Advancing the "Colorado Graduates" Agenda:

Understanding the Dropout Problem and Mobilizing to Meet the Graduation Challenge

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Solving America's Dropout Crisis

NCSE
National Center for School Engagement

COLORADO CHILDREN'S CAMPAIGN

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Preface

The dropout rate in Colorado is unacceptable. With over 15,000 students annually in Colorado not completing high school, those students' futures and Colorado's economy are greatly compromised. To let this problem languish threatens the future of our state's economy, health care and justice systems, overall poverty rates, and way of life. Economic life is essentially over for the bulk of the students who drop out of high school.

Tackling the state's dropout crisis is a daunting task. To date few, if any, states have been able to dramatically reduce the number of high school dropouts. However, new research illustrates that effective early warning and intervention systems that flag students at higher risk of dropping out and target interventions to help them back on-track are having real success in many communities. Colorado has the opportunity to lead these efforts.

The good news is Colorado's school district leaders and state leaders recognize the dropout problem and are actively taking steps to learn more about this student population and what can be done to help them succeed in high school. Our state has a unique opportunity to approach this problem differently. Stakeholders have come to the conclusion that piecemeal dropout prevention and recovery programs are largely ineffective. This has resulted in a desire for a state strategy that empowers and drives schools and communities to have coherent and integrated reform strategies, rather than a hodge-podge of programs to manage.

An effort is underway that aims to cut the state's dropout rate in half over the next ten years by convening a group of organizations. This effort -- the Colorado Graduates Initiative (CGI) – has several elements and includes action to improve policies and practices at both the state and local levels. Partners currently in the CGI network include the Colorado Children's Campaign, National Center for School Engagement at the Partnership for Families and Children, and the Colorado Youth for a Change. Early initiative supporters include the Donnell-Kay Foundation, JP Morgan Chase, Piton Foundation, Rose Community Foundation, Qwest, and the Women's Foundation.

This report highlights one of the initial projects of the CGI – a partnership with Johns Hopkins University to work with five of Colorado's school districts to help them understand both the behavioral patterns of recent dropouts in the years prior to leaving school, and who is currently at risk of dropping out of school (by looking at data from today's students in earlier grades). As the Johns Hopkins work points out, identifying middle school students with poor attendance, failing grades, and poor behavior can help educators and communities intervene with students much earlier to keep them on the path to graduation and prevent future dropouts.

The five districts chosen to participate in the study are some of the largest districts in Colorado, thus, they have some of the highest raw numbers of dropouts. Each of these districts took a bold step by digging deeper into their data and agreeing to tackle this problem head on. Using this analysis, districts and their communities will be better equipped to identify specific state, district, and school policies and practice changes that may be necessary to impact student graduation and dropout rates. This research and analysis is also helping districts better make data-driven decisions and puts them in an excellent position to seek new federal resources to help address this problem.

The Hopkins data analysis, coupled with the work of the CGI partner organizations, has already resulted in real, meaningful educational improvements for kids. Information about the district efforts to curb the dropout rate is included in the report. Some highlights include:

- Adams 12: Is looking to partner with its sister districts in Adams county to create a dropout prevention collaborative under the Adams County Youth Initiative.
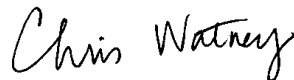
- Aurora: Is actively working to improve Infinite Campus (the district's technology system) to create an early warning data system to help schools have access to timely and accurate information about students so they can provide an immediate response to behavioral factors that lead to dropping out.

- Denver Public Schools: Is conducting a pilot this fall with Lincoln High School to put in place an early warning system, professional development and a community support collaborative to provide intensive support and services to students exhibiting dropout warning signs.

- Jeffco: The Office of Dropout Prevention and Recovery (one of the only in the state), is spearheading a policy audit and analysis of practices that affect the dropout issue in every school in its district: www.jeffcopublicschools.org/programs/drop_out/finish_line/stats.html.

- Pueblo: Instituted a district level policy audit followed by action planning with all central administrators and principals. Professional development on dropout prevention is targeted for August 2009 with all secondary staff.

- Statewide: CGI is leading conversations with state and district officials to ensure that new Title I and Special Education stimulus dollars can be used for dropout prevention and recovery efforts, and CGI is seeking more district partnerships in these efforts.

This is tremendous work, and we applaud these districts and communities for aggressively tackling these issues. The willingness to engage in self-analysis and the leadership of the districts described in this report deserves commendation. It is daunting and courageous for leaders to look candidly at their most significant challenges. All the districts described in this report opened their data to outside partners and engaged in serious discussions about what could be done. This type of candor is necessary to solve this problem. We hope other districts will follow their lead and recognize that solving real problems requires an open attitude. We must do more than acknowledge that challenges exist. Progress requires that we truly understand what is happening to our children. We look forward to partnering with others and supporting all those willing to go down this path.

However, this is just the beginning. More work must be done to reach our goal of cutting the dropout rate in half over the next decade. As such, the Colorado Graduates Initiative will continue to partner with the state's key stakeholders to ensure that this work and future work around the dropouts issue remains a top priority. To find out more about the CGI, please contact Alex Medler, Vice President for Research and Strategy, Colorado Children's Campaign at alex@coloradokids.org.

Tony Lewis
Executive Director
Donnell-Kay Foundation

Chris Watney
President
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1. Introduction

"About 30 percent of Colorado high school students don't graduate. Less than half of the black, Latino and American Indian students who start high school in Colorado actually finish. Our goal: cut the drop-out rate in half within 10 years." Governor Bill Ritter, Jr.[1]

The ambitious goal set by Colorado's governor to address the state's dropout problem is a model for the nation. Helping thousands of young people to receive their high school diplomas instead of leaving school without them is a crucial step in improving the quality of life for all Colorado residents.

Accomplishing this goal will require focused attention on dropout prevention, intervention, and recovery, particularly in the schools and districts with large numbers of dropouts. As researchers at Johns Hopkins University have pointed out in earlier publications (e.g., Balfanz, 2007; Balfanz, Fox, Bridgeland, & McNaught, 2008), understanding the dropout problem in a community is an important first step in developing and implementing plans to reduce the number of dropouts and increase the graduation rate.

The research reported here was conducted as a foundational analysis for the work of the Colorado Graduates Initiative (CGI), a partnership of several education advocacy organizations and other non-profit organizations seeking to assure that districts and schools succeed in accomplishing the goal of cutting the state's dropout rate in half within the next ten years. Created in January 2008, the current CGI partnership includes the Colorado Children's Campaign, the Partnership for Families and Children (and the associated National Center for School Engagement), and Colorado Youth for a Change, together with representatives from the Colorado Department of Education, several Colorado school districts, and the Johns Hopkins University Center for Social Organization of Schools. Funding for this research was provided by the Donnell-Kay Foundation and the Piton Foundation.

This research focused first on the statewide distribution of dropouts, and then on five of the districts having some of the largest number of dropouts, using both aggregate school level data from the Colorado Department of Education and individual level administrative data from each of the five districts. The report begins with an analysis of the concentration of dropouts within the state of Colorado, and a brief review of what research has shown about predictors of a dropout outcome. It provides an analysis of the demographic and behavioral characteristics of dropouts from the five Colorado districts as well as early warning indicators among students in middle school and ninth grade. The report concludes with recommendations for steps that districts and schools could potentially take to identify and address these early warning signals. The recommendations include specific suggestions for an integrated dropout prevention framework, using a multi-tiered public health framework with an early warning system and tiered interventions to increase attendance and reduce both problem behavior and course failure. In short, this report presents several keys to addressing Colorado's graduation challenge:

- We can locate where the dropout problem is concentrated in the state (by districts and schools)

- We can identify which students are unlikely to graduate without interventions (through routinely collected district administrative data)

- We have interventions that can keep students on track to on-time graduation.

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[1] http://www.ontheissues.org/Governor/Bill_Ritter_Education.htm

The Concentration of Colorado's Dropouts

Preliminary analyses using aggregate school level data from the Colorado Department of Education sought to determine the extent to which Colorado dropouts were concentrated in particular districts and schools. Figure 1.1 below, based on 2005-06 data for the 430 Colorado schools that include a grade nine, shows the uneven distribution and concentration of dropouts across schools. The 25 percent of schools (108) in Colorado with the most dropouts account for 70 percent of all dropouts across the entire state.

Figure 1.1 Concentration of Colorado Dropouts by Percentiles of High Schools with Largest Number of Dropouts
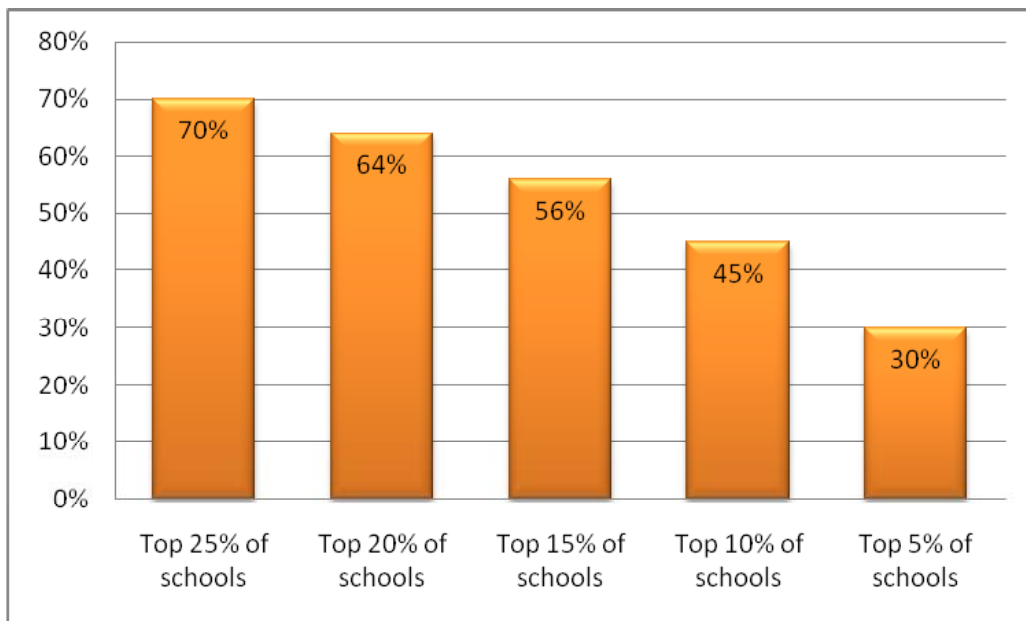
Put another way:

- Only 5 out of every 20 schools accounted for roughly 14 out of every 20 dropouts in the state.

- Only 4 in 20 schools accounted for roughly 13 in 20 dropouts in the state.

- Only 3 in 20 schools accounted for roughly 11 in 20 dropouts in the state.

- Only 2 in 20 schools accounted for roughly 9 in 20 dropouts in the state.

- Only 1 in 20 schools accounted for roughly 6 in 20 dropouts in the state.

Colorado's dropouts are also highly concentrated within a small number of counties and districts. Of those high schools with 46 or more dropouts (the top 25 percent, 108 schools), 60 percent are found in four counties in the metropolitan Denver area. While the rest are spread out throughout the state, there is much more concentration of high dropout schools in the Pikes Peak, North Central, and Mesa County Valley regions than elsewhere in the state.

Understanding the Early Warning Signals of a Dropout Outcome in Districts with the Highest Concentration of Dropouts

Based on these findings regarding the concentration of Colorado's dropouts, this study focused on five of the Colorado districts with large numbers of dropouts: Denver Public Schools, Jefferson County (Jeffco) Public Schools, Aurora Public Schools, Adams 12 Five Star District, and Pueblo City Schools. These districts are large in size, and not necessarily the districts with the highest percent of students that fail to graduate. But given their size, and their dropout rates, they do produce large numbers of non-graduates. These districts agreed to share de-identified longitudinal student level data for analysis, and provided helpful district context information (see Section 2) as well as their plans for responding to the more detailed reports they each received (see Section 8).

The study was theory-driven, building on prior research on the predictors of a dropout outcome. While dropout rates are considerably higher among some demographic groups than others (e.g., high poverty, Hispanic and Black, those with parents who did not complete high school, those with siblings who have dropped out), Gleason and Dynarski (2002) have shown that demographic factors do not efficiently predict which students will drop out. A more promising focus relies on the theoretical construct of student engagement in schooling (e.g., Fredricks, Blumenfeld, & Paris, 2004) that has guided much of the research on dropping out. Engagement has emotional, behavioral, and cognitive components, which are sometimes classified as social and academic engagement (e.g., Wehlage, et al., 1989). Engagement is itself influenced by individual student background, as well as by the institutions (family and community, as well as the school itself) within which the individual student is placed (Rumberger & Lim, 2008). A variety of factors may influence the student to begin a process of disengagement with schooling, a psychological process that generally manifests itself behaviorally in absenteeism, failure to complete assignments, and failure to pass courses.

While many of the factors leading to student disengagement are not school-related, the behavioral indicators of student disengagement leading to a dropout outcome, such as attendance and course failure, manifest themselves directly at school. In the nation's "dropout factories" (Balfanz & Legters, 2004), mostly minority student U.S. high schools where 50 percent or more of students do not make it from ninth to twelfth grade on time, average daily attendance rates of 80 percent or less are an overwhelming daily reality. Low levels of attendance are a strong predictor of course failure, and course failure in ninth grade is a strong predictor of dropping out (Allensworth & Easton, 2007; Finn, 1989; Lan & Lanthier, 2003; Lee & Burkham, 2003; Neild & Balfanz, 2006a, 2006b; Neild, 2009a; Roderick & Camburn, 1999; Schargel & Smink, 2001). Balfanz, Herzog, and Mac Iver (2007) have shown that these behaviors manifested in sixth grade (attendance, a record of misbehavior, or course failure in English or mathematics) predict roughly half of eventual dropouts.

Dropping out is also strongly associated with certain school characteristics (which this study was not able to address directly). Even after controlling for the effects of demographic composition (particularly ethnicity and poverty), attendance, and school resources, dropout rates are higher in schools that are large, located in urban centers, and public (Rumberger & Thomas, 2000). Dropout rates are lower at schools with more personal relationships between teacher and students and less differentiation in curriculum among students (Bryk & Thum, 1989; Croninger & Lee, 2001; Lee & Burkham, 2003). Findings from Chicago have indicated that student course performance is related to relationships with teachers, the relevance of classroom instruction to the future, teachers' sense of joint responsibility for student success, and the degree of "coherence in instructional programming" across the school (Allensworth & Easton, 2007, p. 33).

While there is also a considerable body of research focused on family background and psychological variables that probably influence the observable behaviors related to disengagement from school (see review in Hammond et al., 2007), this study sought to help the districts identify early warning signals already available in district-collected data that could guide potential interventions aimed at dropout prevention. The goal was to provide data for state level and district level decision-making as well as recommendations for targeting interventions to increase the high school graduation rate and reduce the dropout rate. The study sought to go beyond a demographic snapshot of students who dropped out of school to identify behavioral warning signals prior to a dropout outcome. Knowing these early warning signals (e.g., problems with attendance, behavior, or course failure) could help inform district planning for interventions to address the reasons behind a dropout outcome.

Because district policymakers are often interested in the characteristics of all dropouts in a particular year, this study focused primarily on dropouts from the 2006-07 school year (as outcome data for 2007-08 were not finalized). Findings could have been unique in this year, though the correspondence of findings from this study to findings in other districts gives us considerable confidence in their reliability. The "backwards" or "retrospective" analysis approach used in this study complements the "forward cohort" approach used in previous studies (e.g., Balfanz, Herzog, & Mac Iver, 2007; Mac Iver et al., 2008; Allensworth & Easton, 2007). The forward cohort approach provides a better estimate of the impact of certain variables on student outcomes (graduation vs. dropout), and we were also able to conduct this type of analysis in three of the five districts (following all the 2003-04 ninth graders through their on-time graduation year of 2007). On the other hand, the retrospective analysis was able to capture students new to the district, who would not be included in the forward cohort.

This research was conducted using de-identified individual level administrative data from the five districts (described more fully in Section 2). After describing demographic and behavioral characteristics of the dropouts in 2006-07 (Section 3), we turn to an analysis of both ninth graders (Section 4) and middle school students (Section 5) in 2006-07 to examine how many students are currently displaying early warning signals of a potential dropout outcome. We conclude with a summary of findings (Section 6) and some recommendations (Section 7) for steps that districts and schools could potentially take to identify and address these early warning signals. The districts describe their plans for responding to the data analysis and recommendations in Section 8. In Section 9 we provide more technical background on the study and additional statistical analyses based on outcomes for the 2003-04 cohort of ninth graders (the class of 2007). A companion Dropout Prevention "toolkit" with frameworks and tools for use in implementing recommendations is also available online as a downloadable pdf file.

2. The District Contexts

In this section we asked the five districts to summarize their own contexts and explain why it was important to the district to participate in this data analysis project.[2]

Adams 12 District Overview

Adams 12 has 40,800 students. The district spreads across two counties (Adams and Broomfield) and five communities (Broomfield, Northglenn, Thornton, Federal Heights and Westminster) as well as parts of unincorporated Adams County.

In 2008 the district had 39.8% minority enrollment (31% Hispanic, 9% Other, 60% Anglo).

07-08	**Dropout Rate**	**4.6% - 902 Dropouts**
		Hispanic – 6.6% Anglo – 3.5%
06-07	**Dropout Rate**	**7.5% - 1,441 Dropouts**
		Hispanic – 8.9% Anglo – 6.9%
07-08	**Graduation Rate**	**74.1%** Females - 77.3% Males - 70.8% Hispanic - 64.4% Anglo - 6.9% SPED - 62.2% LEP - 64.7%
06-07	**Graduation Rate**	**76.3%**
07-08	**Completion Rate**	**79.0%** Females - 81.0% Males - 76.9% Hispanic - 8.7% Anglo - 84.5% SPED - 69.5% LEP - 66.2%
06-07	**Completion Rate**	**80.4%**

Why was it important for Adams 12 to participate in the Johns Hopkins study?

- Dropout and graduation data are reviewed by many at the school and district level, but systemic "ownership" for action planning to address concerns at the district level has not existed.

- Participating in this study helped quantify dropout-related issues (past, present and future) in a manner and to a degree that goes deeper than we previously thought possible.

- In 2005, the district raised its graduation requirements from 20 to 23 credits. The increased credit requirements became fully in effect for all students in 2008. Without increased support and credit recovery options, dropout rates are likely to increase and graduation rates likely to decrease as a result.

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[2] In Section 8 of this report the districts summarize how they are responding to the report findings.

Aurora Public Schools District Overview

Aurora Public Schools (APS) includes Adams and Arapahoe Counties. APS operates 30 elementary, four K-8s, seven middle schools, five senior high schools and six charter schools. K-12 enrollment for 2008-09 was 32,754 students. The diversity of the student population demographics are reflected in the following figures: Native American – 1%, African American – 21%, Asian – 4%, Hispanic – 52% and White – 22%. Our English Language Learner population is 38% and Free/Reduced Lunch is at 64%. Four-year cohort graduation rates have declined over the past four years to 56% although the one-year dropout rate has also started to decrease and is at 8.2%.

Why was it important for Aurora to participate in the Johns Hopkins study?

In the fall of 2006, under the leadership of a newly elected Board of Education and Superintendent John Barry, the Aurora Public Schools implemented a bold strategic plan, VISTA 2010.

