



Connecticut's Unspoken Crisis
Supplemental Analysis:
Long-Term Outcomes

NOVEMBER 2023

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Context for these materials

BCG was commissioned by Dalio Education and the Connecticut Opportunity Project to conduct a set of **supplemental analyses to the BCG report, *Connecticut's Unspoken Crisis: Getting Young People Back on Track***. These materials aim to dive deeper into some of the factors most strongly associated with disconnection to help point stakeholders to the specific young people (aged 14-26) who are most vulnerable and enable them to develop targeted interventions to better support them.

Our analysis utilizes an **individual-level, integrated, longitudinal database** made possible by Connecticut's P20 WIN system and data from the following entities: Connecticut Coalition to End Homelessness (CCEH), Department of Children and Families (DCF), Department of Labor (DOL), Department of Mental Health and Addiction Services (DMHAS), State Department of Education (SDE). The findings of this study do not necessarily reflect the opinions of the State of Connecticut or the organizations and agencies contributing data; the views and opinions expressed are those of the authors.

In addition, this analysis is meant to **inform future efforts to better identify and support** vulnerable young people; it is not meant to:

- Be a judgment of the individuals themselves or determinative of their educational or employment outcomes
- Make a claim about the level of need in this population, given data captures only a portion of young people in need of support services (e.g., mental health issues often go undiagnosed or untreated; DMHAS provides less than half of the state's mental health services)
- Make a claim about the effectiveness of services provided, given the data does not capture young people who need services but do not receive it (e.g., data does not show the association with disconnection for young people with untreated mental health issues)

The factors listed in the following pages are only a selection of those that influence disconnection, so **future studies should explore other relevant factors**, such as justice involvement, exposure to violence, childcare responsibilities, disability status, and immigration status.

Methodology

Key analytical questions:

- In the years after high school, what can we glean about **education and wage trajectories** of young people across **different subgroups**?
- How does **industry of employment** vary by educational attainment levels and how does this inform wage levels

High-level overview of analyses:

- Identify relevant sub-groups by looking at which factors they were involved in from ages 14-22 (note: this is distinct from our report analyses which identified flags from age 14 to 1-year following high school exit)
- Follow longitudinal journeys of these sub-groups by looking at (1) their educational outcomes, including high school graduation, postsecondary enrollment and completion (2) their wage outcomes, including annual wages earned and industry worked in by quarter

Scope of populations studied:

- To understand the factors that impacted our population during high school and track longer-term outcomes, we primarily studied two longitudinal cohorts across 2013-2022; these struck a balance between providing enough data on their high school years and tracking them longer term
 - Young people aged 14 years-old in 2013, through 22 years-old in 2022 (N = 42,096 individuals)
 - Young people aged 15 years-old in 2013, through 22 years-old in 2021 (N = 43,159 individuals)
- Given race/ethnicity and sex do not change over an individual's high school journey, for those factors we are able to use older cohorts to project out to age 24 and 25, dependent on the analysis (see footnotes on relevant pages for exact cohorts used)

Data considerations:

- These analyses should be used for relative comparisons between sub-groups and not interpreted as exact figures due to the various data considerations listed below and nuances in our scope of data (e.g., graduation rates will not exactly match those reported by SDE)
- With the exception of demographic data, the oldest age that most of our analysis was able to extend to was age 22, an age at which many young people have not yet finished their postsecondary program and more broadly are still maturing into adulthood
- The data allows for more precise measurement of educational attainment and wage level outcomes, but does not allow for a very precise measurement of labor participation (because often difficult to glean whether a young person is unemployed or left CT)
- The cohorts studied in our analyses are not "representative" in the sense that they had their education / employment journeys impacted by the COVID-19 pandemic (though this will not impact relative comparisons of sub-groups within these cohorts)
- All reported data had an N of 10 individuals or greater

Summary of findings

Executive summary of findings

In the report "Connecticut's Unspoken Crisis," we identified several demographic, in-school, and out-of-school factors associated with being newly disconnected one year after high school exit:

- Certain **out-of-school factors** (involvement with DCF, DMHAS, CTHRS, incarceration) and in-school factors (involvement with high poverty school, transiency, special and alternative education) were linked to **2-3x heightened association with disconnection**
- Young people of **almost all races/ethnicities** are more likely to **experience disconnection than White young people**

While data limitations make it difficult to quantify the number of disconnected young people at later ages, longitudinal analysis of P20WIN data validates the impact that exposure to these factors has on educational and wage outcomes longer-term:

1. Out-of-School Factors: Young people experiencing any of these factors have lower educational attainment, and wages are persistently lower even when controlling for educational attainment

- For high school graduates, CTHRS recipients have the **lowest median annual wages**; for high school non-graduates, formerly incarcerated young people have the **lowest**

2. In-School Factors: Young people experiencing any of these factors have lower educational attainment, and wages are persistently lower even when controlling for educational attainment

- **Transient²** young people experience **nearly the same high school graduation rates** as those in **alternative education**, indicating the severe impact of transiency; young people who **were transient or involved with alternative education** in high school saw **~50% lower median annual wages** vs. overall population

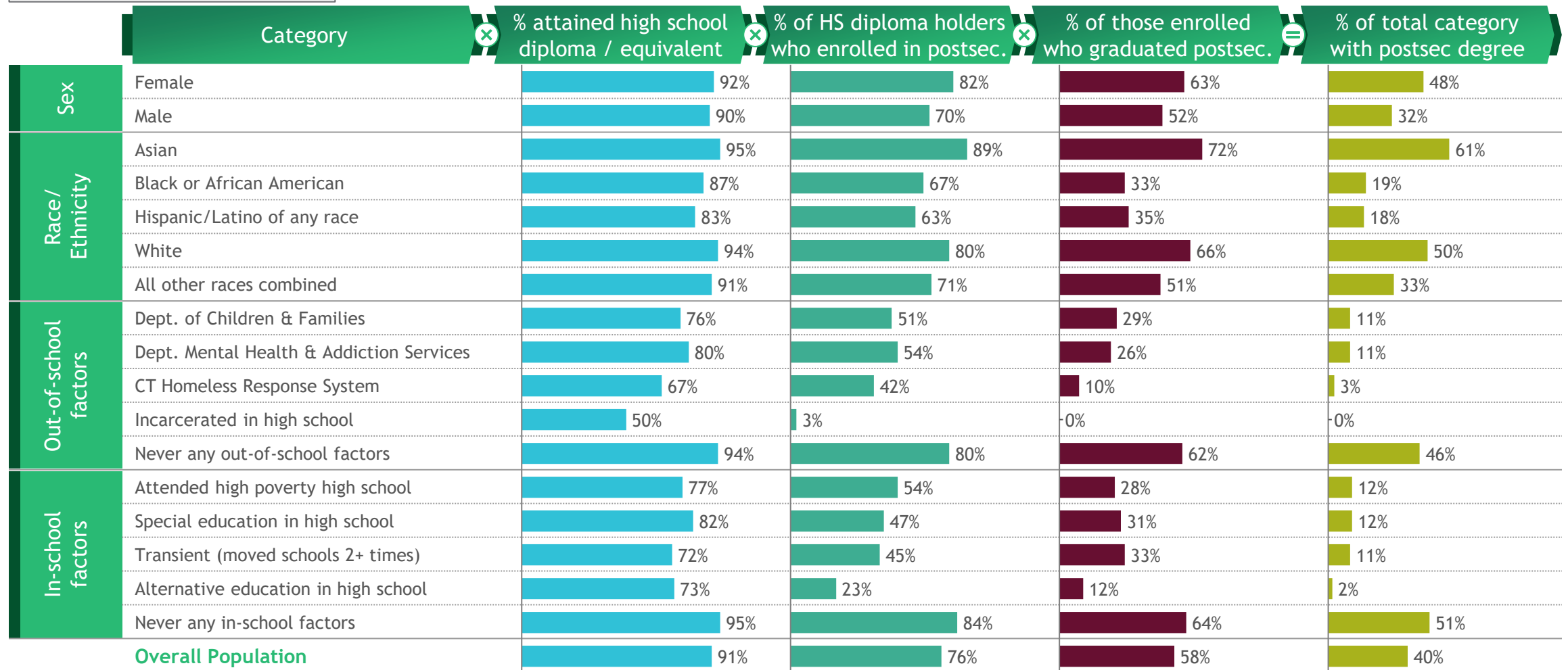
3. Demographics: Young males achieve fewer educational milestones¹ on average, yet out-earn females on median annual wages regardless of educational attainment; racial disparities on wages persist even when controlling for educational attainment

- **Asian and White** young people persistently **earn higher** median annual wages **than Black and Hispanic** young people, **even after controlling for educational attainment**

1. Educational milestones include high school graduation, postsecondary enrollment, and postsecondary completion; 2. Transience defined as moving high schools 2+ times;
Source: P20WIN data from 2013-2022

Education outcomes summary: Out-of-school factors, in-school factors, at-risk status, and demographics all associated with education outcomes at age 22

Cohorts aged 14/15 in 2013

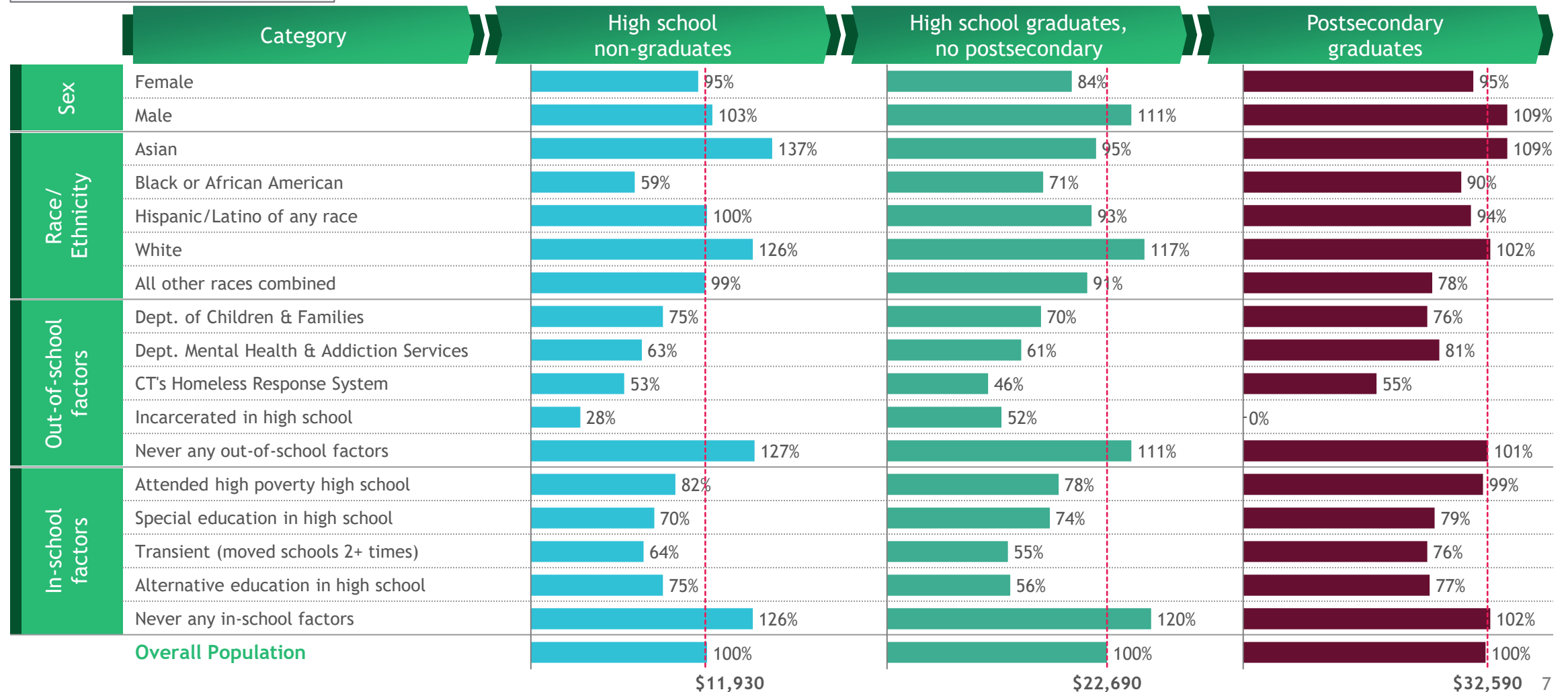


Note: Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "attained high school diploma / equivalent" may not exactly align with SDE's graduation rates); Source: P20 WIN (2013-2022), BCG analysis

Wage outcomes summary: Out-of-school factors, in-school factors, at-risk status, and demographics all associated with wage outcomes at age 22

Cohorts aged 14/15 in 2013

% indicates percentage of average wage across population at age 22



Source: P20 WIN (2013-2022), BCG analysis

Out-of-school factors

Recall: Select out-of-school and in-school factors have 2-3x heightened association with disconnection

Factor	% of young people who exited HS that experienced this factor ¹	% of those experiencing this factor who ended up disconnected	Likelihood of disconnection vs. not experiencing this factor	
Out of school factors	Has received Child Protective Services, or >=1 Contracted Service, from Department of Children and Families since age 14	15%	46%	2.3x
	Has received any services from Department of Mental Health and Addiction Services since age 18	3%	55%	2.3x
	Has received any services from Connecticut's Homeless Response System since age 14	1%	63%	2.7x
Additional in school factors	Has ever attended a high-poverty school in high school	18%	44%	2.2x
	Has ever been involved in special Education in high school	16%	47%	2.4x
	Transient—has moved high schools two or more times	9%	52%	2.4x
	Has ever been involved in alternative Education in high school	4%	67%	3.0x

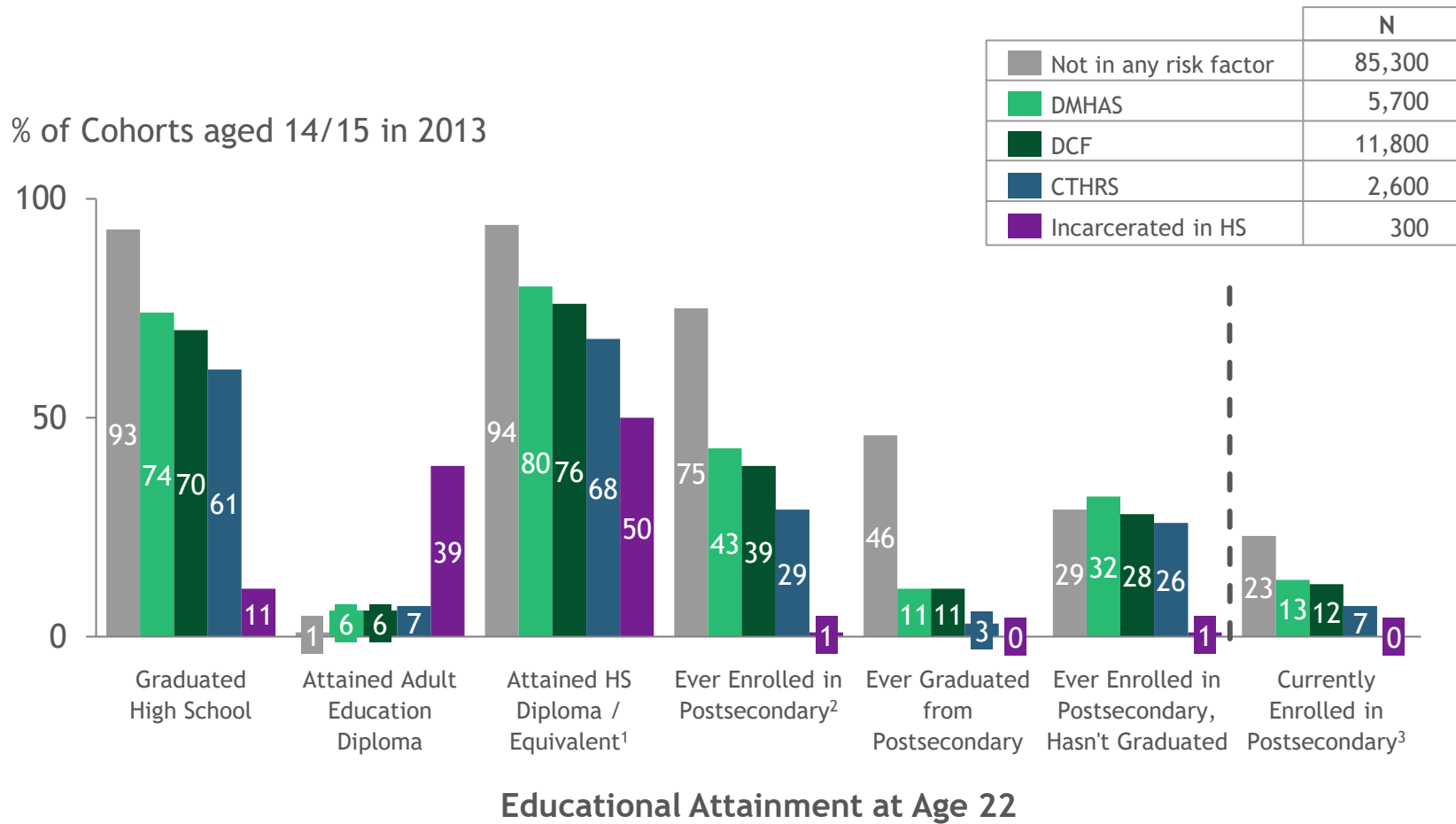
Identification of these factors can help point stakeholders to the specific young people who are most vulnerable and enable them to **develop targeted interventions** to better support them

