



Remediation in Maryland Higher Education

Part 2: Remedial Assessment at Maryland Colleges and Universities

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Remediation in Maryland Higher Education

The State of Maryland has always prided itself on being a leader in higher education. In 2012, the Career and College Readiness and College Completion Act (CCRCCA) set an ambitious goal: that 55% of Marylanders would have at least one degree by 2025.

Reaching this goal requires increasing college access and completion across a wide variety of demographic groups. A key component of this is ensuring that all students are prepared to enroll succeed in higher education.

This study is designed to examine the impact of college-level remediation on students' success at the postsecondary level. To that end, this series of briefs will specifically focus on students assessed to need remediation in college assessment *after* a student has completed high school and enrolled in a Maryland public college or university, and examine the effects of remediation on their path through college.

Specifically, this series of briefs will address the following key policy issues:

- What is college-level remediation, and why does it matter to policymakers?
- What are the demographic characteristics of students assessed to need remediation?
- Do students who are assessed to need remediation complete remedial courses? Do they subsequently progress to credit-bearing courses in the associated subjects?
- How do student outcomes – including first-year college outcomes, persistence, and graduation – compare across three population groups:
 1. Students who enter deemed “college-ready” by the college or university;
 2. Students who are assessed to need and complete remedial coursework; and
 3. Students who are assessed to need and fail to complete remedial coursework?

This study will expand on prior work performed by the Maryland Higher Education Commission to further explore the impacts of college-level remediation on postsecondary success and completion.

Career and College Readiness and College Completion Act

K-12 and Postsecondary Requirements

It is important to note that another focus of the legislation was an attempt to address many of the perceived barriers to student success, and particularly to ensure that students are prepared to enroll directly in credit-bearing, college-level coursework when they enroll in higher education. To that end, there are a number of requirements at both the K-12 and postsecondary levels focusing on ensuring students are college-ready.

At the postsecondary level:

- Public institutions must encourage any students assessed to be unprepared for college-level coursework to enroll in remedial courses as soon as possible in their postsecondary career.
- Public institutions are required to develop degree pathways for students that include credit-bearing coursework and English within the first 24 hours of courses.
- Degree pathways must require any students taking remedial courses in math, English, or reading to enroll in any associated credit-bearing coursework either concurrently with the remedial course or the semester immediately following

At the K-12 level:

- Students must be tested no later than the 11th grade to assess their level of college readiness in algebra, English, and several other subjects.
- Students found to be deficient in either or both disciplines will be required to enroll in “transition courses or other opportunities” aligned with the common core state curriculum to ensure that they achieve college readiness by the end of the 12th grade.
- Students must be reassessed following completion of the courses to determine their college readiness.
- Beginning with students entering in the 2014-2015 school year, students must enroll in a math course in every year that they attend high school.

While there are requirements in CCRCCA that have impacts at both the secondary and postsecondary levels, this series of briefs will focus specifically on remedial education in Maryland’s public colleges and universities.

REMEDIAL EDUCATION IN MARYLAND HIGHER EDUCATION

PART 2: REMEDIAL ASSESSMENT AT MARYLAND COLLEGES AND UNIVERSITIES

Part 1 of this series reviewed several critical concepts related to remediation and described why remedial education remains a continuing point of concern among policymakers and educators.¹ As national data show, there are substantial portions of students enrolling in postsecondary institutions who are assessed as unprepared for college-level coursework when they begin their higher education career. There are a number of potentially considerable impacts on a student's performance and outcomes that may result from having to spend money and time on courses that will not apply towards a degree. However, not all costs associated with remediation are borne by the student; institutions have to spend money to teach these courses, and if developmental coursework serves as an impediment to success, this might have implications for the creation of an educated workforce.¹ Further reports in this series will examine student enrollment, first-year outcomes, persistence, and completion among remedial and non-remedial students.

Key takeaways from part 2 of this series:

- Substantial numbers of students enrolling for the first time in both community colleges and four-year public colleges and universities are assessed to need remediation when entering postsecondary education, although this need is much greater at community colleges than at four-year institutions.
- The need for remedial coursework exists across all races/ethnicities, both genders, and age groups, although there are wide variances across subgroups.