The plan's vision proclaims we will "graduate every student with the choice to attend college without remediation." The mission is to "teach every student the knowledge, skills and values necessary to enter college or a career and become a contributing member of society who flourishes in a diverse, dynamic world." Our vision and mission are unequivocal – every student – with no excuses and no blame. To succeed we would have to accelerate learning and increase student achievement. We start and end every conversation with student achievement.

VISTA 2010 identifies a process and roadmap for institutional change, the kind of change necessary to address our challenges. It is organized around four core priorities in the areas of People, Achievement, Community and Environment (PACE). If reflects a commitment to picking up the PACE for continuous improvement. Because our students come to us with significant academic challenges, we know we cannot be successful addressing the dropout issue unless we accelerate learning. There is a sense of urgency as state test scores continue to be among the lowest in the state. In order to address the barriers of poverty, transiency, language and student disengagement, we developed a plan that addresses both academic and organizational changes. The plan also recognizes the importance of increasing the performance of students who are already proficient or advanced. We are raising the top and bringing up the bottom.

To raise student achievement and close the achievement gap among ethnic groups and economically diverse students, our district needed a coherent vision, revitalized mission and clearly focused strategic plan to address the district's current challenges and ensure a laser focus on student achievement. We had to find solutions to overcome poverty, transiency, language barriers and disinterest. We needed higher expectations and higher accountability for all.

To help address the vision and mission of VISTA 2010, we partnered with Johns Hopkins to study the systemic challenges manifested in the behaviors of our students who had or would soon drop out of our schools.

Denver Public Schools District Overview

Denver Public Schools (DPS) serves the residents of the City and County of Denver, Colorado; 55% of the school district is Latino, 18% is African American, and 23% is Anglo. Sixty-six percent of the district's students qualify for free and reduced lunch. The current student enrollment is 75,269. DPS is comprised of 152 schools -- 68 Elementary, 18 K-8, 16 Middle, 15 High, 21 Charter, 6 Alternative, and 8 Other.

Graduation rate: 52% (completer rate is 60.7%). The graduation rate is determined by following one group of students (a cohort) over a four-year period from grades 9 through 12.

Dropout rate: 10.4%. The dropout rate is a one-year snapshot of all students who drop out of school during one school year. This rate considers all students in grades 7 through 12.

Why was it important for DPS to participate in the Johns Hopkins study?

Denver Public Schools has long had a goal to increase graduation rates and decrease the dropout rates. The research provided by the Johns Hopkins study provided another reference point to be used as the district plans for improved student achievement.

Jefferson County Schools District Overview

Jeffco Schools educates approximately 85,000 students each school year. In the 2007-2008 school year this accounted for 10 percent of the students attending school in Colorado. Despite strong partnerships with our parents and community, hiring highly qualified and dedicated staff in our schools, providing state of the art technology in classrooms, engaging in best practice teaching and counseling methods and holding ourselves personally and professionally responsible for preparing all students for a successful future, we have students who drop out of our schools unprepared for the next step in their life's journey. In the 2007-2008 school year, our dropout rate (3.2 percent) was better than the state average, however 1,430 students dropped out of Jeffco Schools.

Jeffco School District takes very seriously the Governor's charge to reduce the drop out rate among school-age youth by 50 percent within ten years. Jeffco Schools created an Office of Dropout Prevention and Recovery to collaborate with students, parents, counselors, teachers, administrators and community partners to implement strategies and apply intensive services to reduce the likelihood of students dropping out and to reengage those students who have recently dropped out of school. As a district and community we feel a sense of urgency to combat this problem and have dedicated resources to recover students and prevent the loss of future students.

Why was it important for Jeffco to participate in the Johns Hopkins study?

Jeffco Schools has struggled over the last five years to graduate more than 80 percent of our students in a four year period. In 2006-2007, of the 1,713 students who dropped out of school, 1,325 students were not participating in instructional programs typically associated with traditional dropout risk factors. The Johns Hopkins study provided Jeffco-specific, research-based, statistical markers to indicate those students who are more likely to graduate on time and those who are likely to drop out of school. These risk factors allow for timely identification and early intervention with students who are at-risk of dropping out of school.

Pueblo City Schools District Overview

With a population of about 102,000, Pueblo is one of Colorado's smaller urban areas. The Pueblo City School District serves over 18,000 students – 61% Hispanic, 33.5% White, 2.8% Black, and 1% American Indian.

Like many urban areas in Colorado, Pueblo has a growing population of young people that have become disengaged from their families, schools, and their communities. The community faces several challenges to ensuring its youth reach their potential. Analysis of the most recent statistics available from the Office of Juvenile Justice and Delinquency Prevention, The Colorado Department of Education, and the Colorado Children's Campaign revealed:

- Nearly 22% of Pueblo's youth under 18 live in poverty, compared with 13% statewide.

- The teen birth rate in Pueblo County is 31/1000 compared to 24/1000 for the state.

- 31% of all births are to mothers that have not yet received their high school diploma, compared with a statewide rate of 22%.

- Pueblo County has an out-of-home placement rate of nearly 30/1000, compared with about 12/1000 statewide.

- The number of students served by the McKinney-Vento Homeless Education Program is over twice the state percentage of 1.6%.

- 68% of students in the Pueblo 60 school district are eligible for free and reduced price lunches, compared to 34% across the state.

- The high school graduation rate for the district is 58% compared with a statewide average of 70%.

- The student mobility rate in the school district is 51%.

- Juvenile arrests made up 34.3% of the total arrests made in Pueblo County from 1994-2004, compared to 18.7% statewide.

- The juvenile violent crime index was 3% higher than the state average, and the property crime index was 5% higher.

- The Keating Education Center has a dropout rate over three times the district average at 20%, and over 50% of the student body is court-involved.

Why was it important for Pueblo City Schools to participate in the Johns Hopkins study?

The data above reveals that many in the Pueblo community face significant challenges. Pueblo City Schools consistently strives to review their data to ensure the district is meeting the needs of ALL students. As a district, we have also reviewed many of our policies which address attendance, truancy, bullying, suspension, and graduation requirements. During this review, it was discovered that many policies were not in the best interest of students. Since then, we have been aggressively identifying and making changes toward the best interest of all students.

3. Characteristics of 2006-07 Dropouts in the Five Districts

Research on the characteristics of dropouts during 2006-07 was conducted using student level administrative data from each of the five districts (described more fully in Section 9). Dropouts in each of the districts were identified by the withdrawal code in the final district administrative record of the 2006-07 school year for each student.[3] The number of dropouts thus identified in each district was nearly the same as the number reported in Colorado Department of Education (CDE) files for 2006-07. After summarizing the demographic and status characteristics of the 2006-07 dropouts, we describe the behavioral characteristics of these dropouts during their high school years. The extent of early attendance and course failure warning signals suggests the importance of developing intervention systems to address and reverse these behaviors linked to dropout outcomes.

Demographic Characteristics

Gender and ethnicity patterns in dropout outcomes in these Colorado districts matched the national research findings. Overall, the proportion of male dropouts was higher than females in each of the five districts (ranging from 52% to 59%), though in Pueblo, the proportion of males among dropouts (52%) matched the overall high school population proportion of males. Even though there were more male than female dropouts in each district, more than 40% of dropouts were female.

Minority students (Hispanics, African-Americans, and Native Americans) tended to be significantly overrepresented among dropouts as compared to non-dropouts, but male and female dropouts did not differ significantly in ethnic distribution. In districts for which data on student poverty level were available, students eligible for free/reduced price lunch were overrepresented among dropouts compared to their proportion in the overall student population (with no gender differences).

The age of students at the time of dropping out was distributed normally in each of the five districts, but varied from an average of 16 in one district to about 18 in another district. Each district had a relatively small number of 12 and 13 year old dropouts, who may have been students transferring to another district but lacking documentation. Each of the districts also had a small number of dropouts ranging in age from 19 to 22. Female dropouts tended to be somewhat younger than male dropouts in most districts.

Status Characteristics

In districts for which data on English as a Second Language (ESL) status were available, ESL students were somewhat overrepresented in the dropout population, as compared to the non-dropout population. The percentage of dropouts who were new to the school district (no record of enrollment in previous years) varied from 5% to 18% among the five districts. District intervention is particularly difficult for this group of students.

Figure 3.1 Percentage of Dropouts New to District in 2006-07

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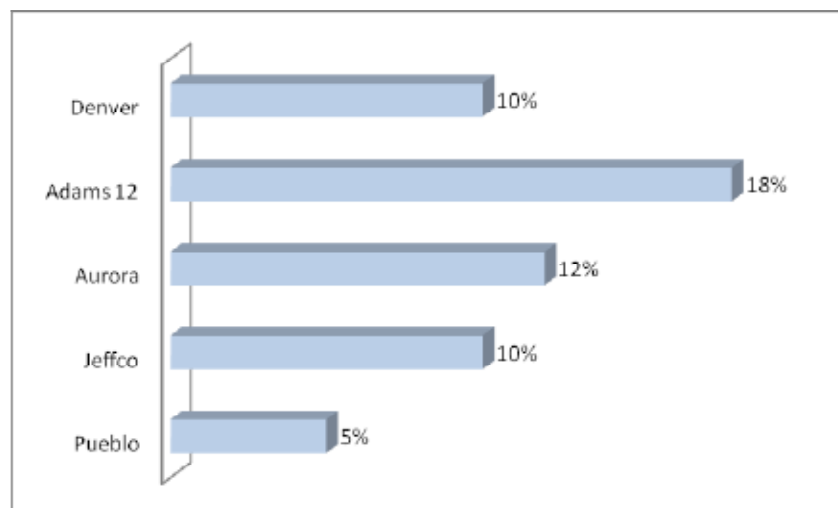
[3] See Section 9 for a more detailed description.

The distribution of dropouts among grade levels differed notably among the five districts, often related to district policy about the relationship between credits earned and promotion to the next grade level. In Denver, Aurora, and Adams 12, a plurality of dropouts were ninth graders, and in Pueblo, a plurality were tenth graders. In Jeffco just over half the dropouts were twelfth graders, but a majority of those students were short more than five credits, and a majority were also age 19 or older.

In general, only a small percentage of the dropouts in any of these five districts had earned sufficient high school credits to be anywhere close to fulfilling graduation requirements. Male and female dropouts did not differ significantly in grade level at dropout or number of credits short of graduation.[4] The percentage of dropouts within five credits (or courses) of the number required for graduation ranged from a low of 7% in Denver to 23% in Pueblo and Jeffco (with 10% in Adams 12 and 12% in Aurora).[5] This information is critical for effectively designing new school solutions involving special programs designed to help students earn missing high school credits quickly.

High School Behavioral Characteristics of Dropouts

Given the prior research that identified attendance, behavior, and course failure (the "ABCs") as important early warning indicators of a dropout outcome, we sought to determine how many of the dropouts in these Colorado districts were displaying early warning signs. Such early warning signs could then be monitored with future cohorts to guide interventions designed to prevent dropout outcomes.

Attendance

Because of changes in district data systems, ninth grade attendance data (absences) were available for less than half of the 2006-07 dropouts in the five districts, and not at all in one of the districts. The available data (which could be biased in some way) indicated that in three of the districts half or more of dropouts were chronically absent[6] during the ninth grade; nearly half had chronic attendance problems in the other district. Data were not available to make comparisons with the 2006-07 graduates.

Figure 3.2 Percentage of 2006-07 Dropouts Chronically Absent in Ninth Grade, By District

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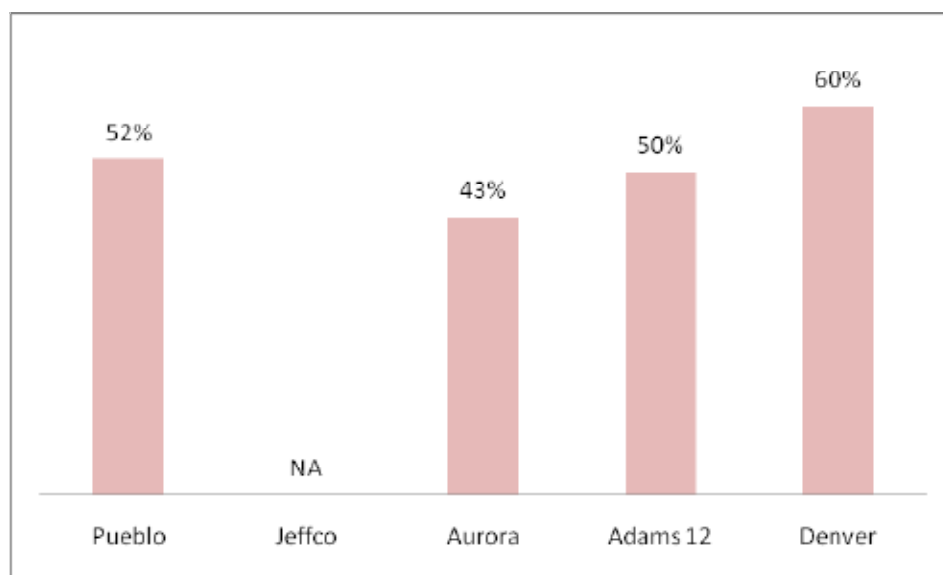
[4] This finding, together with the finding that female dropouts tend to be younger than male dropouts, is related to the fact that males are more likely to be overage for grade than females.

[5] Because of the extent of missing data on this variable in district datasets, these figures should be interpreted with caution.

[6] Because of differences in available district data, we defined chronic absence as either missing more than 20 days, or less than 90% attendance, depending on the district. These may differ by one or two percentage points, depending on the exact number of days in the school year, but are close enough for general comparison. Analyses used "total absences" since most district data available did not distinguish excused from unexcused absences.

Focusing on attendance in the year prior to the dropout or graduation outcome, we found extremely large differences in the chronic absence rate between dropouts and graduates. At the same time, in some districts there were a significant number of dropouts with missing data or relatively good attendance, even in the year prior to the dropout outcome, who could not be identified in an early warning system strictly by attendance. In several of the districts, female dropouts tended to have higher levels than male dropouts of chronic absenteeism in the year prior to the dropout outcome.

Figure 3.3 Percentage of Students Chronically Absent in 2005-06, by 2006-07 Outcome Group and District
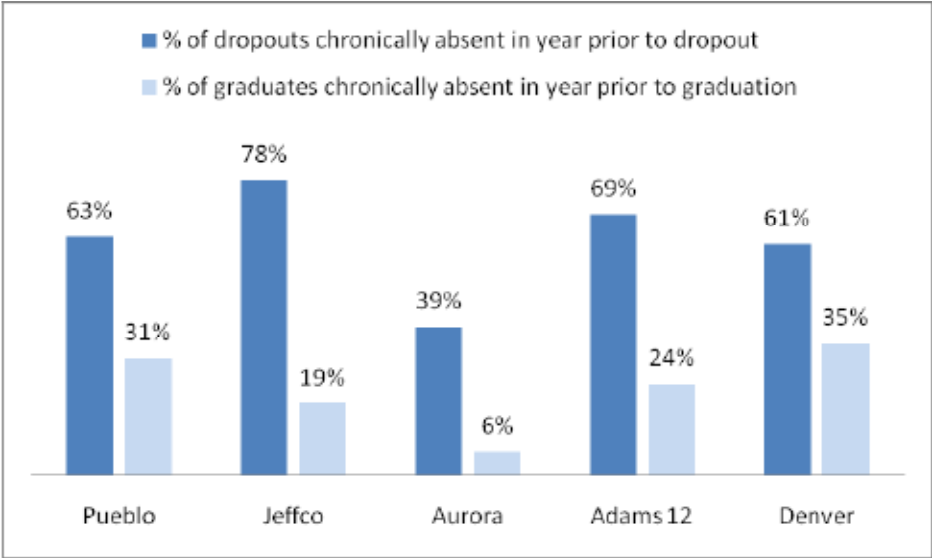
Behavior

Suspension data over the four year period 2003-04 to 2006-07 were available for four of the five districts. Dropouts were at roughly twice (and sometimes nearly three times) as likely as graduates in 2006-07 to have been suspended at least once over that four year period. In general, female dropouts had significantly lower rates of suspension than did male dropouts.

Figure 3.4 Percentage of Students with at Least One Suspension over Four Years, by 2006-07 Outcome Group and District

Course Failure
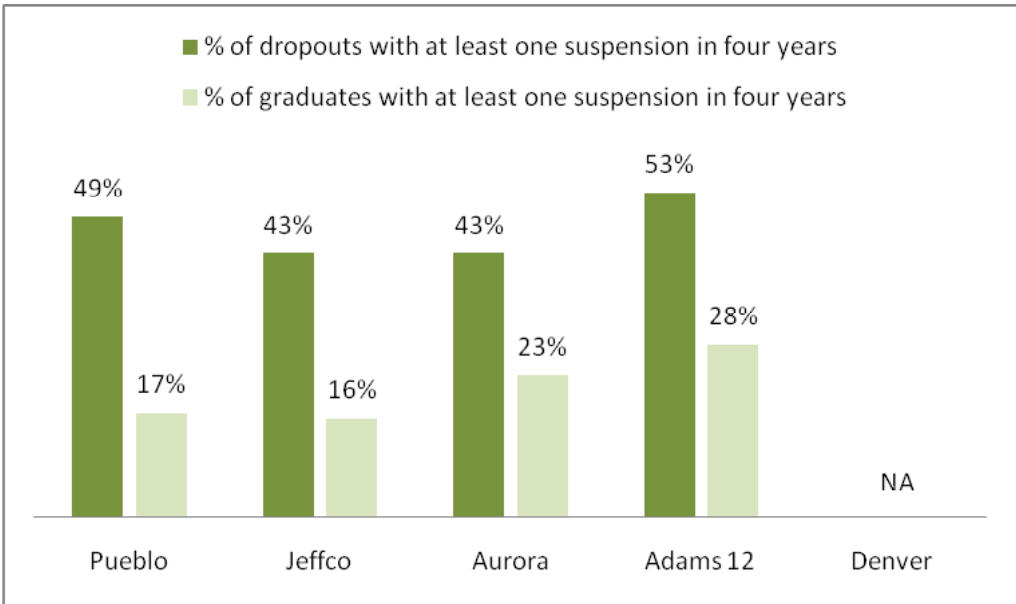
Ninth grade transcript data were available for most 2006-07 dropouts from all five districts. Analyses indicated that dropouts failed significantly more courses than did non-dropouts during their ninth grade year. In some districts female dropouts had somewhat lower levels of ninth grade failure than male dropouts, while in other districts there were no significant differences between male and female dropouts in the extent of ninth grade failure. Though recovery from ninth grade failure is indeed possible, the large majority of graduates had no ninth grade semester failures. Figure 3.5 summarizes how the incidence of ninth grade failure differentiates between dropouts and graduates.

Sufficient data on predictors of ninth grade course failure (particularly ninth grade attendance and eighth grade test scores) were not available for 2006-07 dropouts. As we point out in our analysis of course failure among current ninth graders (Section 4 below), ninth grade attendance is the strongest predictor of ninth grade course failure, followed by eighth grade test scores. (Middle school grades, shown in other research to be more important than test scores, were not available for analysis in most districts.) Controlling for these measures, females also have significantly fewer course failures (which helps to explain lower proportions of females than males among dropouts overall). In some but not all of the five districts, minority status remains a significant predictor of ninth grade failure, even controlling for attendance and eighth grade test score.