Stakeholders working with vulnerable young people should **understand and surface the root causes of disconnection** and uncover the rates at which these underlying conditions are associated with disconnection

It should be noted that there are differences in disconnection rates across sub-groups within the populations studied

1. Population includes those who graduated high school and those who dropped-out
Source: P20 WIN (2014-2022), BCG analysis

Out-of-school: Relative educational outcomes across sub-groups mirrors disconnection outcomes, with incarcerated young people most affected



Key takeaways

Young people with out-of-school factors attain educational milestones at lower rates than overall pop, with discrepancy increasing with each milestone

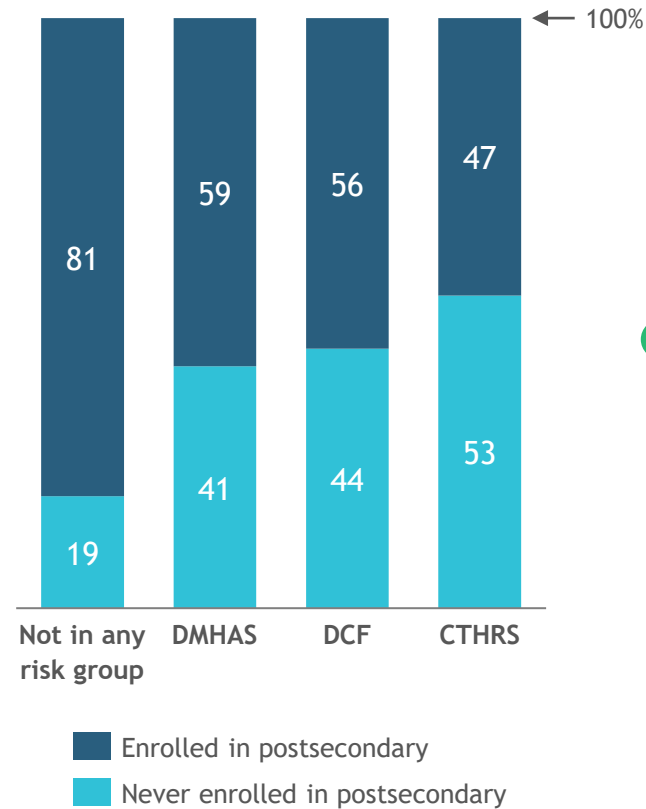
Students incarcerated in HS have more severe outcomes than rest of population across education levels; with exception of attaining adult ed diploma

CTHRS recipients experience lower educational attainment than DCF and DMHAS recipients, mirroring their heightened association with disconnection

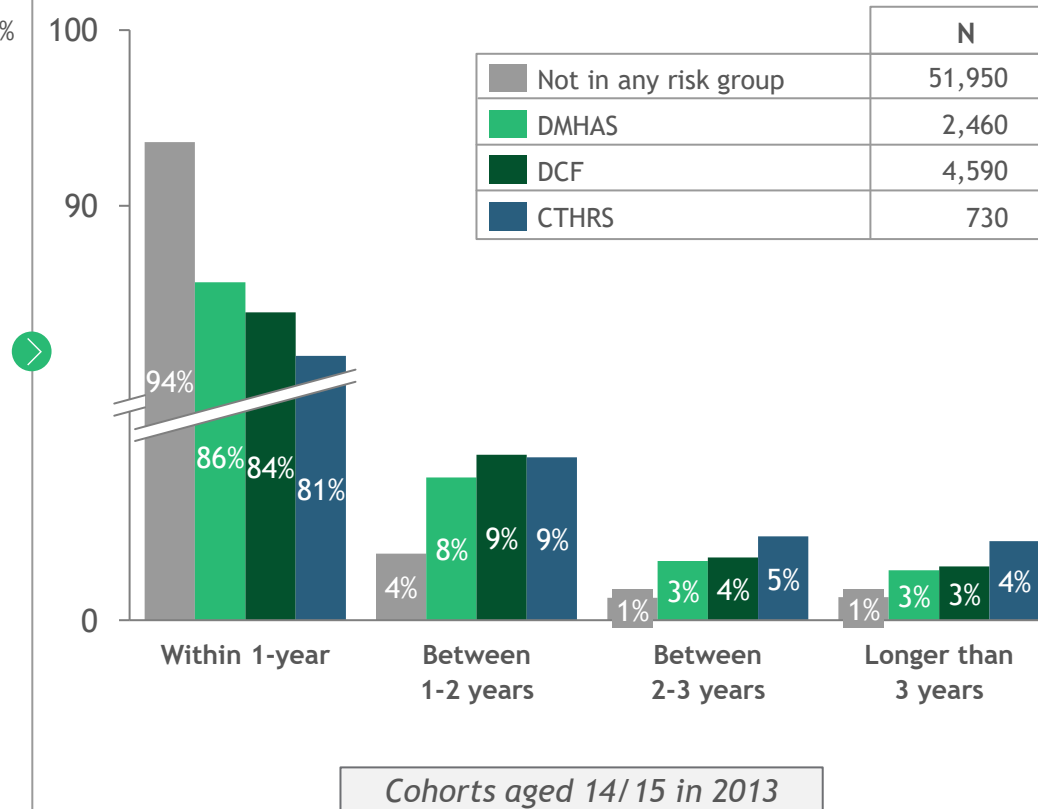
1. Sum of those who ever graduated high school and those who attained an adult education diploma; 2. Sum of those who ever graduated, and those who have enrolled but have not graduated; 3. Population includes those who previously graduated and are currently enrolled in a new program; Note: Involvement in out-of-school factors captured from ages 14-22; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN data 2013-2022, BCG analysis

Out-of-school: Postsecondary enrollment timing more likely to be delayed for those affected by out-of-school factors vs. those not in any risk group

% of high school graduates who enroll in postsecondary education



Of the high school graduates who enroll in postsecondary education, distribution of enrollment timing



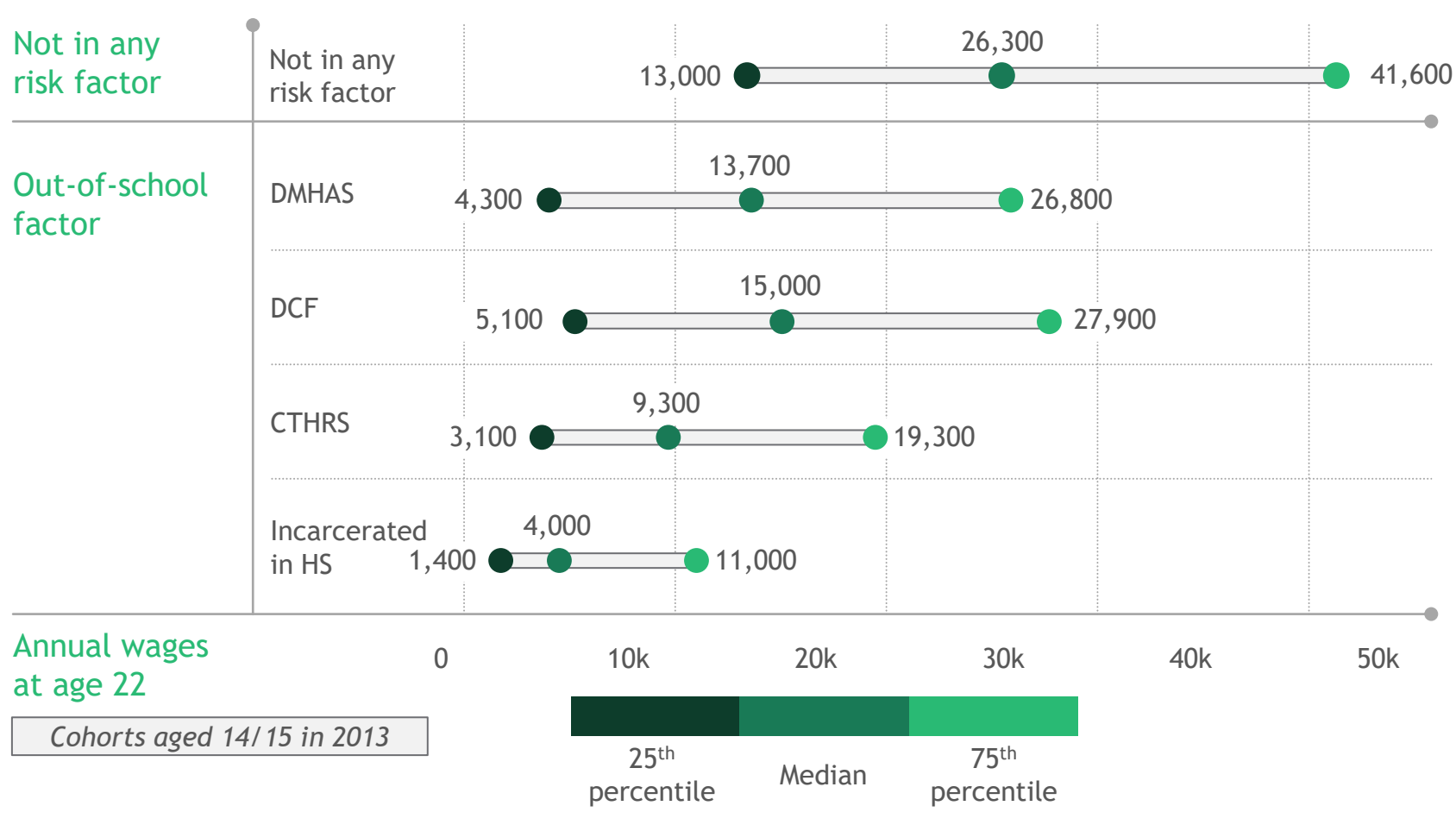
Key takeaways

DMHAS and DCF affected high school graduates see similar trends and are more likely to take longer than 1-year to enroll in postsecondary vs. those never affected by an out-of-school factor

CTHRS high school graduates most likely to experience delays, with 19% enrolling more than 1-year after high school graduation vs. 6% of those never involved in a factor

Note: Involvement in out-of-school factors captured from ages 14-22; Incarcerated in high school not included due to low N for postsecondary enrollment; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN data 2013-2022, BCG analysis

Out-of-school: Population that received services from CTHRS experience lower wages than DCF/DMHAS recipients, highlighting risk of homelessness



Key takeaways

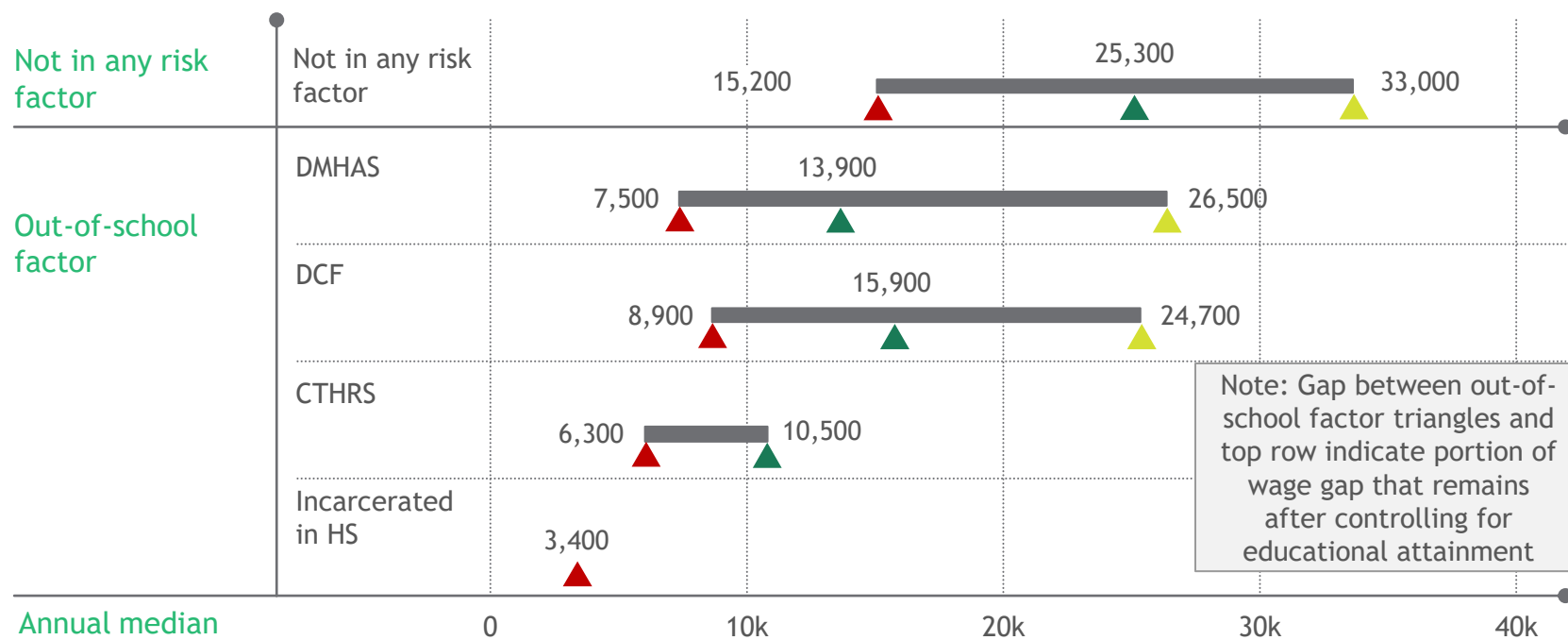
All four groups have lower median annual wages vs. overall population

CTHRS recipients have lower median annual wages and smaller spread than DCF and DMHAS recipients, in-line with disconnection outcomes

Population who was incarcerated in high school has the lowest median annual wages and smallest spread of incomes across the four groups

Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Involvement in out-of-school factors captured from ages 14-22; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2013-2022)

Out-of-school: All four groups have significantly lower wages than overall pop, with CTHRS recipients and incarcerated young people having worst outcomes



Key takeaways

Compared to the overall population, recipients of all four programs have lower median annual wages even when controlling for ed attainment

For HS non grads, those who were incarcerated in HS have the lowest median annual wage

For HS grads, CTHRS recipients have the lowest median annual wages, in-line with disconnection outcomes

Annual median wages at age 22

Sample Size (N)

Cohorts aged 14/ 15 in 2013			
	HS Non Grad	HS Grad, No Post-Secondary	Post-Secondary Grad
Not in any risk factor	5,100	12,200	32,000
DMHAS	1,500	1,700	600
DCF	3,500	3,600	1,300
CTHRS	1,000	800	70 ¹
Incarcerated HS	260 ¹	30 ¹	0 ¹

1. Due to small sample size, cannot show wage outcomes; Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Involvement in out-of-school factors captured from ages 14-22; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2013-2022), BCG analysis

DCF Deep-Dive

DCF vs. Non DCF: Regardless of educational attainment, individuals involved in DCF services have lower median annual wages vs. those never involved



Median Annual Wage for 22 Year Olds

Key takeaways

Overall, individuals involved in DCF services have lower median annual wages than those who were not, regardless of educational attainment

However, in some cases educational attainment seems to decrease this gap, e.g. while the gap between DCF and non-DCF HS non grads is 35%, this decreases to 25% for postsecondary grads

