Findings and Results of Root Cause Analysis for Comprehensive Support and Improvement Schools

Patterson High School

September, 2019

MORGAN STATE UNIVERSITY

UNIVERSITY OF MARYLAND 18 56

COLLEGE OF EDUCATION

CENTER FOR EDUCATIONAL INNOVATION AND IMPROVEMENT

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This report was prepared by the University of Maryland College Park Center for Educational Innovation and Improvement at the College of Education and in partnership with the Bowie State University College of Education and the Morgan State University School of Education & Urban Studies. The Root Cause Analysis process was facilitated by Dr. Sean Coleman and Lori Wilen, who also co-authored this report.

I. INTRODUCTION

The purpose of this report is to share outcomes of a Root Cause Analysis (RCA) conducted to support Patterson High School in identifying underlying causes of school performance problems. The report provides an overview of the RCA process, school profile, problem statement, the RCA conducted at the school, and recommendations to address the root causes.

The Maryland Every Student Succeeds Act (ESSA) Consolidated State Plan requires schools that have been identified for comprehensive support and improvement (CSI) engage in an RCA process facilitated by a third party. CSI schools are defined as follows: the lowest achieving 5 percent of Title I schools, high schools that do not graduate one third or more of their students, or schools that have federal school improvement grants. Patterson High School was identified as a CSI school due to low graduation rates. Outcomes of the RCA must be used to inform the development of intervention plans to improve school performance.

CSI schools that were identified in the 2018-2019 school year have three years to exit CSI status. CSI school leaders will receive a leadership coach to support the development and implementation of the intervention plan. CSI principals will be required to participate in the Leading for School Improvement Institute, which provides customized professional learning experiences to support school improvement. CSI principals will be required to engage in monitoring visits by the Maryland State Department of Education (MSDE) to ensure that progress is being made toward school improvement goals.

The MSDE established a memorandum of understanding with the University of Maryland College Park to facilitate the RCA process. The University of Maryland College Park collaborated with the American Institutes for Research to develop RCA tools and train field teams. Field teams consisted of researchers, data analysts, and education practitioners from Bowie State University, Morgan State University, Johns Hopkins University, and other organizations. Field team members worked with all CSI schools to go through an RCA process. MSDE will support each school to engage in a long-term continuous improvement process that includes RCA recommended interventions and evaluations of employed interventions. As part of this work, CSI schools were first required to go through a needs-assessment process that was used to drive the RCA work.

I. INTRODUCTION

RCA Process for CSI Schools

A Root Cause Analysis Facilitator Guide was developed to promote consistency in the root cause analysis process. The Facilitator Guide contains protocols designed to engage school leaders and stakeholders in identifying a specific problem and prioritizing root causes for the problem.

There was a four-step process used to facilitate the root cause analysis:

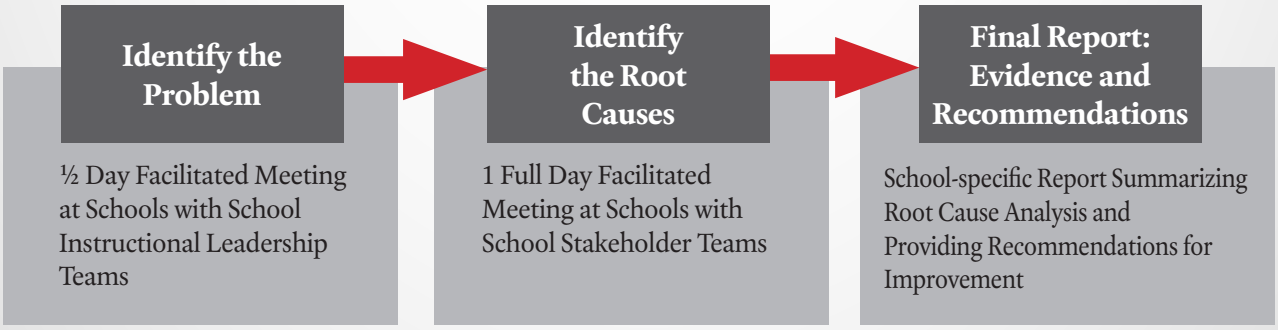
1. Craft a Problem Statement Based on Data
2. Brainstorm Causal Factors
3. Analyze Underlying Causes to Identify Root Causes
4. Prioritize Root Causes for Intervention

The root cause analysis process translates the successes and challenges identified through the CSI needs assessment into priorities to inform actionable improvement planning. The work with schools was staged in three steps: 1) identify the problem; 2) identify the root causes; 3) draft a school report with recommendations for improvement.

First, the RCA team worked with school leadership teams to craft a problem statement in a half-day meeting. Using the available school, school system, and state data, the school team selected a problem that relates to their CSI status and provides a direction for the root cause analysis.

