

Reading on Grade Level: Perspective and Context from Baltimore

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The opinions expressed here do not necessarily reflect that of the supporting agency.

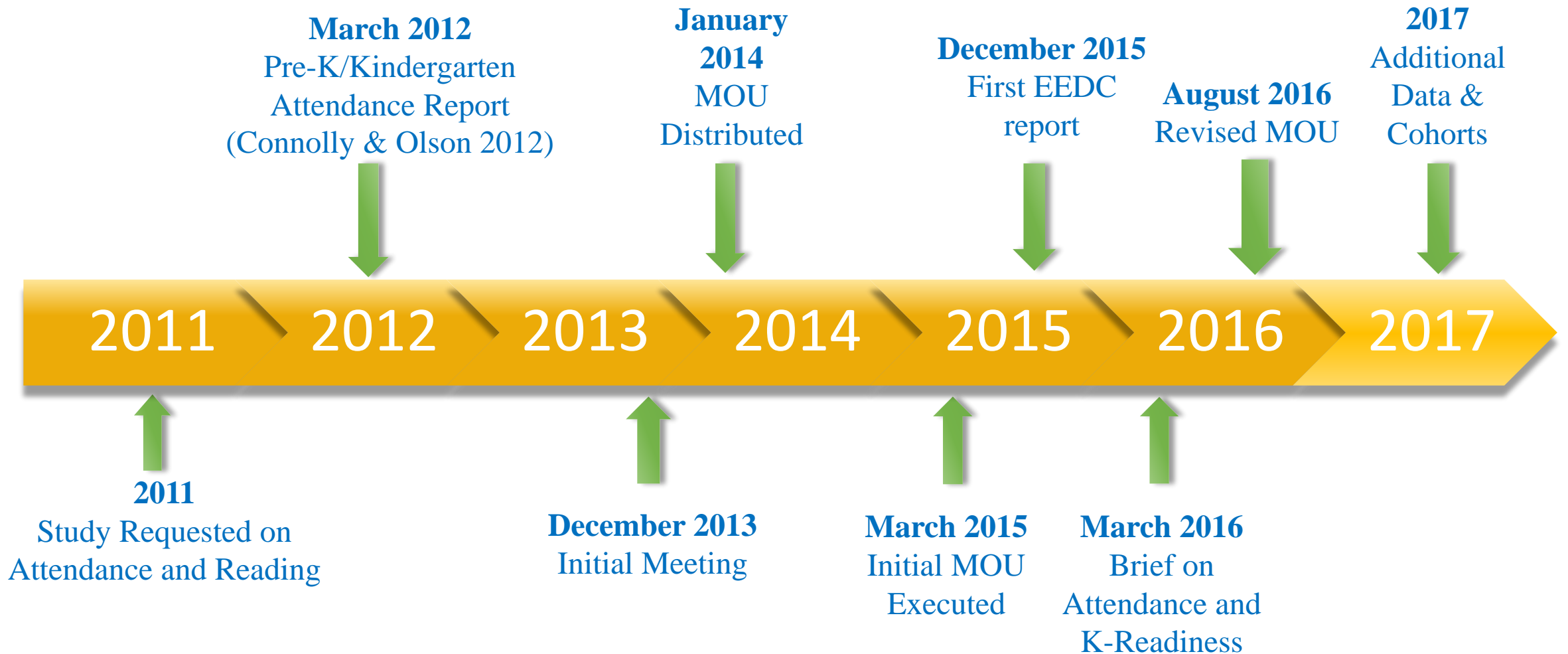


