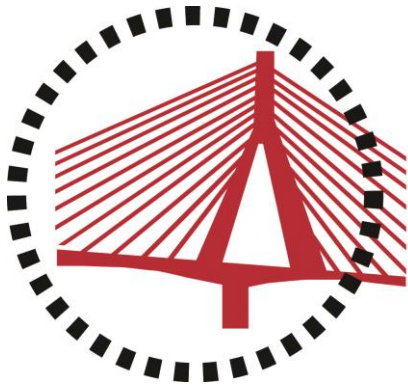


Evaluation of Boston Public Schools' Home-Based Assignment Plan



**Boston
Area
Research
Initiative**

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Northeastern University

Nancy E. Hill, Ph.D.
Harvard University

Organization of Presentation

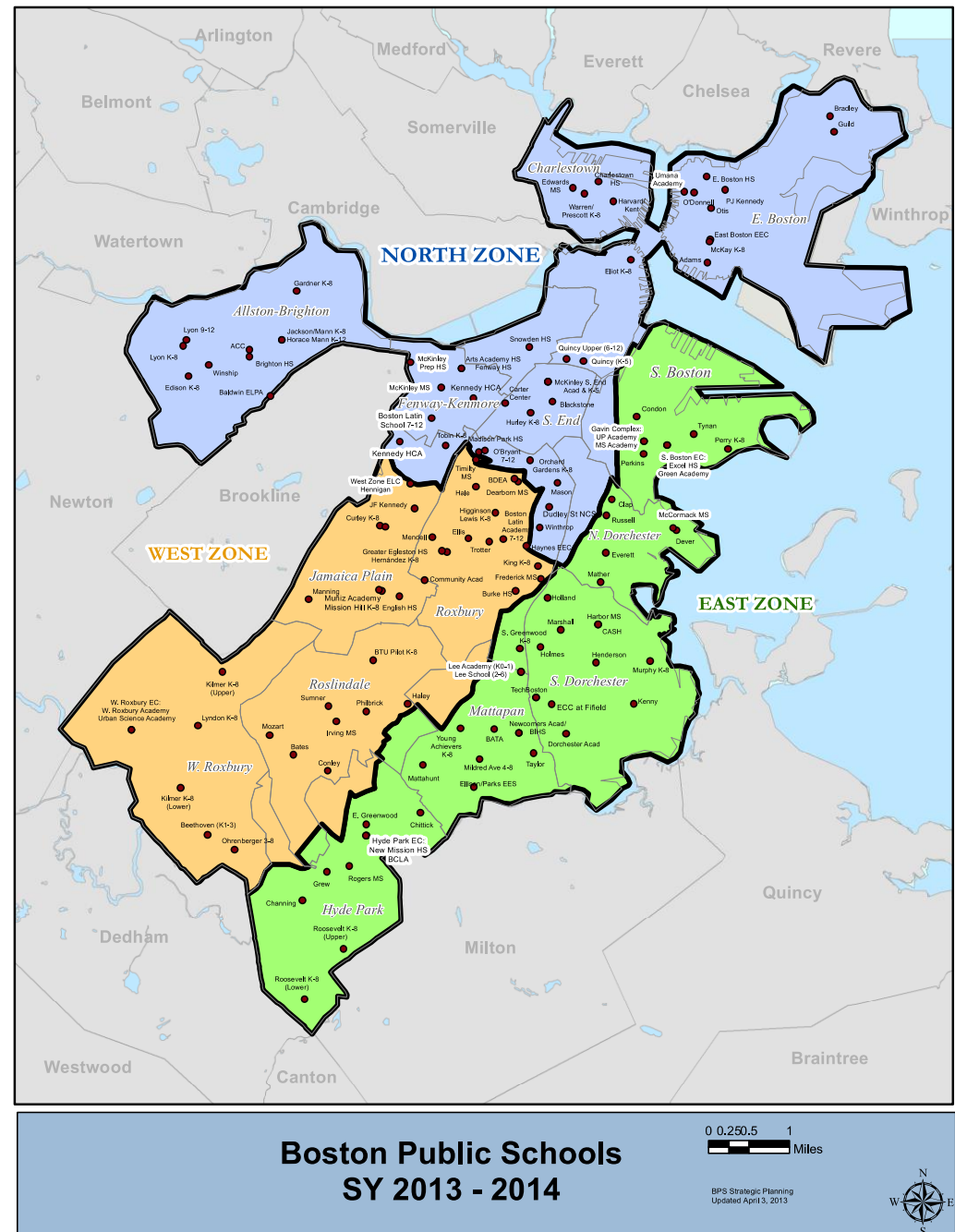
1. Introduction to Home-Based Assignment Plan (HBAP)
2. Main Findings
3. Thoughts on the Pathway Forward

1. INTRODUCTION TO HBAP

Pre-HBAP: 3-Zone

The city was divided into
3 Zones for school choice.

Students were eligible to
attend any school within
their zone and any school
within a mile of their home.



What Stakeholders Said About the Need for Change?

1. Concern with **inequitable access** to high quality schools
2. Desire from some parents for **access closer to home**
3. Desire to **shorten commutes** and as a result potentially **reduce the cost** of transportation

What Are the Goals of HBAP?

In March 2013, the School Committee approved the Home-Based Assignment Plan (HBAP):

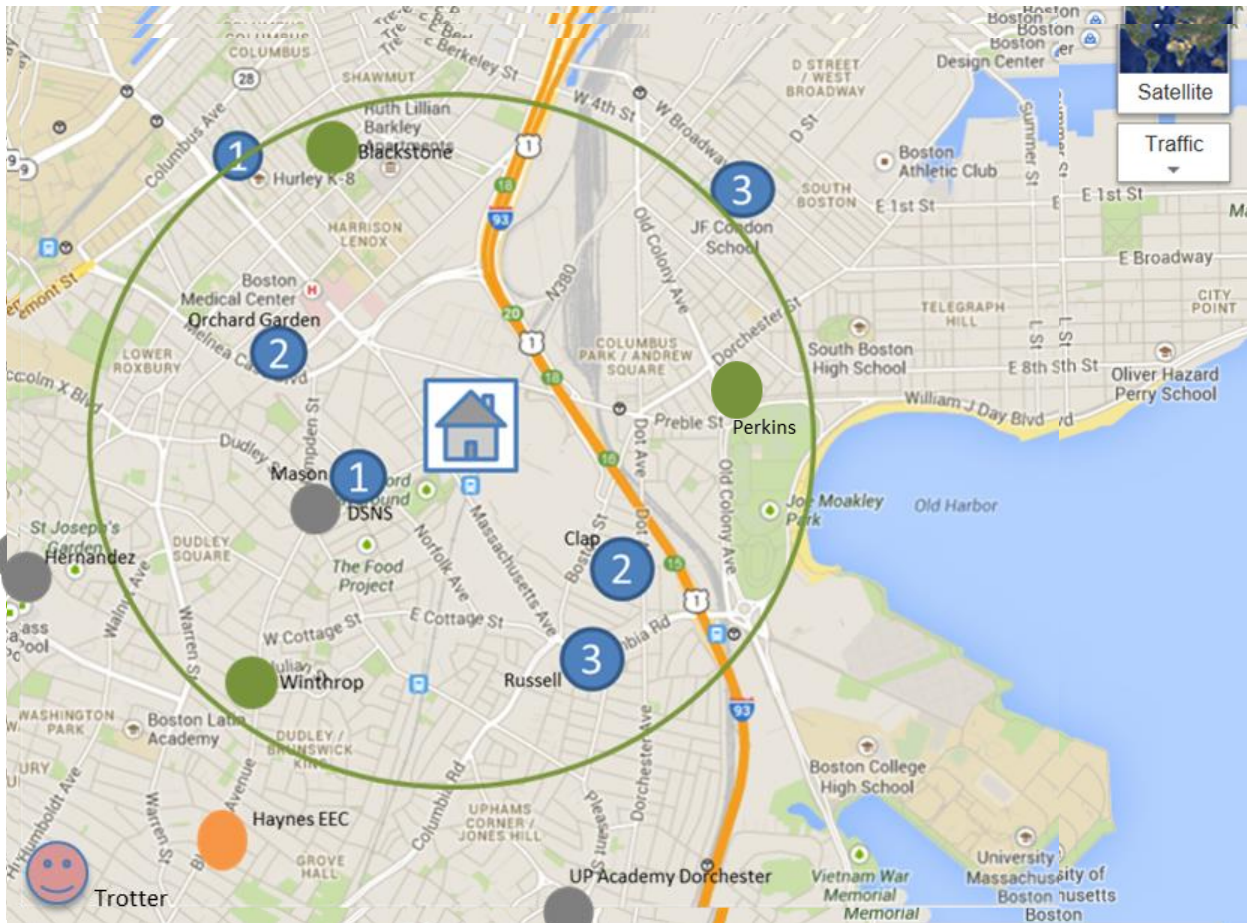
TO PROVIDE GREATER ACCESS TO QUALITY SCHOOLS

TO PROVIDE GREATER ACCESS TO SCHOOLS CLOSER TO
HOME

Central to HBAP is the pursuit of equity based on **MCAS Tiers**, which includes measures of both **proficiency** and **academic growth**.

Choice Under HBAP

Let's explore school options for a K2 student living at Massachusetts Ave. and Magazine St. in Roxbury.



● MCAS Tier Schools

● Schools within 1 mile

● Closest EEC/ELC

● Citywide School

😊 Sibling School

Guiding Questions

Is HBAP Equitable?

1. Do all students have equitable access to choose high quality schools?
2. Are all students equitably assigned to schools?
3. Do BPS students attend school closer to home under HBAP?
4. Does HBAP maintain diverse school communities?

Equity for Whom?

Comparisons across:

Neighborhood regions

- Northern neighborhoods
 - Central, Back Bay/Beacon Hill, Fenway-Kenmore, South End, South Boston
- Southern neighborhoods
 - Mattapan, Dorchester, and Roxbury
- Southwest neighborhoods
 - Hyde Park, Jamaica Plain, Roslindale, and West Roxbury
- Perimeter neighborhoods
 - Allston-Brighton, Charlestown, and East Boston

Individual neighborhoods

Race and ethnicity

Poverty status (not available for access)

Program (e.g., ELL, SPED; not available for access)

2. MAIN FINDINGS

Finding #1: HBAP Reduced Longest Commutes

The longest commutes for kindergarteners were diminished.

