Reforming Math Pathways in California's Community Colleges

October 24, 2017

Olga Rodriguez, Hans Johnson, Marisol Cuellar Mejia, and Bonnie Brooks

Supported with funding from the Bill and Melinda Gates Foundation, the College Futures Foundation, and the Sutton Family Fund

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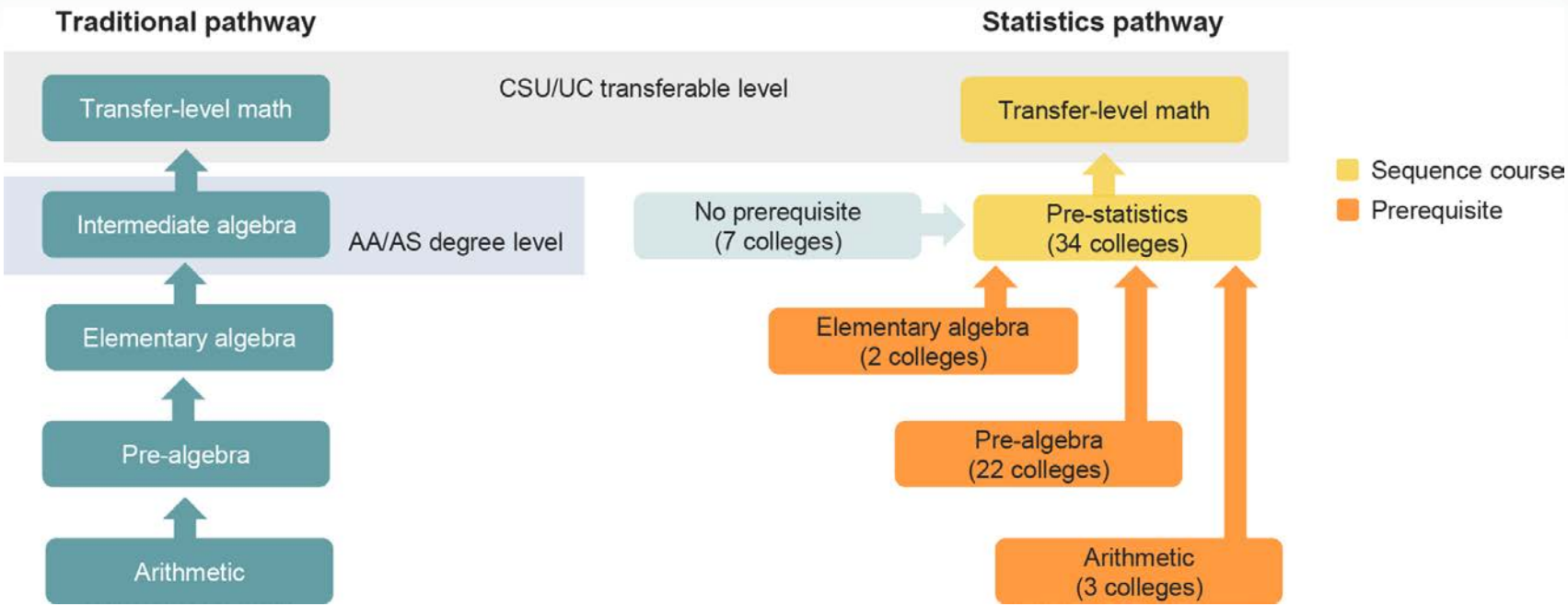
Developmental math is an obstacle for community college students

- The California Community Colleges (CCC) system is large and diverse
  - Educates almost half of the state's undergraduates
  - High numbers of historically underrepresented students enroll
  - Critical to the production of bachelor's degrees
- Equity is a major concern in developmental (remedial) math
  - 65% of incoming students enroll but few complete transfer-level math—49% of students one level below transfer and only 8% of those four levels below
  - Historically underrepresented students are disproportionately represented
- Community colleges are experimenting with alternative pathways to transfer-level math, as well as other reforms
  - Revising assessment and placement procedures
  - Exploring alternative curricular approaches

Two key reforms aim to shorten the path to transfer-level math

- Statistics pathway
  - Provides accelerated pathway to transfer level math for students in liberal arts and humanities majors
  - Aims to better align with transfer-level statistics
- Compressed math pathway
  - Accelerates pathway to transfer math by combines two developmental math courses into a single course
  - Aims to streamline content by reducing time spent on review and eliminating redundancy
- Reforms only reach a small share of students