**Figure 3.5. Percentage of 2006-07 Dropouts and Graduates
with at Least One Ninth Grade Semester Failure**
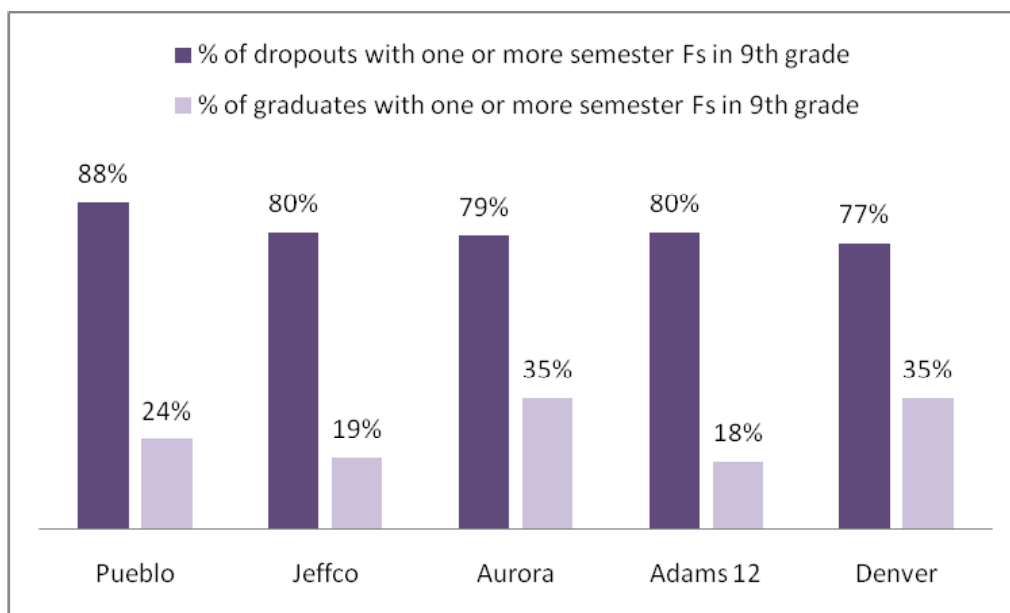
Analyses in the five districts indicated that few dropouts who had been in the district since ninth grade (and thus had ninth grade course failure data available) had no warning indicators (no ninth grade failures, no suspensions, and attendance of 90% or better in the year prior to dropout). Just 3 percent of dropouts in three of the districts had no warning indicators. In two of the districts with relatively higher poverty levels, ten percent of dropouts gave no early warning signals, which could indicate poverty-related "life event" reasons for a dropout outcome. Overall, however, the vast majority of dropouts were giving warning signals prior to dropping out.

Modeling Outcomes for 2003-04 Ninth Grade Cohort (Class of 2007)

For a more in-depth analysis of factors associated with a dropout outcome, and to obtain a more accurate calculation of the probabilities of graduation for different levels of dropout risk, we conducted a separate forward-cohort analysis of the 2003-04 ninth grade class (the class of 2007) in the three districts in which data were available. This analysis captured outcomes for all ninth grade students by the spring of their on-time graduation year.

Outcomes differed dramatically, depending on the number of ninth grade failures. Among those with zero ninth grade failures, the graduation rate (excluding students transferring out of the district) ranged from 77% to 88%. The graduation rate fell steadily for each successive semester course failure in ninth grade. Just 10 to 12 percent of those with five or more semester failures in ninth grade (two courses and a half-course) managed to graduate on time.   Figure 3.6 summarizes how the relationship between course failure and the proportion of students graduating on time is similar across Colorado districts and to results from Chicago (Allensworth & Easton, 2007).

Figure 3.6 Percentage of Class of 2007 Students Graduating from District within Four Years, By Number of Ninth Grade Semester Failures (Transfer students excluded)
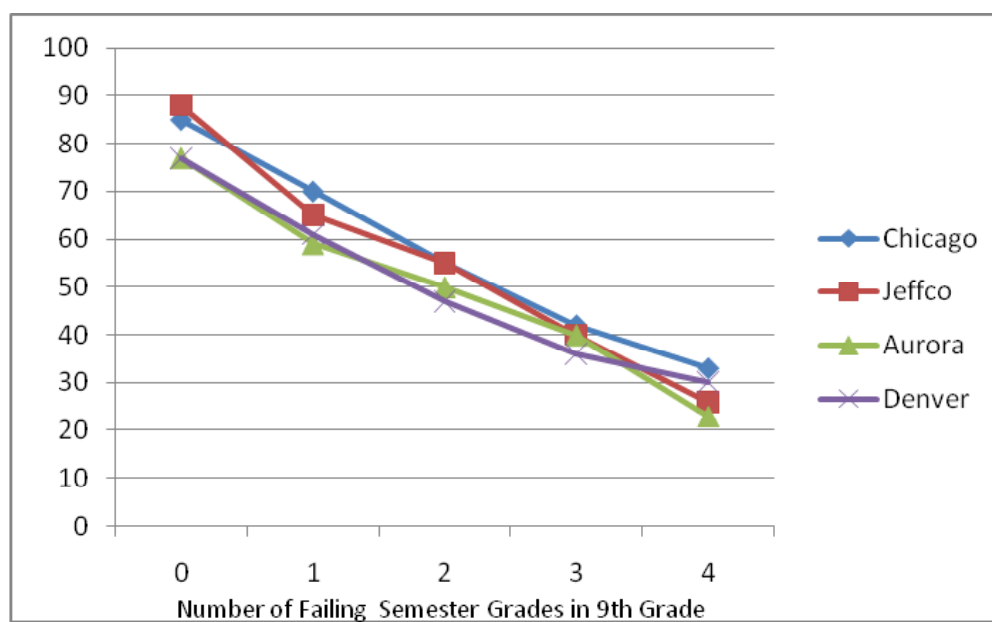
Modeling Graduation, Non-graduation, and Dropout Outcomes

We conducted statistical analyses[7] to model differences in outcomes by 2006-07 for students in the 2003-04 ninth grade cohort (Class of 2007) in these three districts, focusing on 1) Dropouts vs. graduates; 2) Graduates vs. Dropouts (the converse); and 3) Graduates vs. Non-graduates (dropouts, expulsions, GEDs, other non-district programs, still in school, maximum age; excluding regular transfers and death). Besides gender and ethnicity, analyses considered the impact of the number of ninth grade semester failures in 2003-04 on student outcome. Unfortunately, data on attendance were not available for 2003-04 (ninth grade year) in any of the three districts, and suspension data were available in only two of the three districts. Demographic variables besides gender and ethnicity were not available for all districts.

Analyses indicated a very strong relationship between ninth grade course failure and a dropout outcome. Though gender and ethnicity were still significant predictors of dropping out even after controlling for ninth grade failure, gender tended to drop out as a significant predictor when other factors (including ninth grade suspensions) could be controlled.

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[7] See Section 9 for a more detailed and technical description of these analyses.

In two of the districts there were enough high schools to conduct analyses taking into account that students were nested within schools in ninth grade (see Section 9 for a more detailed discussion). In addition to the effects of ninth grade failure and gender and ethnicity, there was a significant effect of school poverty rate (percent of low income students) on non-graduation outcomes. It is possible that students at higher poverty schools are more likely to have "life events" (e.g., the need to get a job or care for family members) that contribute to a dropout outcome, above and beyond the effect of course failure. Structural school variables (size and student/teacher ratio) were not significant, controlling for school poverty level. In addition, the relationship between ninth grade failure and non-graduation outcome varied significantly between schools. This would suggest that school-level practices could potentially have a moderating effect on the relationship between ninth grade failure and graduation outcome. Targeted interventions in response to course failure are likely to help students who have fallen behind in credits needed for graduation to catch up and graduate on time.

4. Dropout Risk Indicators among 2006-07 Ninth Grade Students

Since the preceding analysis of Colorado dropouts echoed findings from previous research regarding the importance of failure during the ninth grade year as a predictor of a dropout outcome, it is important to examine dropout risk factors in the current ninth grade (based on individual student level data from the 2006-07 academic year). While this analysis of current ninth grade students cannot (by definition) include actual graduation or dropout outcomes, it provides a current picture of the number and concentration of students who may be at risk of an eventual dropout outcome. It also provides useful data for targeting interventions to reduce dropout outcomes.

Attendance

As Chang and Romero (2008) have noted, relatively high rates of daily attendance can mask high rates of chronic absenteeism, because students tend to be absent on different days. In 2006-07 the percentage of ninth graders who were chronically absent (missing more than 20 days or attending less than 90% of the time, depending on the district) ranged from 19% to 64% (Figure 4.1).

Figure 4.1 Percentage of 2006-07 Ninth Graders Chronically Absent
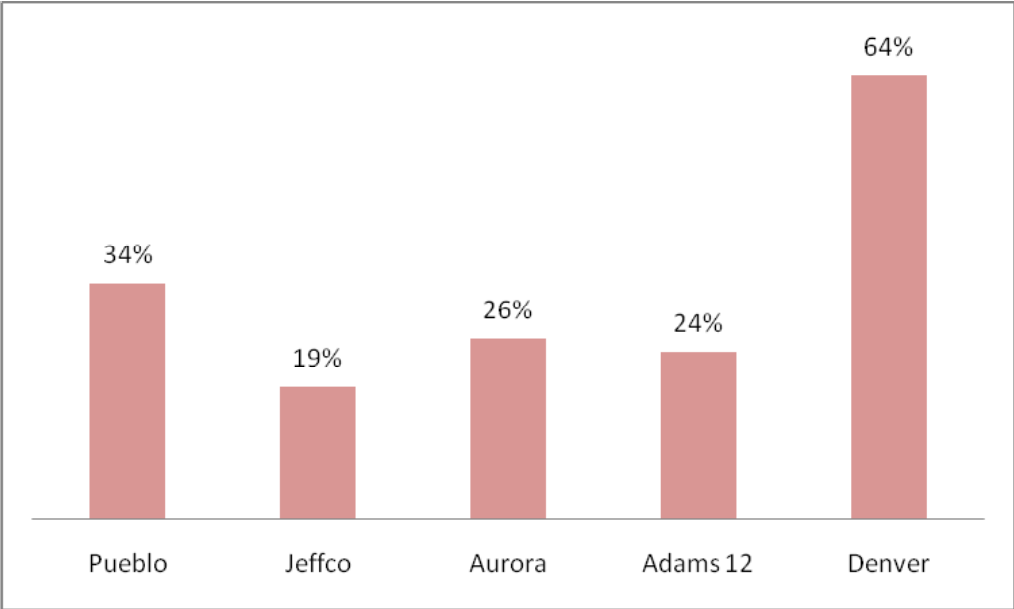
Behavior

As expected, the percentage of students manifesting the risk factor of at least one suspension during ninth grade was lower than those demonstrating attendance problems. As Figure 4.2 indicates, rates of suspension (percentage with 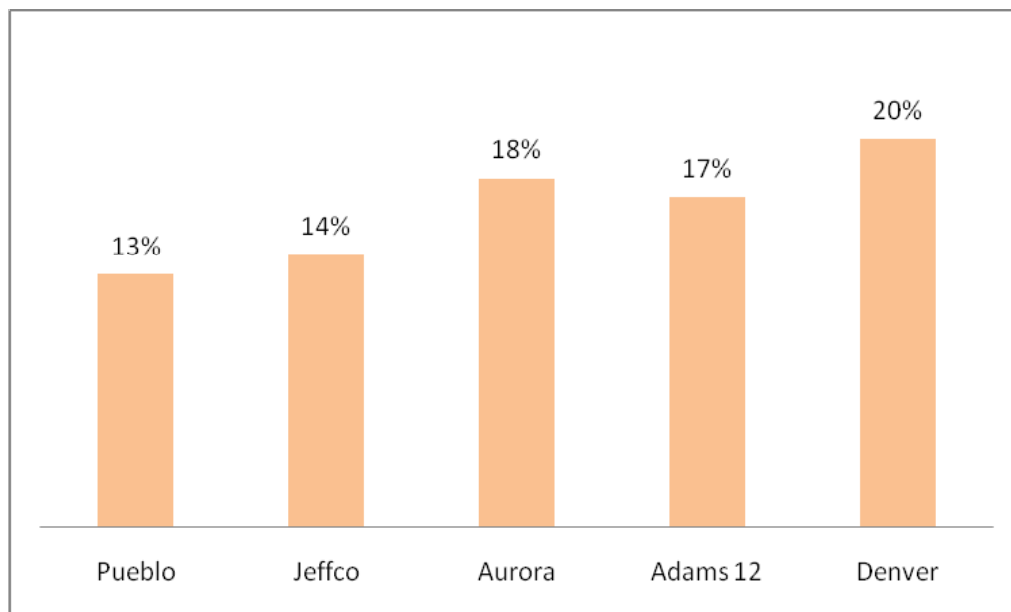one or more incidents) ranged from 13% to 20%. In general, those students with behavior problems generally also had problems with chronic absence, but there were many chronically absent students who did not manifest other behavior problems.

Figure 4.2 Percentage of Ninth Graders Suspended at Least Once During Ninth Grade Year (2006-07)

Semester Course Failures

Of the 2006-07 ninth graders in the five districts for whom course marks were available (ranging from 74% to 100% of students, depending on the district), the percentage with at least one semester failure during ninth grade ranged from 35% to 62%. The percentage with at least four semester failures ranged from 17% to 34%. Failure rates were higher among males than females, and among Hispanic and Black students than White or Asian students.

As expected, the number of semester failures was positively related to number of days absent. The size of the correlation ranged from 0.5 to 0.7, indicating that in some districts failure was less related to absences than in other districts.

Multivariate analyses indicated that attendance was by far the strongest predictor of ninth grade failure, though eighth grade test score was still significant. How students perform in classes reflects the effect of both their level of engagement/effort and their academic skills. (The effect of test scores on the dropout outcome tends to work through the impact of skills on course failure, rather than having a separate, independent effect). Gender was also a significant predictor (males having higher failure rates). Ethnicity, ESL status, overage status, and suspensions were not significant when these other factors were controlled.

Figure 4.3 Percentage of Ninth Graders with at Least One Semester Failure
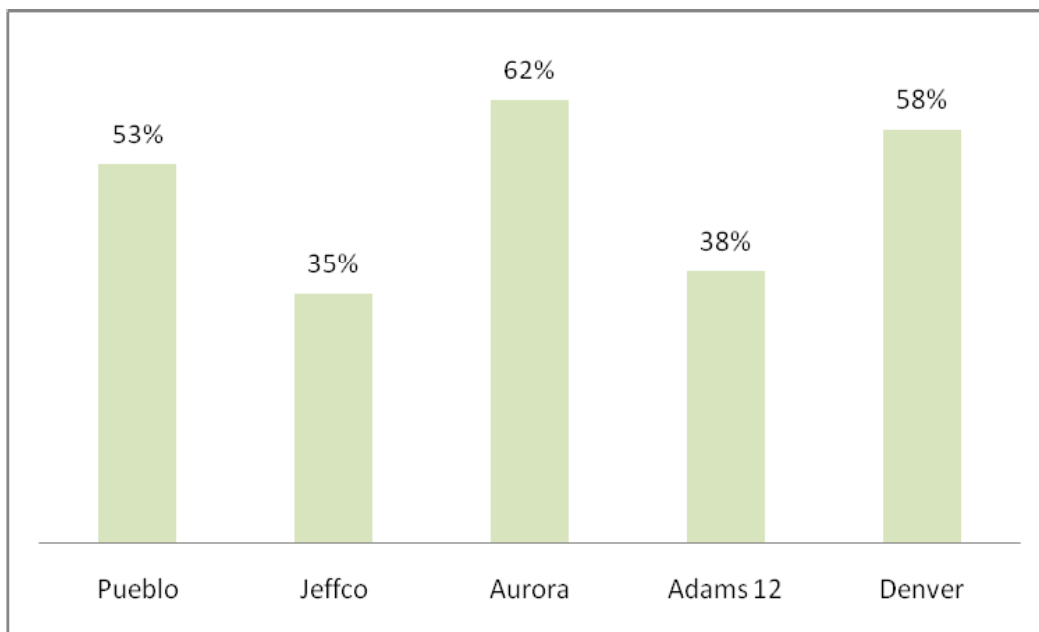
Summary

Large percentages of students are failing at least one ninth grade semester course, which is a key indicator of a potential dropout outcome. Failure is strongly associated with low attendance. Addressing all of these early warning signals with an effective intervention is an important step in seeking to reduce eventual dropout outcomes.

5. Dropout Risk Indicators among 2006-07 Middle School Students

The following analysis provides a snapshot of dropout risk factors in the middle grades, based on individual student level data from the 2006-07 academic year in the five districts. Building on prior research, we again focused on attendance, behavior, and course failure. Although this analysis of current middle grades students cannot (by definition) include actual graduation or dropout outcomes, it provides a current picture of the number and concentration of students who may be at risk of an eventual dropout outcome. It also provides useful data for targeting interventions to reduce dropout outcomes.

Attendance

Chronic absenteeism in middle school varied widely among the five districts. In 2006-07 the percentage of middle school students who were chronically absent (missing more than 20 days or attending less than 90% of the time, depending on the district) ranged from 10% to 43% (Figure 5.1). Since chronic absenteeism tends to increase between middle and high school, it is crucial to begin interventions early so that more students will stay on-track to graduation.

Figure 5.1 Percentage of 2006-07 Middle Graders[8] Chronically Absent
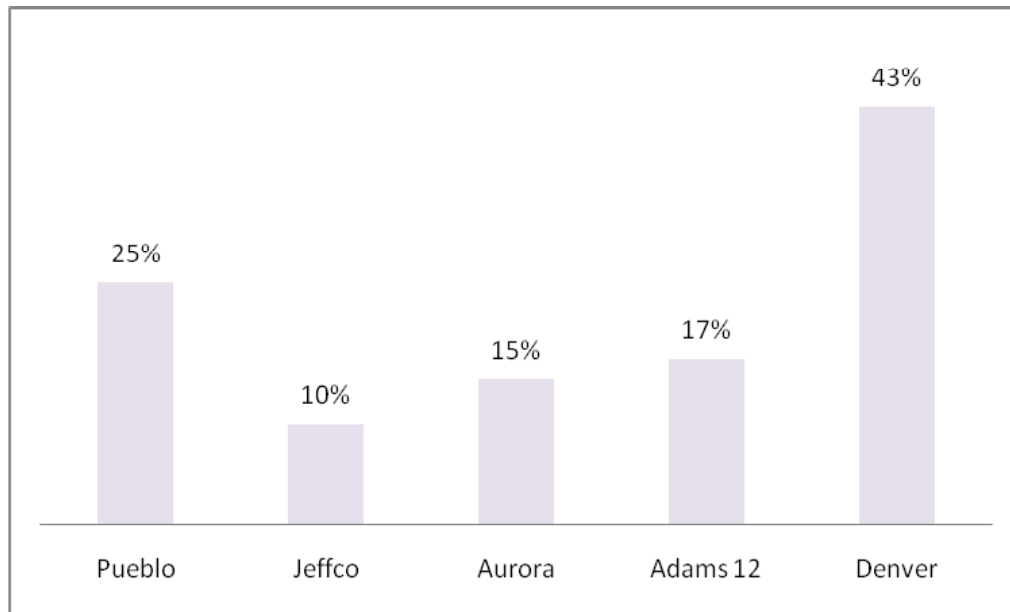
Behavior

Analysis of district data for 2006-07 indicated that the percentage of middle school students with at least one suspension ranged from 13% to 27% (Figure 5.2). Rates of suspension varied by gender (with boys having substantially higher rates than girls) and by ethnicity (with Native American, Black, and Hispanic students having higher rates than White students or Asian-Americans.