- 75th percentile (i.e., the 25% of longest commutes) dropped from:
 - 1.95 miles to 1.45 miles
 - 14 minutes to 11 minutes (one way)
- Findings are consistent across all subpopulations

6th graders saw less effect.

- 75th percentile saw ~100 meter and 20 second drop in commutes

Finding #2: Implementation Decisions

On/Off Grades by School Year		
School Year	On Grades (Incoming Students)	Off Grades
2014/2015	Kindergarten and 6 th	1 st - 5 th , 7 th and 8 th
2015/2016	Kindergarten, 1 st , 6 th and 7 th	2 nd - 5 th and 8 th
2016/2017	Kindergarten, 1 st , 2 nd , 6 th – 8 th	3 rd – 5 th
2017/2018	Kindergarten, 1 st - 3 rd , 6 th - 8 th	4 th and 5 th
2018/2019	Kindergarten, 1 st - 4 th , 6 th – 8 th	5 th
2019/2020	All	None

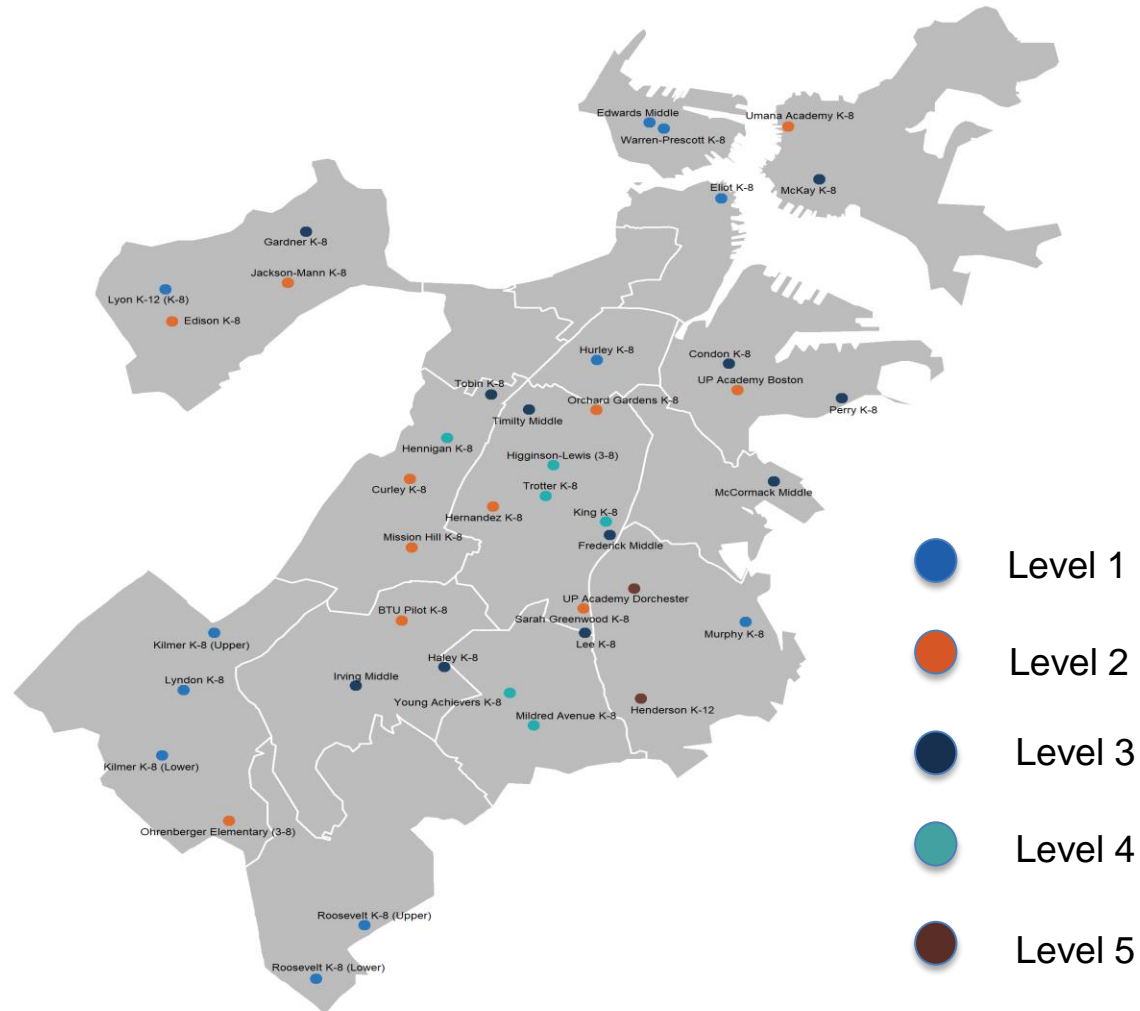
Staggered implementation was probably prudent given the unknown consequences.

Finding #2: Implementation Decisions

- **Inaccurate construction** of 6th grade choice baskets exacerbated inequities.
- 6th grade baskets construction.
 - Algorithm for **Kindergarten** run first
 - Pathway and citywide middle schools, and K-8's added
 - Schools without 6th grades removed
- Created the possibility of less than the prescribed universal minimum access.
 - Most neighborhoods had **fewer than 2** Tier 1 schools on average
 - Over 33% of 6th graders living in Roxbury and over half of students living in Roslindale and Jamaica Plain received zero Tier 1 schools.

Finding #2: Implementation Decisions

mcas1415- 6-8 Schools



Finding #3: Defining Access

We examined three measures for access:

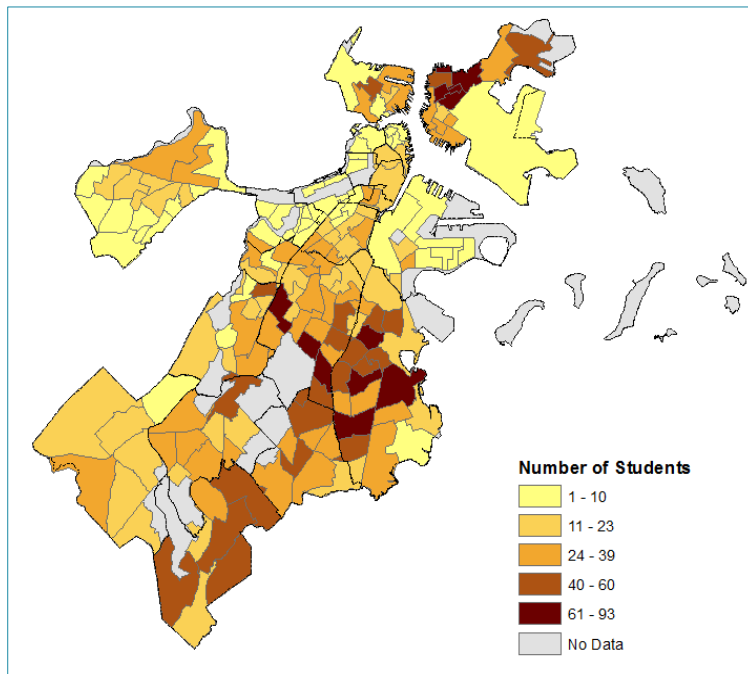
1. Number of schools in a choice basket
2. Number of seats at schools in choice basket
3. Amount of competition for seats (seat shares)
 - The number of seats in each school divided by the number of other students with the school in their choice basket summed for all schools in an individual's choice basket

Finding #3: Defining Access

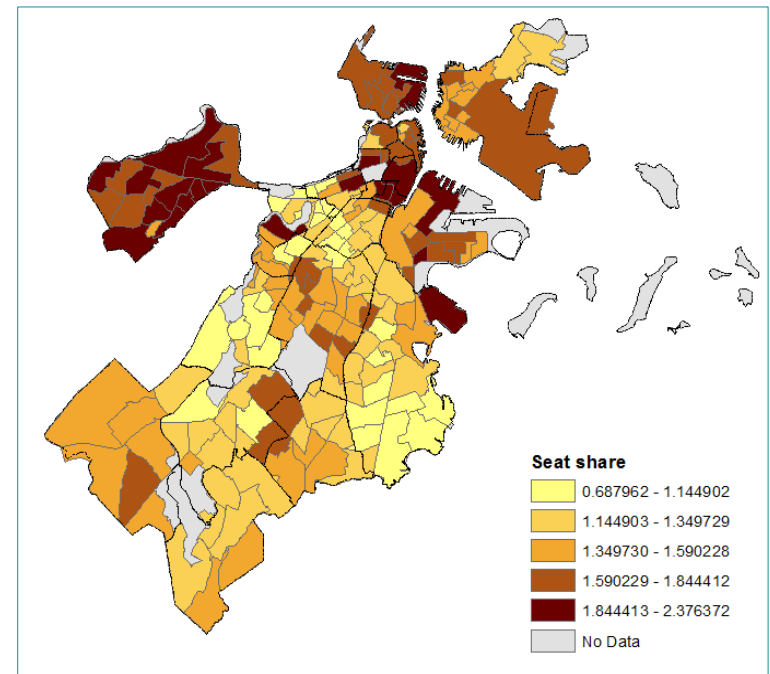
There were inequities in Tier 1 seats, but Tier 1 & Tier 2 combined were more even.

Far greater inequities emerged when competition was considered.