Comparing traditional math and statistics pathways



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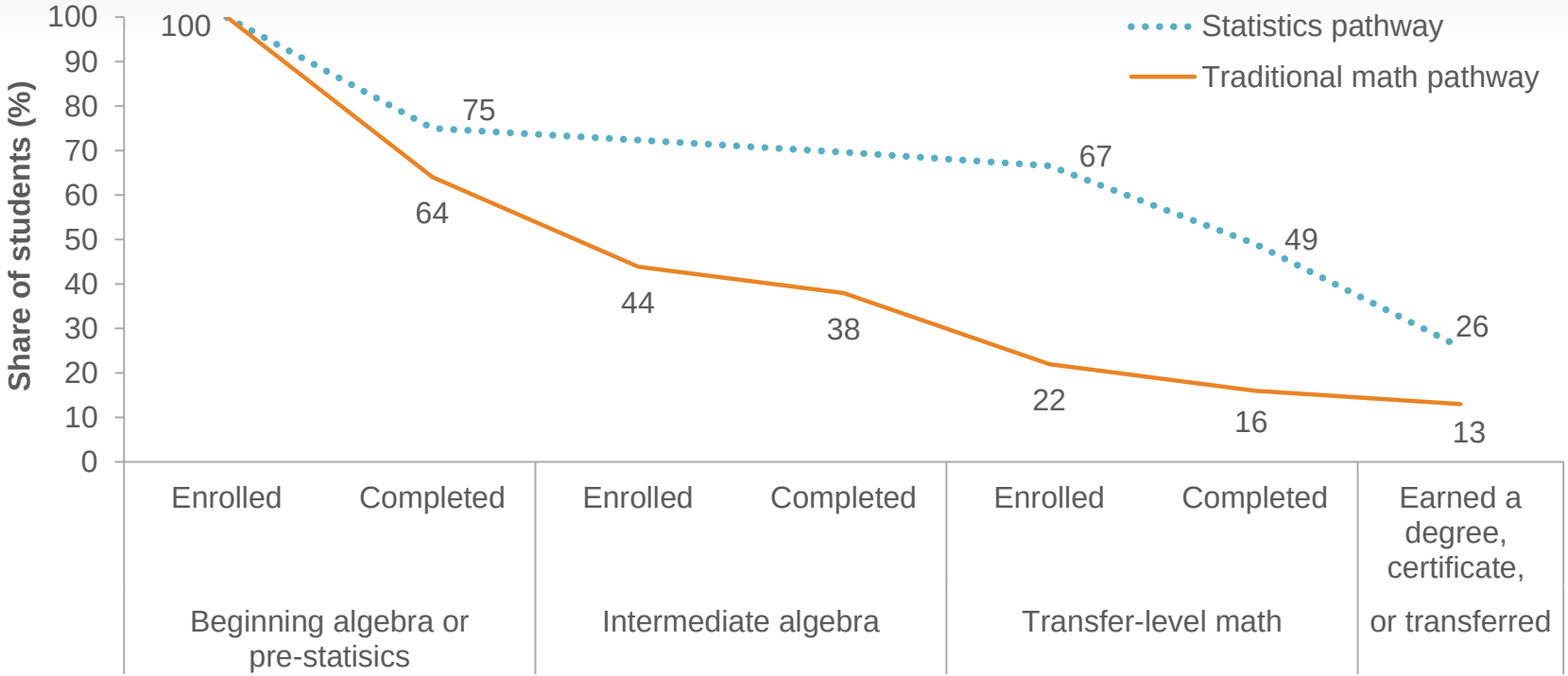