Figure 5.2 Percentage of Middle Graders Suspended at Least Once During 2006-07

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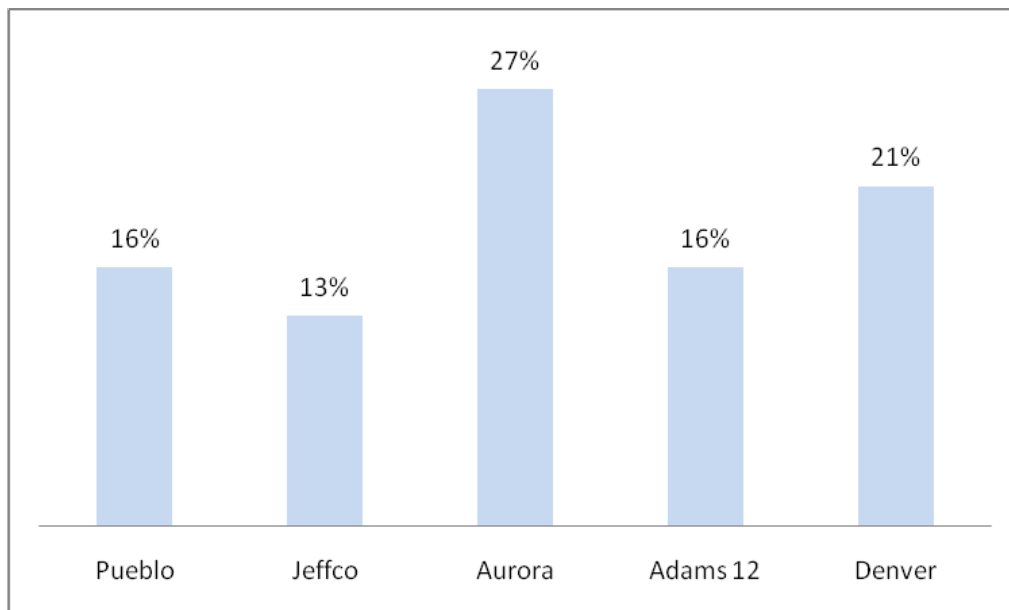
[8] This includes students in grades 6 through 8 in Pueblo, Adams 12 and Denver, and students in grades 7 and 8 in Jeffco. Although middle school in Aurora includes grades 6 though 8, the data available for this report were from grades 7 and higher.

Course Failure in the Middle Grades

Middle school course grades from 2006-07 were available for four of the five districts. The percentage of students in the first year of middle school (either sixth or seventh grade, depending on the district) who had the equivalent of one full year failure (including two semester failures or three trimester failures) ranged from 9% to 23% among the four districts (Figure 5.3). These rates were largely related to the relative percentages of students with demographic at-risk factors of high poverty or minority status. Failure rates varied substantially by ethnicity and were higher among Hispanic, African American and Native American students than among White or Asian students. Failure rates also varied substantially by gender, with more boys than girls receiving failing marks.

Figure 5.3 Percentage of First-Year Middle School Students with at Least Two Semester Failures
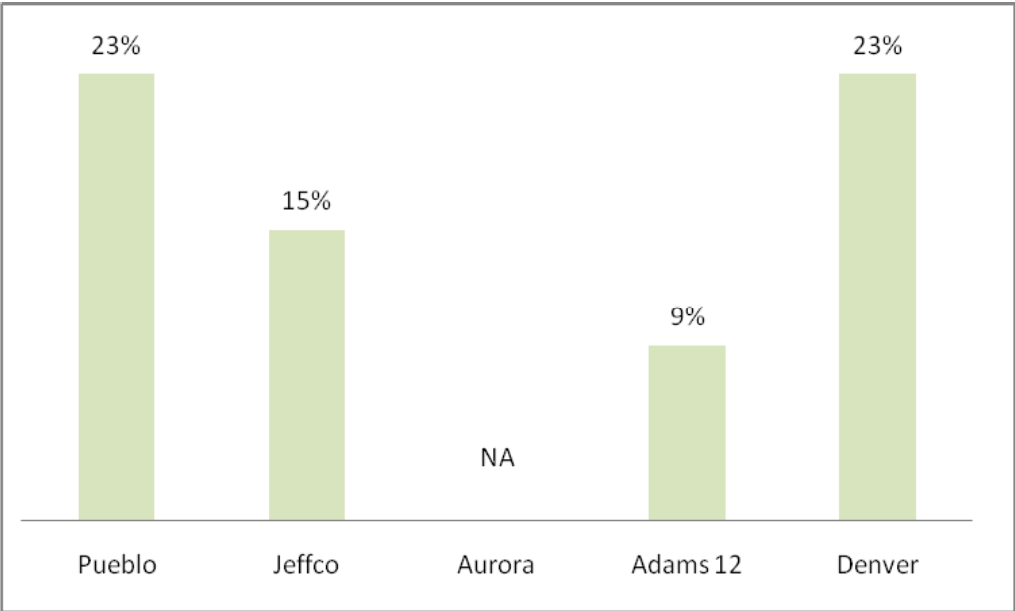
Summary

A third of sixth grade students are exhibiting at least one of the early warning indicators (poor attendance, behavior problems, course failure) in two of the districts, and as many as half appear to be at risk in another district. It is crucial to begin systematic interventions at the middle school level to help these struggling students improve their attendance, behavior, and course performance before the problems worsen and become even more difficult to address in the transition to high school.

6. Summary of Conclusions

This analysis has shown that the 2006-07 dropouts in each of the five districts were displaying behavioral warning signals several years prior to the dropout outcome. While not perfect predictors of a dropout outcome, these indicators distinguished dropouts from graduates rather dramatically.

Among the 2006-07 dropouts (with prior data) in the five districts:

- More than three in four had failed one or more semester courses in ninth grade (compared to between one-fifth and one-third of graduates with the same indicator)

- A large majority (in four of the five districts) displayed patterns of chronic absenteeism

- Nearly half (in four of the five districts) had been suspended at least once during the previous four years (compared to about half as many among graduates)

A second set of analyses in three of the five districts examined outcomes for all ninth graders in 2003-04, whose on-time graduation year would have been 2007 (the "Class of 2007"). These students could have dropped out any time from 2003 to 2007. (By contrast, the dropouts of 2006-07 could have been from several different cohorts of ninth graders.) Among this 2003-04 cohort of 9th graders (Class of 2007) in the three districts:

- The percentage of students with an on-time graduation outcome in 2007 declined steadily for each semester failure in ninth grade

- Excluding transfer students, three-quarters of those with zero failures graduated, compared to just 10 to 12 percent of those with five or more semester failures

- Just 22 to 29 percent of those with one or more semester failures graduated on time

These findings, together with those of multivariate analyses reported in the Technical Appendix, suggest that students are giving warning signals years in advance, which provide clear guidance for implementing interventions aimed at keeping students on track to graduation. Implementation of focused and integrated dropout prevention strategies <u>at the middle school and ninth grade levels</u> should reduce the percentage of students needing more expensive alternative settings. In particular, intervention focused around ninth grade attendance and ninth grade course failure (and preferably, prevention of ninth grade course failure) is a way to target students most likely to experience a dropout outcome.

While this type of intervention would also affect students who could potentially graduate without special measures (those ninth graders with one or more failures in 2003-04 who managed to graduate on time), such an approach would also yield beneficial effects (in improved readiness for post-secondary education) for the "false positives" thus identified. While there are a notable number of dropouts in each of the districts who have entered the district after ninth grade and have few, if any, warning signals available in the district data, the large majority of dropouts can be identified by these early warning signals. Given the amount of school choice that occurs in the state, it is important to note that as Colorado's data infrastructure grows, districts may eventually be able to identify students at-risk of dropping out as they transfer into the district as well.

Though it was not possible to link attendance in ninth grade and middle school to dropout outcomes with the data available, findings from a more recent ninth grade cohort suggest that course failure is closely linked to absenteeism, and that related interventions to increase student attendance are also crucial – not only in the ninth grade, but at the middle school level as well.

While this research in Colorado districts was not able to link ninth grade failure and dropout outcomes to course failure in the middle grades (because of lack of available data), research findings in other districts would suggest that academic interventions are also crucial at the middle grades level for those with failing marks, particularly in reading and mathematics.

Current Risk Indicators in Ninth Grade and Middle School

The percentage of current ninth grade students displaying risk indicators in these five districts varies widely, but a substantial number of students are falling off track even in districts with lower poverty rates. The percentage of ninth graders with at least one semester course failure ranges from 35% to 62%. Chronic absenteeism among ninth graders ranges from 19% to 64%. There is less variation in the percentage of ninth graders with at least one suspension (13% to 20%).

Despite wide variation at the district level, the risk indicators are also widespread at the middle school level. Between 10% and 43% of middle school students display a problem with chronic absenteeism. Suspension rates range from 9% to 23%. The percentage of students in the first year of middle school who have failed the equivalent of a full year's course ranges from 9% to 23%. A third of sixth grade students are exhibiting at least one of the early warning indicators (poor attendance, behavior problems, course failure) in two of the districts, and as many as half appear to be at risk in another district.

The extent to which current students in these five districts are displaying early warning signals of a potential dropout outcome suggests the need for timely interventions. We turn to a detailed discussion of recommendations in the following section.

7. Recommendations

Based on the findings from this study of dropouts in Colorado districts and current levels of behavioral risk factors among students in grades six through nine, we would argue that significant reductions in the dropout rate will require:

- Reducing the number of students failing high school courses, thereby increasing the percentage of students earning high school credits on time

- Decreasing absenteeism, which is strongly linked to course failure

- Addressing root causes of high absenteeism (and intervening effectively during the middle school years to increase attendance)

- Providing academic interventions in middle school so that students enter ninth grade prepared for high school course work

The following recommendations focus primarily on dropout prevention, but we also recognize the need for additional dropout recovery programs for students who are too old and too far behind in the number of credits needed for graduation to return to regular district high schools.

We recognize that many various dropout prevention strategies have already been attempted in the Colorado districts, and that components of the following recommendations are already in place. Our emphasis in these recommendations is on the need for a coherent, systematic, integrated approach that assures that all reforms are in place simultaneously and that no student falls through the cracks.

While specific dropout prevention recommendations may vary somewhat from district to district, depending on the extent and concentration of students with early warning signals of a potential dropout outcome, we recommend an over-arching three-pronged response plan for Colorado districts, focused on district middle and high schools. This response plan will require leadership from the district superintendent and school board and supportive guidance from central office administrators to individual school leaders. This ABC response plan calls for district and school leaders to:

- Analyze the strengths and weaknesses of existing district and school level policies and practices related to attendance, behavior, and course grading at the middle and high school levels and to credit recovery opportunities for students who are behind in credits and/or have already dropped out. This would also include analysis of district capacity to recover the large percentage of students who are failing to finish high school.

- Build consensus among school leaders and faculties on the need for research-based practices (e.g., teacher teaming, project learning, different types of grading systems, opportunities to make up missed work) that will help to prevent dropout outcomes through reducing absences, suspensions, and course failures and providing recovery opportunities for students before they drop out.

- Create integrated whole school reforms and school level student support structures that will assure appropriate, timely interventions to keep all students on track to on-time graduation. These support structures will require district-supported, user-friendly, real-time data systems that will allow schools to implement early warning systems and tiered interventions for struggling students (together with comprehensive, whole school reform that assures high quality, engaging instruction in every classroom, every day).

Before expanding on each of these recommendation components below, we outline our views on the roles of major actors in this process: 1) the State; 2) Superintendents and School Boards, 3) the district office, and 4) the individual school leaders.
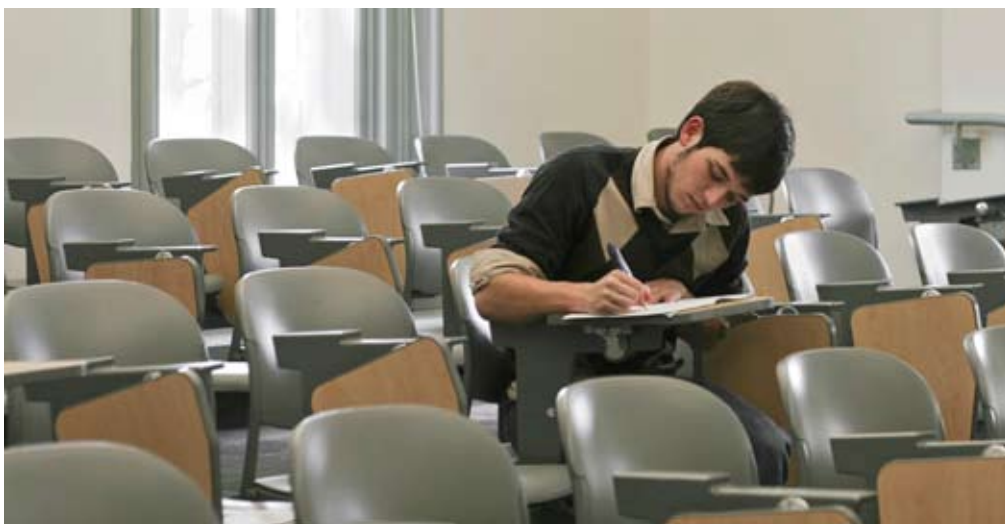
We view the role of the <u>State Department of Education</u> in this process as one of:

- Serving as an information clearinghouse for districts on best practices and research-based strategies for implementing reforms aimed at dropout reduction

- Providing a roadmap for districts to help them create comprehensive dropout reduction plans

- Helping districts identify and secure the necessary resources to implement effective, integrated approaches to dropout prevention. In particular, state leadership is crucial to help prevent the fragmentation of efforts often forced upon districts by various sources of funding that discourage integrated approaches and proliferate multiple disconnected programs that are much less effective

- Providing effective technical assistance to districts in:

  - <u>Analysis of policies/practices</u> related to dropout risk factors (attendance, behavior, course failure)

  - <u>Building consensus</u> about effective strategies (and the necessary changes in school- and teacher practices)

  - Logistics of <u>creating INTEGRATED school level structures based on strongly implemented whole school reform</u> that will assure appropriate/timely interventions to keep all students on track to on-time graduation, including

    - Helping districts identify which whole school reform strategies are most suited for schools that are producing most of their dropouts (a needs and capacity analysis), so that the chosen reforms are strong enough to match the scale and scope of the problem and schools have the capacity to implement the reform

    - Assisting districts (particularly small districts) in building data systems that will facilitate the construction of early warning and intervention systems

We view the role of the <u>Superintendent and School Board</u> in this process as one of:

- Establishing the priority of integrated steps to dropout prevention/increased graduation rates in the district

- Leading a district level analysis of how the dropout problem is concentrated within the district

- Holding central office and schools accountable for <u>analysis of policies/practices</u> related to dropout risk factors (attendance, behavior, course failure) and encouraging policy/practice revisions

- Taking the lead in <u>building consensus</u> about effective strategies (and the necessary changes in school- and teacher practices)

- Catalyzing central office and school leaders to <u>create INTEGRATED school level structures based on strongly implemented whole school reform</u> that will assure appropriate/timely interventions to keep all students on track to on-time graduation

In our view, the primary role of the <u>district (central) office</u> should be providing effective technical assistance to schools in:

- <u>Analysis of policies/practices</u> related to dropout risk factors (attendance, behavior, course failure)

- <u>Building consensus</u> about effective strategies (and the necessary changes in school- and teacher practices)

- Logistics of <u>creating INTEGRATED school level structures based on strongly implemented whole school reform</u> that will assure appropriate/timely interventions to keep all students on track to on-time graduation

    - Assuring timely provision of student level data for early warning systems and interventions (and assistance in data-driven decision-making)

    - Helping schools budget time and resources for effectively integrated structures

    - Assisting school instructional leaders in improving quality of classroom instruction

At the <u>individual school leader level</u>, there must be a commitment by all middle and high schools to participation in the process of:

- <u>Analysis of policies/practices</u> related to dropout risk factors (attendance, behavior, course failure)

- <u>Building consensus</u> about effective strategies (and the necessary changes in school- and teacher practices)

- <u>Creating INTEGRATED school level structures based on strongly implemented whole school reform</u> that will assure appropriate/timely interventions to keep all students on track to on-time graduation

Analysis of Existing Policies and Practices

While the community and school district may have implemented a variety of programs and initiatives to address the challenge of students leaving high school without a diploma, it is likely that there has not yet been a systematic assessment of policies and practices related in some way to this issue. <u>Such an analysis is a key foundation for data-driven decision-making at the district level</u> (Mac Iver & Farley-Ripple, 2009), and involves the following components:[9]

- Dropout Prevention and Intervention Policy Audit

- Classroom Experience Audit

- Dropout Prevention and Intervention Program Audit

- Resource Audit

The Dropout Prevention toolkit (companion document to this report) includes several tools and frameworks for these recommended audits.

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[9] These and many of the following recommendations are discussed in more detail in the Grad Nation guidebook (Balfanz, Fox, Bridgeland, & McNaught, 2008).

Building Consensus on Goals and Strategies

The process of establishing goals and strategies for dropout prevention and recovery will necessarily involve a period of consensus-building among school personnel and community stakeholders (NASSP, 2009). While few if any would question the value of dropout prevention and recovery in general as an overarching goal for a school district, there is likely to be much division over specific strategies. Certain realities that are generally kept under the surface must be confronted head-on. Underlying values and attitudes among some school personnel and community stakeholders may cause resistance to certain strategies designed to prevent dropout outcomes. For example, in a time of scarce resources there may opposition to using resources for personalized outreach to absent students or students at risk of failing a course. There may also be considerable disagreement over such ideas as allowing students to make up work missed during unexcused absences or to have an opportunity to retake tests on which they received an "F." The process of setting specific goals and strategies around dropout prevention and recovery will therefore necessitate some "town-hall" type meetings as well as numerous discussion sessions with school personnel aimed at providing information and persuasive arguments regarding potential strategies and allowing for extended discussion that will help to address underlying concerns and objections. Such a consensus building process could be led by a district-level team, with school level teams of individuals who already have a deep concern about the issue. The process needs to enfold over a substantial period of time, combining fact-finding and continuing dialogue as implementation begins. The Dropout Prevention toolkit (companion document to this report) includes several tools and frameworks for this process.