- Depends on size of choice basket *and* density of students
- Southern neighborhoods had 1/3rd the practical access to top-tier schools of northeast and perimeter neighborhoods



of students by census tract

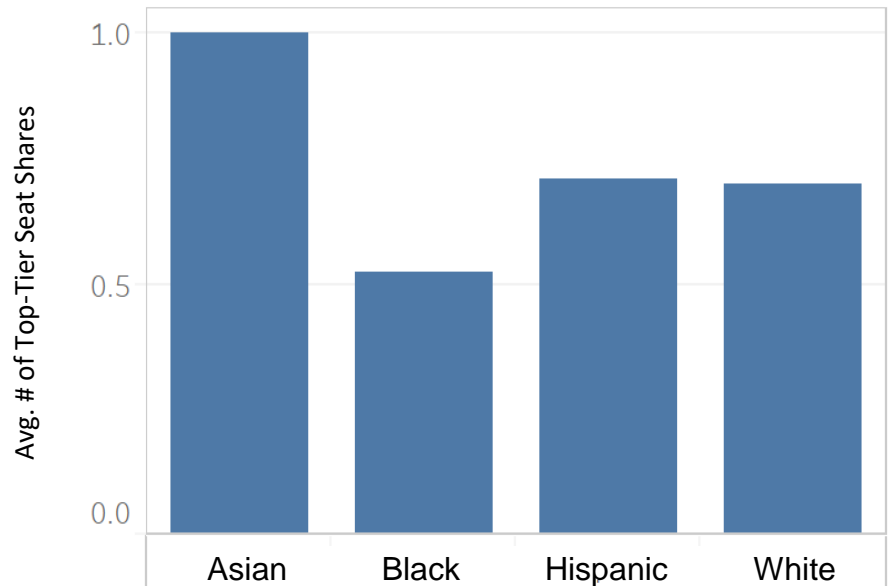
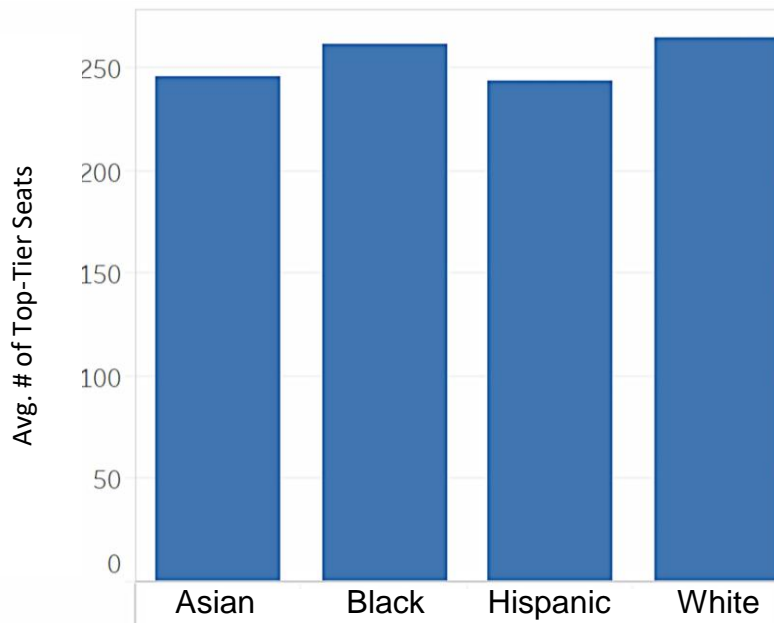


Avg. # of seat shares by census tract

Finding #3: Defining Access

Disparities across race mirrored geographic disparities.

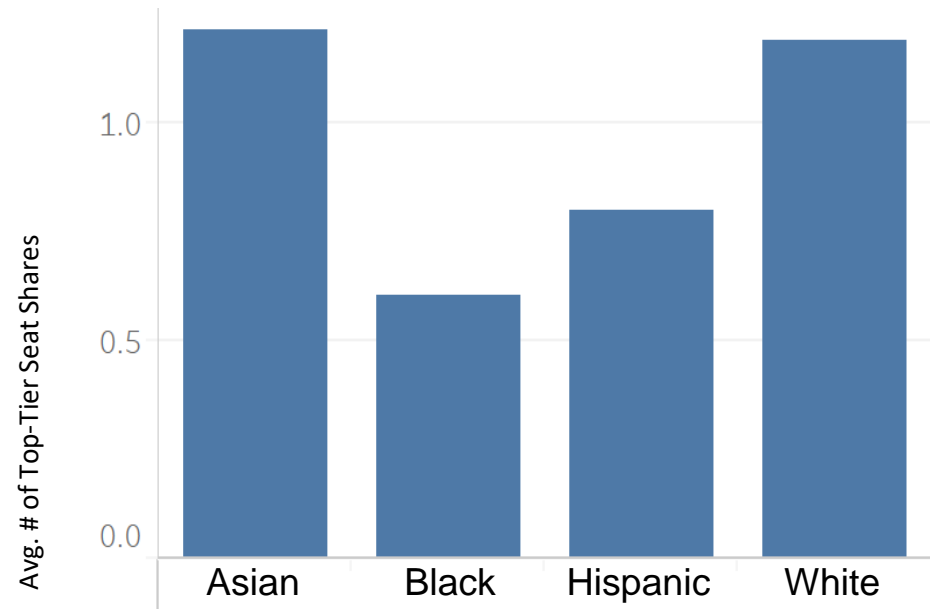
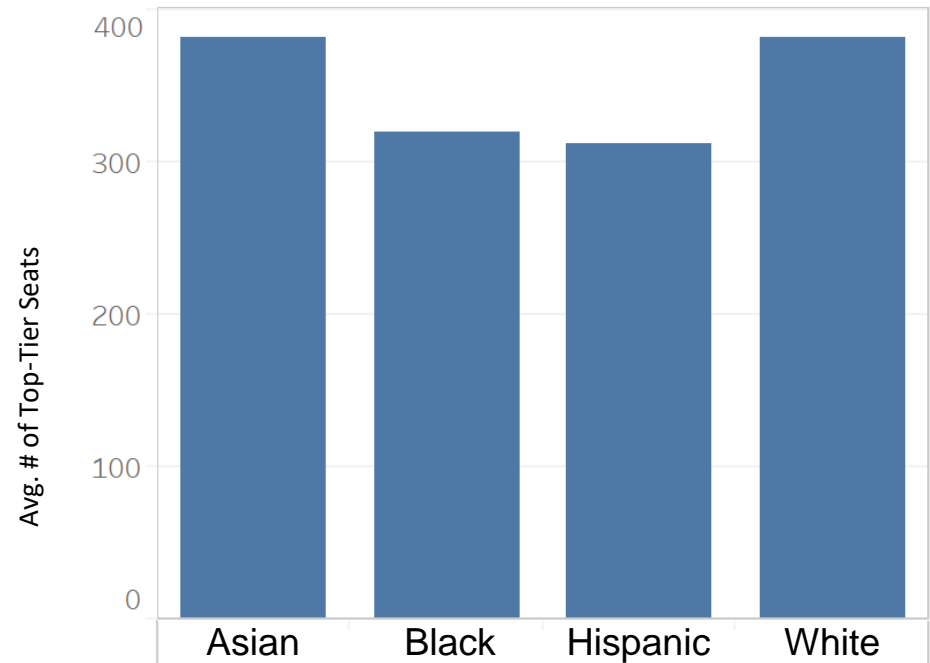
- Racial groups had similar numbers of Tier 1 & 2 seats.
- Competition for seats exacerbated inequities.
 - Asian students had dramatically more access than other groups
 - Black students had notably less access than others



Finding #3: Defining Access

Story was similar for 6th graders but exacerbated by inaccurate implementation.

- Combining Tier 1 & Tier 2 did not even out access to seats
- Competition particularly impacted Black and Latinx students



Finding #4: Critical Role of Geography

Do students have more access to good schools close to home?

- Assessed contents of choice basket within 1.5 miles

Neighborhoods had dramatically different levels of local access.

- For both Kindergarten and 6th grade, the southern neighborhoods, Hyde Park and, at times, Jamaica Plain, had low access
- Charlestown and Central had the greatest access
- No 6th grader in Mattapan had local access to a Tier 1 school

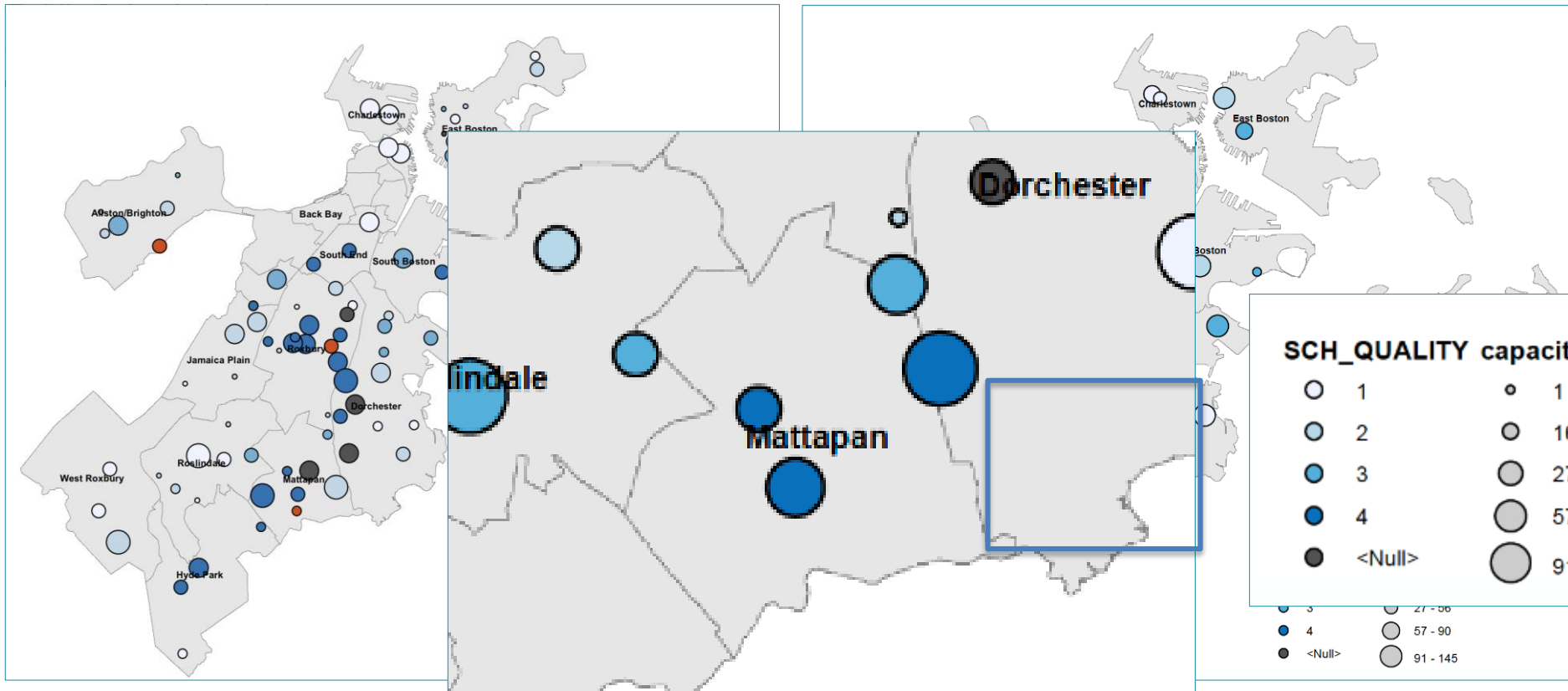
Mirrored in disparities across race.