It is important to define the remedial population prior to further examining the impacts of remedial assessment and enrollment. This part of the series will examine in greater depth who is assessed to need remedial work.ⁱⁱ In particular, this brief focuses on age, race/ethnicity, and gender representation in the first-year college and university student population, as well as the data regarding who is assessed to need remediation. As community colleges and four-year public colleges and universities enroll markedly different populations – given that community colleges are open-access institutions, while four-year public colleges and universities utilize admissions standards that might indicate whether or not an student should be prepared to engage with college-level material – these two segments will be discussed in separate portions of the analysis.

The next briefs in this series build upon the analysis in this report to examine first-year outcomes for these students, as well as students not requiring remediation. This will include students' actual enrollment in and completion of remedial work for those students assessed to need it, as well as enrollment in and completion of associated credit-bearing coursework. Future work will examine other first-year outcomes, including first-year GPA and credit accumulation. This will also include analysis of outcomes further disaggregated by the populations discussed here in Part

¹ See endnotes for further information and sources that are discussed throughout this report.

2 – age, race/ethnicity, and gender – to examine whether there are substantial differences in outcomes across these populations.

Additionally, as reviewed in Part 1 of this series, there is substantial concern regarding the impact of remediation on a student’s likelihood of completing their academic program. There is a large amount of research showing that nationally, students requiring remediation are less likely to graduate than students who do not. However, as also discussed in Part 1, there are data showing that those students who are assessed to require remedial work and complete it are more successful than those who are assessed to need it and do not complete some or all of their assigned remedial sequence.ⁱⁱⁱ Upcoming research will examine longer-term persistence and completion outcomes for students by remedial status.

METHODS AND LIMITATIONS

This study examines the demographic characteristics of students identified as first-time undergraduates in the fall of 2017. In the fall 2017 semester, 45,102 students enrolled for the first time at a Maryland community college or four-year public college or university. These data include part- and full-time and degree- and non-degree-seeking students.^{iv}

Because this research intends to track student performance and outcomes based upon enrollment at one institution, those students attending multiple colleges or universities were eliminated from the analysis.^v Additionally, because of the lack of historical data for independent colleges and universities, students attending these institutions are excluded.^{vi} The final analysis cohort consists of 22,521 first-time full-time and part-time students at community colleges and 16,273 students at four-year public colleges and universities.^{vii}

Lastly, Maryland institutions determine what standard qualifies a student as college-ready in a variety of ways; while some rely solely on assessment tests, others incorporate measures such as high school grades, high school grade point average, or other methods of standardized testing (such as the SAT, ACT, or Advanced Placement Test scores) into those determinations.^{viii} Additionally, developmental offerings are not consistent across all institutions; not all colleges or universities have remedial courses in each area. For purposes of this analysis, students were considered as needing remediation if they were identified to need developmental work in math, English, or reading.

DATA ANALYSIS

Community colleges

Community colleges serve a wide variety of purposes, from preparing students to earn a degree or transfer to a four-year institution, to providing opportunities for personal enrichment or career preparation. They play a critical role in ensuring the development of an educated populace and are an important option to provide students with a diverse array of postsecondary educational opportunities. However, while their status as open-enrollment institutions is key in providing

students access to higher educational opportunities, the lack of selectivity in admissions means that some students who are less well-prepared for the rigor of college-level work will enroll in these institutions. To that end, over three-fifths (60.7%, or 13,663) of the 22,521 students enrolling in Maryland community colleges for the first time in fall 2017 were assessed to need developmental work in at least one subject prior to enrolling in college-level courses.^{ix}