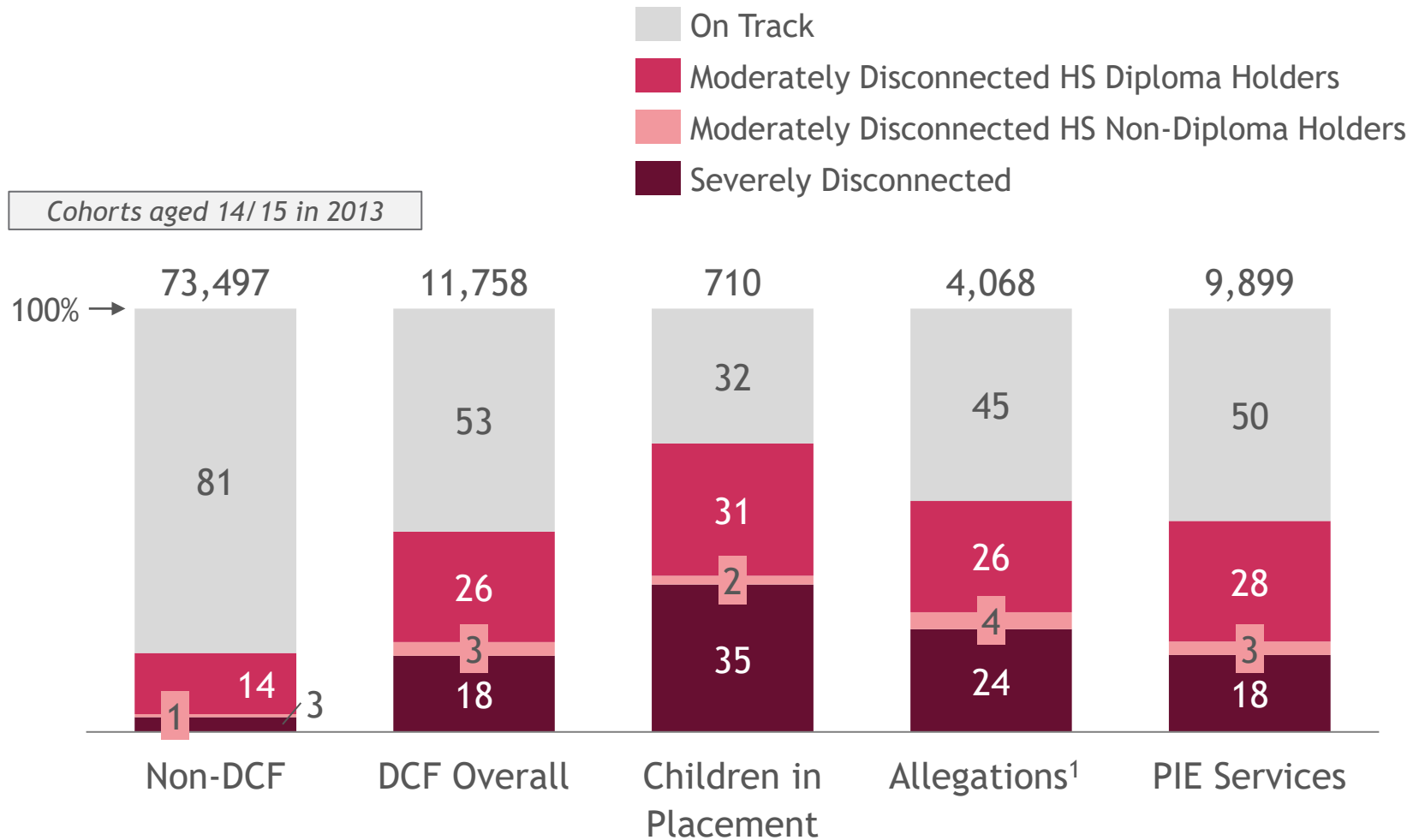
Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2013-2022)

DCF data comprised of four primary categories

Service category	Description	# in cohort
Children in placement (CIP)	Data capturing children that were in child protective service placements (e.g., foster care) provided by DCF	710
Unsubstantiated allegations	Data capturing allegations of abuse and neglect directed to DCF that have not been substantiated by the agency	2,600
Substantiated allegations	Data capturing allegations of abuse and neglect directed to DCF that have been substantiated by the agency	1,480
Provider information exchange (PIE) services	Data capturing a selection of services offered or contracted by DCF such as mental health and family supports. <i>Note this data set does not cover all possible contracted services available from DCF</i>	9,900

Notes: Individuals may be receiving services across multiple categories

DCF: Disconnection outcomes one year after high school exit for DCF service categories mirror educational and wage trends

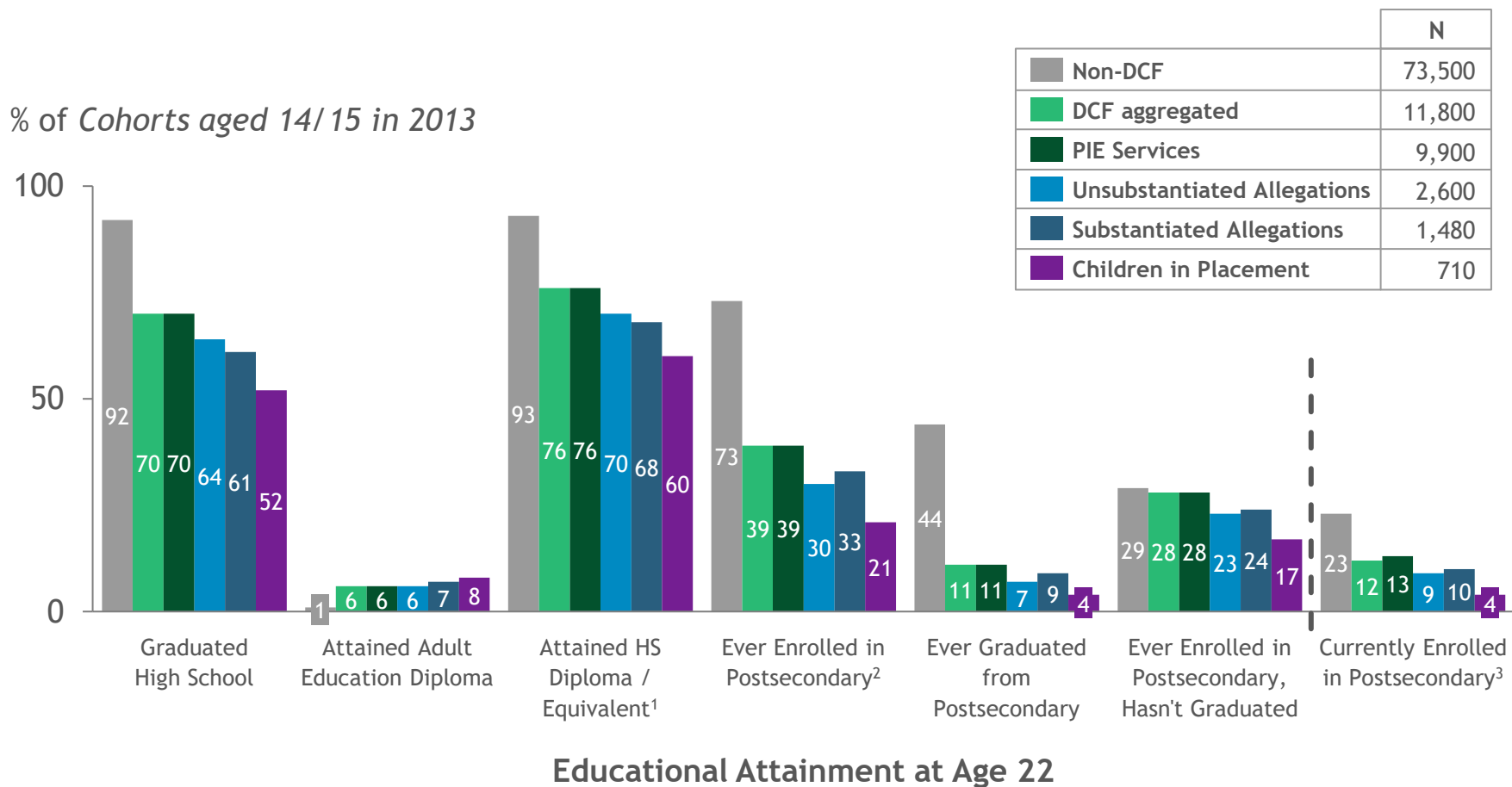


Key takeaways

Children in DCF placements see highest rates of disconnection, with 68% disconnected; more than half of disconnected population is severely disconnected

Alleged victims of abuse/neglect have the second worst outcomes, with 55% being disconnected one year after high school exit

DCF: Educational attainment differs across DCF sub-categories, with children in DCF placements seeing the most severe outcomes



Key takeaways

Children in DCF placements see most severe outcomes compared to other groups across DCF

Alleged victims of abuse/neglect have the second worst outcomes across high school and postsecondary milestones, with little difference between the outcomes of unsubstantiated vs. substantiated allegations

1. Sum of those who ever graduated high school and those who attained an adult education diploma; 2. Sum of those who ever graduated, and those who have enrolled but have not graduated 3. Population includes those who previously graduated and are currently enrolled in a new program; Note: DCF aggregated appears to have highest educational attainment %s because the denominator is the largest, meaning non-graduates impact outcome %s less than service categories with smaller N; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates) Source: P20 WIN data 2013-2022, BCG analysis

DCF: Wage outcomes also differ across DCF sub-categories, with children in DCF placements seeing the worst outcomes



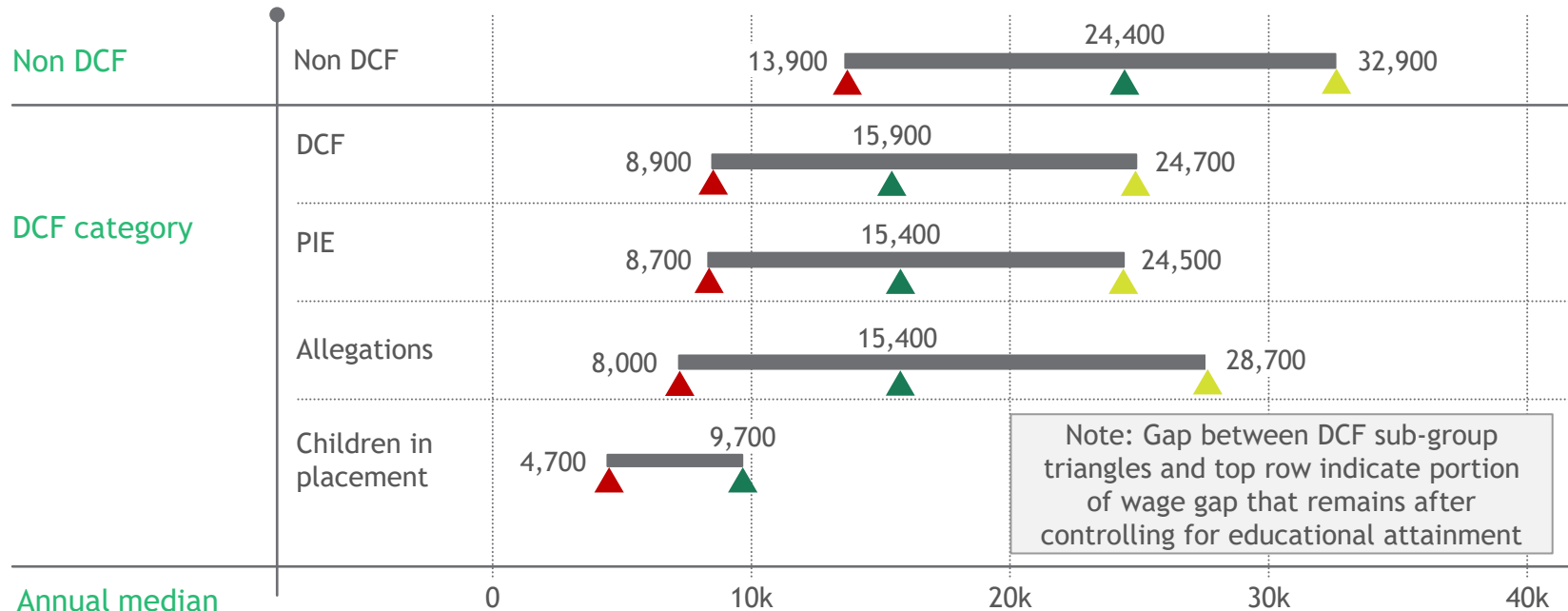
Key takeaways

Compared to the population that did not receive DCF services, individuals involved in DCF services have a lower median wage by 41%

Children in DCF placements have the lowest median wage among DCF sub-categories, 45% lower than the average individual involved in DCF services

Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2013-2022)

DCF: Controlling for ed attainment, children in DCF placements continue to have most severe outcomes



Note: Gap between DCF sub-group triangles and top row indicate portion of wage gap that remains after controlling for educational attainment

Key takeaways

Compared to the non-DCF population, individuals involved in DCF across different types of services have lower wages even when controlling for ed attainment

Children in DCF placements have the lowest wages in the group. CIP HS grads without post-secondary experience have a lower median annual wage than non DCF individuals who did not finish HS

Annual median wages at age 22

Sample Size (N)

Cohorts aged 14/15 in 2013			
	HS Non Grad	HS Grad, No Post-Secondary	Post-Secondary Grad
Non DCF	5,900	13,300	32,600
DCF	3,500	3,600	1,300
PIE	3,000	3,000	1,100
Allegations	1,530	1,270	310
Child. In placement	340	200	30 ¹

1. Due to small sample size, cannot show wage outcomes; Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Metrics should be understood more for the relative comparison across categories vs. exact figures
Source: P20 WIN (2013-2022), BCG analysis

In-School Factors

Recall: Select out-of-school and in-school factors have 2-3x heightened association with disconnection

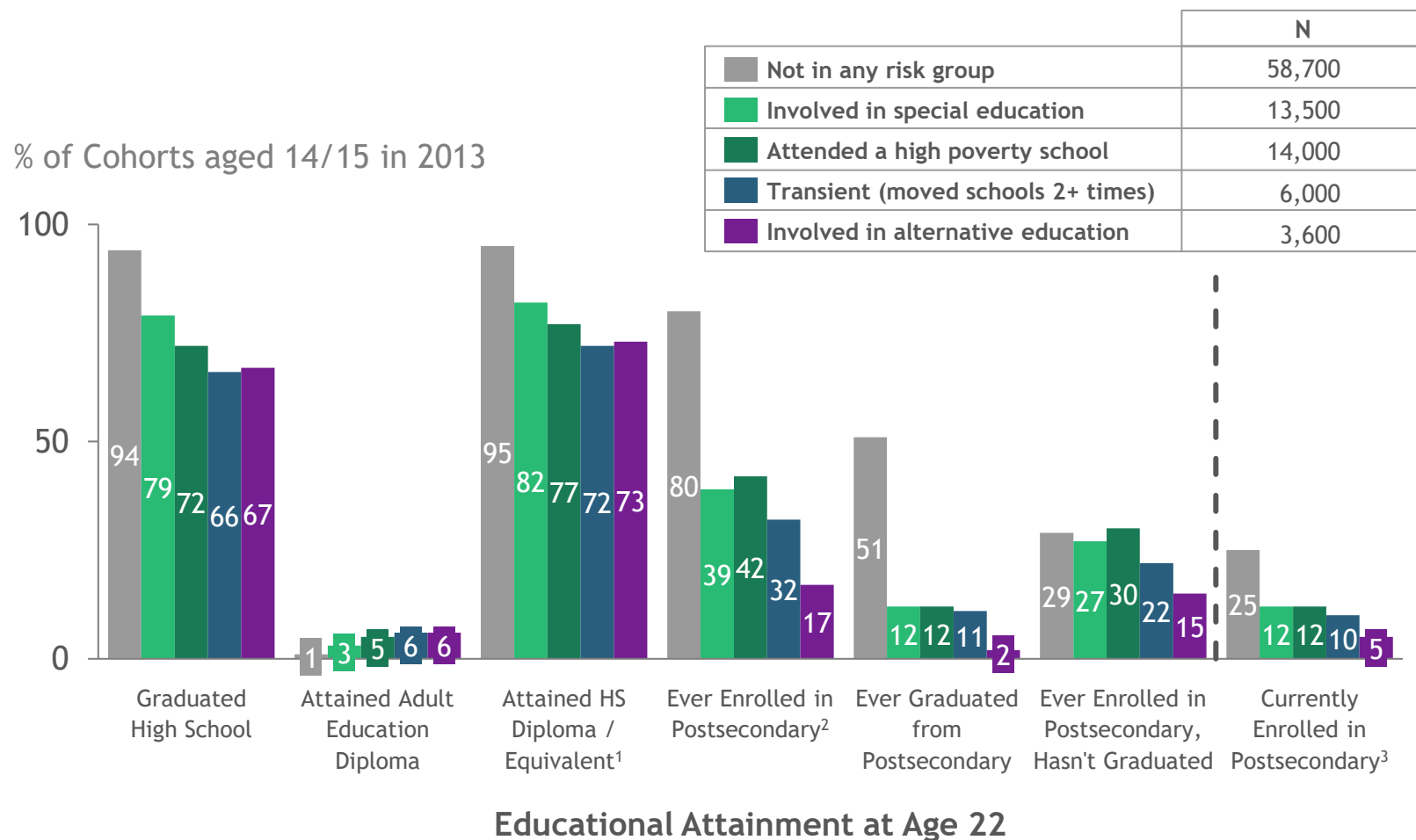
	Factor	% of young people who exited HS that experienced this factor ¹	% of those experiencing this factor who ended up disconnected	Likelihood of disconnection vs. not experiencing this factor
Out of school factors	Has received Child Protective Services, or >=1 Contracted Service, from Department of Children and Families since age 14	15%	46%	2.3x
	Has received any services from Department of Mental Health and Addiction Services since age 18	3%	55%	2.3x
	Has received any services from Connecticut's Homeless Response System since age 14	1%	63%	2.7x
Additional in school factors	Has ever attended a high-poverty school in high school	18%	44%	2.2x
	Has ever been involved in special Education in high school	16%	47%	2.4x
	Transient—has moved high schools two or more times	9%	52%	2.4x
	Has ever been involved in alternative Education in high school	4%	67%	3.0x