Research Questions

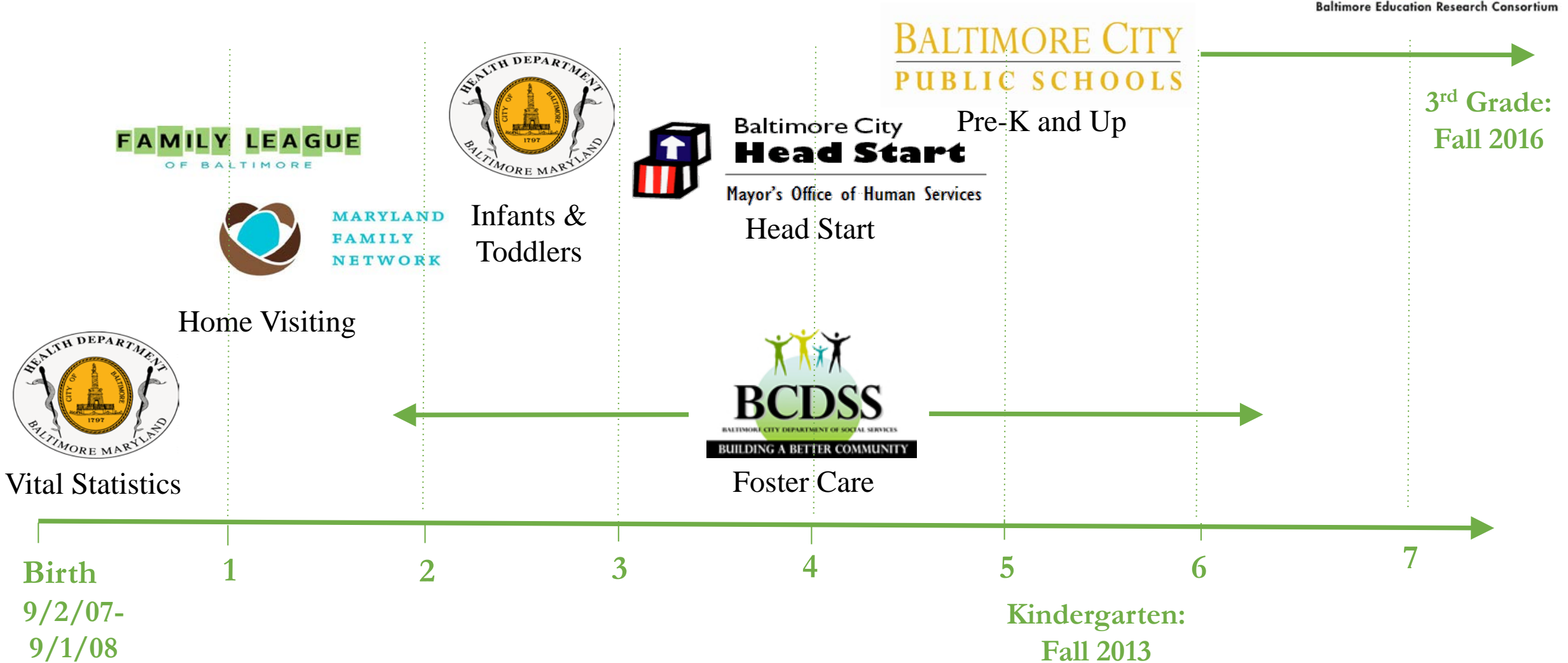


- How Do Families Take Advantage of the Early Childhood Opportunities Available to Them?
- How Are Those Opportunities Associated with Early Elementary School Outcomes?

