The Impact of Early College

Agenda

I. Brief overview of Early College program
II. Executive summary of findings from analysis
III. Matching methodology used to identify comparison group
IV. Balance between Early College and matched comparison group
V. Limitations of the use of this particular match
VI. Estimated effects of Early College Participation in Massachusetts
VII. Estimated effects of other college prep programs in high school
VIII. Estimated effects of Early College on second year persistence
IX. Variation in college enrollment at Early College high schools
What is Early College?
• Simultaneous enrollment in high school and college courses to reduce the time and expense of earning a post-secondary credential while increasing the likelihood of completion

Guiding Principles:
• Equitable Access
• Connections to Career
• Academic Pathways
• High Quality Partnerships
• Robust Student Support

Quick Facts:
• 51 high schools (2022-23)
• 24 colleges or universities (2022-23)
• 4,281 students (2021-22)
• ~30,000 college credits earned (2021-22)
Executive Summary

- Early College participants in 12th grade immediately enrolled in college at higher rates than similar non-participating students from 2019-2021
- Positive differences remain when looking at economically disadvantaged students as well as Black and Latinx students
- Early college graduates who enrolled in college also persisted to a second year in college at higher rates than similar non-participating students
- There is great variation in the rates of immediate college enrollment by designated high school
Data Sources:
• Student Information Management System (SIMS)
• Massachusetts Comprehensive Assessment System (MCAS)
• National Student Clearinghouse (NSC)
• Free Application for Federal Student Aid (FAFSA)

Methodology:
• Match EC participants with students of similar demographics within same range of test scores from similar high schools
• Matches are students whose observable characteristics suggest they have a similar likelihood of participating but did not

Definitions:
• Early College- 12th grade program participants from 2019, 2020, & 2021
• State Match- matched group from propensity scores with similar demographics and similar test scores from similar schools
## Balance Between Comparison Groups

<table>
<thead>
<tr>
<th>Category</th>
<th>Early College</th>
<th>State Match</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of 12th Graders</td>
<td>2579</td>
<td>2580</td>
</tr>
<tr>
<td>Asian</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Black</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Latinx</td>
<td>45%</td>
<td>48%</td>
</tr>
<tr>
<td>White</td>
<td>29%</td>
<td>29%</td>
</tr>
<tr>
<td>Female</td>
<td>63%</td>
<td>62%</td>
</tr>
<tr>
<td>Economically Disadvantaged</td>
<td>44%</td>
<td>45%</td>
</tr>
<tr>
<td>Student with a Disability</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Proficient or Meeting Expectations in ELA</td>
<td>68%</td>
<td>66%</td>
</tr>
<tr>
<td>Proficient or Meeting Expectations in Math</td>
<td>56%</td>
<td>54%</td>
</tr>
<tr>
<td>Advanced or Exceeding Expectations in ELA</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Advanced or Exceeding Expectations in Math</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Attend a school that is majority Black or Latinx</td>
<td>67%</td>
<td>70%</td>
</tr>
<tr>
<td>Attend a school that is majority economically disadvantaged</td>
<td>56%</td>
<td>55%</td>
</tr>
</tbody>
</table>
Limitations of this Match

Internal Validity:
- We do not know if there are systematic differences between participants and matched group on unobservable characteristics
  - Parental Involvement
  - Individual Motivation

External Validity:
- Estimated effects apply directly to participants and matched comparison group included in the study for 2019, 2020, and 2021 but do not extrapolate beyond
  - Non-included students
  - Future years

Accountability:
- This match was neither designed for school-to-school comparisons nor to hold individual schools or districts accountable
  - Data were pooled, so estimates are aggregated effects and do not apply to any individual school or district
Estimated Effects of Program Participation on College Enrollment

Immediate College Enrollment After H.S.

- Early College State Match: 69% (t-statistic = 11.4, p-value < .01)
- State Match: 54% (15 students enrolled)

Percent of students

0 20 40 60 80

Early College State Match
Estimated Effects on Black and Latinx Students

Black/Latinx Immediate College Enrollment After H.S.

<table>
<thead>
<tr>
<th></th>
<th>Percent of students</th>
<th>Early College</th>
<th>State Match</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-statistic</td>
<td></td>
<td>8.67</td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td></td>
<td>&lt; .01</td>
<td></td>
</tr>
</tbody>
</table>

63

48

15
Estimated Effects on Economically Disadvantaged Students

Eco. Dis. Immediate College Enrollment After H.S.

- Early College: 61 percent of students
  - t-statistic = 7.88 | p-value < .01

- State Match: 45 percent of students

Total: 16

Note: 0 to 60 percent scale on the y-axis.
Estimated Effects of Other College Prep Programs on College Enrollment

Results from a brief review of relevant literature:

- 7 Comprehensive college preparation programs across various states and regions
- Have Tier 2/moderate evidence according to US Department of Education
- Unable to make direct comparisons due to variant features of programs
- Effect sizes ranging from 0 to 18 percentage points suggest that MAEC is among those making an impact
Estimated Effects of Program Participation on 2nd Year Persistence

Students Persisting to Second Year in College

- Early College: 60 students
  - t-statistic = 5.9 | p-value < .01
- State Match: 44 students
  - 16 students

Percent of students
There is Great Variation in College Enrollment by EC School

*Many schools excluded from graph due to suppression rules*