- Black students had the fewest high quality seats nearby
- Asian and White students had the most

Finding #4: Critical Role of Geography

Schools with Kindergarten

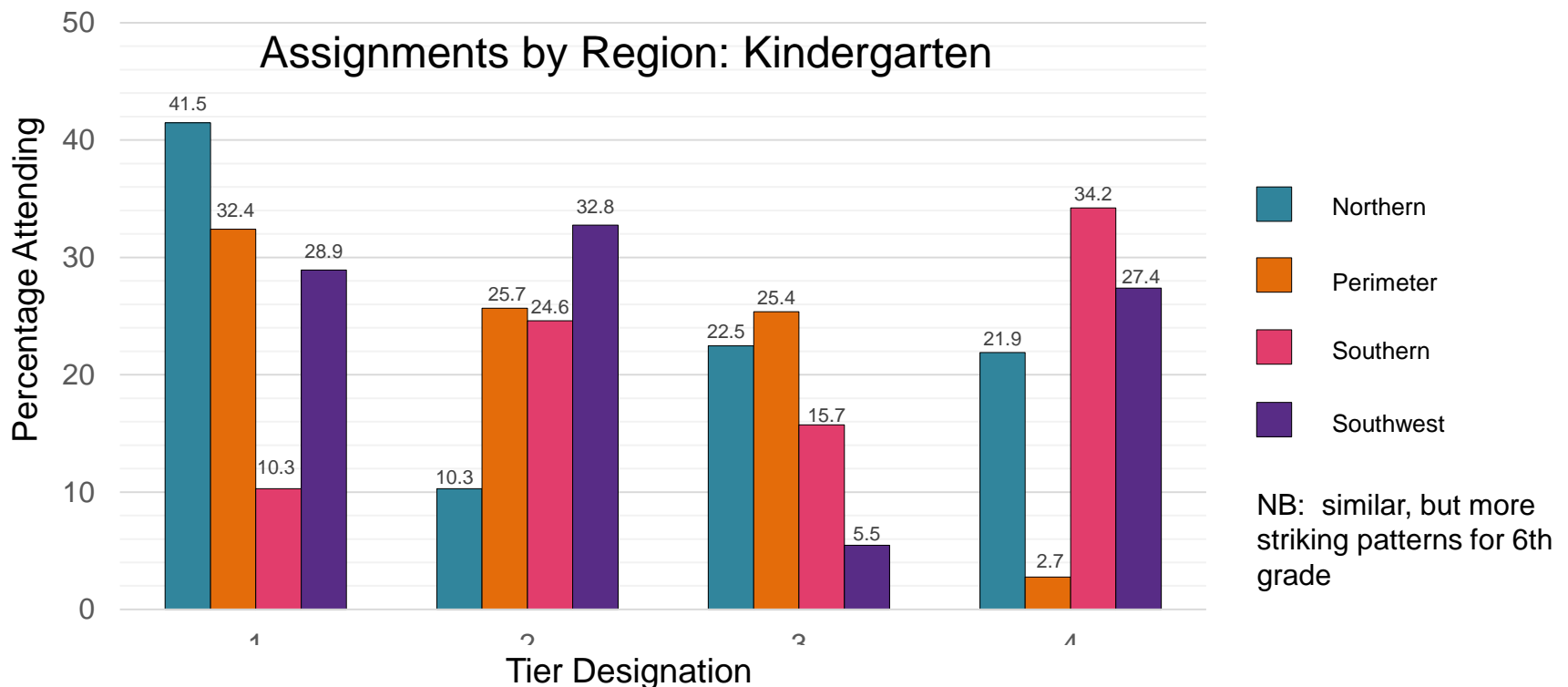
Schools with 6th Grade



Translating Findings 3 and 4: From Access to Assignment

Students from **northern neighborhood** far more likely to be assigned to Tier 1 schools.

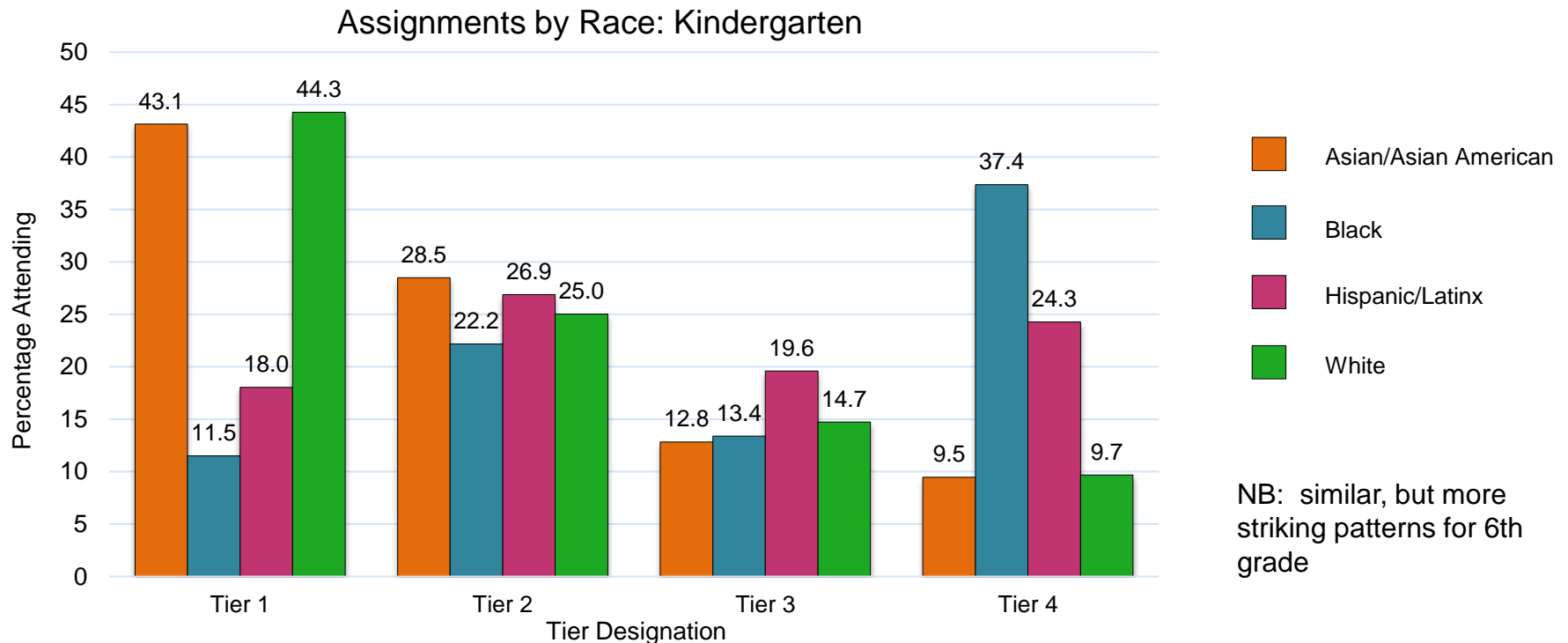
Half of students from **southern neighborhoods** assigned to Tier 3 & 4 schools.



Translating Findings 3 and 4: From Access to Assignment

Resulted in racial disparities:

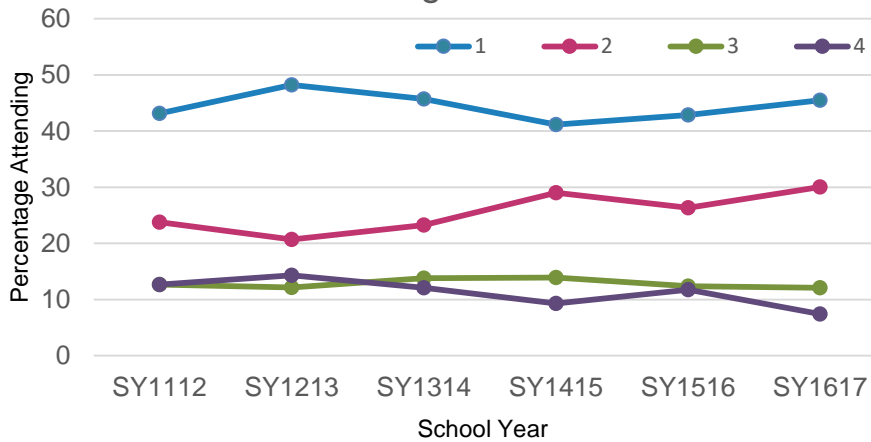
- Black students severely overrepresented at Tier 4 schools and underrepresented at Tier 1 schools
- White and Asian students overrepresented at Tier 1 schools
- Latinx students fell in between



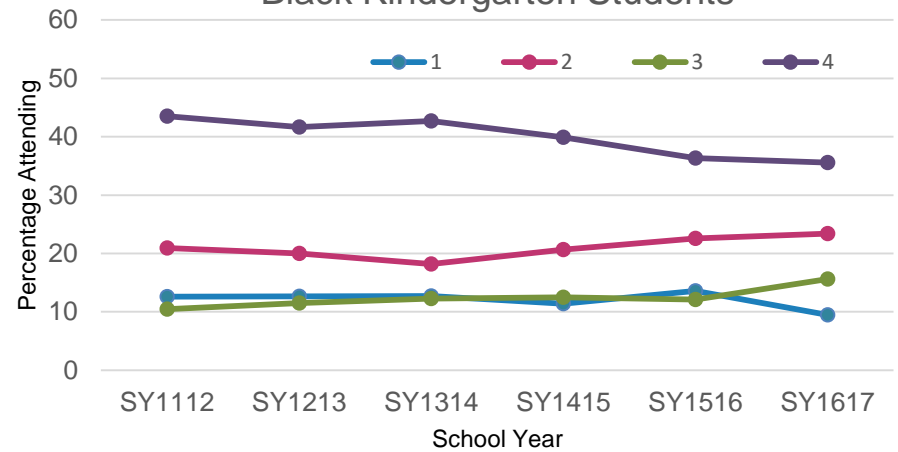
Translating Findings 3 and 4: From Access to Assignment

Disparities in assignment existed before HBAP.