Creating integrated whole school reforms and student support structures

Emerging themes in education research (e.g., Balfanz, Herzog, & Mac Iver, 2007; Communities in Schools, 2008) echo the public health focus on a three stage (primary, secondary, and tertiary) pyramid prevention model. The primary base or foundation of such a prevention model involves district- and school-wide (universal) reforms aimed at providing quality instruction that promotes engaged learning and successful high school completion ready for college and/or career. In addition, the primary foundation includes a whole school approach to encouraging regular attendance and other positive behaviors (similar to the Positive Behavioral Interventions and Supports or PBIS framework). These primary prevention strategies often succeed alone with a large majority (two-thirds to three-quarters) of students. At the secondary level of the prevention model are targeted efforts for smaller groups of students who need additional supports beyond the school-wide reforms to address attendance, behavior, or academic struggles. The tertiary level of such a prevention model involves intensive intervention efforts (often at the one on one level, involving specialists in social work, mental health, etc.) for the 5% to 10% of students who need more clinical types of supports. This model can be depicted graphically as:

Three-Tiered Prevention Model for Schools
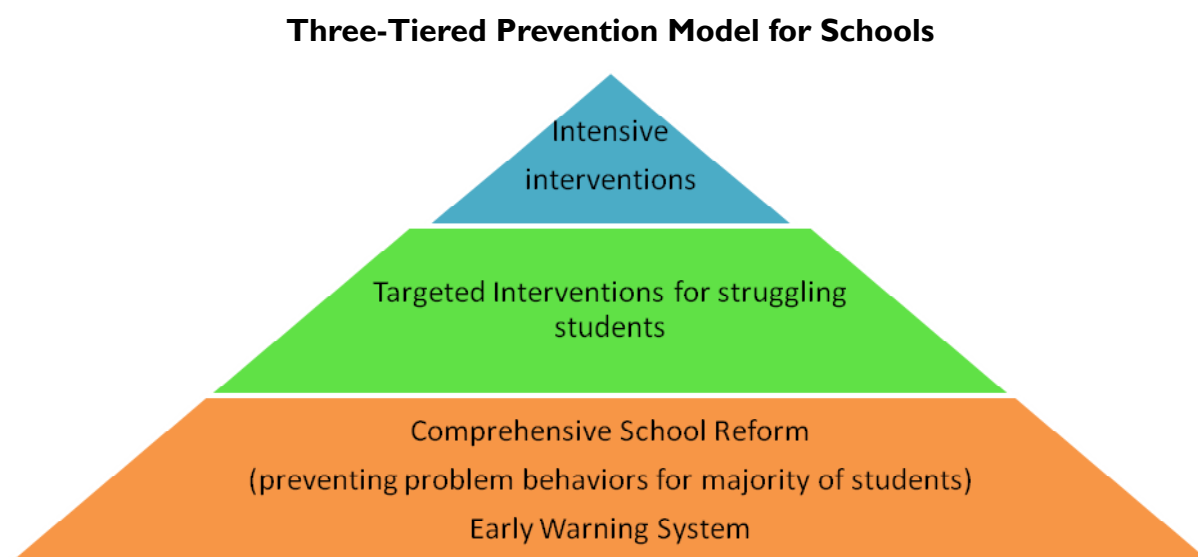
It is important to emphasize that this three-tiered prevention model must address the ABCs of attendance, behavior, and course performance (academics). These ABCs are the "triangle on the pyramid."

Primary Level

The base or foundation of the prevention model pyramid involves assuring that high quality instruction is happening in the classroom each day for students, and that school level structures are in place to promote positive behaviors (including high attendance) and a positive learning environment for students. This emphasis on school-wide instructional excellence and coherence, as well as school-wide positive behavior systems, is a crucial foundation for assuring student success (and preventing dropout outcomes). A primary component is staffing classrooms with highly qualified teachers, as "teacher quality" tends to explain the most variation in student achievement apart from home and family variables (e.g., Greenwald, Hedges & Laine, 1996). Teachers must also be equipped with collaborative professional development opportunities that focus specifically on the content and pedagogy relevant to the classes they are teaching. Key components of effective professional development include: a focus on content learning, opportunity for active learning; and coherence with other learning activities – delivered in a sustained format to a collective group of teachers from the same grade, school, or subject (e.g., Elmore, Peterson, & McCarthey, 1996; Garet, Porter, Desimone, Birman, & Yoon, 2001; McLaughlin & Oberman, 1996). Professional development efforts that target a handful of teachers or particular subject in a particular grade may lead to "pockets of excellence" but they do not create successful learning communities (Knapp, 1995). Continual technical assistance and follow-up are also crucial.

In addition, teachers need standards-based curricular materials, engaging lesson plans, and assessment materials that will enable them to tailor instruction to student needs. The need for <u>relevant curriculum</u> to keep students engaged and motivated cannot be overemphasized, given focus group findings from dropouts regarding how "uninteresting classes" contributed to their dropout decision (Bridgeland, Dilulio, & Morison, 2006). Growing evidence indicates the importance of school-wide consistency and coherence in curriculum and instruction rather than the hodgepodge of materials both within the same grade and across grades found in many schools (Newmann, Smith, Allensworth, & Bryk, 2001).

To be effective, instruction must also take place in a "personalized and orderly learning environment" (Herlihy & Quint, 2009, p. 1). School leaders need to be equipped to provide a supportive learning climate for both students and teachers so that achievement can be maximized in a pleasant work environment for all. The Positive Behavioral Interventions and Supports (PBIS) program provides an increasingly research-based public health model of how to implement a school-wide preventative program dealing with behavior issues (Barrett, Bradshaw, & Lewis-Palmer, 2008; Muscott et al., 2004; Reinke, Splett, Robeson, & Offutt, 2009). School-wide initiatives to create a positive school climate will help to prevent problem behaviors and the need for suspensions, which are closely linked to increased risk of dropout.

Building a positive school climate also necessarily involves building strong connections with students' families, which continues to be a challenge for secondary schools (Mulhall, Mertens, & Flowers, 2001; Juvonen et al., 2004), despite the progress made through such organizations as the National Network of Partnership Schools (Epstein, Sanders, Simon, Salinas, Jansorn, & Van Voorhis, 2002). Since parents tend to lessen their involvement in their children's schools as they grow older, it is essential that middle and high schools make intentional outreach to families a high priority.

To see results in students' academic progress, all these things must be happening simultaneously, integrated together in a systematic way (Keltner, 1998; Miron, St. John, & Davidson, 1998). So the challenge is not simply to recruit, retain, and develop highly qualified teachers, and improve curriculum, instruction, assessment, and school climate -- but to do all these things simultaneously throughout entire schools, across all grades and all subjects. Accomplishing this in schools that face extreme conditions of high mobility and high concentrations of poverty usually requires considerable technical assistance. When more than half (and often more than three-quarters) of ninth graders enter high school with risk factors (low middle school attendance, significantly below grade level reading and math proficiency, prior course failure and/or retentions, etc.), these "overstressed" high schools have considerable difficulty in adapting to respond to such overwhelming needs (Herlihy & Quint, 2009, p. 1). Over the past couple of decades, technical assistance has come from comprehensive school reform (CSR) models as well as district office initiatives.

Comprehensive or whole school reform models have sought to address common problems faced by many low-performing schools, including a "lack of coherence among instructional and related activities," and "lack of information, knowledge, and skills needed for effective reform" (Aladjem & Borman, 2006; Borman, Hewes, Overman & Brown, 2003). Schools that continue implementing a CSR model over a three to five year period tend to perform better than comparison schools, but much is dependent on level of implementation, particular CSR model, and achievement domain and grade level considered (Zhang, Fashola, Shkolnik, & Boyle, 2006).

Comprehensive (whole school) reform models at the middle and high school level share many key principles in common (e.g., personalization, creation of small learning communities, improving instructional practice through extensive professional development), but often differ considerably on the extent to which they provide specific curriculum and instructional support to teachers (see Mac Iver, 2007, for a more detailed discussion).

Herlihy and Quint (2009) summarize specific practices from four different high school reform models (Talent Development, Career Academies, First Things First, and Project GRAD) that are seeking to help high poverty schools to improve student achievement and graduation rates (with varying rates of success thus far).

- To address the goal of "creating a personalized and orderly learning environment," a widely regarded "best practice" in high school reform (Legters, Smerdon, & Early, 2009), these reform models advocate small learning communities (SLCs), including theme-based (and career-based) communities and (for Talent Development) separate ninth grade academies. Talent Development emphasizes the need for these small learning communities to involve <u>interdisciplinary teacher teams who share responsibility together for a group of students</u>. Another practice common to several of these models is connecting students to a faculty advisor or other school-based adult advocate. These practices appear to be necessary but not sufficient to improve student achievement, as they increase students' sense of attachment to school, but not necessarily their achievement.

- Besides personalization, these models specifically address improvement of instructional content and practice. In addition to high quality professional development for faculty, some of the models (particularly Talent Development) also provide curricula and lesson plans to help assure that teachers faced with overwhelming numbers of underprepared students don't have to spend additional time finding materials to create their own lessons.

- To assist schools with large number of students entering high school with poor academic skills, some models (particularly Talent Development) designed elective "catch-up" courses in reading and mathematics and encouraged double-blocked (90 minute) class schedules to provide more time for students to master core skills (while earning full credits toward graduation). Such elective catch-up courses have also been implemented at the middle grades level by Talent Development Middle Grades schools.

- To "prepare students for the world beyond high school" (Herlihy & Quint, 2009, p. 6), the reform models have introduced career-focused academies or small learning communities with career-focused courses, as well as other curriculum (e.g., Talent Development's "Freshman Seminar" and "Reading and Writing in Your Career") with specific connections to future careers. Some of these models also provide career awareness activities and internships through structured partnerships with employers. Project GRAD offers the opportunity for summer coursework on college campuses as well as college scholarships.

- Lessons learned from the implementation of these models in "overstressed high schools" include the need for skilled leadership, school district support, and often additional technical support from external service providers.

There is growing evidence that such reforms are associated with higher rates of attendance, higher rates of course passing, and higher rates of high school graduation (e.g., Balfanz, Herzog, & Mac Iver, 2007; Kemple & Snipes, 2000; Kemple, Herlihy, & Smith, 2003; Kemple, 2004; Mac Iver et al., 2010; Quint, Bloom, Black, Stephens, & Akey, 2005; Snipes, Holton, Doolittle, & Sztejnberg, 2006), though as Herlihy and Quint (2009) point out, there remains a long way to go to increase graduation rates for urban students.

The important role of the central office in supporting particularly "overstressed" schools has recently received more focused attention (e.g., Hightower, Knapp, Marsh, & McLaughlin, 2002; Mac Iver & Farley, 2008). Lessons learned from some of the comprehensive school reform models (e.g., Mac Iver & Balfanz, 2000; Herlihy & Kemple, 2003) have begun to be scaled up to the district level in cities like Philadelphia (Mac Iver & Mac Iver, 2006), New York District #2 (Elmore & Burney, 1997; D'Amico, Harwell, Stein, & van den Heuvel, 2000), San Diego (Darling-Hammond et al., 2002; Hightower, 2002) and others (e.g., Snipes, Doolittle, & Herlihy, 2002;). The increase in Philadelphia's graduation rate (Swanson, 2009) may be due, at least in part, to district adoption of these comprehensive reform practices (Neild, 2009a).

In short, schools in which large numbers of students have been falling off-track to graduation will probably need support from the district office or external partners (e.g., CSR model developers; state department of education technical assistance teams) to assure a strong primary foundation providing excellent instruction in every classroom, every day. A continual process of evaluating the instructional experience of students in the school (not just their test score achievement outcomes) and taking action to make the necessary improvements is a crucial component of establishing a strong primary foundation in this dropout prevention model (Mac Iver & Farley-Ripple, 2009).

The primary barriers or logjams that need to be addressed for the primary foundation of this tiered prevention model to function effectively include:

1) A commitment to team responsibility for students must replace what is too often an individualistic teacher culture.

2) TIME must be provided for teams to engage in common planning and solution building (Creative use of elective period time can accomplish this).

3) DATA on students must be provided to school leaders and teams in a timely and user-friendly way so that interventions can be carried out.

4) Teams must be supported and empowered to act to deliver high quality instruction every day and to carry out interventions.

The Need to Add an Early Warning System to the School-wide Foundation

Even when schools have a solid foundation of high quality instruction in every classroom, every day and positive behavioral supports in place school-wide, there will still be some students who need additional support. No matter how good the classroom instruction and school climate, some students will exhibit problem behaviors and low achievement. Many if not most of these students just slip through the cracks in most schools.

For this reason, it is essential for schools to add a data-based early warning system as a foundational, school-wide practice aimed at identifying which students are particularly at risk of failing to arrive at high school graduation so that interventions (at the secondary and tertiary levels of the dropout prevention model, discussed below) can be effectively carried out. A series of studies identifying early behavioral indicators of a dropout outcome (e.g., Allensworth & Easton, 2005, 2007; Balfanz & Herzog, 2005; Balfanz, Herzog & Mac Iver, 2007; Neild, Stoner-Eby, & Furstenburg, 2001; Roderick & Camburn, 1999) laid the groundwork for the call for early warning systems, now increasingly echoed in reports from policy-focused organizations like Achieve, Inc. and Alliance for Excellent Education (e.g., Jerald, 2006; Kennelly & Monrad, 2007; Pinkus, 2008). Such an early warning system, like the tools now in place throughout Louisiana and in the Chicago and Boston public schools (National Governors Association, 2008; Gewertz, 2009), includes data such as prior attendance, test scores, course failures, and suspensions (ideally in manipulatible files) that indicate students in need of intervention to keep them on track to high school graduation.

In response to the studies conducted by Hopkins researchers, the district of Philadelphia has assigned a prominent role to Early Warning Indicators (EWI) in its strategic planning. They have integrated the middle grade EWI's into the district data system so teachers, parents and even students can access them. Communication briefs to parents have emphasized the importance of the EWI's in middle schools, asking parents to pay attention to them and ask the school how their student is doing on them.

The district is planning for its data system to include EWI's for every grade span (elementary, middle and high), and plans to hold principals accountable for progress on them. In addition, the district is actively seeking ways to bring a multi-tiered support system to scale in their most impacted middle and high schools.

As we discuss in detail below (in describing our current work in Philadelphia, in partnership with the Philadelphia Education Fund, City Year, and Communities in Schools), early warning systems need to be coupled with an effective intervention system carried out at the secondary and tertiary levels of this three-tiered dropout prevention model. Of course, if the early warning system indicates that more than 25 to 30 percent of students have an early warning indicator and need secondary or tertiary level interventions, this suggests that further reforms to the primary foundation are still needed (and probably at feeder schools as well). Stronger school wide efforts aimed at preventing these early warning indicators from developing are essential, since resources for carrying out interventions for more than 30 percent of the students are unlikely to be available.

Secondary and Tertiary Levels

As in public health models, universal practices aimed at dropout prevention (at the primary level) will ideally be successful for the large majority of students. But secondary and tertiary levels of intervention are necessary to address the needs of students who are not successful with whole-school practices alone. The three-tiered model assumes that schools will seek to address problems first with targeted interventions (at the secondary level), moving to more intensive interventions (at the tertiary level) only when those have not proved effective. It also provides a way for all types of interventions to be coordinated together in an integrated way, replacing the patchwork of independent programs that may often allow students to fall through the cracks, or even work at cross-purposes with each other in a fragmented, ineffective fashion. While this tiered intervention approach is similar to the Response to Intervention (RTI) model and to Positive Behavioral Intervention and Supports (PBIS) models, it emphasizes an integrated approach to academic and behavioral problems that is not generally seen in implementations of RTI or PBIS. Researchers and practitioners are only beginning to link these together systematically (Sandomierski, Kincaid, & Algozzine, 2009; Sugai, 2007; Sugai & Horner, 2007).

As Duffy (2007) notes, RTI has been primarily used at the elementary level to identify students with learning disabilities. More broadly, however, "the RTI approach means students are more regularly monitored to determine progress, and scientifically based instruction and intervention are more regularly customized to meet individual student needs" (Duffy, 2007, p. 2). The standard approach to RTI involves "a series of steps – assess, identify problems, intervene, and assess" (Duffy, 2007, p. 5). While this process is usually focused on discrete skills, it has also been used to identify students reading behind grade level who are then assigned to an additional core literacy workshop upon entry into ninth grade. One challenge in implementing and scaling up our proposed three-tiered intervention model will be helping principals and teachers distinguish between the goals of "identification for special education services" and the provision of sequential interventions designed to help students stay on track to graduate from high school. In addition, it will be necessary to move away from a discrete skills-based approach (the most common use of RTI) to focus on students' ability to integrate skills and knowledge to produce intellectual products of value -- skills that are not captured by the kind of testing currently used in RTI approaches (and in state-mandated testing more generally).

Positive Behavioral Interventions and Supports (PBIS) is also based on a three-tiered public health prevention model, with secondary and tertiary levels of intervention for students who do not respond positively to the school wide program (Reinke et al., 2009). The secondary ("selected") level involves small group interventions, while the tertiary ("indicated") level involves individualized interventions. Collaboration with families is also a crucial component of the PBIS model, particularly at the secondary and tertiary levels.

The "Check and Connect" program, reviewed favorably by the What Works Clearinghouse studies of dropout prevention (IES, 2009; Sinclair, Christenson Lehr, & Anderson, 2003), is an example of a tiered intervention program based on close monitoring of student performance, and provisions of interventions for attendance, behavior, and academic course performance. This combination of monitoring and intervention in all three areas begins to address the needs of schools for an integrated approach that we develop more fully below. Our integrated model of dropout prevention adds the strong primary foundation of comprehensive reform practices not included as part of the Check and Connect program.

The key advantages of distinguishing between targeted and intensive interventions is that schools avoid costly intensive interventions by first attempting targeted interventions with small groups of students sharing similar problems. For academic (course performance) issues, provision of extra-help academic labs (elective replacement courses, particularly in math and literacy) for small groups of students (12 to 15) can avoid costly one-on-one interventions. Several elective laboratory courses (e.g., CATAMA, ALFA, Savvy Readers Lab) for students needing additional assistance in math or reading while they continue in their regular core classes have been developed, implemented and evaluated by researchers at the Everyone Graduates Center at Johns Hopkins University (e.g., Mac Iver, Balfanz, & Plank, 1998; Roe, 2006; Mac Iver et al., 2010). Targeted small group intervention for attendance and behavior problems can provide solutions before these problems become intensive issues requiring more expensive interventions. Tertiary level interventions would generally require social services providers and a one-to-one ratio to address student needs. The barriers or logjams that need to be addressed at the secondary and tertiary levels are primarily related to time for interventions to be implemented (e.g., adding extra help elective replacement courses to the school schedule) and human resources to implement them. In addition, the right match of intervention to student need is critical.

Implementing an Early Warning System with Tiered Interventions

How can middle and high schools be organized to provide supports across multiple domains (attendance, behavior, and course performance) to all students who need them? Our recommendation, based on work piloted in Philadelphia (Herzog, 2009; Mac Iver & Mac Iver, 2009) and expanding to several additional districts (Everyone Graduates Center, 2009), is a teacher-friendly early warning system (at both the middle school and ninth grade levels) that alerts teachers and administrators as soon as students begin to demonstrate behaviors which, if left unattended, will begin to push them off the path to graduation. This early warning system is linked to a tiered response system that combines both prevention and intervention strategies and steadily increases the intensity of supports until the student is back on the right path.

The key components of this early warning system are:

1. Provision of regularly updated warning indicator data (from routinely collected student data) on each student to teachers and administrators;

2. Regular (bi-weekly) meetings of school personnel teams to discuss students with warning indicators, plan interventions, and follow up on implemented interventions (making changes as indicated);

3. Organization of a "second team of adults" (including community service interns and volunteers as well as social services professionals) to assist in delivery of interventions for students showing warning indicators.