Second, the facilitators returned to the school for a full-day meeting with the school's stakeholder team to better understand the root causes of the problem. Once the stakeholders worked through the process of determining the root causes, they prioritized those root causes based on importance, feasibility, and alignment to CSI status.

As a third and final step, the RCA teams created these school-specific reports with recommendations for addressing the problem and root causes in improvement planning.



I. INTRODUCTION

An RCA starts with asking the question: What problem do we face that, if solved or mitigated, would most effectively lead to our desired outcomes (in this case significant improvement in student outcomes that would lead to the school being removed from CSI status)? This "Problem Statement" is then studied and interrogated by a team of stakeholders through the RCA process that answers questions such as:

- Why do we get these outcomes?
- Who are the people involved in this problem?
- What policies, procedures, or rules contribute to this problem?
- What resources are currently engaging with this problem?
- What environmental issues impact this problem?

This process led to a small number of "root causes" to the problem designed to help school stakeholders design strategies and programs that are more likely to lead to significant improvement for students. In addition, the process will include conducting research on the problem and prioritized root causes and recommending evidence-based strategies for improvement.

II. SCHOOL PROFILE

School Name: Patterson High School
100 Kane St, Baltimore, MD 21224
(410) 396-9276

Total teachers: 47

Student Demographics								
Total Students	Asian	Black African Americans	Hispanic/ Latino	White	Other	% Economically Disadvantaged	% English Learners	% Students with Disabilities
1,103	13	559	423	103	<10	43.99%	38.53%	16.28%

Patterson High School MSDE School Report Card Profile for 9-12									
Academic Achievement		School Quality and Student Success		Graduation Rate		Progress in Achieving English Language Proficiency		Readiness for Postsecondary Success	
% Proficient in Mathematics	17.7%	Students Not Chronically Absent	33.5%	Four-Year Adjusted Cohort Graduation Rate	63.9%	% English Learners Making Progress Toward Learning English	36.6	Credit for Well Rounded Curriculum	99%
Average Performance Mathematics	2								
% Proficient in English Language Arts (ELA)	24.4%	Access to Well Rounded Curriculum	49.8%	Five-Year Adjusted Cohort Graduation Rate	67.9%			On Track in Ninth Grade for Graduation	45.4%
Average Performance ELA	2.4								
Earned Points	4.9/30	Earned Points	6.0/25	Earned Points	9.1/15	Earned Points	3.7.10	Earned Points	7.3
Total Earned Percent:				34%					

To view this school's full report card, visit www.mdreportcard.org

III. PROBLEM STATEMENT

A half-day meeting facilitated by a two-member RCA team was convened at Patterson High School on April 24, 2019 for day one of the RCA process. Members included the school leadership team, consisting of a local school system leader (i.e., principal supervisor, school improvement leader), and other key school staff. The primary goal of this meeting was to craft a "problem statement" that would drive the RCA. A problem statement is defined as a statement describing a situation, issue, barrier, impediment, or challenge that a school must address to significantly improve student outcomes, related particularly to those outcomes that led to the school being placed on the CSI list.

The goals of the first day were as follows: 1) to determine a problem statement to drive the analysis of the root causes, and 2) to identify stakeholders for day two of the RCA.

The primary data sources reviewed were the MSDE CSI Needs Assessment Report, the Maryland State School Report Card, and the School Climate Survey data and qualitative data from school stakeholders.

Problem Statement Criteria

Participants arrived at a problem statement by examining how CSI schools were identified, using data to understand why the school received CSI status, organizing data trends into themes, evaluating the feasibility of addressing those themes, and prioritizing addressable themes to identify the RCA area of focus. The problem statement was crafted based on the following criteria:

1. *How important is the problem to addressing our needs?*

Importance is determined by whether student outcomes will be improved, teacher efficacy is increased, and/or organizational systems will be improved.

2. *How feasible is it to address this problem?*

Feasibility is defined by the availability of adequate resources, staff, and capacity, and whether there is sufficient support and buy-in.

3. *How aligned is the problem to our needs?*

The problem statement should be related to the reason the school was identified as a CSI school. Also the school should be able to address the problem and its root causes by the effective selection and implementation of evidence-based practices.

Day One Summary

On day one, the stakeholder team gathered to share the story of Patterson High School and analyze data to determine specific problems that relate to the school's low graduation rates. There was frustration that the school's graduation rates had allegedly fallen in one year below the benchmark and concern that this development was not fully accurate. Gathered staff were committed to ensuring the school not only would move out of CSI status quickly, but also to making additional improvements within the school community.