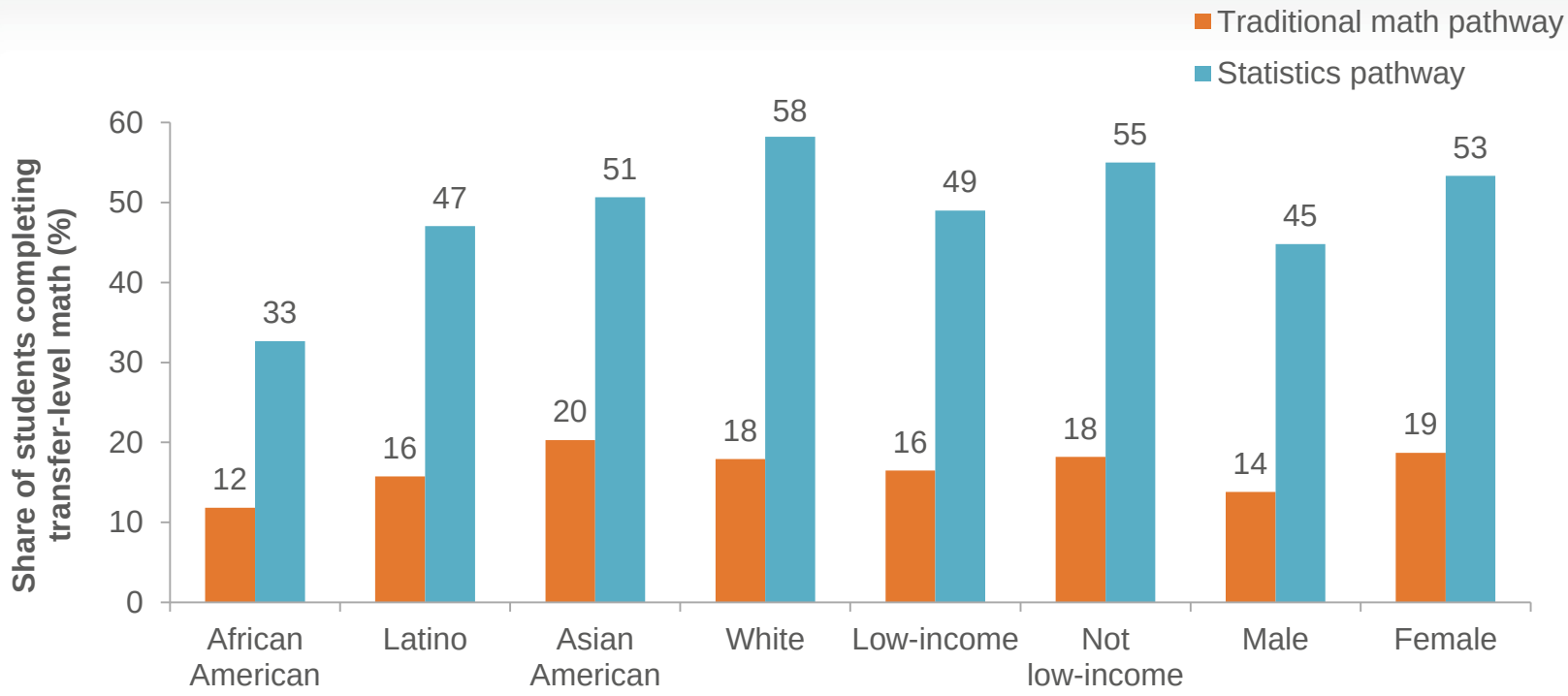
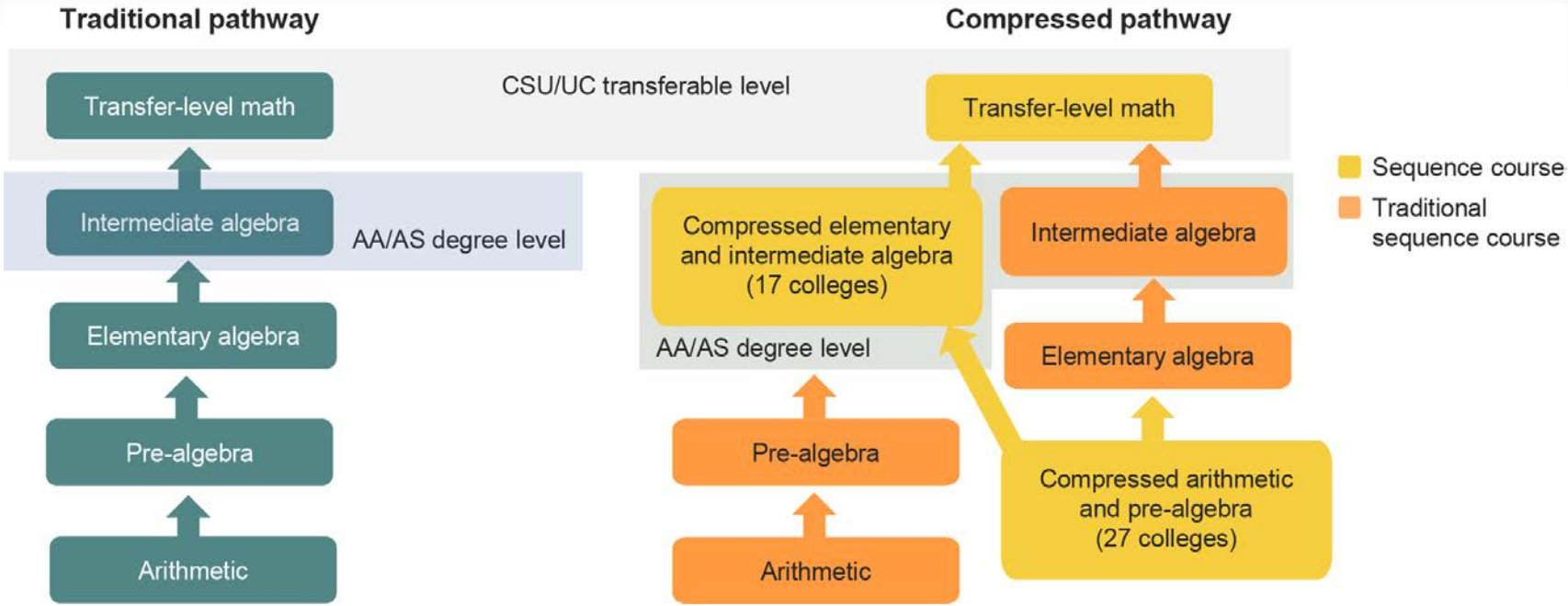
Students in statistics pathways are much more likely to complete a transfer-level course



