

## What if we could...?

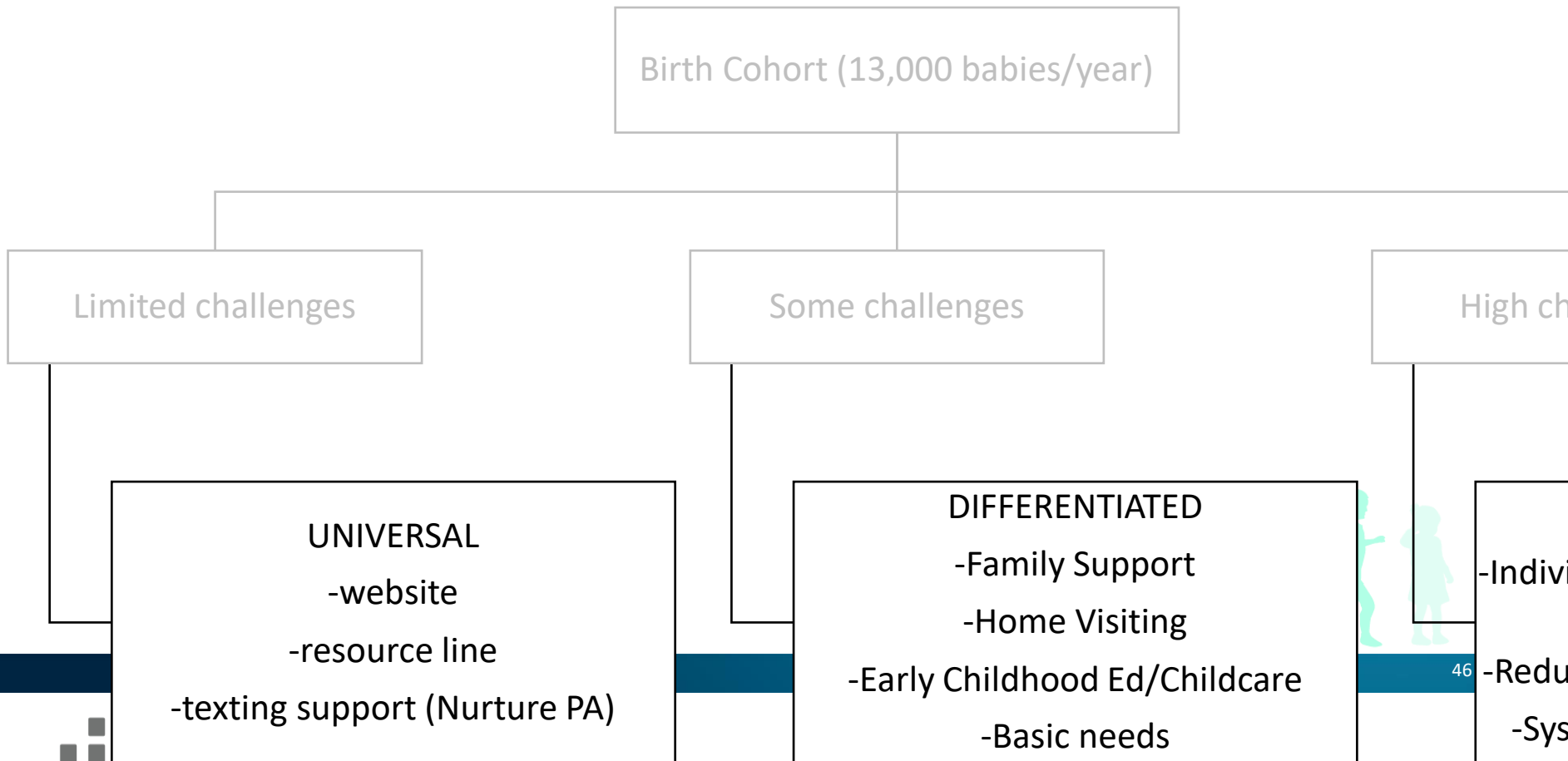
- Identify families who need help earlier
- Ensure that scarce resources are getting to the families who need them most
- Offer voluntary supports that could improve family wellbeing & reduce serious abuse & neglect