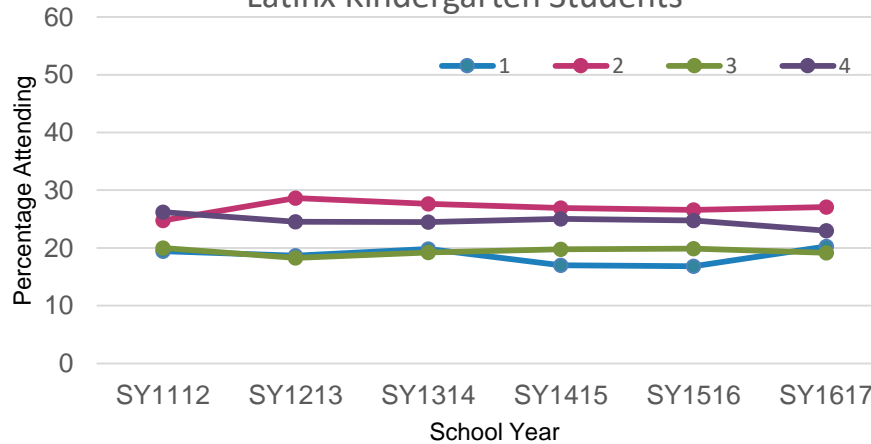
Asian Kindergarten Students



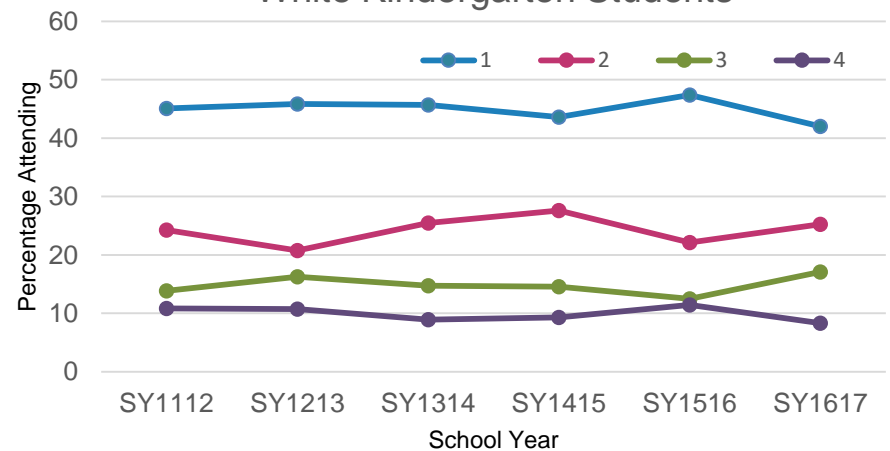
Black Kindergarten Students



Latinx Kindergarten Students



White Kindergarten Students



Translating Findings 3 and 4: Interaction with the Lottery Process

Does differential competition influence other outcomes?

- More students received their first choice under HBAP
- However, Black students were less likely to receive their first choice even when considering round of entry because of competition
- Kindergarteners were **more likely** to be administratively assigned under HBAP (2.7% → 4.8%), 6th graders **less** (3.4% → 0.5%)
- White kindergarteners were **less likely** to be administratively assigned even when considering round of entry
 - From increased access in perimeter neighborhoods

Finding #5: School Composition

Less geographic and racial integration.

- The average school represented fewer neighborhoods
- For kindergarteners, began to lower racial integration
- Lower quality schools were the least integrated

No closer to neighborhood schools.

- Suggestion that Kindergarteners from the same neighborhood were even more dispersed across schools

Take Home Messages

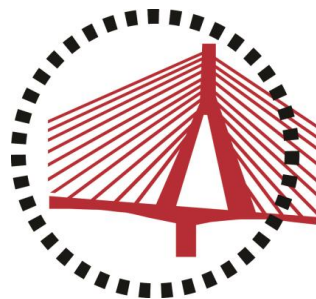
1. Inequities existed **regardless of assignment plan** due to racial and economic residential segregation within the city.
 - In some cases HBAP improved upon these inequities and in some cases exacerbated them
2. Students on average traveled **shorter distances**, especially those who traveled farthest under 3Z.
3. Disparities in the **competition for seats** drove inequities under in HBAP.
4. **Implementation decisions** regarding 6th grade choice baskets make it difficult to evaluate the policy.
5. There are issues that are derived from **implementation decisions** such as 6th grade choice baskets.

BARI Recommendations

1. **Focus** intensely on improving the quality of schools across the city, especially in neighborhoods with the least access close to home.
2. **Address** the implementation for grades 6 to 8 as it relates to universal minimum access.
3. **Modify** the policy to attend to equity in competition for seats rather than number of schools or number of seats.
 - Would require a more sophisticated algorithm

Thank You!

Questions?



**Boston
Area
Research
Initiative**

The Boston Area Research Initiative Team

Prof. Dan O'Brien (Northeastern University's School of Public Policy and Urban Affairs)

Expertise: Interactions within and between neighborhoods, urban systems, and consequences for inequality and their study through complex digital data.

Prof. Nancy E. Hill (Harvard Graduate School of Education)

Expertise: Race, ethnic, & socioeconomic variations in parental involvement in education; parents' beliefs about education, as related to academic and mental health outcomes.

Dr. Mariah Contreras (Tufts University's Eliot-Pearson Dept. of Child Study and Human Development)

Expertise: Parent-child dynamics in ethnically and linguistically diverse populations and academic achievement; longitudinal statistical methods.

Dr. Nolan Phillips (Harvard University's Dept. of Sociology / Boston Area Research Initiative)

Expertise: Network analysis of institutional systems.

Mr. Guido Sidoni (Northeastern University's School of Public Policy and Urban Affairs)

Expertise: Statistical and geospatial analysis of administrative records.

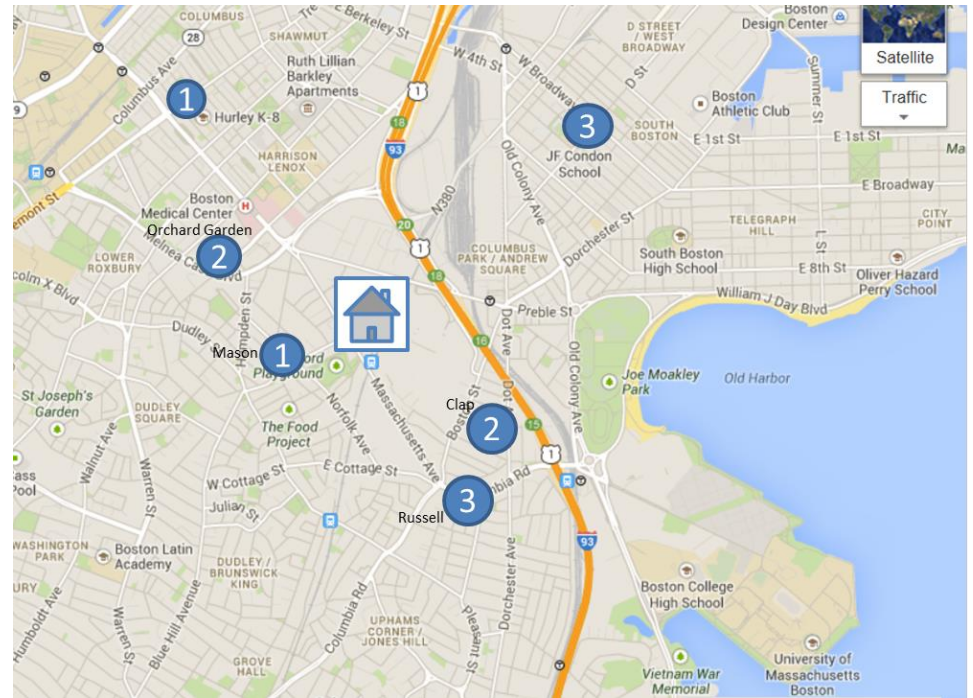
What's Different About HBAP?

1. Provides access based on one's geographical home location.

2. Pursues universal minimum access to high quality schools.

Choice Under HBAP

Let's explore school options for a K2 student living at Massachusetts Ave. and Magazine St. in Roxbury.