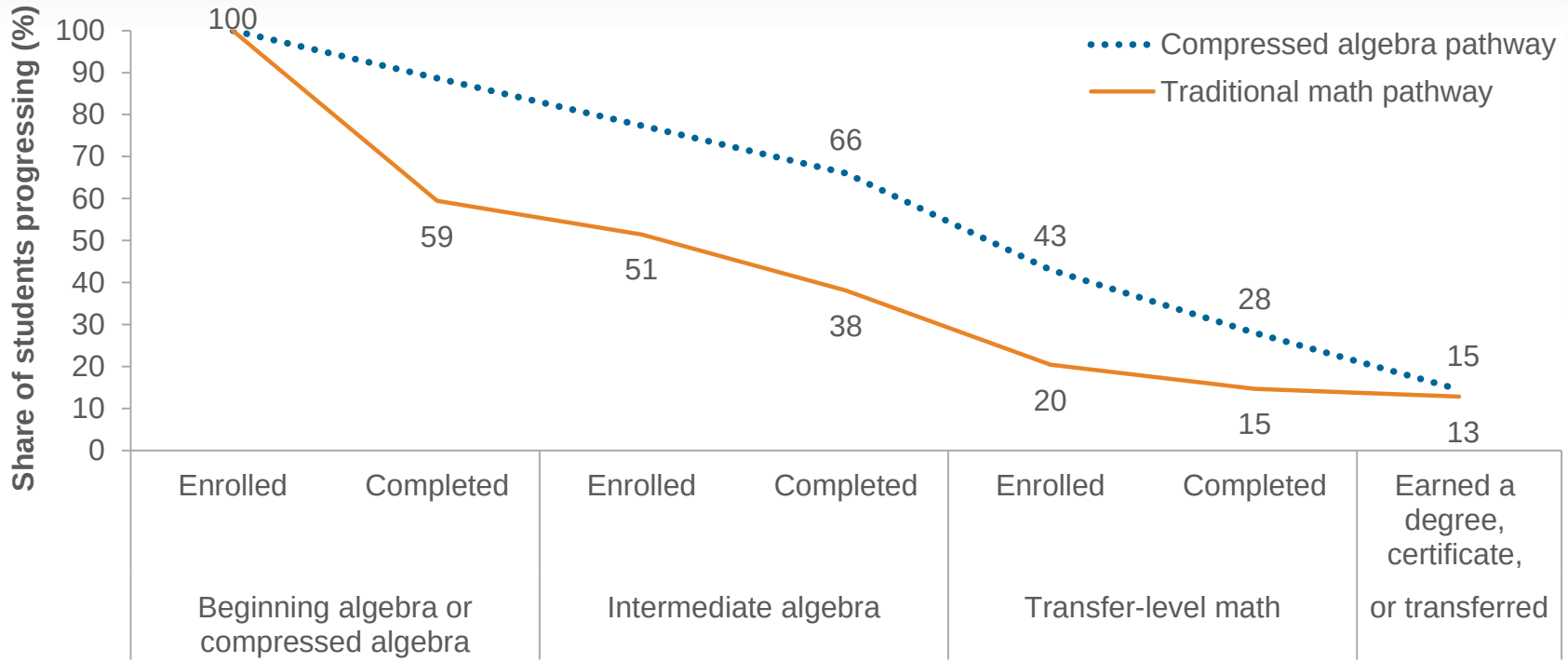
Outcomes improve for a broad range of students, but equity gaps remain