The team discussed the increase in students arriving from other countries, particularly Central American countries. These students often enter with educational gaps, limited English proficiency (LEP), and without needed supports to be successful. Additionally, the group shared the school's lack of resource intervention support both for the academics and socio-emotional needs of their students.

III. PROBLEM STATEMENT

Key Data Themes

The group worked in smaller teams to analyze various data sources. Below are each team's key take-aways:

Data Source	Key Takeaways
MSDE CSI Needs Assessment Report	Examination of the three-year data trend: • An increase in homeless students (2.93-3.37%) • An increase in students with disabilities (15-16%) • An increase in student mobility (43-50%) • An increase in LEP population • High level of interrupted education
Maryland State School Report Card	• 67% of students are chronically absent. • Approximately 50% of students are proficient in mathematics and reading. • The school has a lack of remediation for academic needs in early grade bands that would enable students to pass the state assessments in later years. • The data show LEP students are not on track for graduating in four years. • English language proficiency is at 37%. • LEP students age out (at 21 years) but can still enter ninth grade at age 20, so they do not have time to gain the knowledge to graduate.

III. PROBLEM STATEMENT

Themes Across Data Sources (Topics) (1 being highest priority)	Ranking
Increase in special populations • English language learners • Students with disabilities • Over-age, under-credit, under-skilled students at "ninth grade" •	1
Lack of resources and intervention support • Academic • Socio-emotional • Whole child •	2
Chronic absenteeism	3
Student enrollment as a catch-all	4

Final Problem Statement

Data indicates that a high percentage of students are chronically absent, highly mobile, over-age and/or under-credited, thus impacting their ability to graduate on time.

Evidence Base for Problem Statement

This section represents a brief research summary of the evidence related to the significance and/or impact of the problem statement identified above.

The US Department of Education closely monitors graduation rates as part of an initiative that has increased the national graduation rate to an all-time high of 84.6 percent for students in the class of 2016-2017 who earned diplomas in four years (National Center for Education Statistics, 2019). Research suggests that students do not graduate or graduate "on time" due to numerous reasons (i.e., attendance, early course completion, etc.). Various sources indicate that students become less engaged because of out-of-school factors such as family responsibility, as well as in-school factors such as educators not effectively engaging youth. Overall, the schooling process continues to alienate students and families from the learning process (McKnight, 2015). Thus, the issues that lead to low graduation rates may be adequately addressed with more responsive school and learning environments, more individualized and timely supports for students, and more effective recovery programming.

IV. ROOT CAUSE ANALYSIS OF THE PROBLEM STATEMENT

Day Two Summary

Patterson High School convened on May 1, 2019 for day two of the RCA process. Day two was devoted to working with the school's stakeholder team (see Appendix A for complete list) to identify and prioritize the root causes of the problem so the causes could be addressed in the school's improvement planning efforts.

Stakeholders began the day by reviewing the problem statement developed by the instructional leadership team on day one. Following this review, they comprehensively brainstormed causal factors that contributed to the problem using a "Fishbone" activity. Individual causal factors were then organized into themes, and a causal factor statement was crafted for each theme. Using the "5 Whys Activity," stakeholders were encouraged to dig deeper into causal factor statements by asking "why" questions in order to arrive at underlying causes. Underlying causes were then collectively ranked in order to arrive at a prioritized list of root causes.

Specifically, the goals for day two included:

- Determining factors that contribute to the problem statement,
- Identifying underlying causes of the problem and determining which underlying causes are primary "root" causes, and
- Prioritizing the root causes based on the importance of impacting student outcomes and the feasibility of implementing strategies to address them.

Day Two Summary

On day two, the stakeholder team began the day engaged in rich discussion about why Patterson High School struggles to meet graduation rates and, in particular, whether the specification of LEP should be noted. Ultimately, the team decided that all students could be a focus for support.

Through the process, the team categorized, prioritized, and ultimately narrowed the large list of causal factor statements to three that were most within the locus of control for the staff. Several themes emerged during this process, including the understanding of the culture of poverty and trauma; historic practices within the school that may contribute to segregation and disconnectedness, particularly for special populations; and the lack of accountability for teachers to implement school-wide systems and instructional practices.