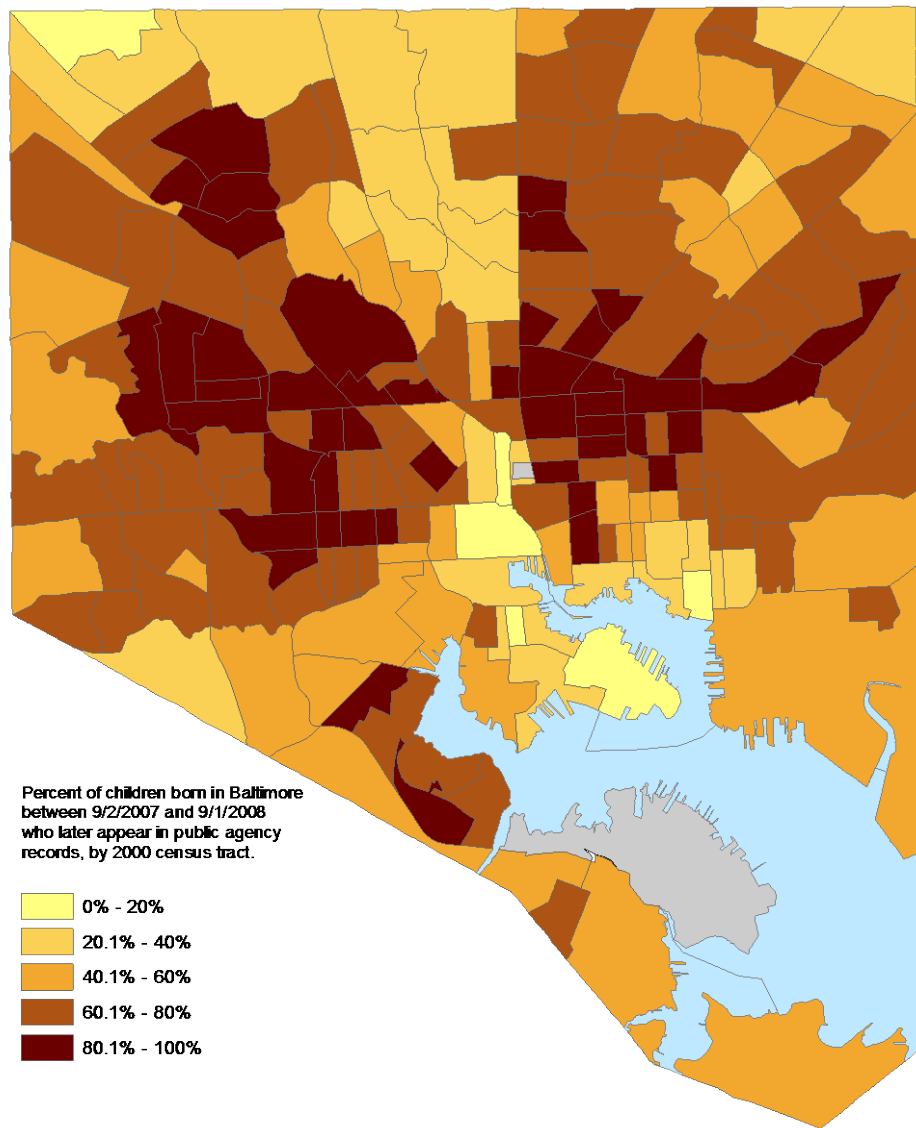
Development of Baltimore's Early Education Data Collaborative (EEDC)