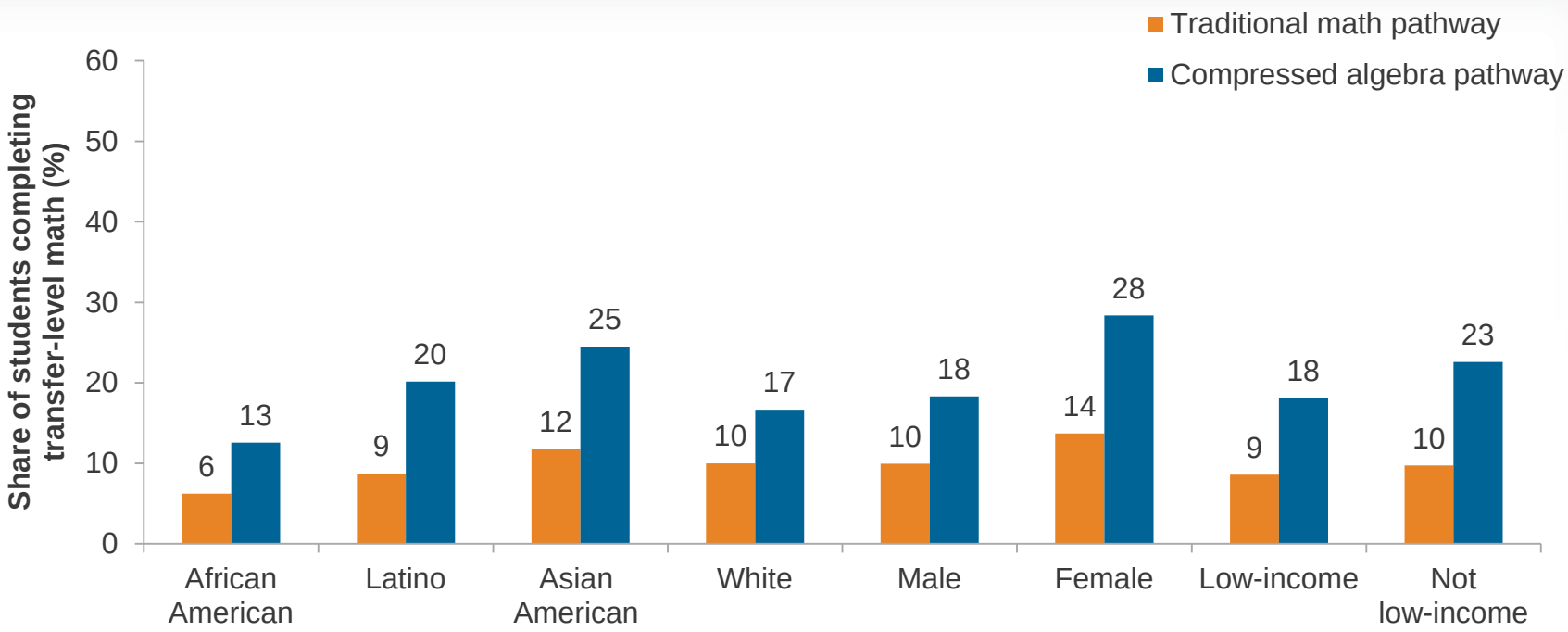
Comparing traditional and compressed math pathways