Identification of these factors can help point stakeholders to the specific young people who are most vulnerable and enable them to **develop targeted interventions** to better support them

Stakeholders working with vulnerable young people should **understand and surface the root causes of disconnection** and uncover the rates at which these underlying conditions are associated with disconnection

1. Population includes those who graduated high school and those who dropped-out
Source: P20 WIN (2014-2022), BCG analysis

In-school: Relative educational outcomes across factors emphasize the severity of experiencing transiency and involvement in alt. education in high school



Key takeaways

Young people who were involved special education have the greatest relative likelihood of high school graduation; however, attainment drops off significantly at postsecondary

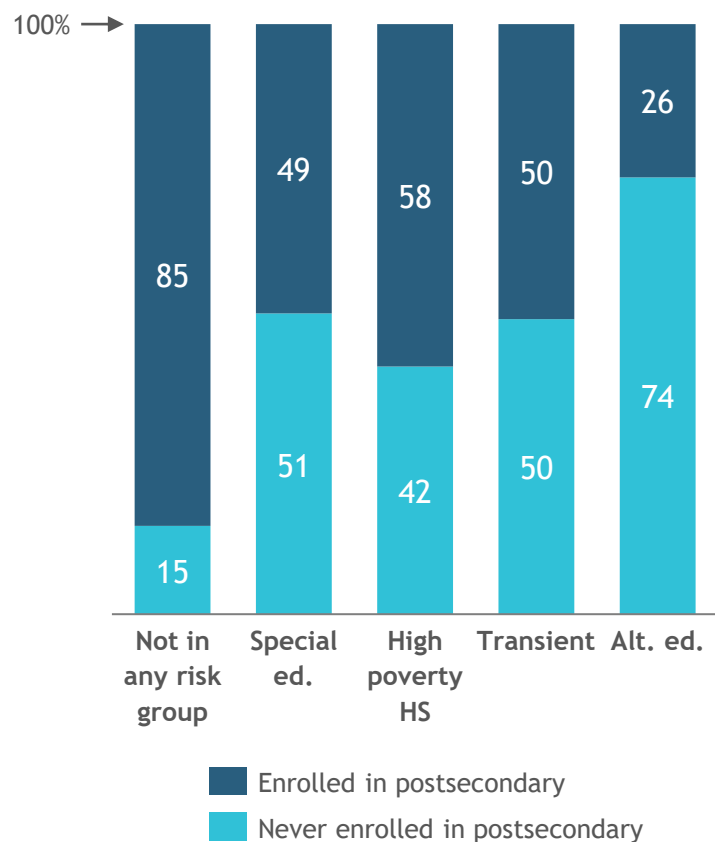
Transient young people experience nearly the same high school graduation rates as those in alternative education, indicating the severe impact of moving high schools

Mirroring disconnection trends, young people involved in alternative education see the worst postsecondary outcomes

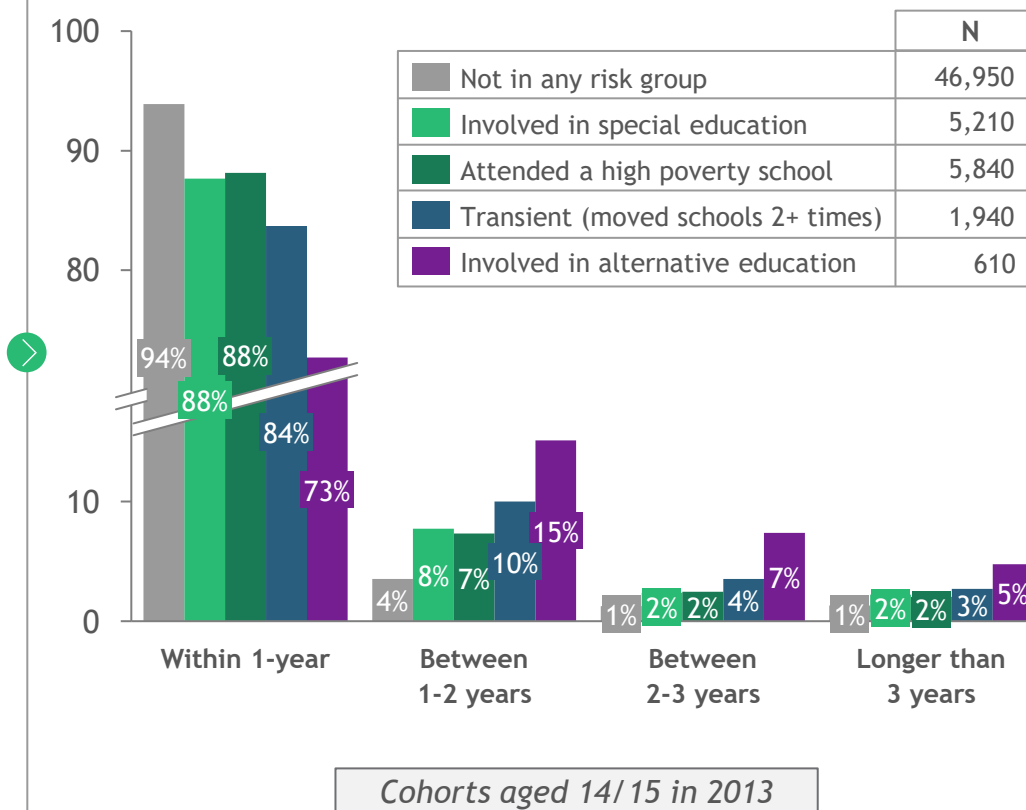
1. Sum of those who ever graduated high school and those who attained an adult education diploma; 2. Sum of those who ever graduated, and those who have enrolled but have not graduated; 3. Population includes those who previously graduated and are currently enrolled in a new program. Note: Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN data 2013-2022, BCG analysis

In-school: Postsecondary enrollment timing more likely to be delayed for those affected by in-school factors vs. those not in any risk group

% of high school graduates who enroll in postsecondary education



Of the high school graduates who enroll in postsecondary education, distribution of enrollment timing



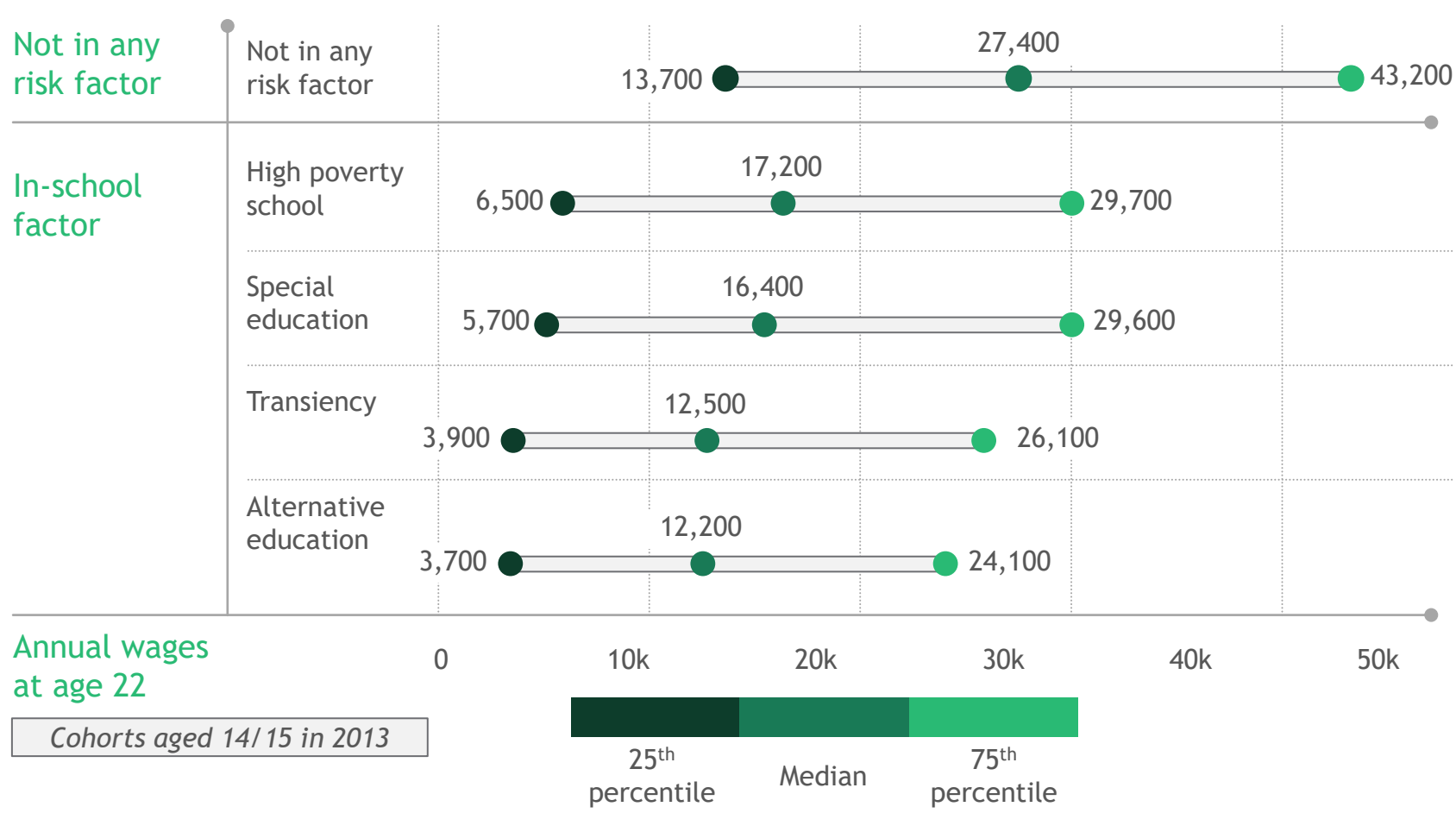
Key takeaways

Trends in postsecondary enrollment mirror those of disconnection, with alternative education population experiencing the lowest postsecondary enrollment rate

Even among those who do enroll, those who experienced alternative education in high school see the most severe enrollment delays (27% take longer than 1-year after HS graduation to enroll in postsecondary vs 6% of population not in any risk group)

Note: Analysis covers individuals in P20 WIN database aged 14 or 15 in 2013; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN data 2013-2022, BCG analysis

In-school: Young people who were transient or involved with alt education in high school saw ~50% lower median annual wages vs. those not in any factor



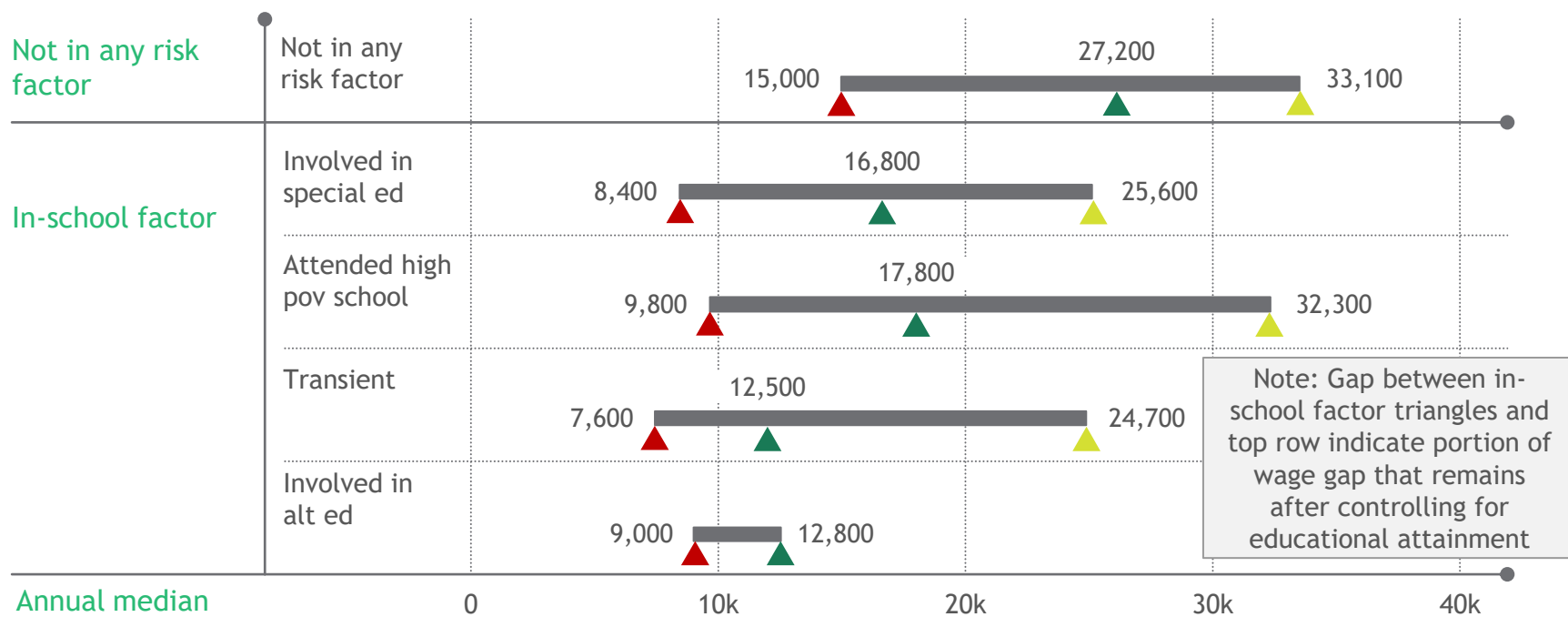
Key takeaways

Across percentiles, populations with in-school risk factors earn significantly lower annual wages than those who did not have these risk factors

Young people involved in alternative education in high school see the lowest wage outcomes, closely followed by young people who experienced transiency in high school

Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2013-2022)

In-school: Populations experiencing in-school risk factors earn significantly lower annual wages across educational attainment levels vs. those who do not



Key takeaways

Generally, populations with in-school risk factors earn significantly lower median annual wages than those who did not have these risk factors

The bright spot in the data is young people who attended a high poverty school close the wage gap after graduating from postsecondary education

Transient and alternative ed populations have the lowest median wages in the group, particularly for those who did not graduate post-secondary school

Annual median wages at age 22

Sample Size (N)

Cohorts aged 14/15 in 2013

	HS Non Grad	HS Grad, No Post-Secondary	Post-Secondary Grad
Not in any risk factor	3,400	8,100	30,200
Involved in special ed	2,800	5,400	1,600
Attended high pov school	3,900	4,300	1,300
Transient	2,100	2,000	650
Involved in alt ed	1,200	1,800	70 ¹

1. Due to small sample size, cannot show wage outcomes; Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2013-2022), BCG analysis

Demographics

Recall: Young males and people of almost all non-White races/ethnicities are more likely to experience disconnection

	Factor	% of young people who exited HS in this demographic	% of demographic who ended up disconnected	Likelihood of disconnection compared with ...	
Race/Ethnicity	White	58%	18%	1.0x	
	Hispanic/Latino of any race	22%	37%	2.0x	
	Black or African American	14%	33%	1.8x	
	Asian	5%	14%	0.7x	Compared with a White person
	Two or more races	2%	26%	1.4x	
	American Indian or Alaska Native	0.3%	31%	1.7x	
	Native Hawaiian or Other	0.1%	25%	1.3x	
Sex	Male	51%	29%	1.5x	Compared with a female person
	Female	49%	20%	1.0x	