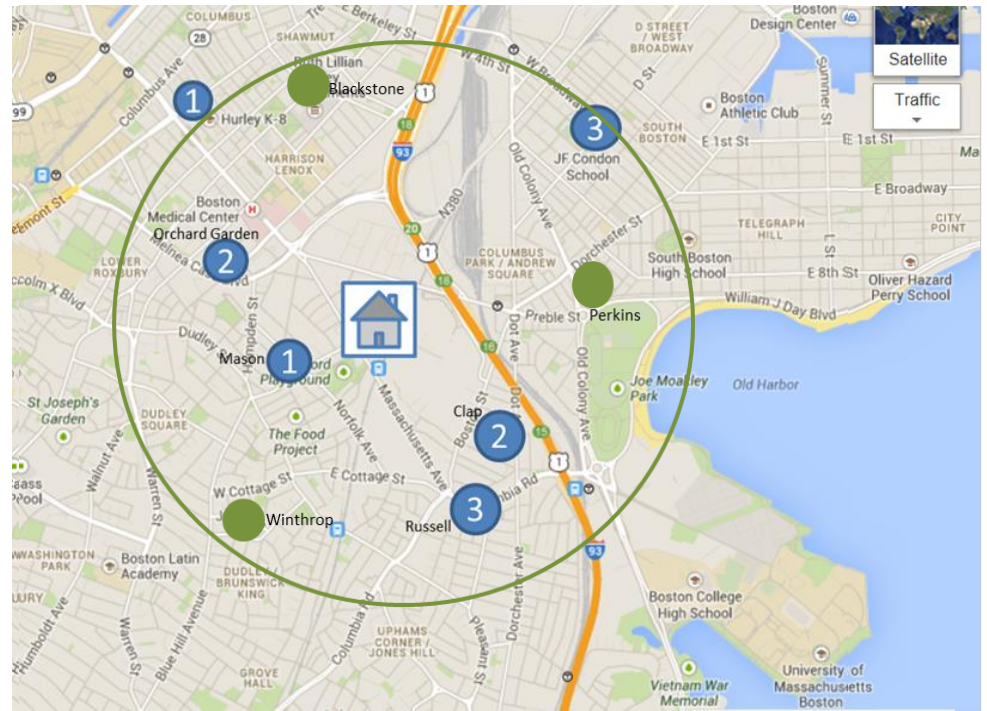
 MCAS Tier Schools



First, the student receives **at least 6 MCAS Tier schools**:

- 2 closest MCAS Tier I schools
- 4 closest MCAS Tier I or II schools
- 6 closest MCAS Tier I, II, or III schools

Choice Under HBAP

Let's explore school options for a K2 student living at Massachusetts Ave. and Magazine St. in Roxbury.

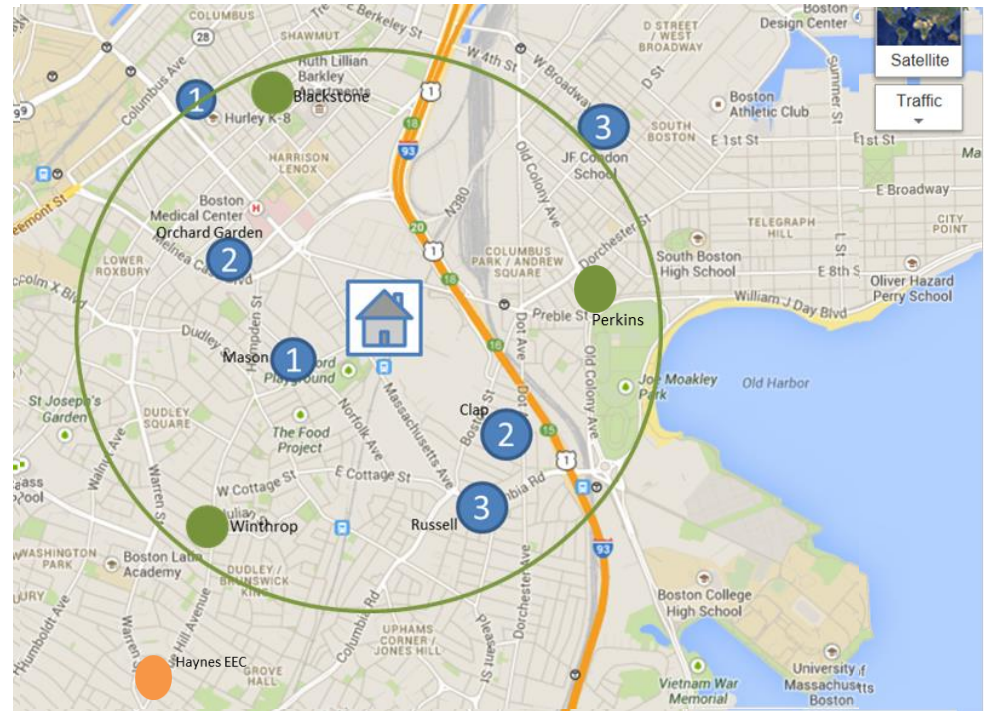


-  MCAS Tier Schools
-  Schools within 1 mile

Next, the student receives any schools within one mile of home (as the crow flies).

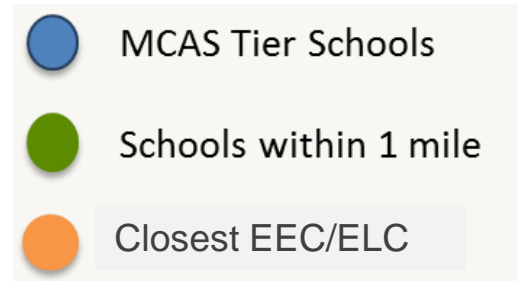
Choice Under HBAP

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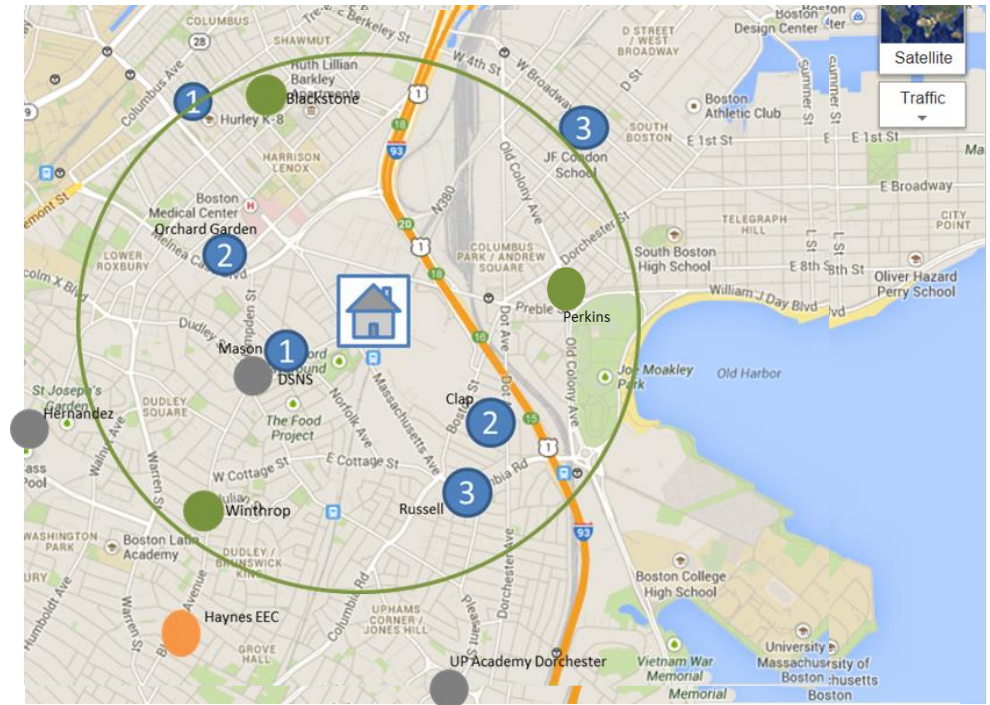
The student then receives:

- Programmatic options (e.g., ELL, SPED)
- Capacity options







Choice Under HBAP

Let's explore school options for a K2 student living at Massachusetts Ave. and Magazine St. in Roxbury.

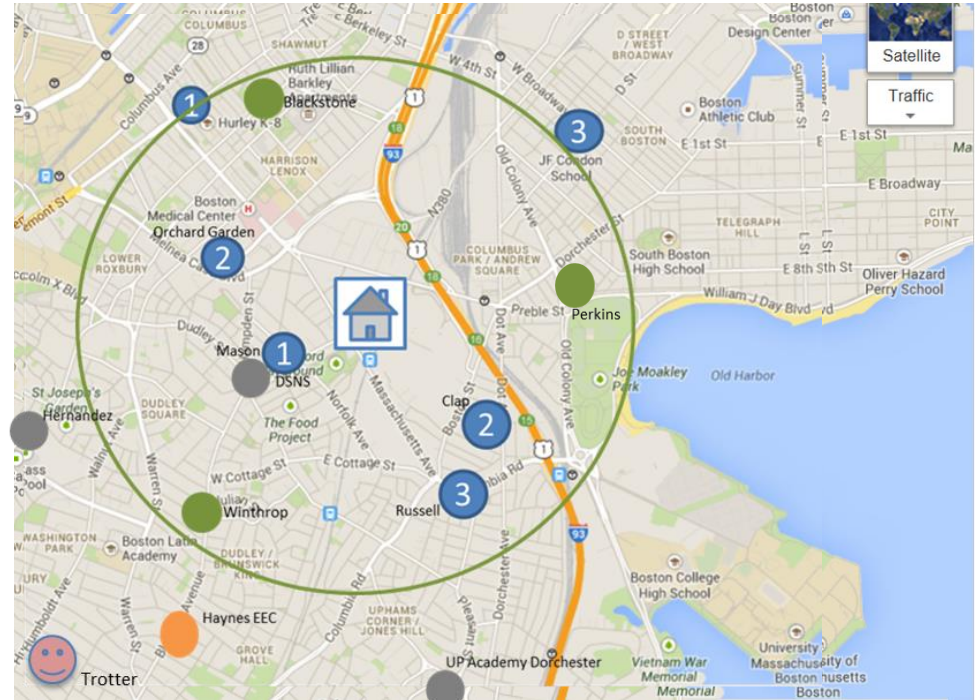


The student then receives **citywide schools**.

-  MCAS Tier Schools
-  Schools within 1 mile
-  Closest EEC/ELC
-  Citywide School

Choice Under HBAP

Let's explore school options for a K2 student living at Massachusetts Ave. and Magazine St. in Roxbury.



The student then receives **sibling schools**.

-  MCAS Tier Schools
-  Schools within 1 mile
-  Closest EEC/ELC
-  Citywide School
-  Sibling School

2. METHODOLOGICAL BACKGROUND

- What Data Did We Use?
- Breaking Down Our Reasoning
- Equity for Whom?

