

Integration and Dissemination of Clinical, Population Health, and Educational Data

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EMORY
UNIVERSITY



Background



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

- The academic achievement of America's youth is strongly linked with their health.
 - Healthy Student Are Better Learners
 - Schools are the Right Place for a Healthy Start

Problem

- Schools know little about a child's health especially between 0-3 years of age;
- Pediatric providers know little about a child's birth history and the perinatal health of the mother;
- We collect a tremendous amount of data on any given child especially those at highest risk of morbidity and school failure but we rarely share information in way that will help that child;
- The relationship between a child's health and educational achievement is mutualistic but the respective data systems are not.

Georgia



EDUCATION

DOMAIN RANK

40

Children not attending preschool

2010-12

52%

141,000 CHILDREN

UNCHANGED

2005-07 52%

Fourth graders not proficient in reading

2013

66%

N.A.

IMPROVED

2005 74%

Eighth graders not proficient in math

2013

71%

N.A.

IMPROVED

2005 77%

High school students not graduating on time

2011/12

30%

N.A.

IMPROVED

2005/06 38%

N.A. NOT AVAILABLE



HEALTH

DOMAIN RANK

38

Low-birthweight babies

2012

9.3%

12,014 BABIES

IMPROVED

2005 9.5%

Children without health insurance

2012

9%

220,000 CHILDREN

IMPROVED

2008 11%

Child and teen deaths per 100,000

2010

30

792 DEATHS

IMPROVED

2005 35

Teens who abuse alcohol or drugs

2011-12

6%

49,000 TEENS

IMPROVED

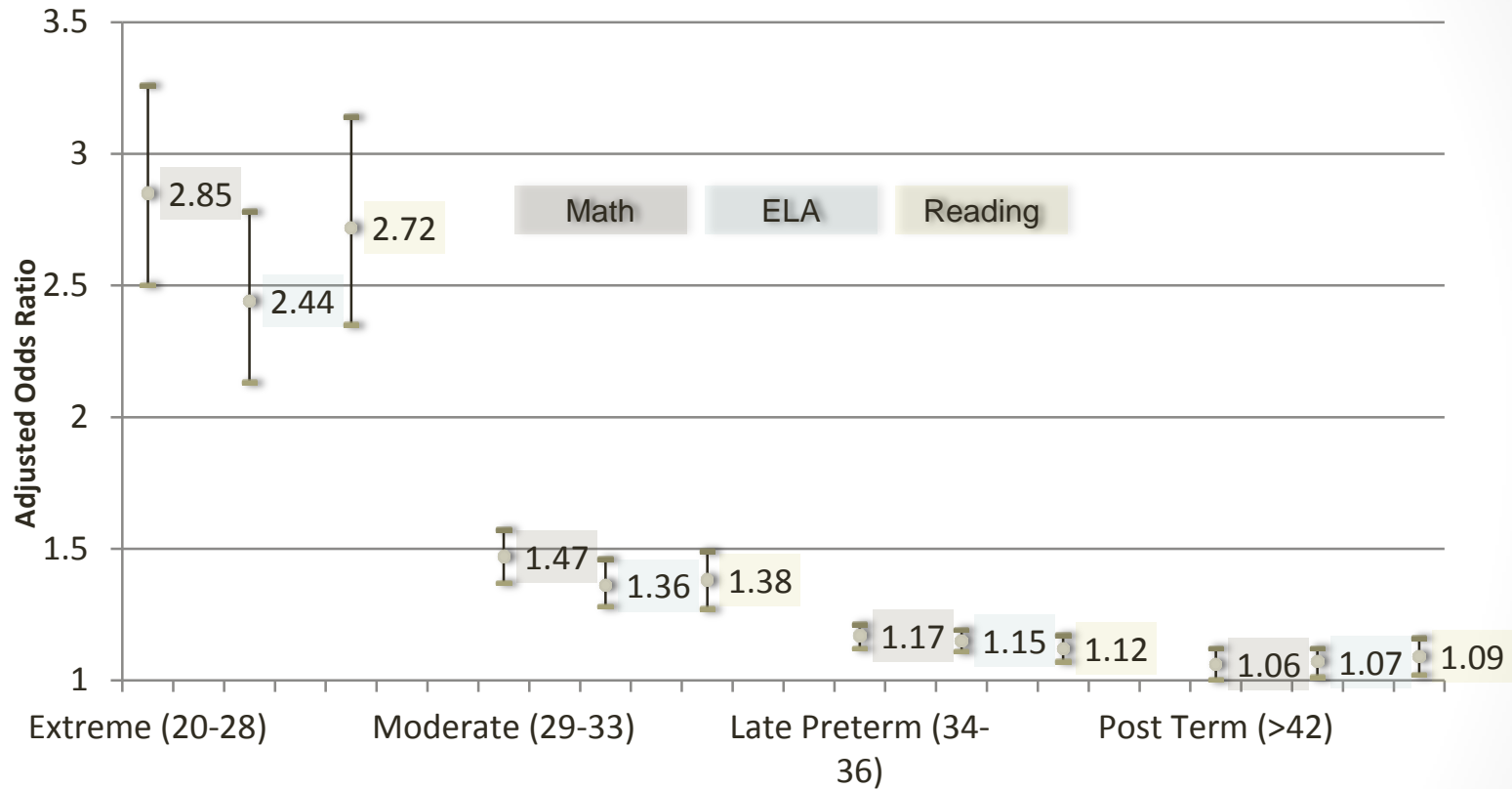
2005-06 7%

Children With Comorbidity

Congenital heart defects
Hearing and speech pathology
Prematurity
Children in foster care

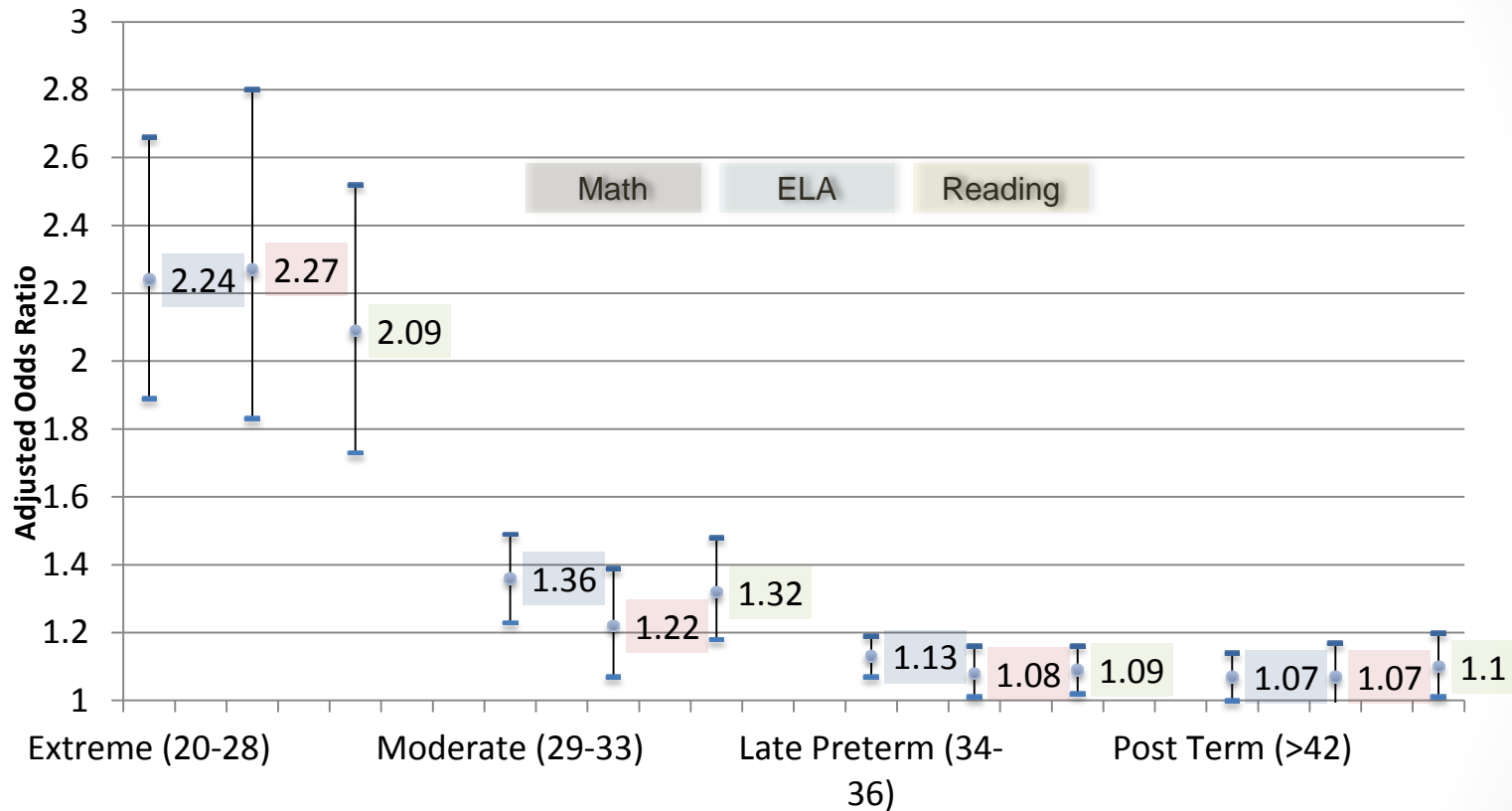


Prematurity and Risk of 1st Grade CRCT Failure



Adjusted for maternal age at birth, maternal education, maternal race/ethnicity, child race/ethnicity, sex of child, and year of birth (N=354,781)