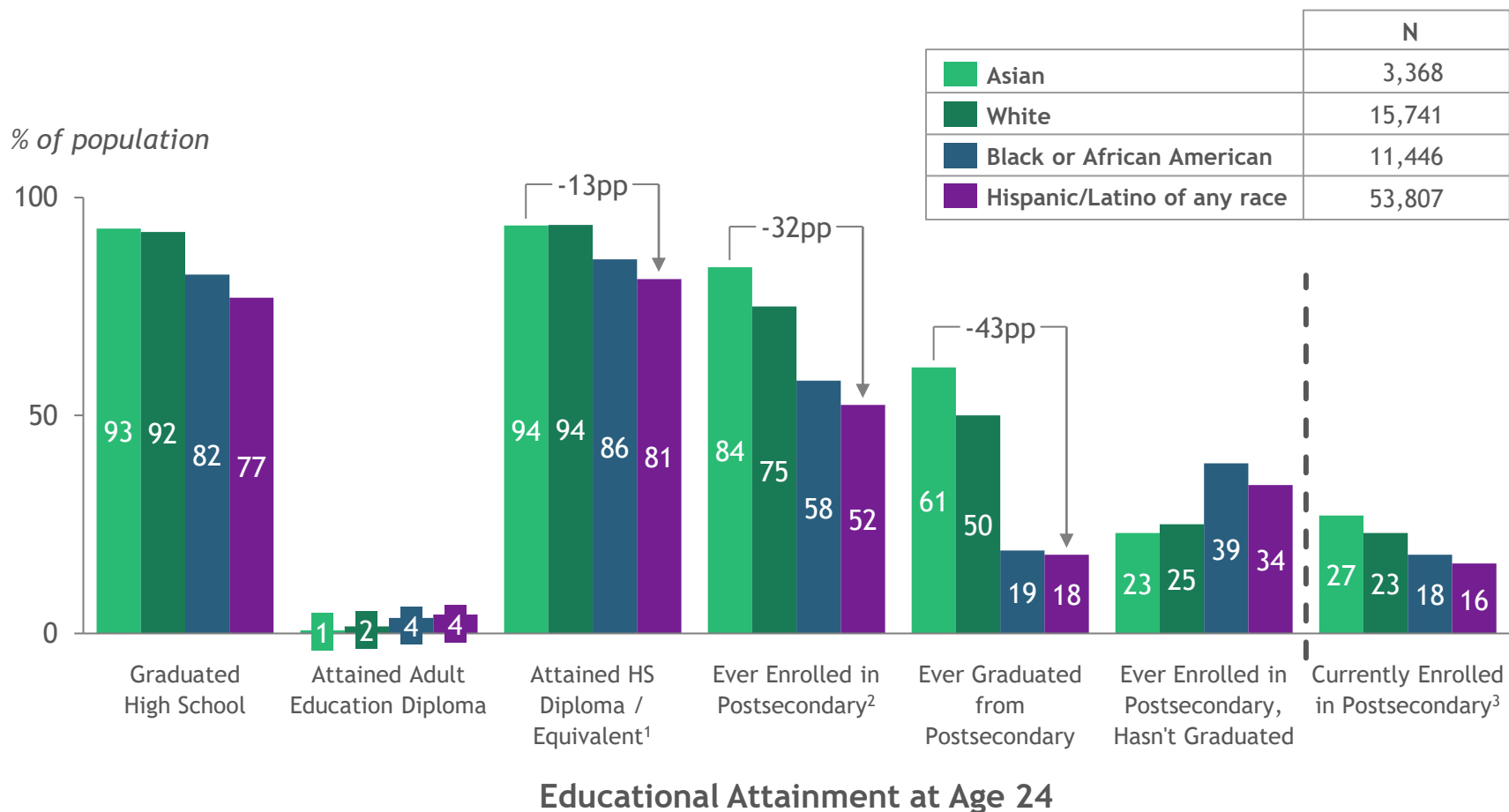
Hispanic/Latino young people have the strongest association with disconnection, **2x** of white young people

Black/African American young people have second strongest association with disconnection, **1.8x** of white young people

Young men **1.5x** more likely to experience disconnection than young women

41% of young men of color experience disconnection

Race/ethnicity: Discrepancies between racial groups widen as educational milestones progress from high school to postsecondary



Key takeaways

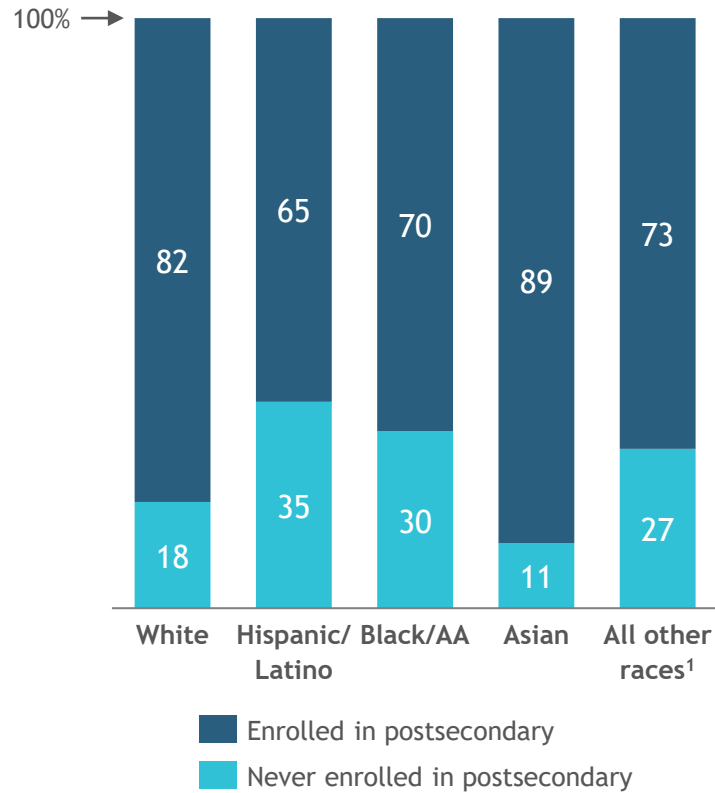
Hispanic young people see the worst educational outcomes across milestones, followed by Black young people

Widest discrepancies occur between young Asian people and young Hispanic/Latino people, increasing as milestones progress -- from 13pp difference in high school graduation to 43pp difference in postsecondary graduation

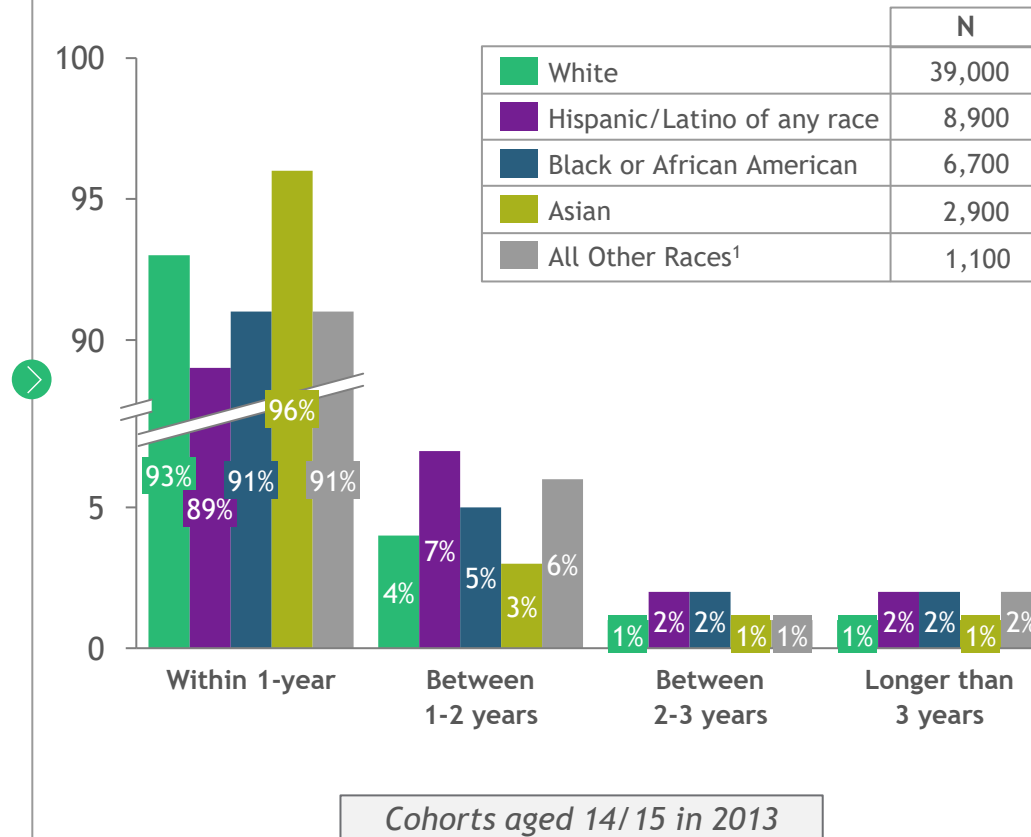
1. Sum of those who ever graduated high school and those who attained an adult education diploma; 2. Sum of those who ever graduated, and those who have enrolled but have not graduated; 3. Population includes those who previously graduated and are currently enrolled in a new program
 Note: Data for Native Hawaiian or Pacific Islander, Two or More Races, and American Indian young people excluded because of lower N; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Analysis covers individuals in P20 WIN database aged 14 or 15 in 2011; Source: P20 WIN data 2011-2022, BCG analysis

Race/ethnicity: Hispanic young people most likely to experience delays in postsecondary enrollment vs. other race/ethnicity groups

% of high school graduates who enroll in postsecondary education



Of the high school graduates who enroll in postsecondary education, distribution of enrollment timing



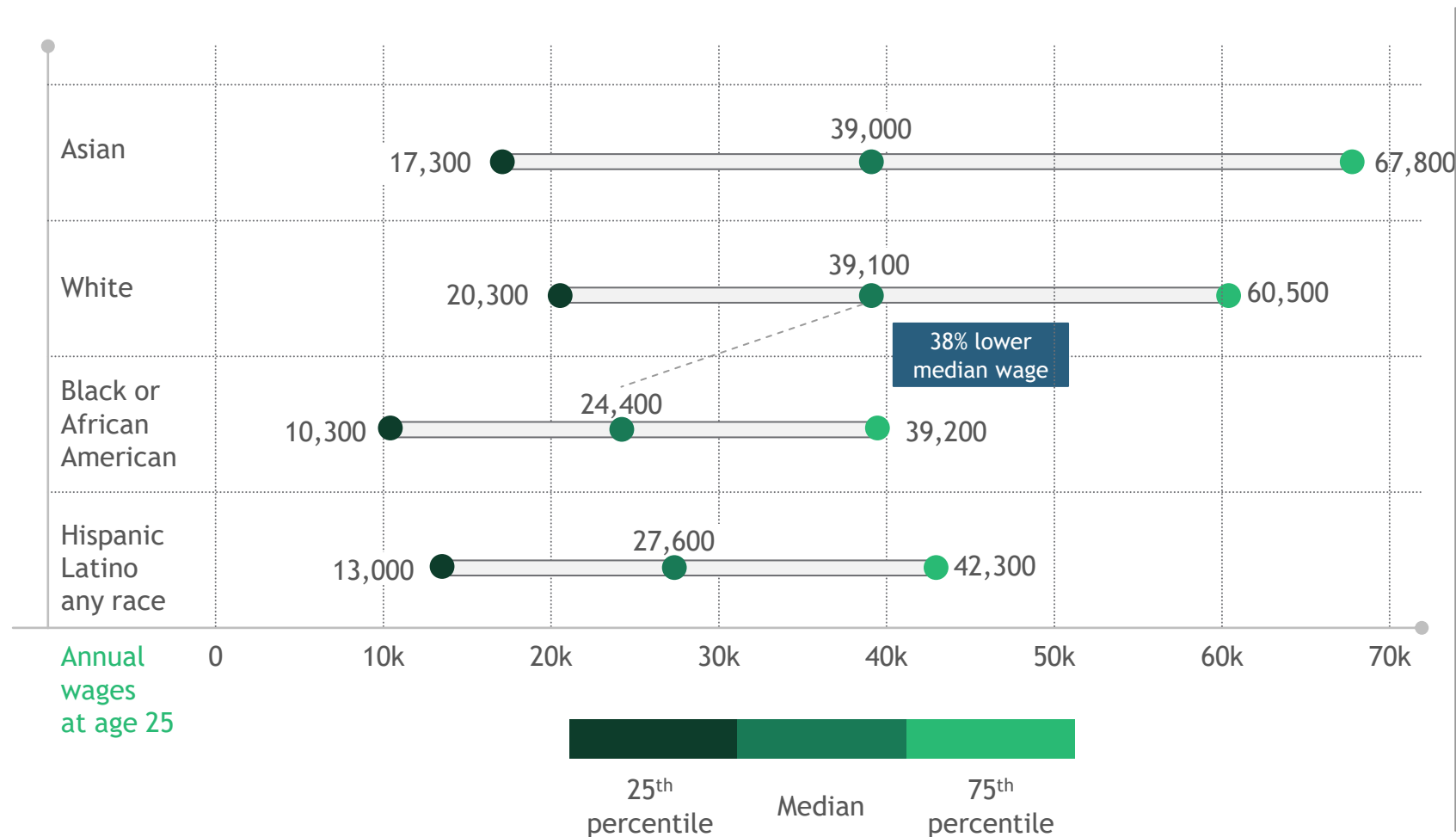
Key takeaways

Black and Hispanic high school graduates are more likely to not enroll in postsecondary than White peers - about 1/3 never enroll in postsecondary vs. 1/5 White young people

Hispanic high school graduates are most likely to delay postsecondary enrollment vs. other race/ethnicity groups

1. Includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islanders, or Two or More Races; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN data 2013-2022, BCG analysis

Race/ethnicity: Racial/ethnic disparities are also present in wage earnings, with Black/African American young people most affected



Key takeaways

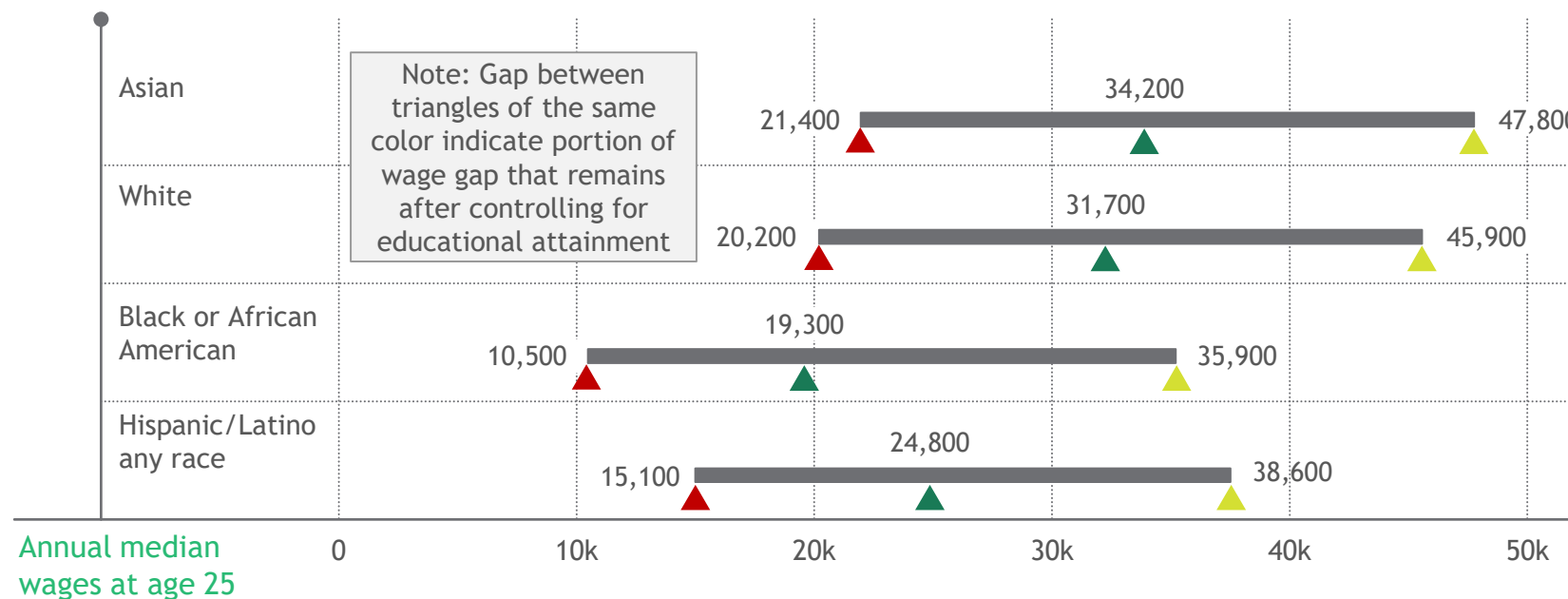
The largest discrepancy between median wages is between White and Black or African American people; the latter have median wages 38% lower than White people