The Dropout Prevention toolkit (companion document to this report) includes more detailed description of the frameworks and tools for the early warning and intervention system.

Establishment of these three-tiered systems, with strong primary foundations and effective tiered interventions tied to an early warning system, must begin at the middle school level (if not the elementary level as well). Prior research has shown that as many as half of high school dropouts can be identified by middle school problems in attendance or behavior or failure in reading and mathematics. Such an early warning and intervention system is also essential at the ninth grade level, which is where course failure throws students off-track to graduation and leads all too often to a dropout outcome. It is also crucial that such a system continue throughout the high school years to address problems faced by students after ninth grade. The chart on the following page summarizes promising prevention and intervention strategies at each of the three levels for attendance, behavior and course failure.

Summary

We have argued that prevention of a dropout outcome requires a focus on the ABCs of Attendance, Behavior, and Course Failure. Our recommendations for action also follow an ABC format:

- Analyze existing policies/practices related to credit recovery opportunities and to attendance, behavior, and course grading at the middle and high school levels

- Build consensus among school leaders and faculties on goals and strategies for dropout prevention (reducing absences, suspensions, and course failures) and dropout recovery.

- Create integrated whole school reforms and school level student support structures that will assure appropriate and timely interventions to keep all students on track to on-time graduation and provide credit recovery opportunities to maximize the number of students with high school diploma outcomes.

This is a doable task, even in times of scarce resources. The dividends – in more high school graduates who are making a contribution to society – are well worth the effort and investment required.

Comprehensive Plan for Keeping Students on the Graduation Path

Type of Intervention	Focus of intervention		
	Attendance	**Behavior**	**Course Failures**
School-Wide (All Students)	Every absence brings a response Create culture which says attending every day matters Positive social incentives for good attendance Data tracking at teacher team level	Teach, model, expect good behavior Positive social incentives and recognition for good behavior Advisory Data tracking at teacher team level	Research-based instructional programs In-classroom implementation support to enable active and engaging pedagogies Data tracking at teacher team level
Targeted (15-20% of Students)	2 or more unexcused absences in a month brings brief daily check by an adult Attendance team investigates and problem solves, why isn't student attending (teacher, counselor, administrator, parent)	2 or more office referrals brings involvement of behavior team Simple behavior checklist brought from class to class checked each day by an adult Mentor assigned	Elective replacement extra help courses-tightly linked to core curriculum, preview upcoming lessons, fill in knowledge gaps Targeted reduced class size for students whose failure is rooted in social-emotional issues
Intensive (5-10% of Students)	Sustained one on one attention and problem solving Bring in appropriate social service or community supports	In-depth behavioral assessment-why is student misbehaving Behavior contracts with family involvement Bring in appropriate social service or community supports	One-on-one tutoring

8. District Responses

In this section, districts describe how they are responding to the findings in the more detailed district level reports they received. Districts also describe their other efforts focused on dropout prevention and recovery, and the key lessons they have learned thus far.

Adams 12 Five Star District

What has been the biggest benefit of participating in this study for Adams 12?

- Stimulating discussion and generating a problem-solving spirit at the district and school campus level.

- Quantifying what we knew intrinsically but hadn't pinpointed regarding the impact attendance, behavior and course credits has on Adams 12 students from an early age.

- Broadened the discussion from a focus on attendance to focusing on all three behavioral components.

- Increased collaboration with colleagues and non-school agencies from other districts who are dealing with similar challenges.

What is Adams 12 doing to respond to the information in the study?

- Meeting with National Center for School Engagement (NCSE) representatives to consider partnership.

- Creating a "Continuum of Options" committee to action plan around dropout prevention and intervention. First tasks will be to conduct an inventory of current services and supports available to prevent attendance, behavior and course failures and to conduct a policy audit at all schools.

- Seeking meeting with legislators to review "disincentives" in current accountability process for working with dropped out or highly at-risk students.

- Action planning to revive a "Bridge" transitions program for students in transition to / from / or between schools or otherwise at-risk of disconnecting from district.

What other initiatives is Adams 12 engaged in that will help prevent, recuperate, and recover dropouts and increase the district's graduation rate?

- Individual schools have worked to beef up monitoring of risk factors and targeted interventions.

- Switched to Central Enrollment allowing more consistent monitoring of enrollments.

- Small pilot of online alternative program.

- Expansion of Gateway to College program for juniors and seniors – 100 spots currently available.

- Final year of an EARSS grant to fund county-wide truancy reduction collaborative.

- Starting 3rd year of a federal Safe Schools Health Students (SSHS) grant of approximately $9 million over 5 years.

- Out of the SSHS grant bloomed the Adams County Youth Initiative with over 25 partner agencies. The initiative's goals are simple -- to increase graduation rates and decrease the percentage of youth who become involved in the juvenile justice system.

- Over 25,600 students in Adams County and 14,600 in Adams 12 participated in a school safety and climate survey last year. This will be administered again later in September 2009.

- Continued focus on building, district and county truancy prevention and intervention.

- Increased focus on alternatives to suspension and expulsion to minimize disciplinary exclusions while increasing students' skills and strategies for effective behavior.

- We have 17 elementary schools using the L2 - Learning Together peer tutoring program, which uses underperforming or at-risk tutors (usually 4th or 5th graders) to tutor similar younger students (usually 3rd grade). Each school has a teacher coordinator and serves between 10 and 30 students.

- We're using our C.A.I. Computer Assisted Instruction Program, which has traditionally been accessible for only expelled students, to provide transition and recovery services for dropouts or late comers needing assessment before being enrolled in large, comprehensive schools.

- Each of our 5 comprehensive high schools is also piloting a program using "Compass" software for in-building, real-time credit recovery when kids fail quarters of classes vs. waiting until semesters are lost.

What information would Adams 12 share with other districts looking to make progress in this area – what are some key lessons learned thus far?

- Dropouts aren't a school issue or a single district department issue – they're a community issue. We're recognizing that there's no "one size fits all" remedy.

- Data alone may not be a catalyst to change, but it can be a good starting place.

Aurora Public Schools

What has been the biggest benefit of participating in this study for Aurora?

The emphasis of VISTA 2010 is on results. It identifies our obligation to develop an organization where all students can learn and succeed. We launched our transformation efforts on three fronts: organizational structure, technology and our concept of operations for instruction. Although the description of this process is presented in linear fashion, it is essential to understand that the execution of each component is delivered as an integrated enterprise system. Each part is connected to and related to every other action. The absence of one element weakens the entire structure. We can modify the pieces as needed, but we must recognize the importance of setting a course and staying with it.

The Hopkins study has allowed the Aurora Public Schools to leverage clear and concise data to strategically set and meet our goals and objectives in VISTA 2010. We have excellent information about our current dropouts and our students at risk of dropping out. This information has driven subsequent action through which interventions are taking place for both cohorts.

What is Aurora doing to respond to the information in the study?

The Johns Hopkins study has confirmed that the three reasons most students drop out of middle and high schools is as simple as A B C: attendance, behavior or credit deficiency. We decided that the best response to close the achievement gap and keep students in school was to follow the three R's: rigor, relevancy and relationships.

To do this, we have created pathways for learning that connect schools into integrated systems for learning. We want to engage students and spark their interest at the earliest time possible. For example, one pathway from elementary, through middle and high school is in health science and technology. The comprehensive program offers academics, field experiences, and nearby medical campus resources that prepare students for high school and college and highlight career choices in medicine and health sciences. This pathway encompasses several elementary, middle and high schools and is not a stand alone magnet program. It is the result of a federal grant and a partnership with the University of Colorado Anschutz Medical Campus, Community College of Aurora, and other local health care and education providers. This is only one example of various pathways we are creating within the school district.

We have changed the 20th century industrial model to a 21st century system that provides energy and excitement for learning that is organized around post secondary and workforce readiness. We are developing platforms that allow choice and student engagement by connecting learning to the real world and encouraging community engagement. The concept of operations for instruction is integrated and flexible and offers choice through academic disciplines and not only by school sites. We believe this fluidity will keep students excited about learning and connected to education.
In addition, the Aurora Public School District has four significant and targeted programs in place, each serving as cornerstones in our efforts to increase our graduation rates.

Rebound: The "Rebound" program is an initiative of the Aurora Public Schools in partnership with Educational Services of America (Ombudsman), Colorado Youth for a Change, Community Faith Based Organizations and the Community College of Aurora. The program provides an alternative learning environment for students who have dropped out of high school or been expelled. The program provides Credit Recovery, Original Credit and Dual Credit opportunities for students. The all-inclusive on-site program offers a personalized, student-centered curriculum. Students attend for four hours a day during one of three scheduled sessions – morning, afternoon, and evening – to accommodate individual schedules and needs. During that time, students receive three hours of academic instruction and a fourth hour of behavior intervention, social skills training and life skills management. Qualifying students may attend the program four days a week with transportation provided to the Community College of Aurora one day a week to take a three-hour college course. A dropout recovery specialist works with community nonprofit organizations and faith-based groups to identify dropouts, contact them, and market the alternative education programs as a way to complete their education.

Futures: Our "Futures" program grew out of our partnership with Colorado Youth for a Change. It will serve up to 100 students who are overage and under credit - and thus not candidates for a high school diploma. They have made the decision to return to school, earn a GED, and also gain entry to the Community College system. The program is located at Pickens Technical College to provide students with seamless access to higher education.

Pathways of Choice: In 2010, we will open an innovative P-20 campus on a 100 acre site to provide a seamless continuum of public education from pre-school through post-secondary. This site will also house a professional learning center for teachers and administrators to develop cutting edge teaching and expand their skills. The campus will become the centerpiece for the district's existing framework of innovation. It can become the model for education that focuses on small schools, educational alignment with industry relevant curriculum and experiences, collaborative partnerships and leadership development. The campus will incorporate the district's best practices and choice options that are already in place as well as become a source for continued innovation and creativity.

School Corps Counseling Grant: Aurora Public Schools was awarded a School Corps Counseling Grant to meet the following goals:

- Provide professional development and capacity building for counselors that results in the implementation of a counseling model aligned with the ASCA data-driven national model

- Increase by 50% the number of ninth-grade students who successfully develop an Individual Career and Academic Plan (ICAP), and are taking steps to accomplish specific goals in those plans. In years two and three of the grant period APS will increase the number of ninth graders who complete a plan by 10% each year; by the third year a majority of ninth, tenth, and eleventh graders will be implementing ICAPs.

- Reduce number of students who drop out of school after the ninth grade by 20%, and increase the likelihood that they will graduate from school

To accomplish these goals, Aurora Public Schools has hired six counselors to provide counseling services at the ninth-grade level to guide students in developing ICAPs and reach their post-secondary goals. The counselors will also focus on students who are at risk for truancy and possible drop out. The counselors will monitor data from Infinite Campus to determine whether or not students are attending school, following behavior guidelines, and doing well academically. If they are not, the counselor will intervene to support them at the current school or assist transition into another APS school. This approach will help address the 70% drop out rate of APS students at the ninth grade level and will ultimately increase the overall graduation rate of APS high school students.

What other initiatives is the District engaged in that will help prevent, recuperate, and recover drop-outs and increase the district's graduation rate?

We have aligned curriculum, instruction, assessment and professional development. For example, we provide pacing guides for teachers with specific learning goals to ensure consistent instruction district-wide. The guides have instructional targets at every grade level to meet the challenges of high mobility rates of students and provide for the highest quality initial instruction. We are helping administrators and teachers become experts at understanding and using data to carefully monitor student progress, identify potential problem areas and implement student targeted intervention strategies. We have developed horizontally integrated teams who look at all the data – not just their classes. By creating "data walls" displaying results for every classroom and every school, we create a transparent accountability where everyone knows, understands and accepts mutual responsibility for results. We use quarterly standards-based exams (interim assessments) rather than wait for annual state exams to determine a student's progress. We are implementing a standards-based system kindergarten through twelfth grade so students are promoted on performance – what they know and are able to do – instead of seat time.

We have changed the school calendar to extend the school year by providing a fifth block of instruction that adds 23 days of voluntary instruction for approximately 4,000 students who are making progress but who need more time to reach proficiency in literacy and math. Students who are recommended for attendance receive the extra instruction at no cost to parents. This goes well beyond summer school because it is delivered in each child's school by teachers at that school. The evaluation at the end of the first year of implementation in 2008 confirmed that over 80% of students completed fifth block and scored higher on state assessments. Finally, we are fortunate to be the recipient of a nearly $400,000 grant from the Rose Community Foundation to allow us to become the leading district in the country in meeting the needs of English Language Learners.

What information would Aurora share with other districts looking to make progress in this area – what are some key lessons learned thus far?

What we are doing is working. Leading indicators confirm that we are making the progress necessary for a lagging indicator like dropout rates to eventually show significant progress. Achievement gains have been significant in grades 3 to 10 over the past two years. Attendance rates have increased, truancy rates have decreased and one year dropout rates continue to decline.

Students who start out below proficiency too often stay there. The Aurora Public Schools recognizes that a one-size-fits-all approach to learning must be replaced by opportunities that better match schools with diverse student learning needs and interests. We have created a menu for innovation and choice within the school district that allows schools to seek multiple opportunities to support student success. Our goal is to continually develop and instill within students the "art of the possible." We are helping them believe that success is possible and that college is not beyond their grasp. We realize that every student may not choose to attend college. But we want to make certain that the choice is theirs and does not result from their lack of knowledge or skills because we have not prepared them to be successful.

To make real and lasting change, strategies and plans need to be transformational. Small adjustments and incremental changes are not enough. Our district has transformed operations to create a vigorous, motivating organizational structure. Meaningful change is the result of an integrated focus and not a hodge-podge of ideas. Too often transformation is confused with reorganization. Transformation means changing your entire organization from the inside out, leaving no part untouched. It is an integrated focus that requires changing the organizational structure, changing technologies and changing the concept of operations.

Denver Public Schools

What has been the biggest benefit of participating in this study for DPS?

The benefit of participating in this study was the specific attention to Denver Public Schools (DPS) data (in the full report delivered to the district). The Hopkins study reinforced information we had at an anecdotal level about student attendance and behaviors. The data across all five districts showed similar results and were specific to Colorado. The recommendations made to all five districts were similar. This will allow DPS to network with other metro districts to share best practices for student success.

What is DPS doing to respond to the information in the study and what other initiatives is the district engaged in that will help prevent, recuperate, and recover dropouts and increase the district's graduation rate?

As a district, we have already begun many initiatives, which are outlined in our Denver Plan. The Hopkins study confirmed our recent initiatives were needed. For several years, Denver Public Schools has set a priority goal to improve graduation rates and decrease dropout rates. The DPS, in updating its strategic plan, is focusing intensely on post-secondary readiness. It has established a district Office of Post-Secondary Readiness, with the mission "to ensure that Denver Public Schools students graduate and successfully pursue post-secondary opportunities that prepare them to be productive world citizens." The vision of this office is to help schools focus on 1) instruction aligned to college readiness standards; 2) creating a culture where all students are significantly connected to adults; 3) developing professional learning communities that use data to improve teacher effectiveness and improve student achievement; 4) offering a welcoming culture and environment; and 5) improving parent and community involvement through communication and collaboration.

The district has also instituted many initiatives to raise expectations, including:

- Instituted rigorous high school graduation requirements

- Created and supported school-based data teams focused on student performance on formative and summative standards-based assessments and instruction;

- Increased enrollment in Advanced Placement classes 66% over 6 years;

- Enhanced intervention services and additional supports for struggling students, including the Ninth Grade, Sixth Grade and ELA Academies;

- Provided school administrators with an Administrator Portal to bring disparate student data and school management systems into one web-based access point;

- Provided parents access to real-time data about their children's academic achievement, attendance, course schedule, and behavior incidents through Infinite Campus.

And the district has begun developing additional supports for our students, including:

- Credit recovery and summer Freshman Academy to students for past 3 years; This will also support the development of a stronger "pipeline" of well-prepared students who will be able to engage in meaningful high school content courses and post-secondary programs.

- The development of an alternative school focused on students who require a non-traditional approach to learning. Engagement centers, career academies, competency-based diploma, online course work and credit recovery will all be explored as multiple options leading to graduation.

Finally, we understand a comprehensive system to support the whole child, centering on ongoing partnerships with parents and community members and providing support for academic and social -emotional needs of our diverse student populations, is critical. To identify students at risk of dropping out of school, DPS will replicate effective strategies across the district with particular emphasis on attendance and credit recovery. These strategies will include pro-active support systems, such as the Attendance Tool Kit, to monitor and intervene when absences are a concern, and a common provider for credit recovery to streamline efforts and economize expenses. Furthermore, additional human resources will provide credit recovery services to students who are not "on track" to graduate. Additional pro-active supports include Positive Behavior Support programs, which establish school wide expectations for positive student behavior. The district has numerous interventions to address students' social-emotional needs, ranging from protocols for functional behavior assessments and behavior intervention plans to Restorative Justice and Truancy Mediation projects. The district goal is to provide resources for a uniform set of intervention available to all schools to address a myriad of students' social-emotional challenges.

What information would DPS share with other districts looking to make progress in this area – what are some key lessons learned thus far?

- It is essential to use student data around attendance, course failure, and behavior. Districts should consider how to develop an Early Warning System to identify students who are at risk of dropping out. Most districts are using the Response to Intervention (RTI model), providing the intervention needed for all students.

- Districts should develop interventions based on the needs of their students. Districts can focus on Grade 8 to Grade 9 transitions. Freshman Academy data from DPS shows improved student achievement for students who attend the summer academy. Some high school principals continue to use Grade 9 academy throughout the school year.

- Districts should also review their grading and attendance policy and how these policies impact student achievement.

- The district focus to prepare all students to be post secondary ready raises the expectations for students and teachers. We are continuing to pursue Multiple Pathways to graduation for all students to obtain a certificate in a Career and Technical Education (CTE) pathway, a two-year college, or a four-year college.

Jefferson County Public Schools

What has been the biggest benefit of participating in this study?

This study provided guidance for understanding our dropout problem and for developing solutions in the classroom, the central office and the community. The research provided tangible data describing our dropout problem including early warning signals to help guide intervention. The research served to increase awareness of our dropout problem as well as to highlight practices that work in dropout prevention. The early warning signals (students with poor attendance, failing grades, and discipline issues) will assist educators, parents, and community partners to intervene with students much earlier to ensure that they are prepared for a successful future.

What is Jeffco doing to respond to the information in the study?

In Jefferson County, graduating all students with choices has always been a priority. In recent years, and prior to this study, several initiatives were undertaken that should ultimately impact the success of students. Jeffco Schools has been working on an effort to align our curriculum and to support the classroom teacher through our instructional coaching program in an effort to ensure that all students have access to a guaranteed and viable curriculum and to highly effective instruction. In addition, Jeffco Schools expanded educational opportunities and supports for students at-risk of dropping out that included new alternative school environments as well as the creation of the Office of Dropout Prevention and Recovery.

As a result of this research and recommendations, in tandem with the direction that the district is headed, there is an increased focus on ensuring each school has a defined and effective system of interventions utilizing the Response to Intervention Framework. This system of interventions includes but is not limited to: Positive Behavior Support, implementation of the Comprehensive Guidance and Counseling Program, 6 Year Graduation Plan, progress monitoring, credit recovery opportunities, professional learning communities, prevention of course failure, transition between levels, and early identification using the warning indicators provided in the Johns Hopkins study.