What Data Did We Use?

Choice baskets

- Assessment of access

Enrollment

- Assessment of assignment
- Assessment of school composition

School reference data

- Information on each school

All data geocoded against BARI's geographical infrastructure to permit easy coordination.

- 90% of students with home addresses were geocoded successfully

The WHO, the WHAT, the HOW and WHY

Who: Kindergarteners and 6th Graders

Why: Only grades with HBAP for three years

What: Comparison between HPAB and 3-Zone

How: 1) Analysis of historical data for assignment and composition;
2) Simulation of 3-Z for stronger comparison for access

What: Distance

How: Measure real travel time at 8am with Google Maps, rather than “as crow flies”

Why: To control for changes in traffic over time as all comparisons are assumed to occur at the same time and date

What: School Quality

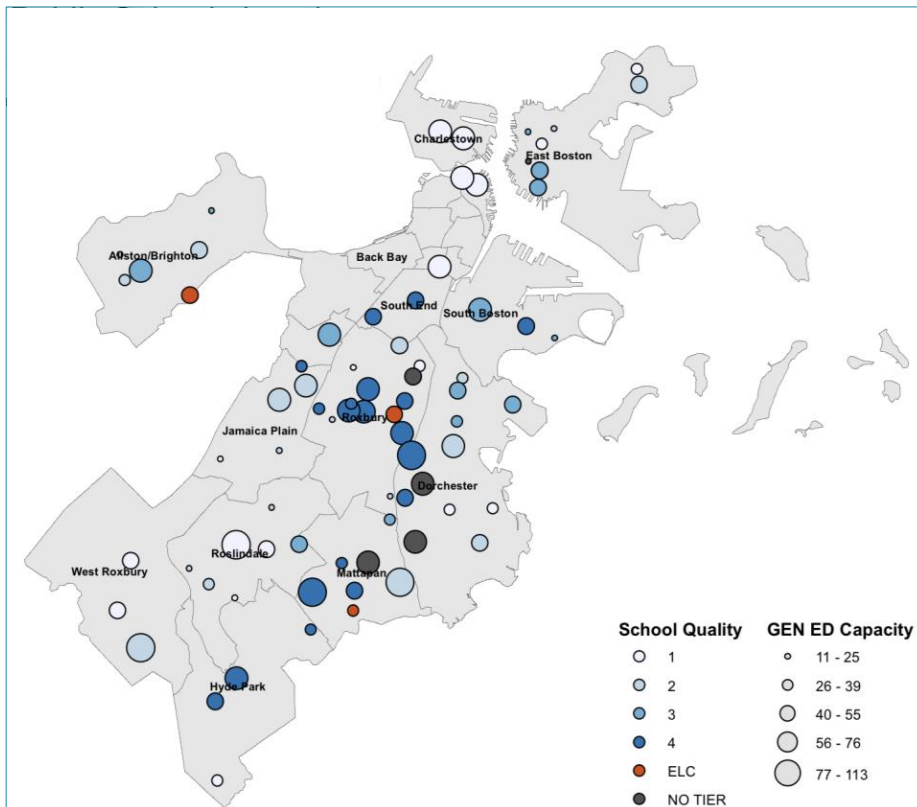
How: Using BPS MCAS Tiers in all cases, applying rankings from 2014-2015 to 2013-2014 (N.B. Defined “High Quality” as Tier 1 alone and Tier 1&2 combined)

Why: To compare 3-Zones method to HBAP

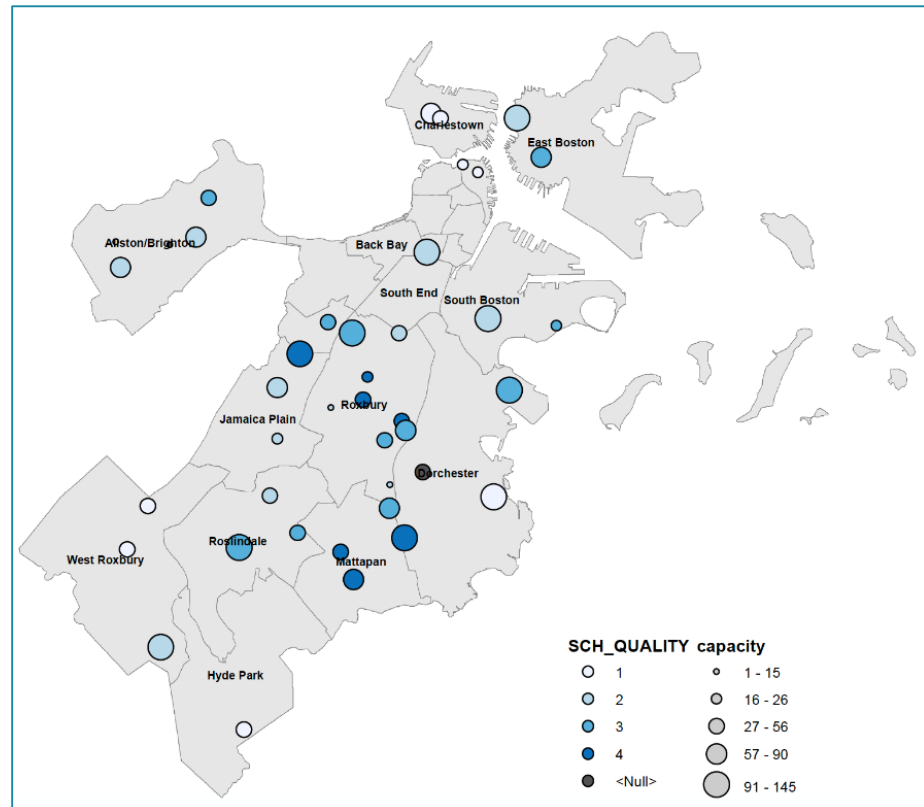
Finding #2: Incomplete Implementation

Over 33% of 6th graders living in Roxbury and over half of students living in Roslindale and Jamaica Plain received zero Tier 1 schools.

Schools with Kindergarten



Schools with 6th Grades

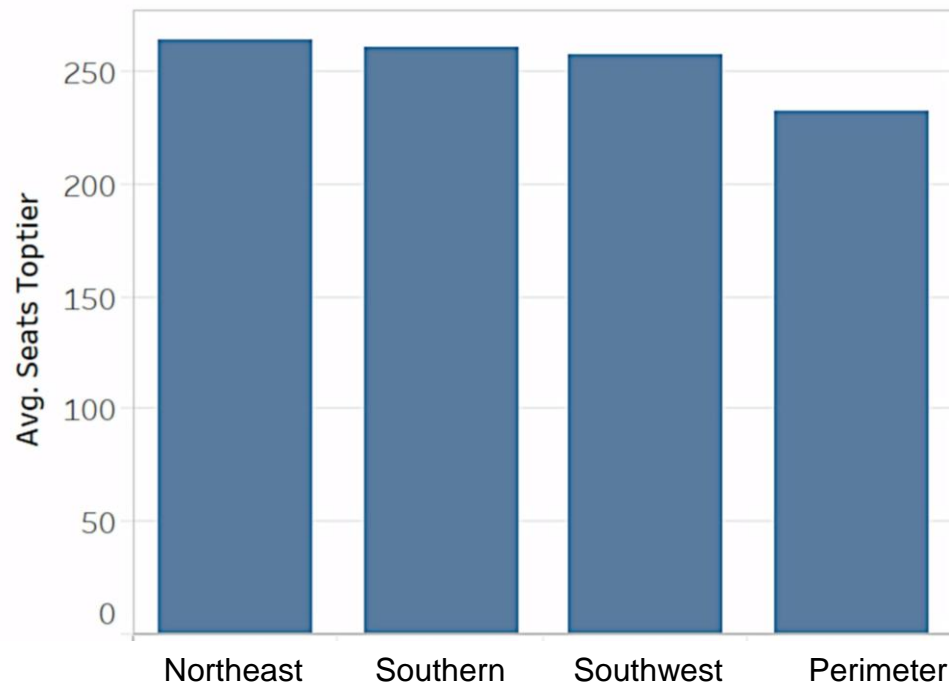


Finding #3: Defining Access

There were inequities in the number of Tier 1 schools and seats across neighborhoods for Kindergarten.

- The southern urban core had the fewest Tier 1 schools
- Downtown neighborhoods had the most

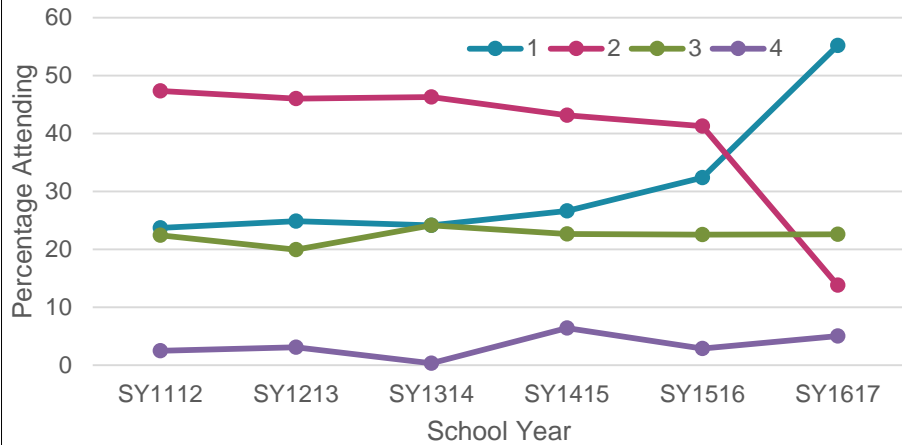
Greater equity when Tier 1 & 2 were combined.