Black people also have the narrowest wage spread and the lowest wage for 25th percentile earners across groups

Hispanic people have slightly lower educational attainment than Black people, but see higher wage outcomes

Notes: Data for Native Hawaiian or Pacific Islander, Two or More Races, and Native American young people excluded because of lower N, Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Analysis covers individuals in P20 WIN database aged 14 or 15 in 2010; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2010-2022)

Race/ethnicity: Even when controlling for educational attainment, Black and Hispanic people have significantly lower wages than White and Asian people



Key takeaways

Asian and White young people persistently earn higher median annual wages than Black and Hispanic young people, even when controlling for educational attainment

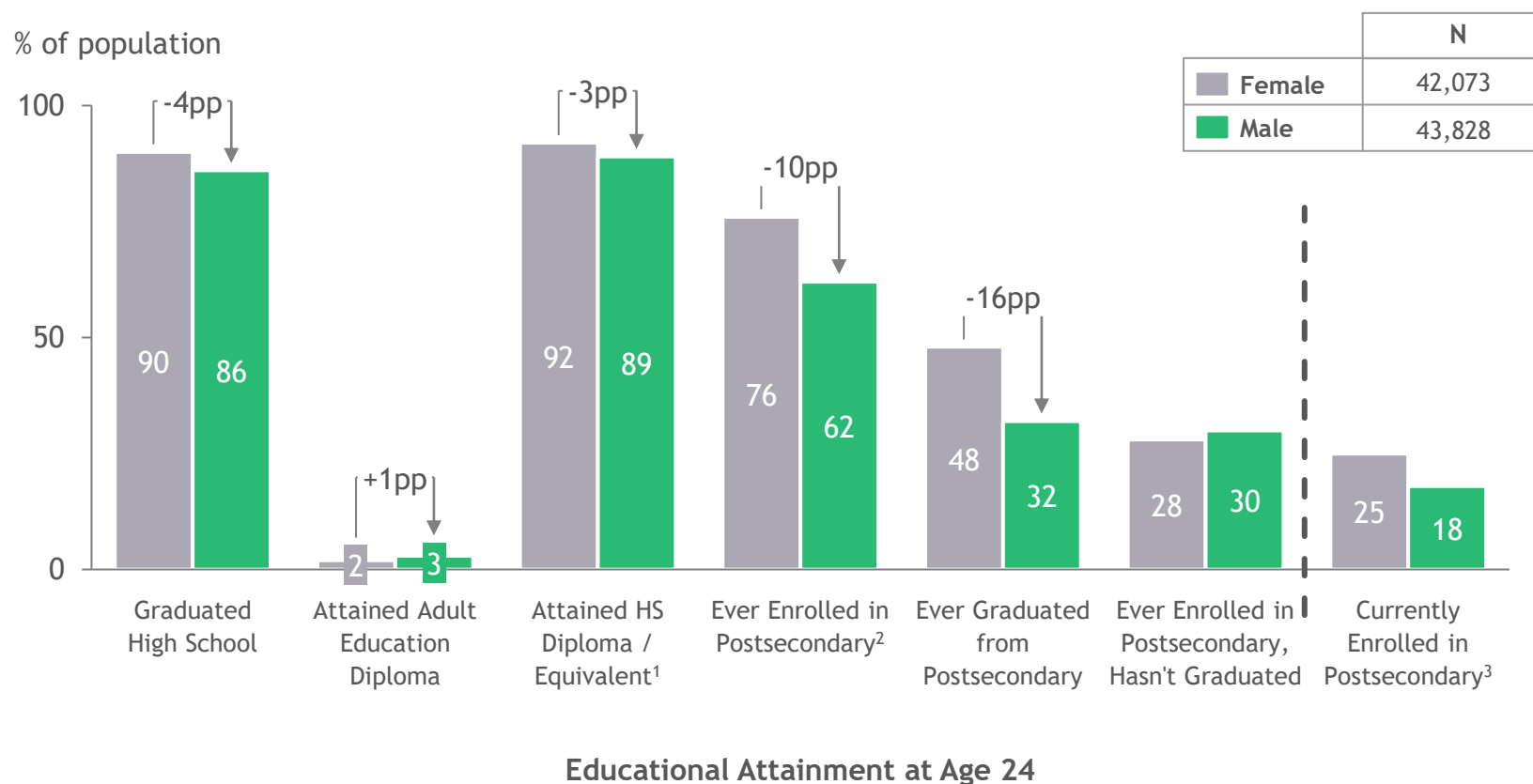
The median annual wages of Black postsecondary graduates is almost equivalent to the median annual wages of Asian and White high school graduates that did not attend postsecondary school

Asian and White young people who did not graduate high school make higher median annual wages than Black young people who graduated high school

	HS Non Grad	HS Grad, No Post-Secondary	Post-Secondary Grad
Sample Size (N)			
Asian	240	380	2,100
White	850	8,400	30,400
Black/African American	2,000	2,700	2,700
Hispanic/Latino any race	3,600	3,900	3,400

Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Analysis covers individuals in P20 WIN database aged 14 or 15 in 2010; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2010-2022), BCG analysis

Sex: Young females have higher rates of educational attainment than males across levels, with difference increasing with each passing milestone



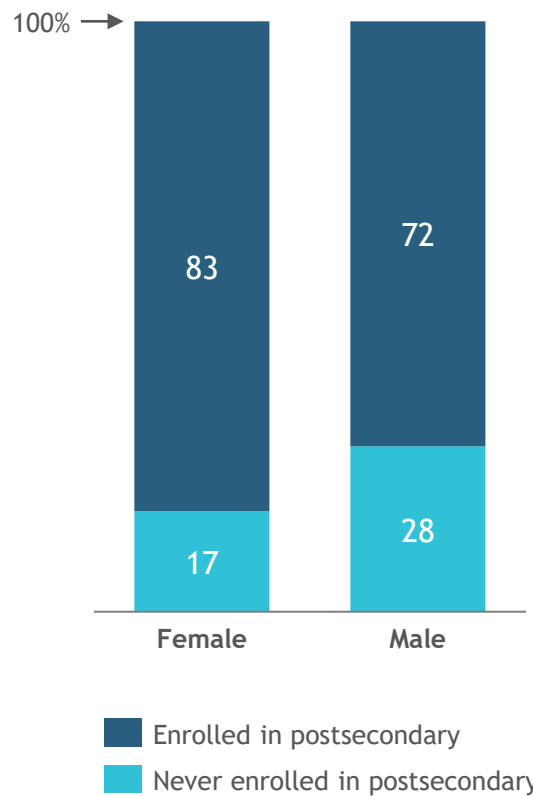
Key takeaways

Overall, females have higher attainment of educational milestones than male peers, with gaps widening with each passing milestone - from a 3pp difference in high school graduation to a 16pp difference in postsecondary graduation

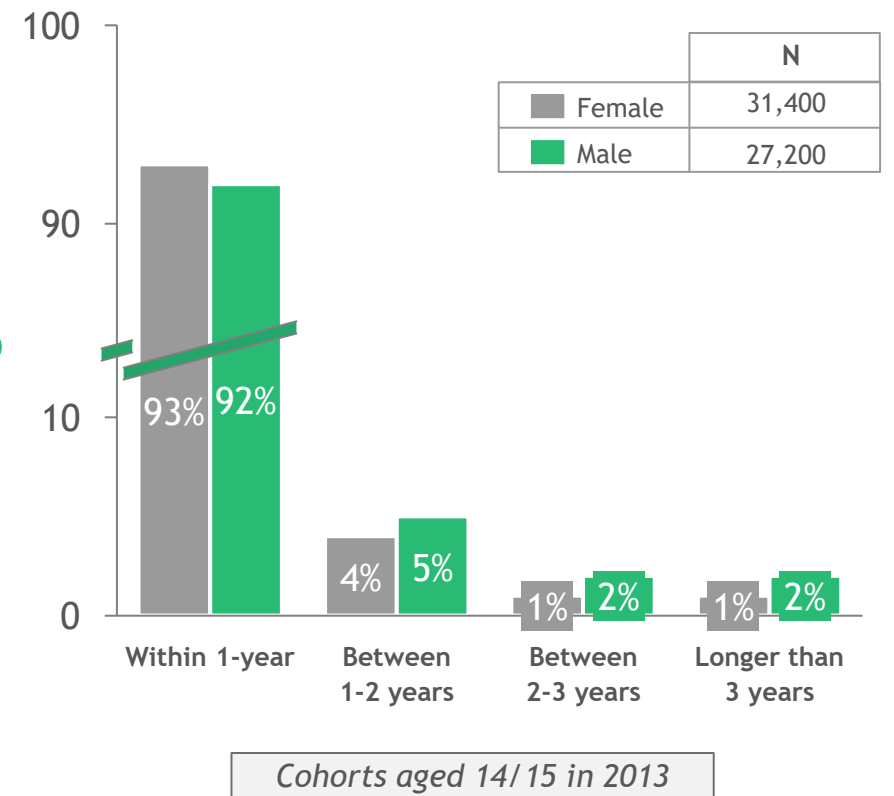
1. Sum of those who ever graduated high school and those who attained an adult education diploma; 2. Sum of those who ever graduated, and those who have enrolled but have not graduated; 3. Included under "Ever Enrolled in Postsecondary, Didn't Graduate"; Note: Analysis covers individuals in P20 WIN database aged 14 or 15 in 2011; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN data 2011-2022, BCG analysis

Sex: Postsecondary enrollment timing largely the same for males and females

% of high school graduates who enroll in postsecondary education



Of the high school graduates who enroll in postsecondary education, distribution of enrollment timing

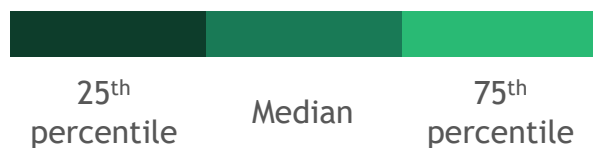
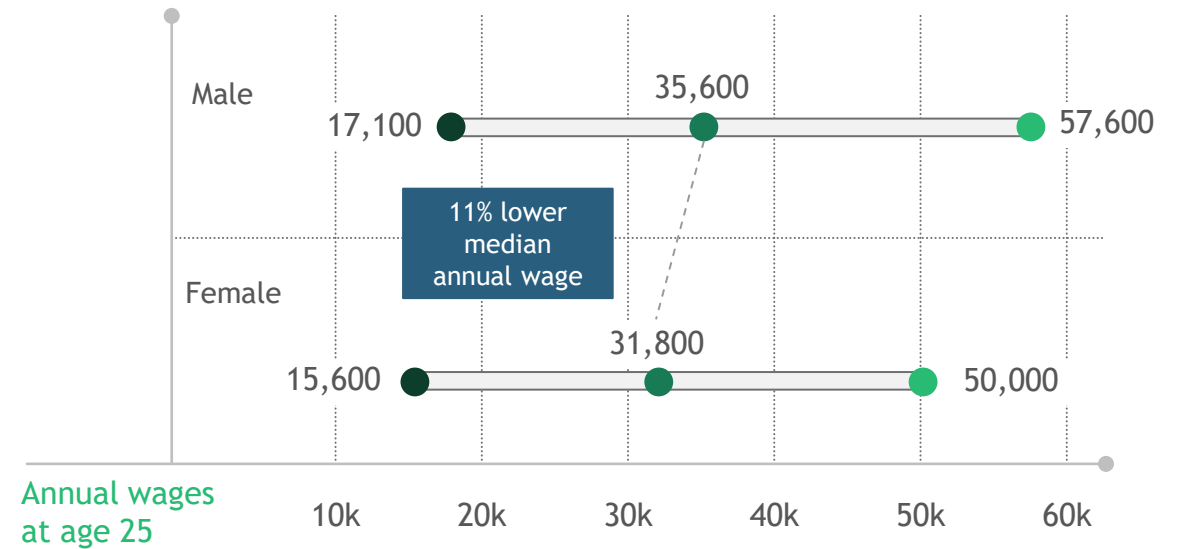
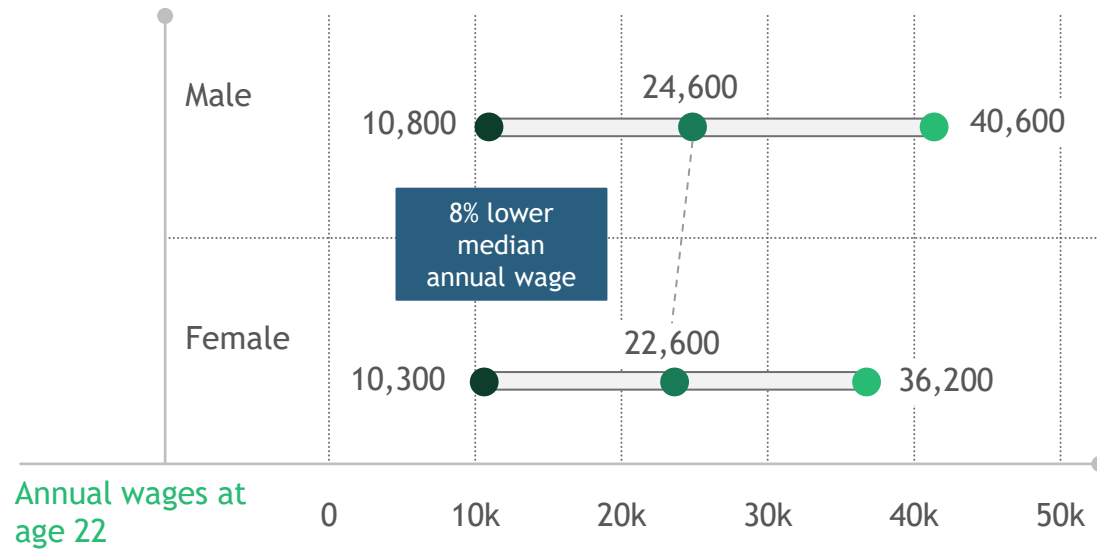


Analysis covers individuals in P20 WIN database aged 14 or 15 in 2013; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates) Source: P20 WIN data 2013-2022, BCG analysis

Sex: While wages go up for females and males between age 22-25, disparity between them increases

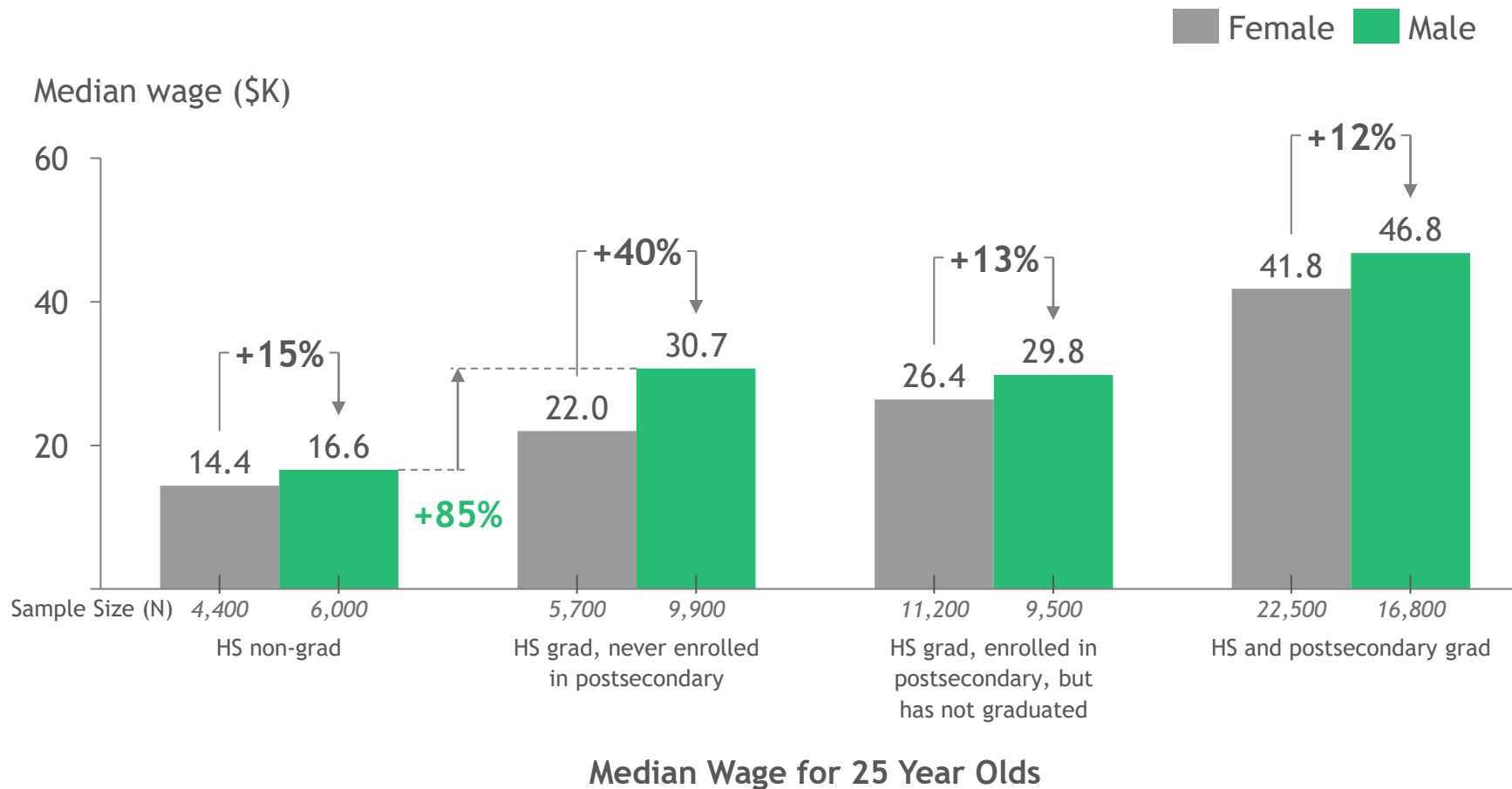
At age 22, females already have a median annual wage that is 8% lower than male counterparts...