As a direct result of this study, our district has established a new withdrawal/dropout policy intended to gather data, systemically improve practice, and reengage students. In addition to this new policy, we are participating in an extensive district-wide audit of our practices and policies to identify critical factors that impact whether or not students are engaged and connected to their school community and/or whether there are practices in place that promote or discourage student attendance, behavior, and course failure.

The research and recommendations provided by Johns Hopkins University and the Colorado Graduates Initiative has promoted rich problem solving conversations at the school, district, and community levels. Ultimately, this research has energized our school community to take action.

What other initiatives is the District engaged in that will help prevent, recuperate, and recover dropouts and increase the district's graduation rate?

Jeffco Schools created the Office of Dropout Prevention and Recovery in order to coordinate efforts to reengage students who are at-risk of dropping out or who have dropped out of school. This office has centered its work on fostering relationships with our community, advocating for families and schools, expanding options for students, and systems navigation. In the last year, the Office of Dropout Prevention and Recovery has become an information resource, connecting parents, students and school personnel to supports and services. The district has strengthened partnerships and collaborated with Jefferson County Department of Human Services to provide substance abuse prevention programming and to provide additional credit recovery for students in poverty in the north area of the county. Through a Counselor Corps Grant from the Colorado Department of Education, four additional counselors in our most at-risk schools are dedicated to increasing graduation rates, preventing dropouts, and increasing post-secondary enrollment. An Expelled and At-Risk Student Services Grant is providing additional case management, credit recovery, and transition support for students at-risk of suspension and/or expulsion.

Along with the previously explored district-wide prevention efforts, the Office of Dropout Prevention and Recovery is dedicated to contacting all families of students who have dropped out of school within seventy-two hours with the intention of repairing the relationship and reengaging the student. This involves working with the parent and student to assess the student's educational and career goals and connecting them to resources, supports, and programs in our schools and communities.

What information would Jeffco share with other districts looking to make progress in this area – what are some key lessons learned thus far?

After going through this process, we recognize two primary factors that were imperative to making progress in combating our dropout problem. An analysis of the data specific to our own schools and our own community was integral. Although there is a wealth of national information about the dropout problem, warning indicators and best practices, data that is specific to your schools and to your district provides the opportunity for real conversations about real kids and real solutions. The second factor that impacted our district's ability to take action was the support from people in both formal and informal leadership positions. In the end, in our district there was extraordinary support at every level in our organization to examine our reality and to take action.

Pueblo City Schools

What has been the biggest benefit of participating in this study?

While Pueblo City Schools has been successful in closing the achievement gap in our elementary schools, our middle and high school academic achievement has not fared so well. Along with data analysis of school student performance, the data confirmed that transition years- from 5th to 6th and 8th to 9th grades were extremely crucial in providing safety nets for our students in improving high school graduation. Understanding the dropout problem in our community is an important first step in developing and implementing plans to reduce the number of dropouts and increase the graduation rate for Pueblo City Schools. The Hopkins data highlighted the importance (particularly for 9th graders) in passing semester courses, attending school, and preventing suspensions.

In summary, we are aggressively forging ahead to provide safety nets with regard to course completion, improving our attendance monitoring systems and improving student/parent engagement activities, while also designing effective programs to provide credit recovery options for students and to decrease out of school suspensions.

What is Pueblo doing to respond to the information in the study?

Based on the findings from this study of dropouts in the Pueblo City Schools and current levels of behavioral risk factors among students in grades six to nine, we are designing a response with supportive guidance from central administration.

Tiered Interventions for Middle Schools and High School Graduation Centers

Pueblo is instituting America's Choice, a tiered approach to instruction that helps students at varying performance levels to be successful in the regular classroom. This organization will be providing several tools to help support students with appropriate academic interventions. These engaging programs will challenge all students to higher levels of achievement, and will provide benchmarked assessments to help schools determine the appropriate level of individual student support. Many schools have been successful using these programs with special needs populations as well. The America's Choice School Design features school wide initiatives that support student performance, including: classroom management structures, The 25-Book Campaign and Book of the Month program, celebration of student work, a safety net program for at-risk students provides extra instructional support during, before school, after school, on Saturdays, or during the summer, and teachers and school administrators embrace a practical approach to analyzing student data, using the Planning for Results system.

What other initiatives is Pueblo engaged in that will help prevent, recuperate, and recover dropouts and increase the district's graduation rate?

High School Strategies -- In Pueblo City Schools we are providing recovery opportunities within each course, in an effort to prevent failures. The first step is to move "F" students to 'D' students, and quickly beyond. We expect that increased number of credits earned as a result of decreases in the failure rate will result in reductions in the number of dropouts and increases in the graduation rates.

High School Graduation Centers -- Our alternative education program was closed this year. Much of this decision was based on the data in which we received from the Johns Hopkins study. Year after year, we were faced with the fact that our students were not making annual yearly progress. We stepped back as a district to research what are some of the best instructional and alternative education programs which we can provide for our students. We have implemented the Graduation Centers for our students who are credit deficient.

The High School Graduation Center targets students with chronic nonattendance, discipline referrals, and failing grades, and combines an intensive approach to core academics with the case management and support of two Certified Teachers (one math and one language arts endorsed/high school) and a Community Advocate. Students will attend the program for approximately ¾ of the day, focusing on reading, language arts, and mathematics. The community advocate will work exclusively with students and families in the program, to ensure the students are at school each day, contract with the student and teacher with regard to behavior and academic expectations, and mediate conflicts that may arise during the school day. Every week, a licensed counselor will conduct a social skills group with the class, and Community Advocates provide ongoing counseling support as well as referrals to community agencies, if the student is in need of community services.

All students in the program have an Individualized Education Plan which includes a post secondary plan as well. The students will be in the proficiency center classroom for reading and math class to establish proficiency in the areas of math and language arts (reading/literacy), using a self-paced approach that allows students to test out of units, and is based on mastery of basic skills. The instructor will provide a daily rating of academics and behavior, as well as weekly reports to ensure the student is reaching mastery of academic skills. The Graduation Centers will have:

- Flexibility (in structure, scheduling, programming) with 10 to 15 students per classroom at one time.
- Instructional blocks will focus on math, language arts, career discovery, and electives.
- Small size (small class size, overall enrollment, low student to teacher ratio)
- Parent involvement (parent choice, decision making, exit)
- Innovative instruction (creative curriculum, varied teaching approaches, responsiveness to learning style)
- Individualized programming (self-paced, self directed, individualized curriculum)
- Access to technology for credit recovery.
- Access to "specials" classes based on student interest.
- Individual Educational Plans with a post secondary plan
- Academic Assessments, benchmark testing, Galileo, etc…
- Access to Career Centers at the High Schools
- Access to JET/Career discovery classes

Referrals will be made by school administration. The district has established specific student performance criteria for entry into and exit from the graduation centers.

What information would Pueblo share with other districts looking to make progress in this area – what are some key lessons learned thus far?

A key lesson learned is, study the data. Keep moving forward for the sake of student success and also keep the safety nets afloat at all times. Professional development is key, as is working with students, particularly in the area of student engagement. Always work with students from a strength-based focus and celebrate their successes. Get the right staff working with the students, staff who are familiar with curricular rigor and relevance while forming positive student/staff/parent/community relationships. Always set your standard high with clear benchmarks for student success attainment.

9. Technical Appendices

Modeling Graduation, Non-graduation, and Dropout Outcomes

We used binary logistic regression to model differences in the log odds of dropout outcomes for Class of 2007 students in three districts in which it was possible to build a four-year longitudinal cohort for 2003-04 ninth graders (Jeffco, Aurora, and Denver).

Table 9.1a summarizes results of comparable binary logistic models that predicted the log odds of dropping out vs. graduating for students in each of the three districts. These models were limited to variables available from all three districts. Log odds were converted to odds ratios for ease of interpretation. The first set of models included just gender and ethnicity, while the second set of models added number of ninth grade semester failures. The third set of models used a dichotomous measure of ninth grade failure (failed at least one semester course vs. no failures) to provide a common metric for comparing the odds ratios for the demographic variables with the odds ratio for the behavioral variable (failure).

The models using demographic variables alone predicted between 63% and 89% of dropout outcomes correctly, with Nagelkerke R square values of .08 to .12 (loosely interpretable as explaining 8% to 12% of the variance in student outcomes). As expected, the demographic models indicated a significantly higher odds of dropout outcome for minority students and a lower odds for females. When number of ninth grade semester failures is added as a predictor of dropout outcome (Table 9.1b), the range of Nagelkerke R square values increased dramatically (ranging from .41 to .47). The percentage of correctly predicted outcomes increased to between 79% and 92% (a particularly notable increase in Aurora and Denver).

As Table 9.1c indicates, the odds ratio for ninth grade semester failure (when measured dichotomously) was much higher than for gender or ethnicity (also measured dichotomously), indicating a much stronger predictive relationship. At the same time, gender and ethnic identity were still significant predictors of a dropout outcome, even when ninth grade failure was controlled.

Table 9.2 summarizes results of different binary logistic models that separately predicted the log odds of dropping out vs. graduating, graduating vs. dropping out (the converse), and graduating vs. not graduating on time in each of three districts (adding additional non-graduation outcomes to dropout, while excluding students who transferred out of district). The number of ninth grade suspensions was also a significant predictor of student outcome in those districts where sufficient data were available for analysis. In addition, overage for grade status and special education status were also significant predictors in districts where data were available, even controlling for ninth grade failures and suspensions. English as a Second Language (ESL) status was a significant predictor of student outcome even controlling for ethnic identity in one district, but not in the other district where this analysis was possible. In districts where it was possible to control for the number of ninth grade suspensions, gender dropped out as a significant predictor of dropout/graduation outcome, though it was still significant as a predictor of graduation vs. all non-graduation outcomes.

Table 9.3 summarizes analyses for males and females separately. The models for each gender group are generally similar (particularly in the impact of ninth grade failure, Hispanic identity, and being overage for grade). Differences between models for males and females tend to vary by district with no discernable common pattern. In one district the impact of ninth grade suspensions on outcome is significant for females but not males, while in the other district it is the reverse. This may reflect complex interaction effects related to how variables are distributed in each district and within a particular year.

In two of the districts there were enough high schools to conduct analyses using hierarchical linear modeling to take account of the fact that students were nested within schools in ninth grade. (We did not account for transfers between schools after ninth grade.) We modeled the log odds of graduation vs. non-graduation coding non-graduation as drop-outs, expulsions, GED and other non-district programs, and still in school (excluding regular transfers and death). As Table 9.4 indicates, in addition to the effects of ninth grade failure and gender and ethnicity (which remained virtually the same as in the simple binary logistic regression models), there was a significant effect of school poverty rate (percent of low income students) on non-graduation outcomes. Since school poverty was highly correlated with percent minority students, the model could not include both simultaneously. Structural school variables (size and student/teacher ratio) were not significant, controlling for school poverty level. As the presentation of variance components indicates, the relationship between ninth grade failure and non-graduation outcome varied significantly between schools.[10] This would suggest that school level practices could potentially have a moderating effect on the relationship between ninth grade failure and graduation outcome. We would argue that equipping schools to implement interventions in response to student course failure (or to prevent course failure) is one crucial next step in dropout prevention efforts.

Table 9.1 Comparison of Common Binary Logistic Model of Dropping out for Three Colorado Districts

a) Binary Logistic Model 1 for Colorado Class of 2007 Outcomes (Dropout vs. Graduate)

Gender and Ethnicity Effects

	Jeffco		Aurora		Denver	
R-Square	.083		.122		.094	
Percent Correctly Predicted	88.5		63.4		69.8	
	Odds Ratio	**P-Value**	**Odds Ratio**	**P-Value**	**Odds Ratio**	**P-Value**
Female	.664	.000*	.495	.000*	.633	.000*
Native	4.011	.000*	2.595	.188	5.545	.000*
Asian	.809	.454	.806	.493	1.363	.205
Black	3.752	.000*	1.607	.000*	2.079	.000*
Hispanic	4.283	.000*	3.547	.000*	3.920	.000*

Comparison group: white males

b) Binary Logistic Model 2 for Colorado Class of 2007 Outcomes (Dropout vs. Graduate)

Effects of Gender, Ethnicity, and Number of ninth Grade Semester Failures

	Jeffco		Aurora		Denver	
R-Square	.471		.453		.405	
Percent Correctly Predicted	92.4		79.1		82.1	
	Odds Ratio	**P-Value**	**Odds Ratio**	**P-Value**	**Odds Ratio**	**P-Value**
Female	.789	.040*	.699	.006*	.679	.000*
Native	3.256	.005*	3.510	.156	2.571	.011*
Asian	1.119	.737	1.118	.770	1.493	.154
Black	3.154	.001*	.877	.481	1.341	.059
Hispanic	2.431	.000*	2.741	.000*	2.108	.000*
# of ninth grade Failures	2.069	.000*	1.641	.000*	1.543	.000*

Comparison group: white males with no failures

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[10] This effect was also significant when we truncated the "number of ninth grade failures" variable (0 to 5 or more) to address the different number of opportunities for semester failure at different schools.

c) Binary Logistic Model 3 for Colorado Class of 2007 Outcomes (Dropout vs. Graduate)

Effects of Gender, Ethnicity, and One or More ninth Grade Semester Failures

	Jeffco		Aurora		Denver	
R-Square	.370		.347		.276	
Percent Correctly Predicted	89.2		74.2		75.2	
	Odds Ratio	**P-Value**	**Odds Ratio**	**P-Value**	**Odds Ratio**	**P-Value**
Female	.795	.024*	.616	.000*	.708	.000*
Native	2.554	.017*	2.098	.460	2.222	.018*
Asian	1.137	.682	.996	.991	1.617	.076
Black	1.807	.067	.951	.761	1.296	.076
Hispanic	2.602	.000*	2.564	.000*	2.300	.000*
1 or more ninth grade Failures	18.282	.000*	9.486	.000*	6.848	.000*

Comparison group: white males with no failures

Table 9.2a Binary Logistic Model for Jeffco Class of 2007 Outcomes

	Dropouts (1) vs. Graduates (0)		Graduates (1) vs. Dropouts (0)		Graduates (1) vs. Non-Graduates (0)	
R-Square	.481		.481		.409	
Percent Correctly Predicted	93.1		93.1		83.5	
	Odds Ratio	**P-Value**	**Odds Ratio**	**P-Value**	**Odds Ratio**	**P-Value**
Female	.791	.057	1.264	.057	1.381	.000*
Native	3.918	.002*	.255	.002*	.417	.006*
Asian	1.121	.748	.892	.748	.992	.967
Black	2.861	.004*	.349	.004*	.555	.029*
Hispanic	2.136	.000*	.468	.000*	.520	.000*
# of ninth grade suspensions	1.406	.001*	.711	.001*	.649	.000*
# of ninth grade Failures	2.046	.000*	.489	.000*	.522	.000*

Table 9.2b Binary Logistic Model for Aurora Class of 2007 Outcomes

	Dropouts (1) vs. Graduates (0)		Graduates (1) vs. Dropouts (0)		Graduates (1) vs. Non-Graduates (0)	
R-Square	.491		.491		.450	
Percent Correctly Predicted	80.4		80.4		76.2	
	Odds Ratio	**P-Value**	**Odds Ratio**	**P-Value**	**Odds Ratio**	**P-Value**
Female	.800	.099	1.250	.099	1.546	.000*
Native	3.042	.218	.329	.218	.277	.067
Asian	1.128	.779	.886	.779	.685	.219
Black	.769	.188	1.300	.188	1.013	.933
Hispanic	2.391	.000*	.418	.000*	.463	.000*
ESL	1.060	.785	.944	.785	.766	.124
Spec. Ed.	1.663	.043*	.601	.043*	.377	.000*
Overage	3.277	.000*	.305	.000*	.433	.000*
FRL	1.085	.592	.921	.592	.952	.689
# of ninth grade suspensions	1.248	.015*	.801	.015*	.826	.011*
# of ninth grade Failures	1.623	.000*	.616	.000*	.636	.000*

Table 9.2c Binary Logistic Model for Denver Class of 2007 Outcomes

	Dropouts (1) vs. Graduates (0)		Graduates (1) vs. Dropouts (0)		Graduates (1) vs. Non-Graduates (0)	
R-Square	.432		.432		.413	
Percent Correctly Predicted	81.8		81.8		75.9	
	Odds Ratio	**P-Value**	**Odds Ratio**	**P-Value**	**Odds Ratio**	**P-Value**
Female	.710	.001*	1.409	.001*	1.615	.000*
Native	2.531	.013*	.395	.013*	.498	.024*
Asian	1.280	.392	.781	.392	.898	.606
Black	1.345	.060	.744	.060	.812	.062
Hispanic	1.758	.000*	.569	.000*	.712	.001*
ESL	1.991	.000*	.502	.000*	.518	.000*
Overage	2.574	.000*	.388	.000*	.374	.000*
# of ninth grade Failures	1.552	.000*	.644	.000*	.632	.000*

Table 9.3 Comparison of Binary Logistic Models of Dropping Out for Males and Females in Three Colorado Districts

Female

	Jeffco		Aurora		Denver	
R-Square	.475		.462		.398	
Percent Correctly Predicted	94.4		81.4		83.6	
	Odds Ratio	P-Value	Odds Ratio	P-Value	Odds Ratio	P-Value
Native	1.388	.725	†	†	2.687	.071
Asian	1.008	.988	2.903	.066	.962	.934
Black	2.008	.245	.672	.162	1.449	.105
Hispanic	1.849	.009*	3.065	.000*	1.515	.047*
ESL			.704	.231	1.949	.001*
Spec. Ed.			1.035	.929		
Overage			5.012	.000*	2.549	.000*
FRL			1.148	.512		
# of ninth grade suspensions	1.010	.951	1.444	.026*		
# of ninth grade Failures	2.220	.000*	1.610	.000*	1.531	.000*

† N too small to report

Male

	Jeffco		Aurora		Denver	
R-Square	.488		.517		.454	
Percent Correctly Predicted	91.8		80.1		80.0	
	Odds Ratio	P-Value	Odds Ratio	P-Value	Odds Ratio	P-Value
Native	6.547	.000*	12.730	.044*	2.318	.096
Asian	1.235	.655	.459	.227	1.571	.227
Black	3.652	.006*	.817	.479	1.202	.401
Hispanic	2.435	.000*	1.831	.060	1.987	.000*
ESL			1.628	.118	2.049	.000*
Spec. Ed.			2.523	.007*		
Overage			2.386	.000*	2.643	.000*
FRL			1.004	.985		
# of ninth grade suspensions	1.674	.000*	1.140	.219		
# of ninth grade Failures	1.953	.000*	1.644	.000*	1.583	.000*

Table 9.4 HLM Estimates of Predictors of a Non-Graduation Outcome

<u>Jeffco</u>

Fixed Effects	Coefficient	P-Value	Odds Ratio	Confidence Interval
Intercept, G00	-1.21	0.000*	0.30	(0.13,0.19)
Sch % Low Income, G01	0.03	0.000*	1.03	(1.03,1.05)
Total Failures, G10	0.68	0.000*	1.97	(1.89,2.17)
Disciplinary Incidents, G20	0.40	0.000*	1.48	(1.19,1.63)
Male, G30	0.30	0.001*	1.36	(1.01,1.56)
Minority, G40	0.30	0.008*	1.36	(0.96,1.79)
Variance Components		P-Value		
Intercept, U0		0.023*		
Total Failures, U1		0.004*		
Disciplinary Incidents, U2		0.349		
Male, U3		0.178		
Minority, U4		>.500		

<u>Denver</u>

Fixed Effects	Coefficient	P-Value	Odds Ratio	Confidence Interval
Intercept, G00	-0.59	0.001*	0.56	(0.42,0.74)
Sch % Low Income, G01	0.01	0.000*	1.01	(1.01,1.02)
Male, G10	0.44	0.000*	1.55	(1.28,1.88)
Total Failures, G20	0.49	0.000*	1.63	(1.50,1.77)
Minority, G30	0.27	0.077	1.31	(0.97,1.78)
Variance Components		P-Value		
Intercept, U0		0.245		
Male, U1		0.421		
Total Failures, U2		0.002*		
Minority, U3		0.107		

Nongraduation outcome defined as dropouts, expulsions, GEDs, other non-district non-graduation outcome programs, still in school. Minority status defined as Hispanic, Black, or Native American.