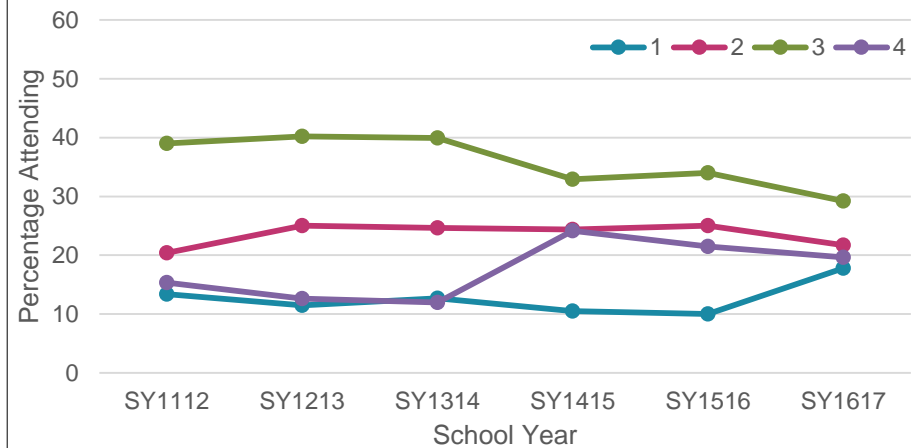
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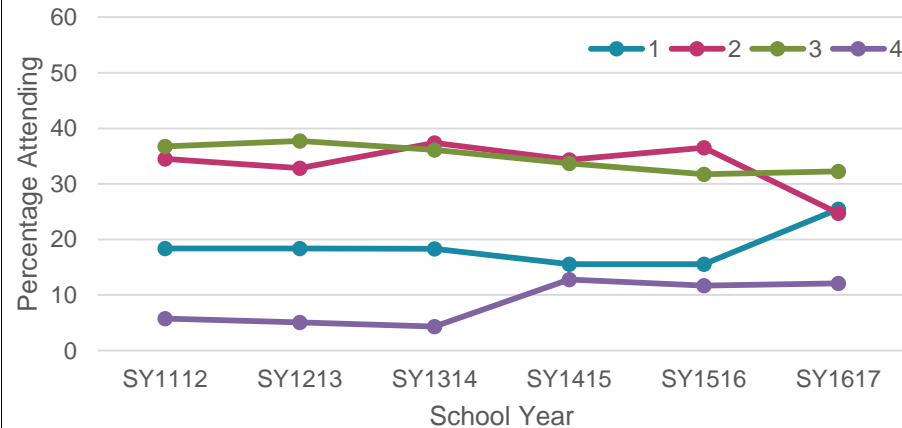
Asian 6th Grade Students



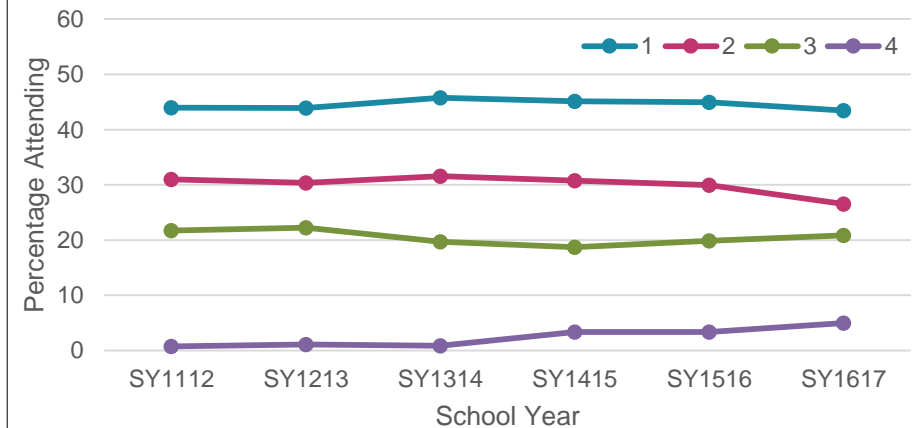
Black 6th Grade Students



Latino 6th Grade Students

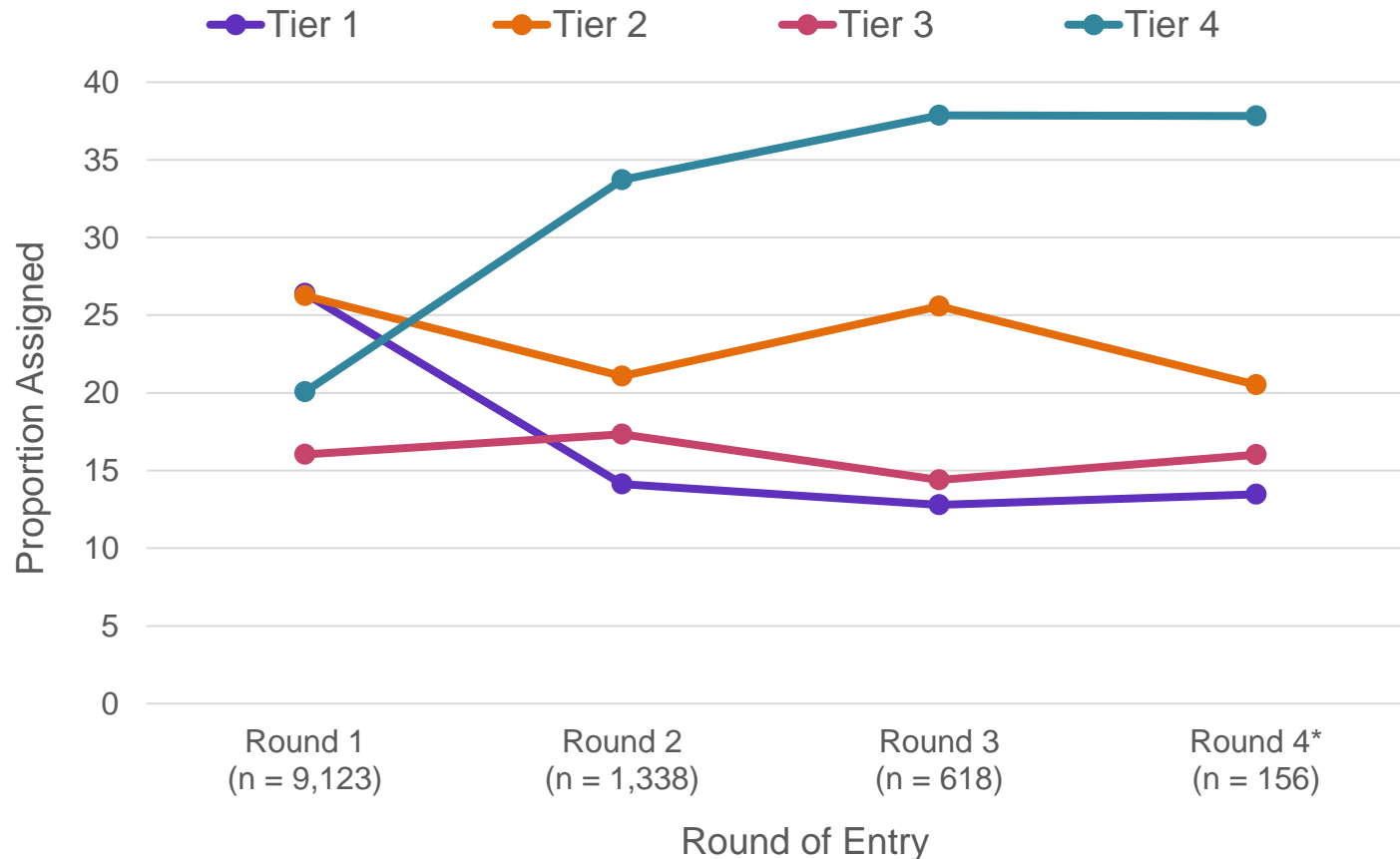


White 6th Grade Students



Translating Findings 3 and 4: Interaction with the Lottery Process

Students entering the lottery in later rounds were less likely to receive high quality assignments.

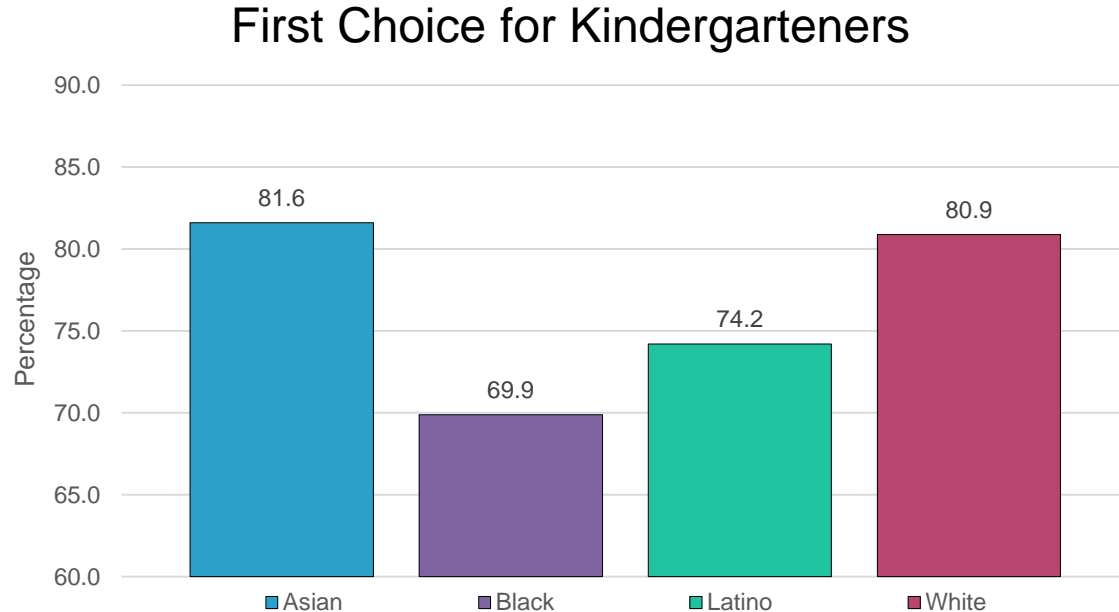


NB: less dramatic for 6th grade

Translating Findings 3 and 4: Interaction with the Lottery Process

Do rounds or differential competition influence other outcomes?

- More students received their first choice under HBAP
- However, Black students were less likely to receive their first choice even when considering round of entry because of competition



NB: similar for 6th grade