Prematurity and Risk of 3rd Grade CRCT Failure



Adjusted for maternal age at birth, maternal education, maternal race/ethnicity, child race/ethnicity, sex of child, and year of birth (N=178,033)

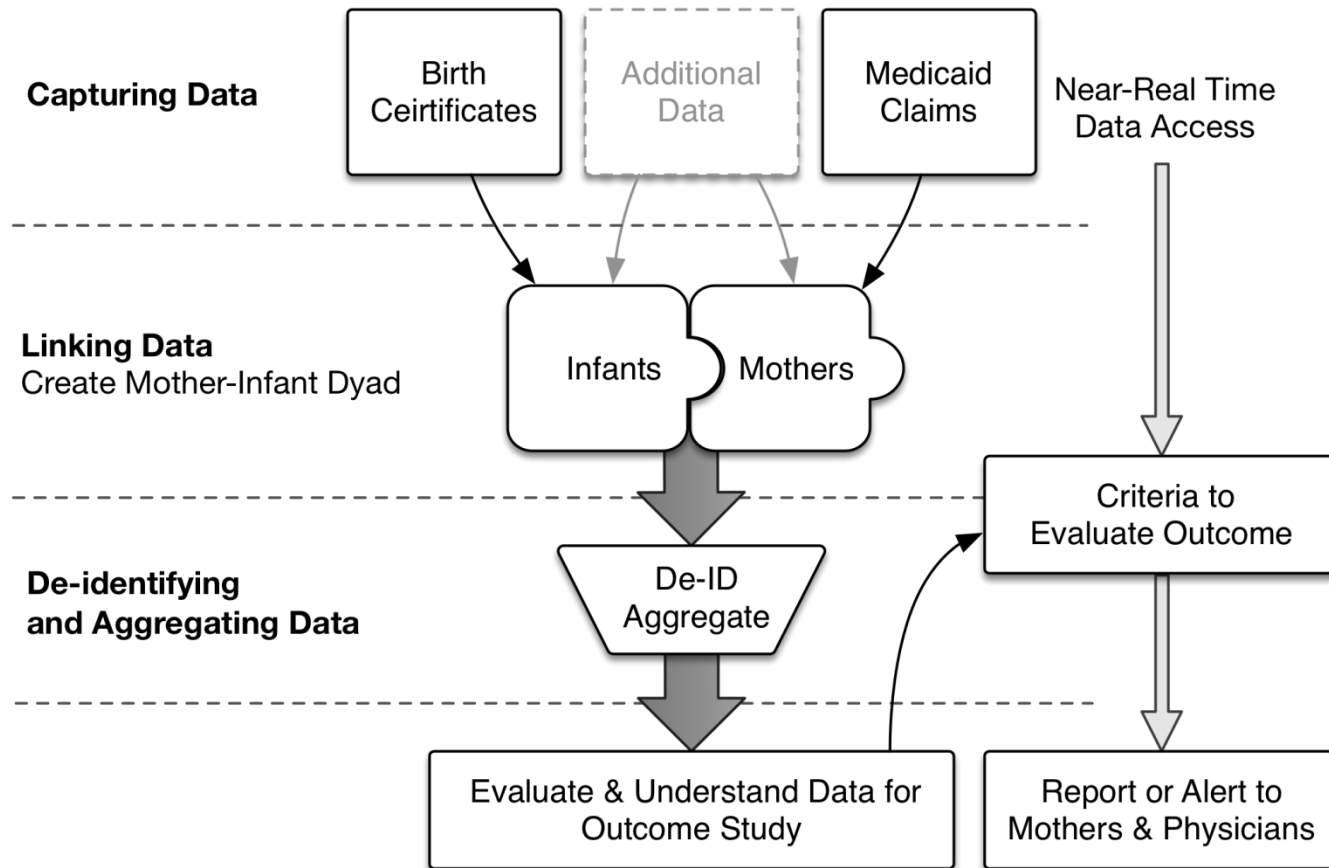
Child Data Ecosystem



Solutions

- Design and validation of a integrated data model with predictive capabilities;
- Design and evaluation of an end-to-end patient mobile app to clinician desktop portal for data input, secure transfer, and summarization;
- Design and validation of patient mobile app to local school desktop data input, secure transfer, and summarization

Concept



Key Features

- Evidence-based integration of maternal and child health data;
- Parental ownership of data;
- Relevant to both clinical and educational practice