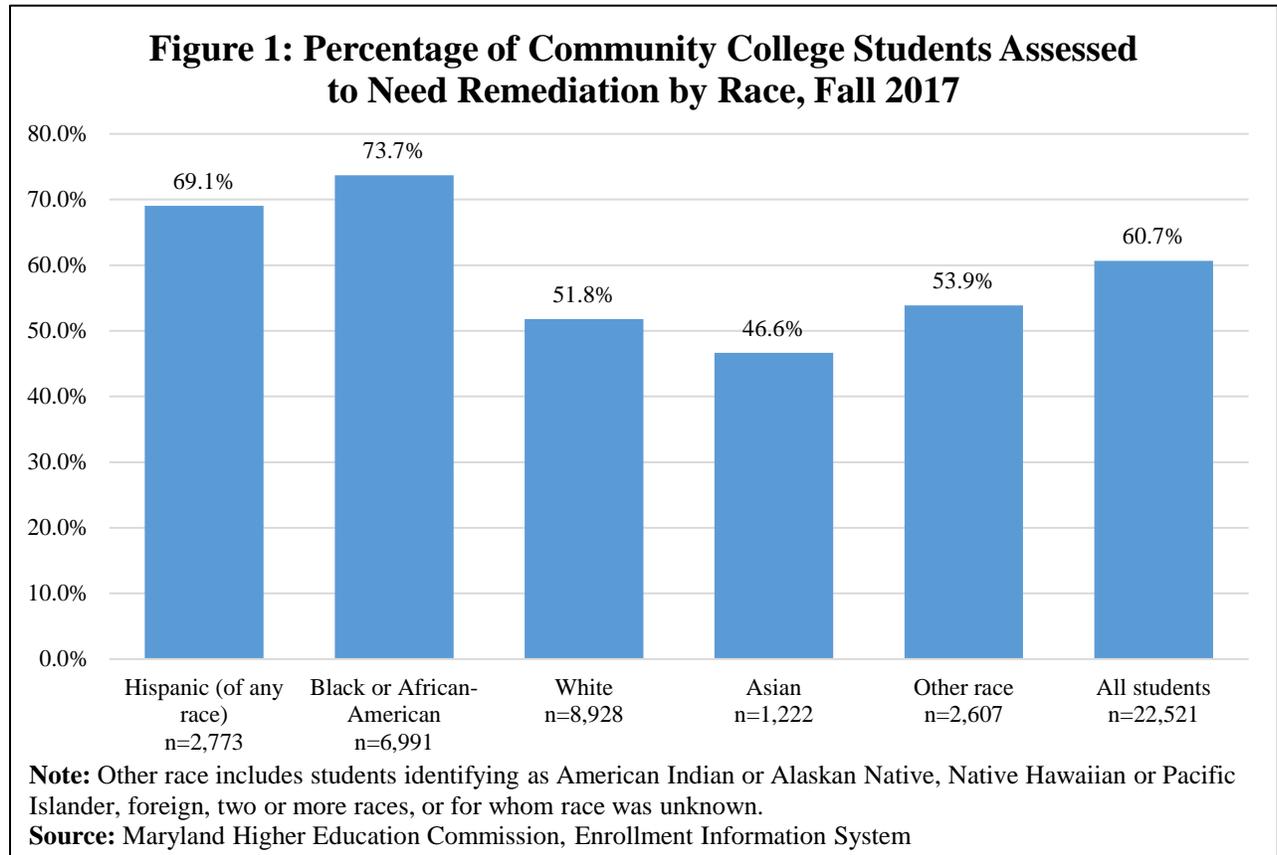
As discussed in Part 1 of this report, the cost of remediation remains a significant policy concern, particularly due to the fact that students may be completing work in courses that should have been included at the high school level. It is often argued that the necessity for developmental coursework is indicative of a failure of the K-12 education system to adequately prepare students for college-level work.

As Table 1 shows, however, there are a substantial number of students whose age indicates they are likely to have recently graduated from high school who are assessed to need remedial work. Attributing the need for remediation solely to inadequate preparation at the K-12 level presumes that all first-time students are enrolling directly out of high school. As Table 1 shows, in 2017, over one-quarter (6,093, or 27.1%) of first-time students at Maryland’s community colleges were age 20 and over, suggesting that they may have had some break between their secondary and post-secondary education. As Table 1 also shows, a sizeable portion of these non-traditional age students require remediation. The 20-24 age group presented the highest likelihood of being assessed to need remediation, with over two-thirds (67.4%, representing 2,044 students) placed into developmental coursework in either English or math.

However, over half of students in all other age groups were also assessed to need some form of remedial work prior to enrolling in college-level courses. Parts 3 and 4 of this report will assess whether needing remediation may have a greater impact on student success for students based upon whether the student is enrolling directly from high school versus a student whose age suggests that they are likely to have taken a break in their educational career.