# Tiered Supports

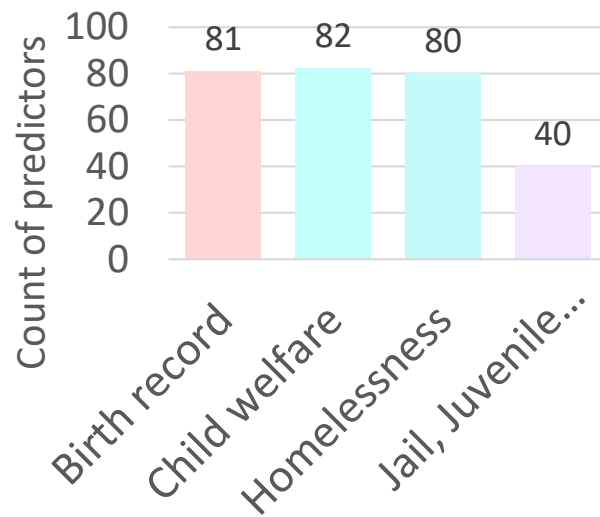


# Tiered Supports

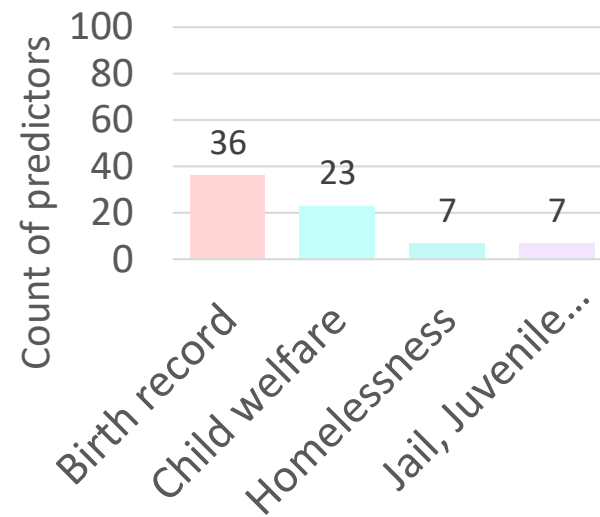


# Tiering Supports with Analytics

**283 predictive indicators were used to develop the model, across 4 domains:**

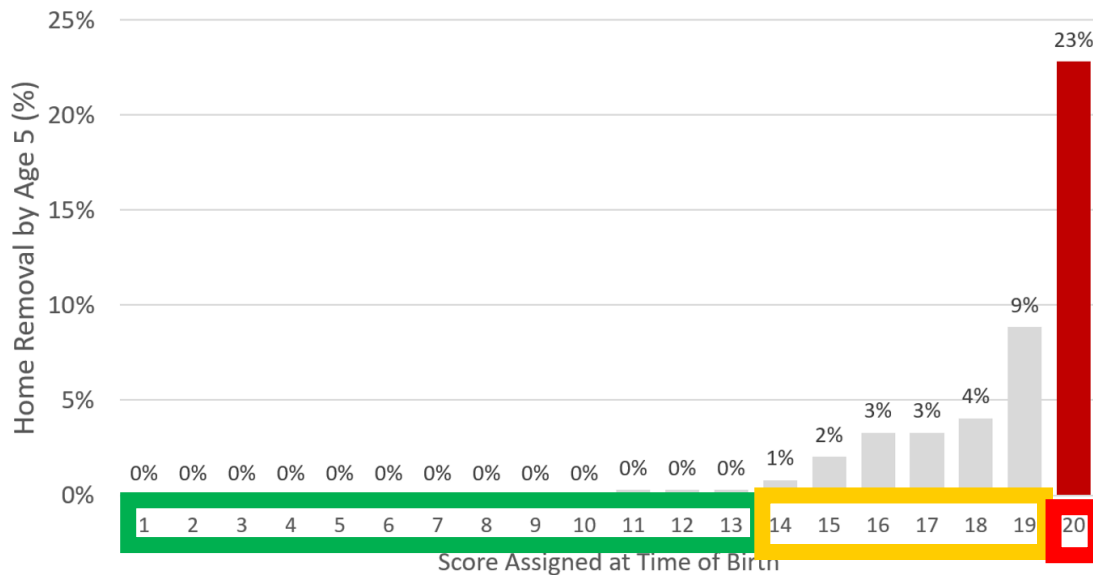


**73 predictive indicators are in the current/best LASSO model predicting child welfare placement w/in 3 years**

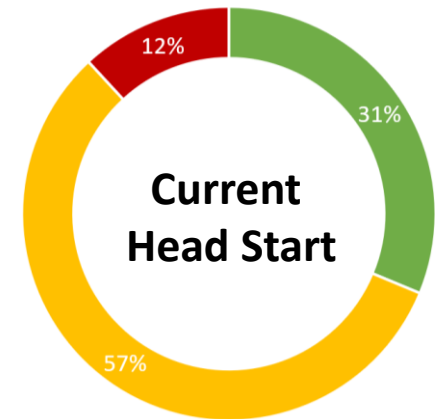


# Tiering Supports with Analytics

- **23 times the likelihood of home removal by age 5**
- **10 times more likely to experience post neo-natal infant mortality**



■ Below Average Risk   ■ Moderate Risk   ■ High Risk





# Preparation

- Community engagement
- Independent ethical review
- Case reviews with clinicians and peer supports
- Interviews with high need families
- Responding to concerns
- Search for the best engagement approach to “bend the curve”