...and the disparity further increases at age 25



Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Analysis covers individuals in P20 WIN database aged 14 or 15 in 2013 and 2010; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2014-2022), BCG analysis

Sex: Males have higher median annual wages vs. females across education levels, with largest gap seen with HS grads not enrolled in postsecondary



Key takeaways

Even when controlling for educational attainment, males have higher median annual wages than females

The largest gap occurs between male and female HS grads who did not attend post-secondary school, at 40% difference

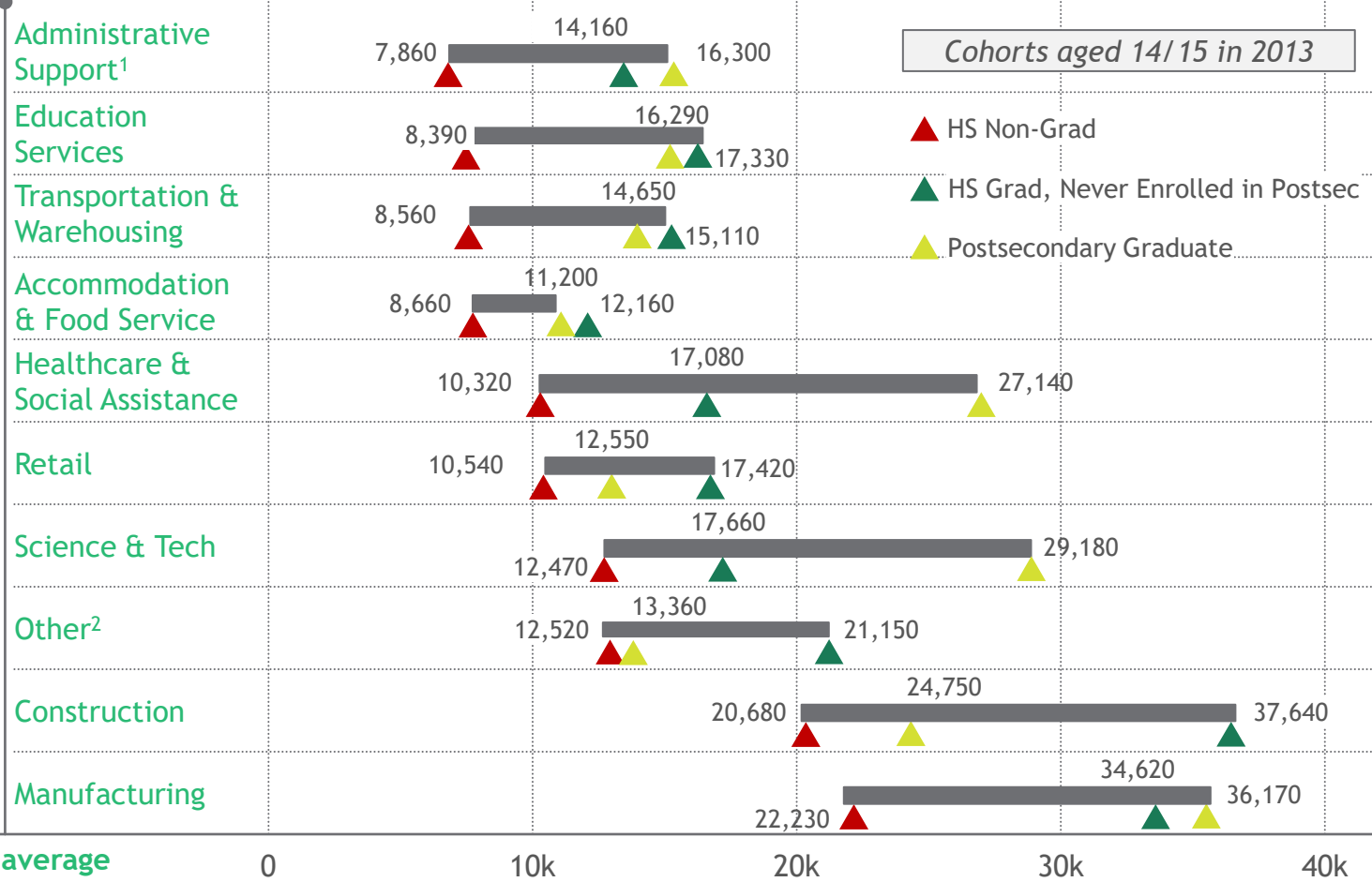
The educational milestone that leads to the highest increase in median annual wages is seen when males graduate high school, which increases their median annual wages by 85%

Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Analysis covers individuals in P20 WIN database aged 14 or 15 in 2010; Metrics should be understood more for the relative comparison across categories vs. exact figures; Source: P20 WIN (2010-2022), BCG analysis

Industry Analysis

Industry Employment: Some industries, such as Manufacturing and Construction, offer higher wages and greater wage growth at age 22 vs. others

Industries sequenced by HS non-grad wages (low to high)



Key takeaways

Admin. Support, Education Services, Transportation, and Accommodation & Food Service, and Retail are relatively **lower wage industries with limited wage growth**, which may be partially attributed to higher incidences of part-time work or underemployment within these industries

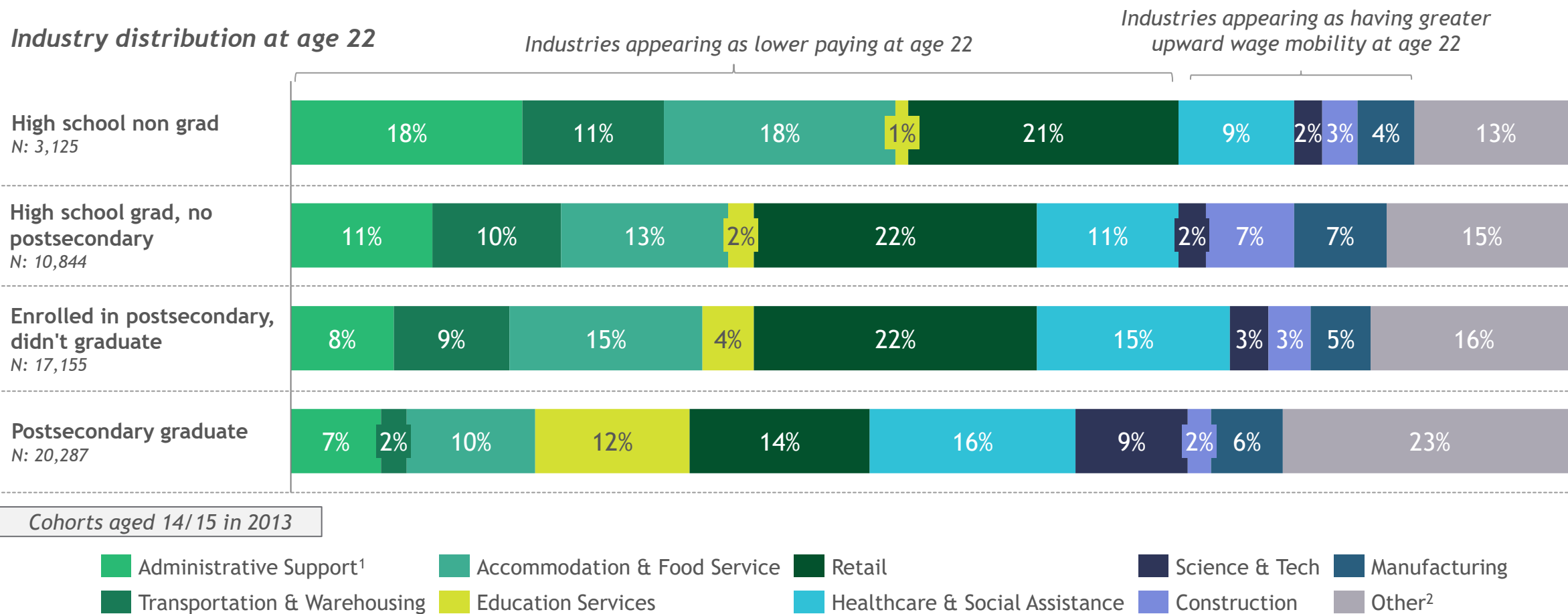
Manufacturing, Construction, Science & Tech, and Healthcare industries seem to offer the clearest path for **upward wage mobility with educational attainment**

Note: Given wage data is for age 22, the positive impact postsecondary degree attainment is expected to have on wages likely hasn't yet been realized

Annual average wages at age 22

Notes: Data does not include wages earned from self-employment or gig economy work; Analysis only includes individuals with >0 wages in year of study and excludes individuals who worked in multiple industries in a given quarter or are currently enrolled in postsecondary education 1. Official NAICS code name "Administrative and Support and Waste Management and Remediation Services" 2. No single industry in other is >5% of included pop, includes 9 categories: Agriculture, Arts, Finance/Insurance, Information, Management, Public Admin, Real Estate, Wholesale Trade, Other Services (excl. Public Admin); Source: P20 WIN (2013-2022), BCG analysis

Industry Employment: Lower educational attainment associated with lower paying industries; postsecondary grads sees largest shift in industry distribution



Notes: N is number of people who've earned a wage in the category; Individuals can be categorized into multiple industries; Data does not include wages earned from self-employment or gig economy work; Analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education 1. Official NAICS code name "Administrative and Support and Waste Management and Remediation Services", defined as "performing routine support activities for the day-to-day operations of other organizations. 2. No single industry in other is >5% of included pop, includes 9 categories: Agriculture, Arts, Finance/Insurance, Information, Management, Public Admin, Real Estate, Wholesale Trade, Other Services (excl. Public Admin); Source: P20 WIN (2013-2022), BCG analysis

Industry Employment: Cohort sample sizes

Cohorts aged 14/15 in 2013

	HS Non Grad	HS Grad, No Post-Secondary	Post-Secondary Grad
Administrative Support	660	1,250	1,390
Education Services	50	250	2,460
Transportation & Warehousing	370	1,120	500
Accommodation & Food Service	650	1,540	2,080
Healthcare & Social Assistance	350	1,450	3,780
Retail	800	2,800	3,110
Science & Tech	80	250	2,120
Construction	110	970	420
Manufacturing	180	970	1,370
Other	120	500	540

Note: Wage analysis only includes individuals with >0 wages in year of study and excludes individuals currently enrolled in postsecondary education; Source: P20 WIN (2013-2022), BCG analysis

Implications

Implications of our findings

Validates report findings on the association between these demographic, out-of-school, and in-school factors and disconnection, strengthening case for practitioners to use these factors for early identification of vulnerable young people

Shows that the impact of these factors on outcomes persist even as young people mature in age (e.g., from right after high school to age 22-25), emphasizing need for increased long-term supports for these vulnerable sub-groups, especially after they leave school or agency purview

Reveals that, while educational attainment is important, it cannot singularly protect against detrimental outcomes (e.g., lower wages) for vulnerable populations, so interventions beyond education are required for these sub-groups (e.g., on-the-job mentorship, wraparound supports)

Potential future areas of study

Better understand young people's lives by integrating data from **more agencies** (e.g., social services data from DSS, Office of Early Childhood, justice data from CSSD + DOC)

Conduct further analysis of **high school experience** and associated outcomes (e.g., vocational and technical schools)

Conduct further analysis of **postsecondary outcomes** (e.g., differentiate outcomes by degree level and program)

Conduct further analysis of **workforce outcomes** (e.g., analyze industry of employment at subsector level, i.e. 3-digit NAICS code level)

Further understand life trajectories of young people from **earlier ages** (e.g., bring in DCF data prior to age 14)

Explore the **intersectionality between factors** (e.g., is the DCF-involved population more likely to be comprised of demographics that we know are at heightened risk of disconnection?)

Study policies and programs that impact at-risk and disconnected young people, starting with participation reach and dosage, but also gleaning efficacy and outcomes where possible (e.g., how much target population participation is there in workforce programs)

Improve current **analytical gaps** (e.g., improve understanding of self-employment and gig economy participation of target population, better account for which young people move out of state vs. are disconnected)

Appendix - Definitions of terms

Definitional framework for at-risk and disconnected young people



Young people aged 14-26 who are engaged in prosocial institutions and on-track for gainful employment

High school students who are at risk of not graduating and, therefore, also at risk for eventual disconnection. Category has three sub-populations:

- Off-track¹: Students who do not meet state credit attainment requirements
- At-risk due to other factors: Students who exhibit concerning rates of absenteeism and/or behavioral issues
- Severely off-track: Students who are both off-track and at risk due to other factors

Young people aged 14-26 who are not engaged in prosocial institutions and/or not on-track for gainful employment. Category has two sub-populations:

- Moderately disconnected: (1) High school diploma holders who are neither employed nor in postsecondary and (2) high school non-graduates who are employed
- Severely disconnected: Young people who are not employed, have not attained a high school diploma/equivalent and/or are incarcerated

Note: Though framework focuses on education and workforce, important to recognize that other factors and systems also play a role in connection and disconnection

1. Inclusive of severely off-track population

Descriptions of data fields used: At-risk and disconnected (I/III)

Term	Definition	Notes
At-risk	<p>At-risk young people are the population of high school students who are at heightened risk of not graduating, combines students who are off-track, severely off-track, and at-risk due to other factors:</p> <ul style="list-style-type: none"> • <u>Off-track</u>: Students not on track to graduate due to low credit attainment (as defined by the Connecticut State Department of Education) • <u>Severely off-track</u>: Students off-track due to low credit attainment and displaying additional risk factors of absenteeism and/or behavioral incidents • <u>At-risk due to other factors</u>: Students on-track with credit attainment, but displaying concerning trends in attendance and/or behavioral incidents 	<p>This analysis segments at-risk in a few different ways:</p> <ul style="list-style-type: none"> • <u>Ever at-risk in high school</u> - individual qualifies as at-risk during any year of their high school journey • <u>At-risk in X grade</u> - individual qualifies as at-risk for a given grade, independent of whether they were at-risk in prior years • <u>First-time at-risk in X grade</u> - individual becomes at-risk for the first-time in a given grade and was not at-risk in prior years
Attendance flag	<p>Attendance is defined as the percentage of available days a student attends school; Students are considered chronically absent if their attendance is below 90% for 9th and 10th grade, and below 85% for 11th and 12th grade</p>	
Behavior flag	<p>Whether a student has been suspended one or more times and/or expelled</p>	
Off-track / credits flag	<p>Each student’s cumulative credit attainment compared with what they need to graduate, as defined by the Connecticut State Department of Education (CSDE); If a student is not on-track to graduate from a credit perspective, they are considered “off-track.” All students who repeated a grade in high school were also characterized as “off-track”</p> <p>The analysis was conducted in line with the state’s evolving graduation requirements—setting graduation requirement at 20 credits for classes prior to class of 2023, and then increasing graduation requirement to 25 credits starting with class of 2023</p>	<p>The analysis where possible looked at credit accumulation at each grade level and set the on-track threshold as: 5 credits at 9th grade, 10 credits at 10th grade, 15 credits at 11th grade, and 20 credits at 12th grade (for classes prior to the class of 2023), and as 6 credits at 9th grade, 12 credits at 10th grade, 18 credits at 11th grade, and 25 credits at 12th grade (for the class of 2023 onward)</p> <p>For students for whom the data set did not have credit data for all grades (e.g., students who have transferred in from out of state), the analysis defined on-track/off-track by whether the student had earned 5 credits that year (prior to class of 2023) and 6 credits that year (class of 2023 onward)</p> <p>This analysis does not account for district-level credit requirements, which vary by district and are often higher than the state requirements</p>