	All First-Year Students		Assessed to Need Remediation	
	Number of all first-year students	% of all first-year students	Number assessed to need remediation	% assessed to need remediation
under 17	488	2.2%	260	53.3%
17-19	15,939	70.8%	9,716	61.0%
20-24	3,033	13.5%	2,044	67.4%
25 +	3,060	13.6%	1,643	53.7%
Unknown	1	0.0%	0	0.0%
<i>All students</i>	<i>22,521</i>	<i>100.0%</i>	<i>13,663</i>	<i>60.7%</i>
Note: student age is defined by year of birth.				
Source: Maryland Higher Education Commission, Enrollment Information System				

There are also substantial differences in remedial assessment by race and ethnicity at Maryland’s community colleges. As Figure 1 shows, nearly three-quarters (73.7%) of African American students enrolling for the first time in fall 2017 were assessed to need remedial work, followed closely by Hispanic students (69.1%). Just over half (51.8%) of white students required developmental work, while slightly below half (46.6%) students were assessed to need remedial coursework prior to entering into credit-bearing coursework. These discrepancies may be identified as of particular import when examining outcomes, since they may serve to perpetuate achievement gaps already in existence.



On the other hand, an analysis of remedial assessment by gender showed that there was very little difference in the percentage of students assessed to need developmental work at community colleges. Males and females were approximately equally likely to be assessed as needing remediation, with 59.1% of males and 61.6% of females assigned to remedial work (a 2.5 percentage point difference). As noted in the introduction to this report, first-year and longer-term outcomes examining the intersection of gender and remedial status will be explored further in later editions of this research project.

Four-Year Public Colleges and Universities

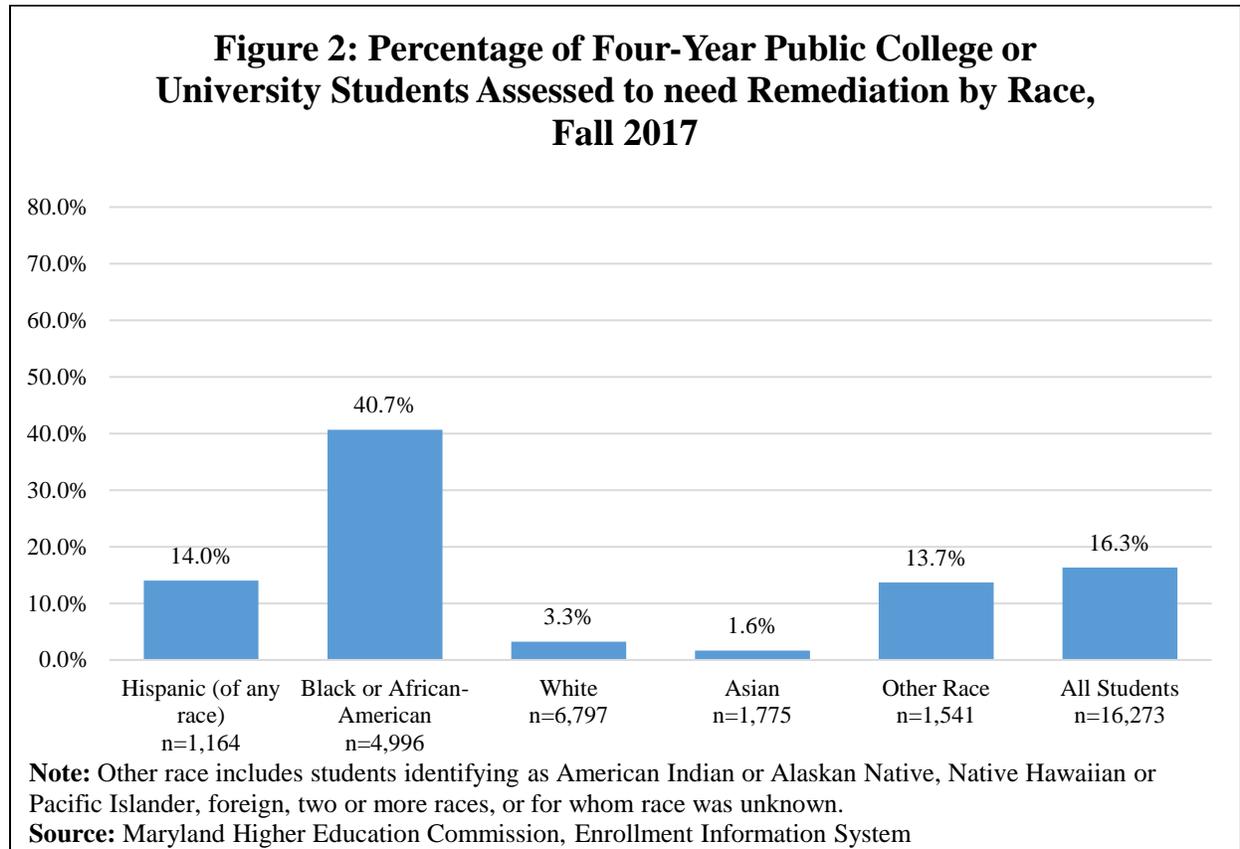
A far lower proportion of students enrolling in Maryland’s public four-year colleges and universities were assessed to need remediation than those in community colleges. While well over three-fifths of students at community colleges were required to enroll in remedial