Limitations of the Study

The five district study was based completely on individual level administrative records available from the districts, and so there are certain limitations that must be recognized. Prior years' records were not always available from all of the districts. The study could not at this time be supplemented by survey or focus group data that would shed more light on reasons for a dropout outcome. It is possible that certain psychological variables identified in previous research are the main drivers of a dropout outcome, rather than the student behavioral variables this study was able to examine. At the same time, one goal of the study was to help the district identify early warning signals already available in district-collected data that could guide potential interventions aimed at dropout prevention. The study was theory-driven, building on previous research focused on student behavioral variables and their relationship to a dropout/graduation outcome. Though we sought to analyze all the student level variables identified in prior research (particularly attendance, suspensions, course grades, test scores), there may be important unmeasured behavioral variables that were omitted.

Because district policymakers are often interested in the characteristics of all dropouts in a particular year, this study focused primarily on dropouts from the 2006-07 school year (as outcome data for 2007-08 were not finalized). Findings could have been unique in this year, though the correspondence of findings from this study to findings in other districts gives us considerable confidence in their reliability. The "backwards" or "retrospective" analysis approach used in this study complements the "forward cohort" approach used in previous studies (e.g., Balfanz, Herzog, & Mac Iver, 2007; Mac Iver et al., 2008; Allensworth & Easton, 2007). The forward cohort approach provides a better estimate of the impact of certain variables on student outcomes (graduation vs. dropout), and we were also able to conduct a forward cohort analysis of 2003-04 ninth graders through 2006-07 in three of the five districts (see analysis below). On the other hand, the retrospective analysis was able to capture students new to the district, who would not be included in the forward cohort.

Students were designated as dropouts if their final record had a withdrawal code defined as follows:

Discontinued schooling/dropped out *– A student who was enrolled in school at any time during the current school year, but leaves school for any reason other than one of the following exclusionary conditions: 1) transfers (with official documentation) to another public school district, private school, home based education program or other state- or district-approved educational program; 2) temporary absence due to suspension or expulsion; or 3) serious illness or death and does not complete their education. This would also include a student who was in membership the previous school year and who does not meet the above exclusionary conditions and does not return to school prior to the end of the school year.*

Two of the districts did not follow the same withdrawal coding system and definitions of dropout were established following analysis of data and discussion with the district.

References

Aladjem, D.K, & Borman, K. (Eds). (2006). *Examining comprehensive school reform. Washington, DC:* Urban Institute Press.

Allensworth, E., & Easton, J. (2007). *What matters for staying on-track indicator and graduating in Chicago public high schools.* Chicago: Consortium on Chicago School Research.

Balfanz, R., Fox, J., Bridgeland, J., & McNaught, M. (2008). *Grad nation: A guidebook to help communities tackle the dropout crisis.* Washington, DC: America's Promise Alliance. Retrieved December 9, 2008 from http://www.every1graduates.org/PDFs/GradNation_Guidebook_Final.pdf

Balfanz, R. & Legters, N. (2004). *Locating the dropout crisis.* CRESPAR Report #70. Baltimore, MD and Washington, DC: Center for Research on the Education of Students Placed at Risk.

Balfanz, R. (2007). *What your community can do to end its dropout crisis: Learnings from research and practice.* Baltimore, MD: Center for Social Organization of Schools.

Balfanz, R., & Herzog, L. (2005, March). *Keeping middle grades students on track to graduation: Initial analysis and implications.* Presentation given at the second Regional Middle Grades Symposium, Philadelphia, PA.

Balfanz, R., Herzog, L. & Mac Iver, D.J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early identification and effective interventions. *Educational Psychologist, 42, 4,* 223-235.

Barrett, S., Bradshaw, C., & Lewis-Palmer, T. (2008). Maryland statewide PBIS initiative: Systems, evaluation, and next steps. *Journal of Positive Behavior Interventions, 10(2),* 105-114.

Borman, G., Hewes, G., Rachuba, L., & Brown, S. (2003). Comprehensive school reform and student achievement: A meta-analysis. *Review of Educational Research 73,* 125-230.

Bridgeland, J., Dilulio, J. & Morison, K. (2006). *The silent epidemic: Perspectives of high school dropouts.* Washington, DC: Civic Enterprises.

Bryk, A.S. & Thum, Y.M. (1989). The effects of high school organization on dropping out: An exploratory investigation. *American Educational Research Journal, 26,* 353-383.

Chang, H. N. & Romero, M. (2008). *Present, engaged, and accounted for: The critical importance of addressing chronic absence in the early grades.* New York: National Center for Children in Poverty.

Communities in Schools. (2008). *Communities in schools and the model of integrated student services: A proven solution to America's dropout epidemic.* Alexandria, VA: Author.

Croninger, R. & Lee, V. (2001). Social capital and dropping out of high school: Benefits to at-risk students of teachers' support and guidance. *Teachers College Record, 103,* 548-581.

D'Amico, L., Harwell, M., Stein, M.K., & van den Heuvel, J. (2001). *Examining the implementation and effectiveness of a district-wide instructional improvement effort.* Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, Washington.

Darling-Hammond, L., Hightower, A.M., Husbands, J.L., LaFors, J.R., & Young, V.M. (2002, April). *Building instructional quality: Inside-out, bottom-up, and top-down perspectives on San Diego's school reform.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Duffy, H. (2007). *Meeting the needs of significantly struggling learners in high school: A look at approaches to tiered intervention.* Washington, DC: National High School Center.

Elmore, R. F., Peterson, P. L., & McCarthey, S. J. (1996). *Restructuring in the classroom: Teaching, learning, and school organization.* San Francisco: Jossey-Bass.

Elmore, R.F., & Burney, D. (1997). *School variation and systemic instructional improvement in Community School District #2, New York City.* Pittsburgh, PA: University of Pittsburgh, HPLC Project, Learning Research and Development Center.

Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Van Voorhis, F. L. (2002). *School, family, and community partnerships: Your handbook for action* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Everyone Graduates Center. (2009). Diplomas Now: Keeping students on track to high school graduation and adult success. Retrieved May 28, 2009 from http://www.every1graduates.org/PDFs/DiplomasNow.pdf

Finn, J.D. (1989) Withdrawing from school. *Review of Educational Research,* 59, 117–142.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research,* 74, 59-109.

Garet, M., Porter, A., Desimone, L., Birman, B., & Yoon, K.S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal* 38, 915-945.

Gewertz, C. (2009, March 11). 9th grade, by the numbers. *Education Week.* Retrieved May 19, 2009 from http://www.edweek.org/login.html?source=http://www.edweek.org/ew/articles/2009/03/11/24tracking_ep.h28.html&destination=http://www.edweek.org/ew/articles/2009/03/11/24tracking_ep.h28.html&levelId=1000

Gleason, P. & Dynarski, M. (2002). Do we know whom to serve? Issues in using risk factors to identify dropouts. *Journal of Education for Students Placed at Risk*, 7, 25-41.

Greenwald, R., Hedges, L.V., & Laine, R.D. (1996). The effect of school resources on student achievement. *Review of Educational Research* 66(3), 361-396.

Hammond, C., Linton, D., Smink, J., & Drew, S. (2007). *Dropout risk factors and exemplary programs: A technical report.* Clemson, SC: National Dropout Prevention Center.

Herlihy, C. & Kemple, J. (2003, April). *Impacts of the Talent Development Middle Grades Model on achievement, attendance, and promotion: A third-party evaluation.* Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Herlihy, C., & Quint, J. (2009). *Emerging evidence on improving high school student achievement and graduation rates: The effects of four popular improvement programs.* Washington, DC: National High School Center. Retrieved May 7, 2009 from http://www.betterhigh-schools.org/docs/NHSC_EmergingEvidenceBrief_111606Final.pdf

Herzog, L. (2009, Spring). Two schools use 'early warning system' to avert dropouts. *Philadelphia Public School Notebook,* 16(3), 26-27.

Hightower, A. (2002). *San Diego's big boom: District bureaucracy supports culture of learning.* Seattle: Center for the Study of Teaching and Policy, University of Washington.

Institute of Education Sciences (IES). (2008). *Dropout prevention: IES practice guide.* Washington, DC: U.S. Department of Education.

Jerald, C. (2006). *Identifying potential dropouts: Key lessons for building an early warning data system.* Washington, DC: Achieve, Inc. Retrieved May 7, 2009 from http://www.achieve.org/files/FINAL-dropouts_0.pdf

Juvonen, J., Le, V.N., Kaganoff, T., Augustine, C., & Constant, L. (2004). *Focus on the wonder years: Challenges facing the American middle school.* Santa Monica, CA: The Rand Foundation.

Keltner, B. (1998). *Funding comprehensive school reform.* Rand Issue Paper. Santa Monica: Rand Corporation.

Kemple, J. 2004. *Career academies: Impacts on labor market outcomes and educational attainment.* New York: MDRC.

Kemple, J. & Snipes, J. (2000). *Career academies: Impacts on students' engagement and performance in high school.* New York: MDRC.

Kemple, J. & Herlihy, C., & Smith, T. (2003). *Making progress toward graduation: Evidence from the Talent Development High School Model.* New York: MDRC.

Kennelly, L. & Monrad, M. (2007). *Approaches to dropout prevention: Heeding early warning signs with appropriate interventions.* Washington, DC: National High School Center at the American Institutes for Research.

Knapp, M. S. (1995). *Teaching for meaning in high-poverty classrooms.* New York: Teachers College Press.

Lan, W., & Lanthier, R. (2003). Changes in students' academic performance and perceptions of school and self before dropping out of schools. *Journal of Education for Students Placed at Risk,* 8(3), 309–332.

Lee, V.E., & Burkam, D.T. (2003). Dropping out of high school: The role of school organization and structure. *American Journal of Education*, 100, 420-453.

Legters, N., Smerdon, B., & Early, K. (2009). *High school reform implementation toolkit.* Washington, DC: The Urban Institute and Academy for Education Development. Retrieved May 21, 2009 from http://www.highschooltoolkit.com/

Mac Iver, D.J. Balfanz, R., & Plank, S. B. (1998). An 'elective replacement' approach to providing extra help in math: The Talent Development Middle Schools' Computer- and Team-Assisted Mathematics Acceleration (CATAMA) Program. *Research in Middle Level Education Quarterly,* 22(2), 1-23.

Mac Iver, D.J., & Balfanz, R. (2000). The school district's role in helping high-poverty schools become high performing. In B. Gaddy (Ed.), *Including at-risk students in standards-based reform* (pp. 35-69). Aurora, CO: Mid-continent Research for Education and Learning (McREL).

Mac Iver, D. J., Ruby, A., Balfanz, R., Jones, L., Sion, F., Garriott, M. D., et al. (2010). Talent Development Model in the Middle School: A design for improving early adolescents' developmental trajectories in high-poverty schools. In J. Meece & J. Eccles (Eds.), *Handbook of Schools, Schooling and Human Development.* New York: Routledge.

Mac Iver, M. (2007). What reform left behind: A decade of change at one urban high school. *Education and Urban Society*, 40, 3-35.

Mac Iver, M. & Mac Iver, D.J. (2006). Which bets paid off? Early findings on the impact of private management and K-8 conversion reforms on the achievement of Philadelphia students. *Review of Policy Research* 23(5), 1077-1093.

Mac Iver, M. & Mac Iver, D.J. (2009). *Beyond the indicators: An integrated approach to dropout prevention.* Arlington, VA: The Mid-Atlantic Equity Center, The George Washington University Center for Equity and Excellence in Education. Retrieved June 17, 2009 from www.maec.ceee.gwu.edu.

Mac Iver, M., Plank, S.B., Durham, R., Farley-Ripple, E., & Balfanz, R. (2008). *The challenge of on-time arrival: The seven-year flight paths of Baltimore's sixth graders of 1999-2000.* Research Report. Baltimore, MD: Johns Hopkins University. Retrieved May 21, 2009 from http://www.baltimore-berc.org/pdfs/SIXTH%20pathways5-13-08.pdf

Mac Iver, M., & Farley-Ripple, E. (2008). *Bringing the district back in: The role of the central office in instruction and achievement.* Alexandria, VA: Educational Research Service.

Mac Iver, M.A. & Farley-Ripple, E. (2009). *Data-driven decision making requires more than just achievement data: Measuring and analyzing the factors that influence achievement.* Presentation at the 2009 American Association of School Administrators National Conference on Education, San Francisco, CA. Retrieved May 21, 2009 from http://www.every1graduates.org/PDFs/MacIverAASA2009presentation.pdf

McLaughlin, M.W. & Oberman, I. (Eds.) (1996). *Teacher learning: New policies, new practices.* New York: Teachers College Press.

Miron, L., St. John, E., & Davidson, B. (1998). Implementing school restructuring in the inner city. *Urban Review*, 30, 137-166.

Mulhall, P.F., Mertens, S.B., & Flowers, N. (2001) How familiar are parents with middle level practices? *Middle School Journal,* 57-61.

Muscott, H., Mann, E., Benjamin, T., Gately, S., Bell, K., & Jo Muscott, A. (2004). Positive behavioral interventions and supports in New Hampshire: Preliminary results of a statewide system for implementing schoolwide discipline practices. *Education and Treatment of Children,* 27(4), 453-475.

National Governors Association. (2008). *Implementing Graduation Counts: State progress to date, 2008.* Washington, DC: The National Governors Association. Retrieved May 21, 2009 from http://www.nga.org/Files/pdf/0807GRADCOUNTS.PDF

Natriello, G., & McDill, E. (1986). Performance standards, student effort on homework, and academic achievement. *Sociology of Education*, 59, 18-21.

Neild, R. C., & Balfanz, R. (2006a). An extreme degree of difficulty: The educational demographics of urban neighborhood high schools. *Journal of Education for Students Placed at Risk*, 11, 131-141.

Neild, R. C. & Balfanz, R. (2006b). *Unfulfilled promise: The dimensions and characteristics of Philadelphia's dropout crisis, 2000-2005.* Philadelphia, PA: Philadelphia Youth Transitions Collaborative.

Neild, R. C., Stoner-Eby, S., & Furstenberg, F. F. (2008). Connecting entrance and departure: The transition to ninth grade and high school dropout. *Education and Urban Society,* 40, 543-569.

Neild, R.C. (2009a). Falling off track during the transition to high school: What we know and what can be done. *The Future of Children* 19, 53-76.

Neild, R.C. (2009b, May). Does Philadelphia really lead all big cities in improving the graduation rate? *Philadelphia Public School Notebook,* 16. Retrieved May 21, 2009 from http://thenotebook.org/may-2009/091268/philadelphia-leading-big-city-improved-graduation-rates

Newmann, F. M., Smith, B., Allensworth, E., & Bryk, A.S. (2001). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis,* 23(4), 297-321.

Pinkus, L. (2008). *Using early-warning data to improve graduation rates: Closing cracks in the education system.* Washington, DC: Alliance for Excellent Education. Retrieved May 7, 2009 from http://www.all4ed.org/files/EWI.pdf

Quint, J. & Herlihy, C. (2009). *Emerging evidence on improving high school student achievement and graduation rates: The effects of four popular improvement programs.* Washington, DC: National High School Center.

Quint, J., Bloom, H., Black, A., Stephens, L., & Akey, T. (2005). *First Things First: The challenge of scaling up educational reform.* New York: MDRC.

Reinke, W., Splett, J., Robeson, E., & Offutt, C. (2009). Combining school and family interventions for the prevention and early intervention of disruptive behavior problems in children: A public health perspective. *Psychology in the Schools,* 46(1), 33-43.

Roderick, M., & Camburn, E. (1999). Risk and recovery from course failure in the early years of high school. *American Educational Research Journal,* 36, 303–344.

Roe, T. (2006). *ALFA accelerating literacy for adolescents: A TDHS 9th grade literacy lab.* Retrieved May 21, 2009 from http://www.every-1graduates.org/PDFs/ALFA%20Summary.pdf

Rumberger, R., & Lim, S. (2008). *Why students drop out of school: A review of 25 years of research. California Dropout Research* Project Report #15. Santa Barbara, CA: California Dropout Research Project.

Rumberger, R. & Thomas, S. (2000). The distribution of dropout and turnover rates among urban and suburban high schools. *Sociology of Education,* 73, 39-67.

Sandomierski, T., Kincaid, D., & Algozzine, B. (2009). *Response to intervention and positive behavior support: Brothers from different mothers or sisters from different misters.* Washington, DC: National Center on Response to Intervention. Retrieved May 29, 2009 from http://www.rti4success.org/images/stories/pdfs/rti_and_positive_behavior_support.pdf

Schargel, F., & Smink, J. (2001). *Strategies to help solve our school dropout problem.* Larchmont, NY: Eye on Education.

Sinclair, M. F., Christenson, S. L., Lehr, C. A., & Anderson, A. R. (2003). Facilitating student engagement: Lessons learned from Check & Connect longitudinal studies. *The California School Psychologist,* 8 (1), 29–42.

Snipes, J., Doolittle, F., & Herlihy, C. (2002, September). *Foundations for success: Case studies of how urban school systems improve student achievement.* Washington, DC: The Council of the Great City Schools.

Snipes, J., Holton, G., Doolittle, F., & Sztejnberg, L. (2006). *Striving for student success: The effect of Project GRAD on high school student outcomes in three urban school districts.* New York: MDRC.

Sugai, G. (2007). *RTI: Reasons, practices, systems, and considerations.* Washington, DC: National Center on Response to Intervention. Retrieved May 29, 2009 from http://www.rti4success.org/images/stories/pdfs/rti_summit_keynote_sugai_2007

Sugai, G. & Horner, R. (2007). *SW-PBS and RTI: Lessons being learned.* Washington, DC: National Center on Response to Intervention. Retrieved May 29, 2009 from http://www.rti4success.org/images/stories/pdfs/rti_logic_and_positive_behavior_support.pdf

Swanson, C. (2009). *Cities in crisis: Closing the graduation gap.* Washington, DC: Editorial Projects in Education Research Center.

Wehlage, G., Rutter, R., Smith, G., Lesko, N., & Fernandez, R. (1989). *Reducing the risk: Schools as communities of support.* New York: Falmer Press.

Zhang, Y., Fashola., O., Shkolnik, J., & Boyle, A. (2006). Implementation of comprehensive school reform and its impact on increases in student achievement. *Journal of Education for Students Placed at Risk,* 11, 309-329.