Descriptions of data fields used: Out-of-school factors (II/III)

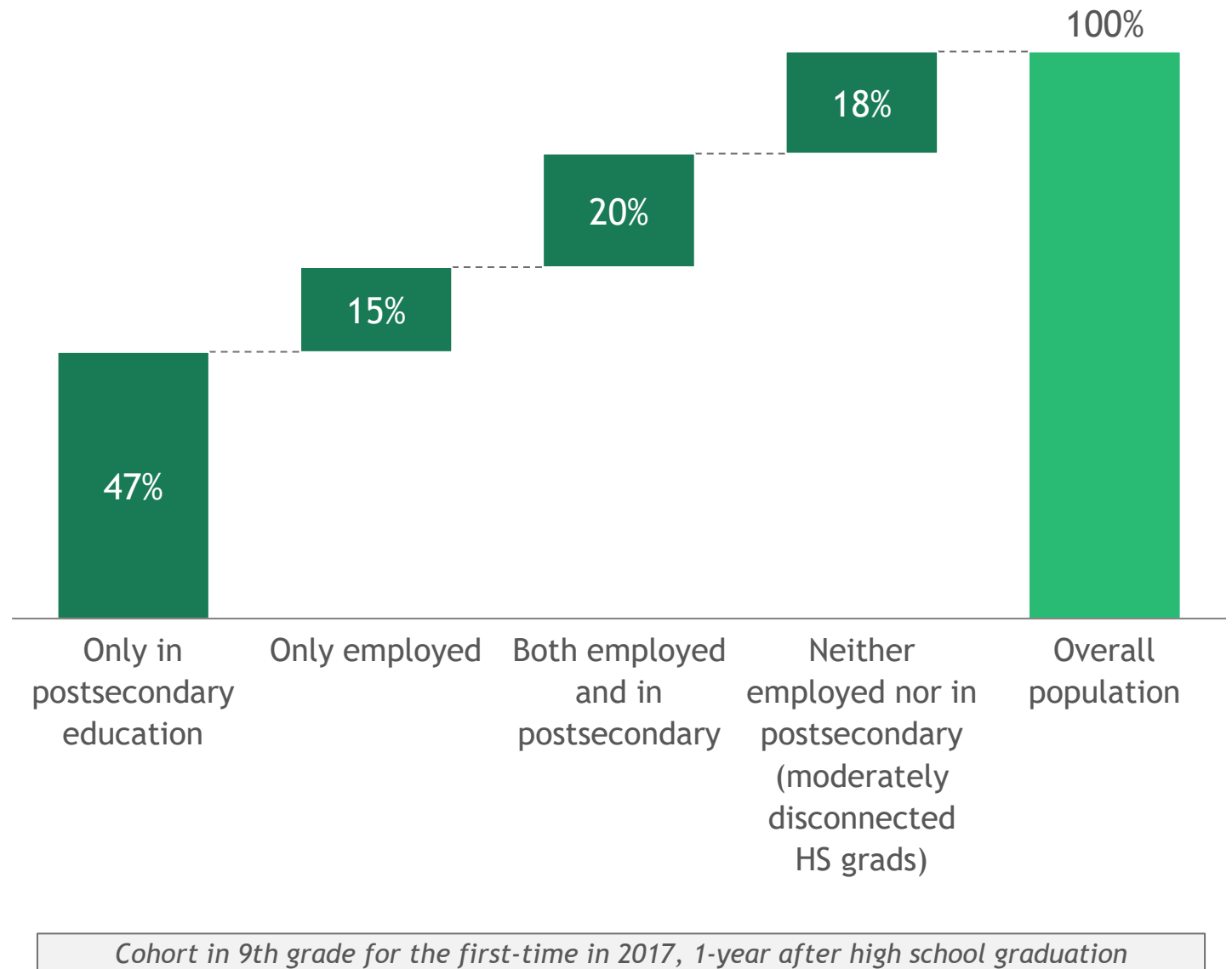
Term	Definition	Notes
Ever involved with CTHRS - Connecticut's Homeless Response System	Whether a young person ever received services from Connecticut's Homeless Response System from ages 14-22 (e.g., shelter, housing, street outreach)	Data set does not capture the actual count of Connecticut's homeless population, but instead serves as a close proxy; namely, who/how many individuals have received homelessness support services from Connecticut Coalition to End Homelessness members
Ever involved with DCF - Department of Children & Families	Whether a young person ever received services from DCF, including Children in Placement data (such as foster care placements), allegations data (data capturing allegations of abuse and neglect directed to DCF), and Provider Information Exchange (PIE) services data (services offered or contracted by DCF such as mental health and family supports), from ages 14-22	The PIE dataset does not cover all possible contracted services available from DCF. Further, DCF offers many other direct services not captured by being present in the allegations or placements data, though almost all children receiving some form of child protective service will be captured in those datasets
Ever involved with DMHAS - Department of Mental Health & Addiction Services	Whether a young person ever received services from DMHAS, including participation in inpatient programs, residential services, outpatient programs, and outreach and engagement services, from ages 18-22	The data includes only programs and services affiliated with DMHAS, meaning it does not provide a full window into the mental health and addiction services offered across the state, but instead provides a window into the subset offered by DMHAS, which tends to be the more vulnerable populations.
Incarcerated in high school	Whether a young person was incarcerated during high school, sourced through data from the State Department of Education on students who were enrolled in Unified School District #1, an education program managed by the Department of Corrections	The data does not capture the full set of individuals incarcerated from ages 14-22, just those who were enrolled in Unified School District #1

Descriptions of data fields used: In-school factors / other (III/III)

Category	Term	Definition	Notes
In-school factors	Has ever attended a high poverty school in high school	Whether an individual attends a high school where more than 75% of its students are eligible for a free/reduced-price lunch	Definition used widely in education research, including at the National Center for Education Statistics (NCES)
	Has ever been enrolled in special education in high school	Whether an individual has ever participated in a special education high school program since age 14	
	Has ever been enrolled in alternative education in high school	Whether an individual has ever participated in an alternative education program in high school (e.g., alternative, dropout diversion/credit recovery, expulsion program, public transition program) or an alternative school	
	Transient	Whether an individual has moved high schools more than two times	
Other	Wages earned	Includes data on wages recorded by the Department of Labor's unemployment insurance data set for the target age range and years. To keep the data set size manageable, the research team received wage data only for individuals who were captured in one of the other data sets Employment was defined for this analysis as having wages earned equal to or greater than \$7,000 in a given year (roughly equivalent to working full-time at ALICE wages for one-quarter of the year)	Due to data limitations, wage data does not include self-employment, independent contractor work (e.g., gig economy), or informal economy work
	Disconnected	Combined population of 14- to 26-year olds who are experiencing either moderate or severe disconnection, defined as: <ul style="list-style-type: none"> <u>Moderately disconnected</u>: Includes high school diploma holders, both traditional graduates and those who have attained an adult education diploma/ equivalent, who are neither employed nor enrolled in postsecondary education, as well as high school non-graduates who are employed <u>Severely disconnected</u>: Includes individuals neither employed nor holding a high school diploma, as well as incarcerated individuals 	

Appendix - Supplemental analysis

One-year after high school graduation, 82% of graduates are enrolled in postsecondary education and/or employed



Race/ethnicity: Hispanic/Black high school graduates are 2x more associated with moderate disconnection 1-year after graduation vs. White graduates

Cohort in 9th grade for the first-time in 2017, 1-year after high school graduation



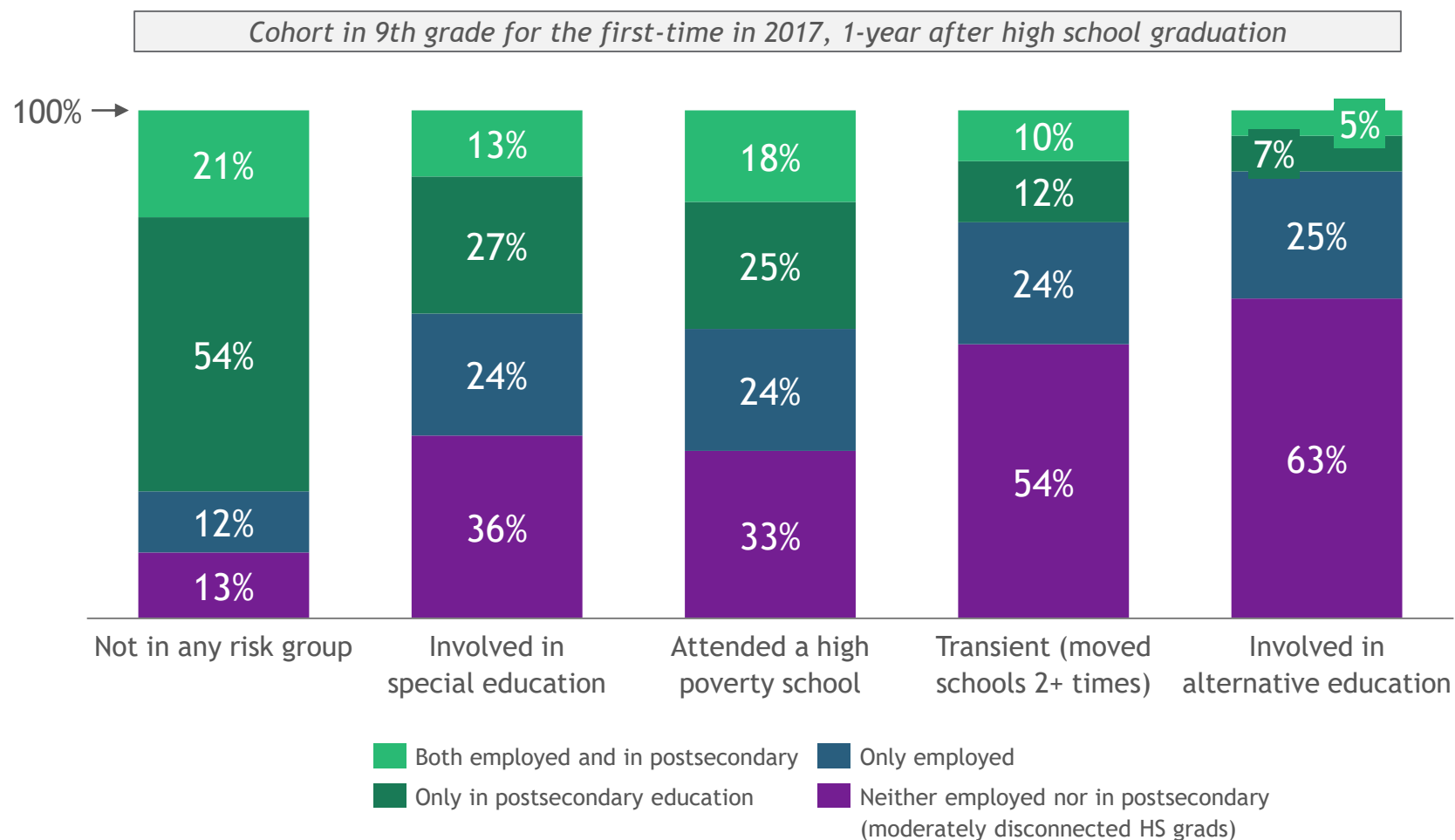
Key takeaways

Black and Hispanic high school graduates have higher rates of moderate disconnection despite having higher rates of employment; key driver affecting disconnection is lower rates of postsecondary enrollment, particularly enrollment in postsecondary without employment

Asian young people most likely to be involved in postsecondary and/or employment one-year after high school graduation

1. Includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, two or more races; Note: Data only includes high school graduates; Employment defined as earning >= \$7K wages in the year; Source: P20 WIN data 2017-2022, BCG analysis

In-school factors: More than 50% of high school graduates who experienced transiency or alternative education were disconnected 1-year after graduation



Key takeaways

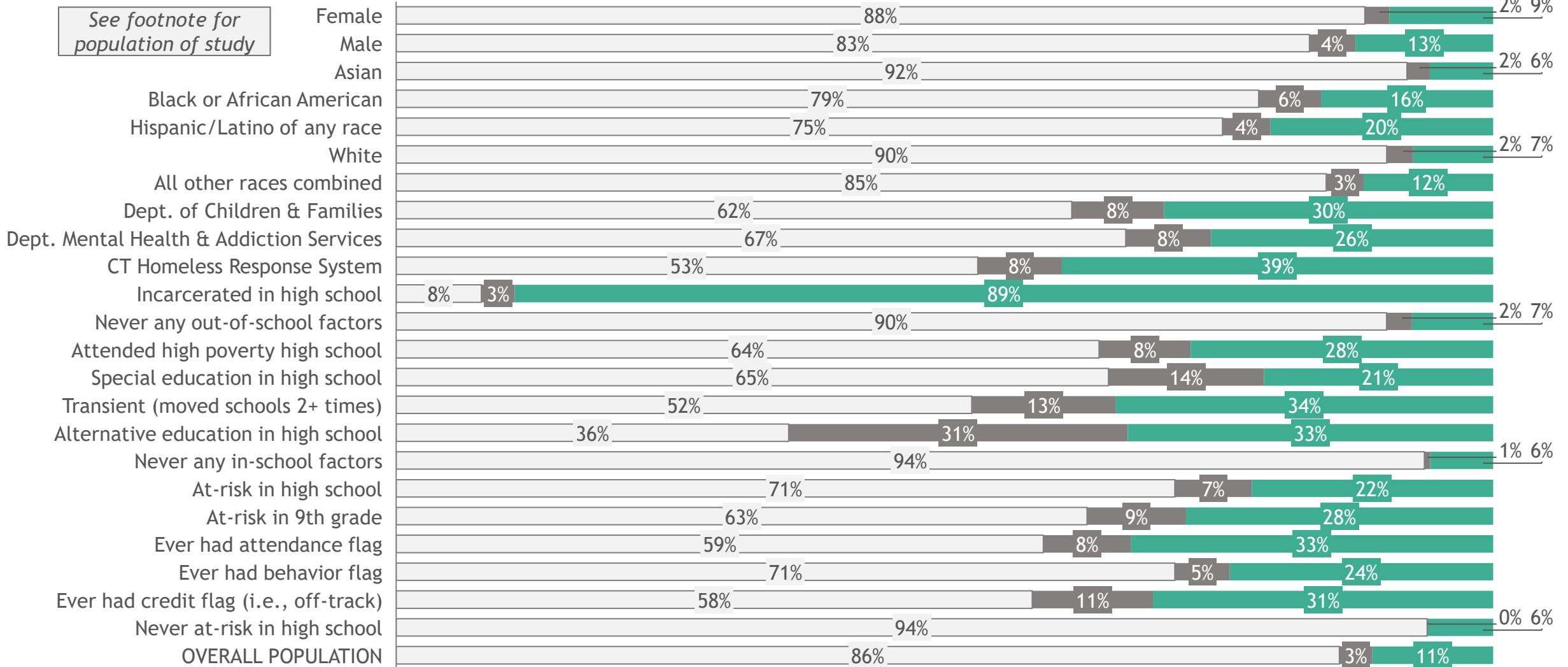
High school graduates who were involved in alternative education are the most likely to be neither employed nor enrolled in postsecondary a year out of school (63%), followed by transient students (54%)

For students who were involved in special education or who attended a high poverty school, about 1/3 are neither employed nor enrolled in postsecondary a year after graduating high school vs. 13% of those who never experienced an in-school factor in high school

Trends in on-time high school graduation by sub-group largely mirror trends in disconnection

Graduated High School in 4-Years
 Graduated High School in 5+ Years
 Never Graduated High School

See footnote for population of study



Note: Majority of table uses data from those aged 14/15 in 2013; At-risk fields use data from those in 9th grade for first-time in 2014 due to 9th grade credits issue for original cohort; On-time graduation includes transfers in who may have repeated a grade at an out-of-state school; Metrics should be understood more for the relative comparison across categories vs. exact figures (e.g., "graduated high school" may not exactly align with SDE's graduation rates); Source: P20 WIN (2013-2022), BCG analysis

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