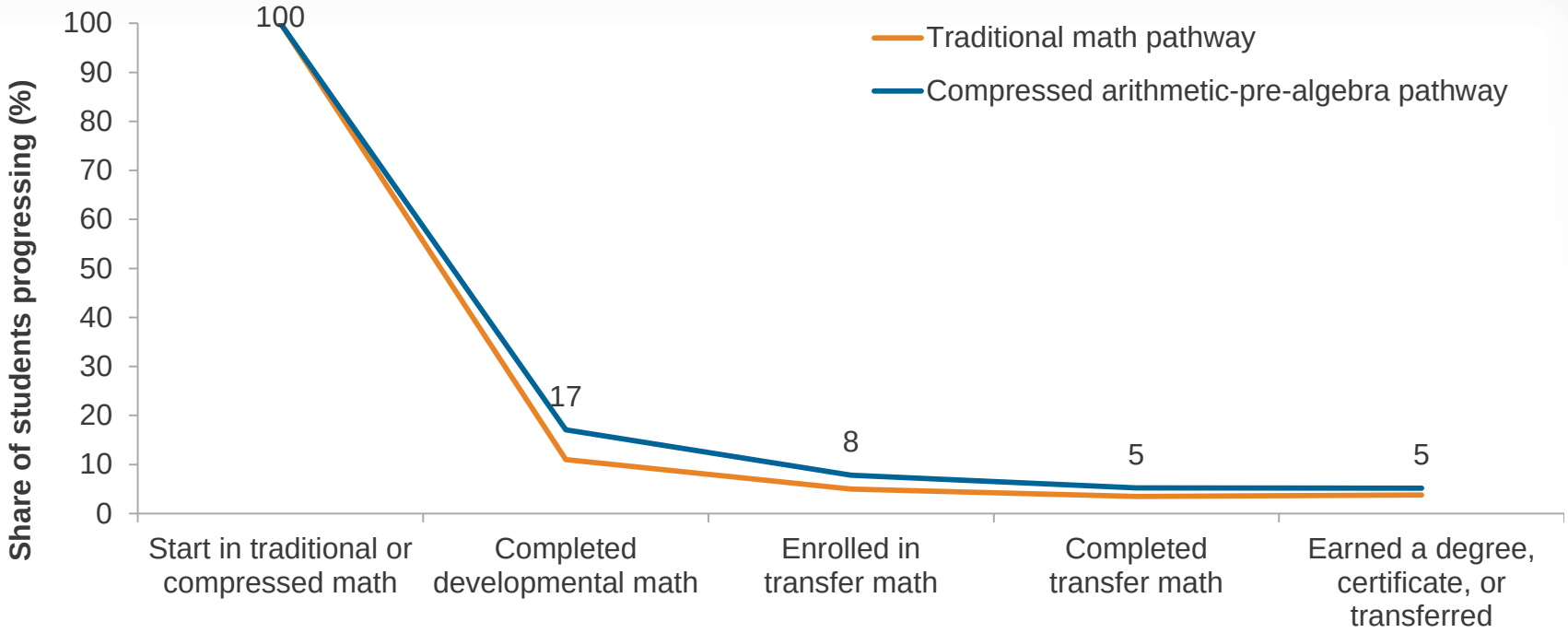
The compressed algebra pathway has a modest impact



Outcomes improve for a broad range of students, but equity gaps have not narrowed



Students in compressed arithmetic and pre-algebra pathways have poor outcomes



Developmental math reforms improve overall outcomes but have not closed gaps between student groups

- Longstanding gaps between students overall and students in underrepresented groups have not narrowed
  - Race/ethnicity, gender, and low-income status
- Community colleges have begun to consider the equity implications of developmental education
  - Partly in response to student equity funding
- Colleges have begun to address equity gaps
  - Integrating student supports
  - Professional development
  - Reforming assessment and placement

Policy recommendations

- Expand access to statistics and compressed algebra pathways
- Consider curricular reform in compressed algebra
- Consider eliminating lowest developmental math levels
- Integrate developmental math reforms and guided pathways to support student success beyond developmental education
- Encourage innovations and monitor their impact
  - Evaluate outcomes as colleges implement and expand math reforms
  - Assess whether interventions help to close equity gaps

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Notes on the use of these slides

These slides were created to accompany a presentation.
They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.