Data Partners



Vital Statistics

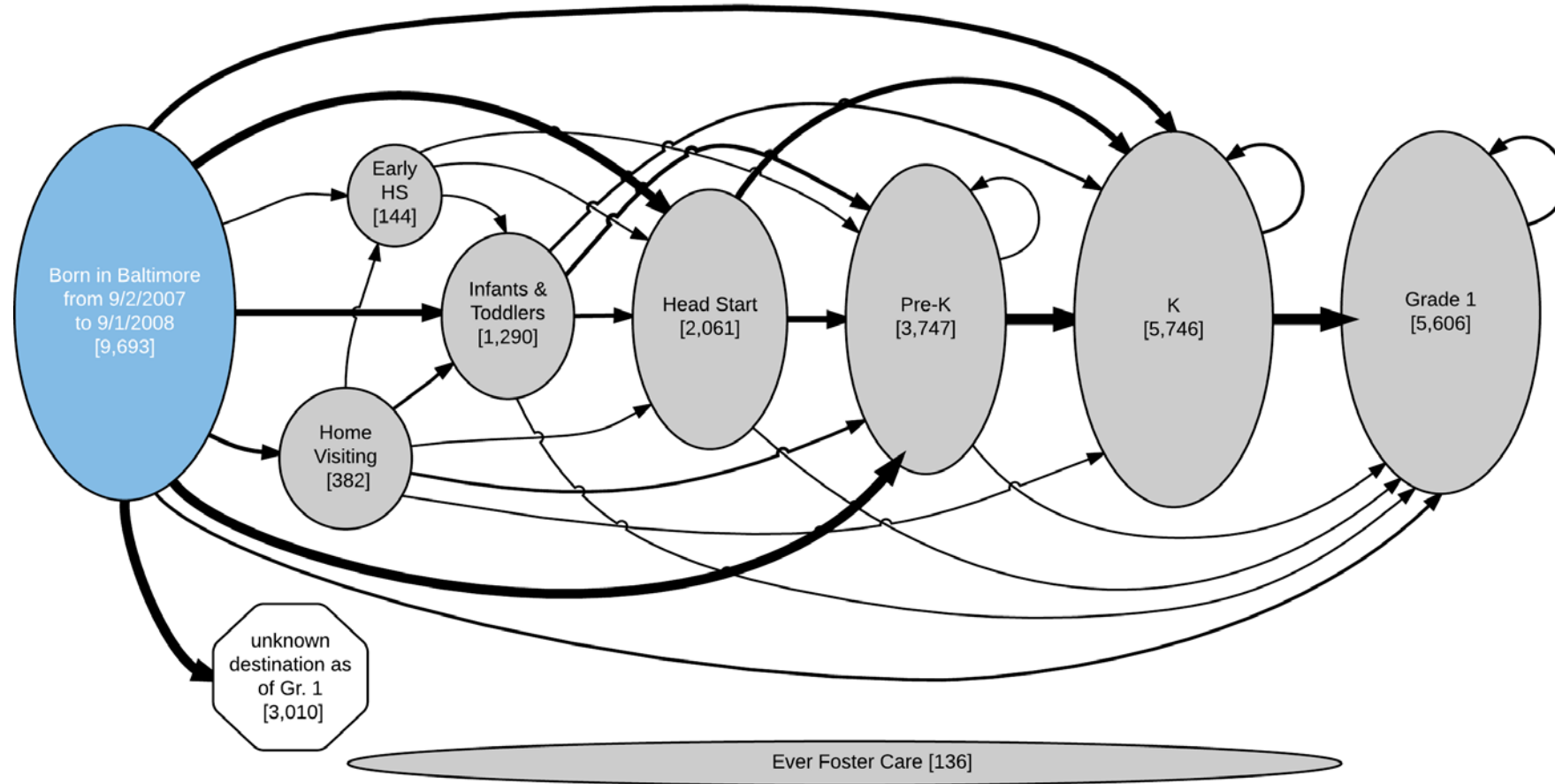


Characteristics of Mothers and Babies in Matched Data and the Full Sample

Variable	All Births	Matched Sample
Mother's Age	25.8	24.9
African-American	68%	81%
White	22%	12%
Latina	6%	6%
Asian	2%	1%
< 12 Yrs Education	27%	33%
>= 16 Yrs Education	23%	12%
Financial Assistance	67%	77%
Preterm Birth	13%	14%
Low Birthweight	12%	14%
Father's Name on Record	67%	62%
N	9,692	6,683