coursework, most of the 16,273 students first enrolling at four-year public institutions in fall 2017 (83.7%) were considered ready to proceed directly to credit-bearing work. While it is important to note that some institutions do not offer remedial coursework in some or all subject areas, which would contribute to the substantially lower rates of remedial participation, the majority of this difference is likely driven by the more selective nature of admissions at the four-year public institutions.

As Table 2 shows, the vast majority of students who enrolled for the first time at a Maryland four-year public college or university in fall 2017 were of an age that would suggest that they enrolled in college directly after high school; nearly all students (95.3%) were aged 19 or below. As these data show, students among the three categories representing those 24 and under were assessed to need remediation at roughly similar rates. However, the percentage of adult students (age 25+) requiring remediation is substantially smaller than that of students in other age groups. This may suggest some intrinsic differences between these populations that are difficult to analyze using available data, or may simply be a random variation due to small sample size. Further exploration regarding outcomes for this population will be conducted in the next part of this series.

	All First-Year Students		Assessed to Need Remediation	
	Number of all first-year students	% of all first-year students	Number assessed to need remediation	% assessed to need remediation
under 17	256	1.6%	45	17.6%
17-19	15,247	93.7%	2,509	16.5%
20-24	391	2.4%	83	21.2%
25 +	377	2.3%	18	4.8%
Unknown	2	0.0%	0	0.0%
<i>All students</i>	<i>16,273</i>	<i>100.0%</i>	<i>2,655</i>	<i>16.3%</i>
Note: student age is defined by year of birth.				
Source: Maryland Higher Education Commission, Enrollment Information System				

As overall remedial assessment rates suggested, far fewer students of every racial and ethnic group at four-year institutions were assessed to need remediation than those of students at community colleges. However, the degree to which this was true differed radically by group, as Figure 2 illustrates. Very few students identifying as Asian (1.6%) or white (3.3%) were assessed to need developmental work prior to enrolling in college-level courses. However, over two-fifths (40.7%) of African American students were assessed to need remedial coursework in at least one subject. While this is substantially lower than the comparable rate for community colleges, it represents a stark gap between races and ethnicities in college readiness at four-year colleges and universities.



The difference in remedial placement by gender at four-year public colleges and universities was less pronounced than the difference by race. While 18.1% of females were assigned to need remedial work, 14.1% of males were also determined to require additional work prior to enrolling in credit-bearing courses. While this gap is slightly more pronounced than that at the community colleges (4.0 percentage points, compared to 2.5), it is dwarfed by the gap between races/ethnicities.

IMPLICATIONS FOR POLICY AND PRACTICE

State:

- The cost of remediation remains substantial, both financially and in terms of it representing a potential impediment to student success.
- The likelihood of being assessed to need remediation is substantially different among various demographic groups, particularly when race and ethnicity are considered.
- While not all students who are assessed to need remediation enroll directly from high school, data show that many of them do. Maryland K-12 systems and higher education institutions should continue to evaluate both the best ways to ensure that students are adequately prepared for college-level work and the best ways to assess their readiness.