Source: Baltimore City Health Department, Vital Statistics from 9/2/07-9/1/08

Families Navigate Programs in Many Ways

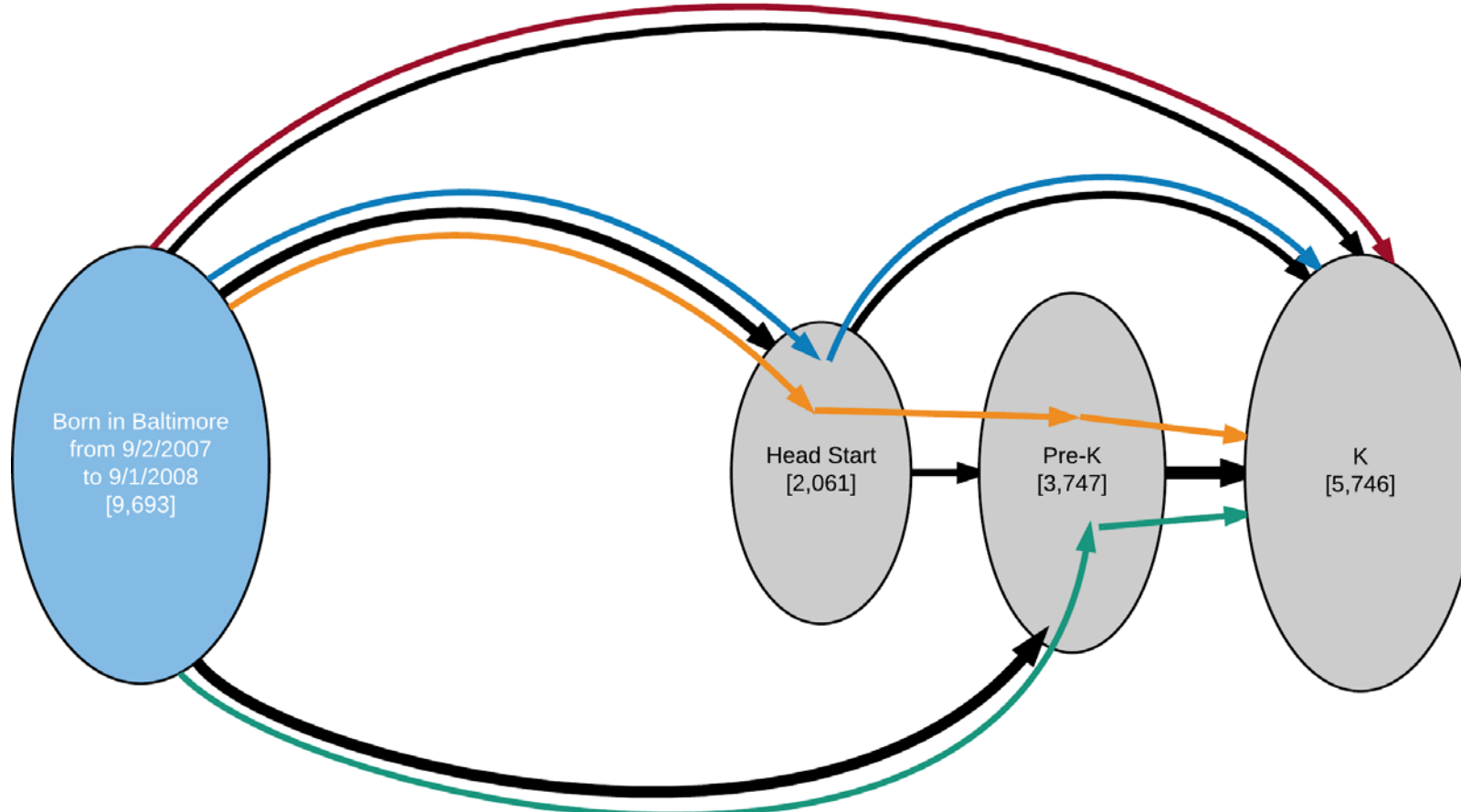
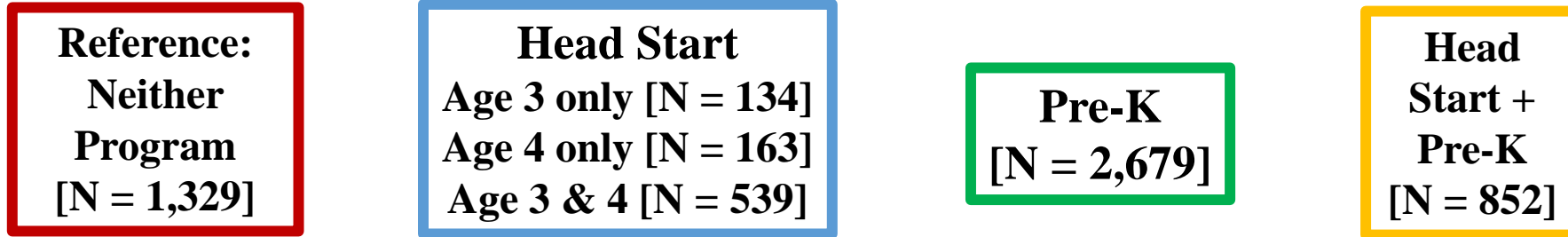


Proportion of Birth Cohort Enrolled in Program

Home Visiting	4%
Infants & Toddlers	13%
Foster Care	1%
Early Head Start	1%
Head Start	21%
Pre-K	39%
Kindergarten	59%
First Grade	58%
Second Grade	50%
<i>Total Birth Cohort Size</i>	<i>9,692</i>

59% of Baltimore-born children matched to public kindergarten records, and 75% of all public kindergarten students matched to birth records.