Institutions:

- Substantial gaps in readiness for college across demographic groups persist. Institutions should ensure that they are implementing targeted interventions for those groups most disproportionately impacted, and evaluate the impacts these may have upon increasing student success for those subpopulations.
- Institutions should evaluate ways to promote or incentivize students completing remedial courses, as well as associated credit-bearing courses, earlier in their academic careers. Current Maryland regulations require that students complete at least one credit-bearing math and English course within the first 24 credits of enrollment. However, many institutions report that students tend to postpone attempting or completing these courses to the greatest extent possible.
- Maryland's colleges and universities should seek to identify best practices drawn from the lessons learned at institutions that have successfully implemented these programs and ensure that they are following these best practices on their own campuses. Innovative approaches to offering remedial work, particularly co-requisite remediation, are rapidly evolving and changing the landscape regarding course delivery. However, a number of institutions, both in Maryland and nationally, have seen success in implementing these models.

NEXT STEPS FOR RESEARCH

As this analysis has shown, remedial assessment varies widely across demographic groups. Previous work performed by the Maryland Higher Education Commission has identified persistent achievement gaps throughout higher education based upon a variety of factors. The next parts of this series will examine how first-year outcomes differ by remedial status and explore what contribution remedial assessment might make in perpetuating those gaps. In particular, this analysis will review enrollment in and completion of remedial courses and enrollment in and completion of associated credit-bearing courses, comparing students who are assessed to need developmental courses with students who are not. This will also examine two other key first-year outcomes, first-year GPA and credit accumulation. Further research will

include an examination of longer-term outcomes, including retention, graduation, and transfer, disaggregated by racial and ethnic group, gender, and remedial assessment.

ENDNOTES

ⁱ As noted in part 1 of this series, there is a lack of consensus in the higher education community regarding whether there should be a distinction between "remedial" education - e.g., coursework designed to compensate for skills lacking that they already should have obtained - and "developmental" coursework - designed to help students develop understanding in areas that they had not previously studied. However, due to the lack of consensus regarding this, and the fact that the MHEC data do not provide a mechanism to distinguish the two, throughout these analyses "remediation" and "developmental" and "remedial" education/courses/sequences will be used interchangeably.

ⁱⁱ MHEC collections include an indicator regarding assessment at the postsecondary level; these categories are: not assessed, assessed and remediation not needed, assessed to need remediation, or unavailable assessment status but took remedial coursework. Assessments are for the subjects of math and/or English, and reported separately for each subject area. MHEC does not have data to identify whether a student may have been required to enroll in a "transition" skills course at the high school level prior to graduation.

ⁱⁱⁱ In "Remedial Coursetaking at U.S. Public 2- and 4-Year Institutions: Scope, Experiences, and Outcomes" (2016), National Center for Education Statistics, (NCES), the authors find that remedial completers achieved more successful outcomes than their counterparts who were assessed to need remediation and either did not complete any or all of the remedial sequence to which they were assigned.

^{iv} Outcomes analysis will include full-time and part-time students separately due to distinctly different rates of students assessed to need developmental coursework particularly at community colleges.

^v There were 263 students removed from the analysis due to multiple, simultaneous enrollments.

^{vi} State-aided independent colleges and universities were not required to submit unit-record data until 2013.

^{vii} As the intent of this study is to examine the population of students deemed fully qualified to enroll in postsecondary education, this research excludes students who are dually-enrolled in high school.

^{viii} While assessments vary among Maryland four-year institutions, following the passage of the College and Career Readiness and College Completion Act, the Maryland Association of Community Colleges and the Maryland State Department of Education developed a set of common assessment standards to identify a student as college-ready. Maryland Association of Community Colleges and Public-School Superintendents Association of Maryland (2019). "Revisions to the Memorandum of Understanding between Maryland Association of Community Colleges and Public-School Superintendents Association of Maryland."

^{ix} The cohort for this second report in the series is all new students, which is a more inclusive population than that used in Part 1, which was defined using recent high school graduates. Analysis contained within this brief is not interchangeable with that contained in Part 1.