Comparing Program Sequences



Covariates:

Program Experience:

- Home Visiting
- Infants & Toddlers
- Early Head Start
- Foster Care

Vital Statistics:

- Maternal Education,
- Birthweight, Teen Birth,
- Preterm Birth, Low Birthweight, Parity, Financial Assistance, Race/Ethnicity, Marital Status, Father's Name on Certificate

Early Childhood Program Features



	Head Start	City Schools Pre-K
Definition of Financial Need	Federal Poverty Guidelines (e.g. \$24,300/yr for family of 4)	National School Lunch Program ($\leq 185\%$ Federal Poverty)
Staff Educational Requirement	Associates Degree or Higher	Bachelor's Degree or Higher
Maryland Teaching Credential	In Progress	Required
Length of Program Day	Part Day (pre-2014)/Full Day (post-2014)	Full Day
Curriculum	Varies	Developed by Baltimore City Schools
Curricular Alignment	Varies	Aligned to Maryland Standards and Common Core State Standards
Average Class Size	17-20	20-23
Program Location	Varies (some in City Schools)	Baltimore City Schools buildings
Location Attended	Family Choice	Zoned by Residence
Means Tested	Yes	Priority to Low-Income
Focus	"Whole Child"	Academic Preparation
Program Services	Health care, dental care, meals, family services coordination	Standard school-based services

Literacy Outcomes: Beginning K to Beginning 3rd Grade



DIBELS On Benchmark

	Beginning K	End K	Beginning Gr. 1	End Gr. 1	Beginning Gr. 2	End Gr. 2	i-Ready: Beginning Gr. 3
Early Education Experience (reference: neither program)							
Head Start Age 3 & 4	0.635*** (0.131)	0.055 (0.126)	-0.065 (0.124)	0.077 (0.123)	0.010 (0.127)	0.003 (0.138)	-0.119 (0.178)
Pre-K Only	1.567*** (0.094)	0.269** (0.085)	0.150 (0.081)	0.151 (0.081)	0.053 (0.084)	0.010 (0.093)	-0.112 (0.114)
Head Start & Pre-K	2.009*** (0.134)	0.483*** (0.114)	0.324** (0.106)	0.333** (0.106)	0.268* (0.110)	0.142 (0.118)	-0.0343 (0.151)

Notes: Head Start Age 3 and Age 4 Only not shown. Log-odds coefficients shown with robust standard errors in parentheses. *p < 0.05, ** p < 0.01, *** p < 0.001

Other Outcomes from K to Gr. 3



	Chronic Absence in Kindergarten	Chronic Absence in Gr. 1	Chronic Absence in Gr. 2	Repeated Kindergarten	Repeated Gr. 1	Special Education (2015-16)	i-Ready Math: Beginning Gr. 3
Early Education Experience (reference: neither program)							
Head Start Age 3 & 4	-0.639*** (0.118)	-0.784*** (0.117)	-0.250 (0.130)	-1.006*** (0.293)	-0.595* (0.265)	0.146 (0.140)	-0.219† (0.335)
Pre-K Only	-0.418*** (0.0754)	-0.592*** (0.0756)	-0.0519 (0.0849)	-1.065*** (0.173)	-0.414* (0.162)	-0.0243 (0.0983)	-0.222 (0.188)
Head Start & Pre-K	-0.629*** (0.101)	-0.769*** (0.102)	-0.213 (0.111)	-1.732*** (0.324)	-0.750** (0.244)	-0.117 (0.131)	0.329† (0.252)

Notes: Head Start Age 3 and Age 4 Only not shown. Log-odds coefficients shown with robust standard errors in parentheses; *p < 0.05, ** p < 0.01, *** p < 0.001; † Statistically significant positive coefficient for scale score model.

Future Work

- **Data:**
 - **Continue Adding Cohorts**
 - Currently Have Four Cohorts
 - Anticipated to be in Kindergarten through Grade 3 in 2016-2017
 - **Continue Adding Data Sources**
- **Analysis:**
 - **Investigate Student Attrition**
 - **Heterogeneity: e.g., by Maternal Education**
 - **Use Census Tract of Residence at Time of Birth**
 - **Matching with Multiple Treatments?**
 - **Examine Policy Changes (e.g. Head Start/Pre-K Coordination in 2014)**