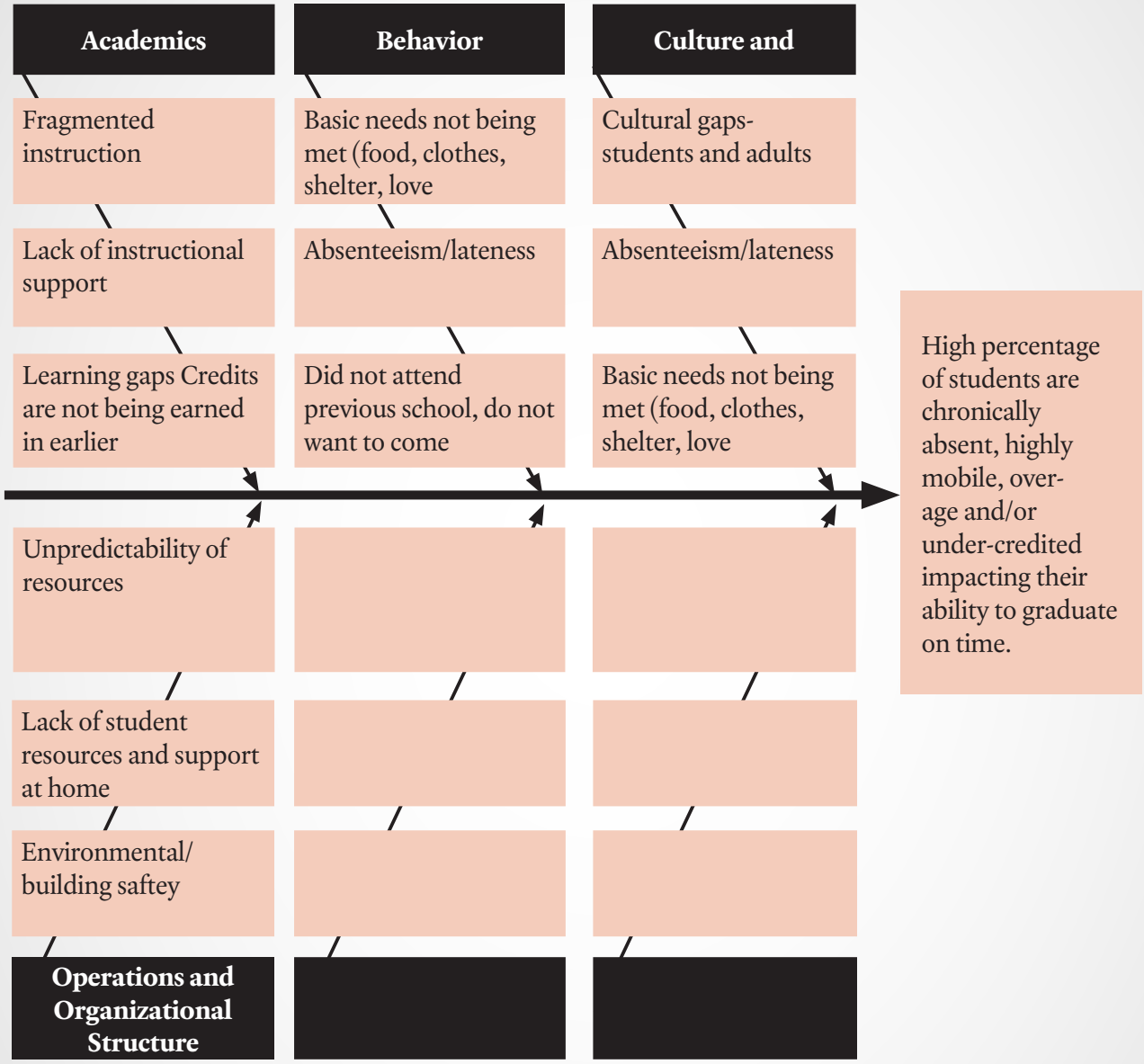
Ultimately, the team prioritized three underlying causal factors that, if addressed, would yield improvement in teaching, learning, and graduation rates.

Casual Factors

The "Fishbone" diagram represents the stakeholder group's initial assessment of all of the individual factors contributing to the existence or recurrence of the problem statement.

IV. ROOT CAUSE ANALYSIS OF THE PROBLEM STATEMENT

Patterson High School Fishbone: Exploring Causes



IV. ROOT CAUSE ANALYSIS OF THE PROBLEM STATEMENT

Prioritized Root Causes

Following several group exercises, the stakeholder group came to consensus on the priority root causes. These are the causes most critical to addressing the problem based on the criteria of importance, feasibility, and alignment.

Final Output. Prioritized Root Causes:	Ranking
Teachers and staff are not equipped to support students who live in poverty and have experienced trauma.	1
A poor school climate has resulted in students and teachers feeling isolated and disconnected.	2
The school support of teacher professional learning is insufficient.	3

Evidence Base for Prioritized Root Causes

The literature suggests that building student relationships represents an essential factor to enhanced academic outcomes, while also serving as a vehicle for effective instruction. Thus, facilitating care, respect, and support between teachers and students and students and each other remain paramount to increased academic learning outcomes and increased graduation rates (Shepard et al., 2012; Pianta, 2013). Pathways to building teacher and student relationships rely on educators showing care for the students (Sabol & Pianta, 2012), making connections to students' home and community environments through instruction and class climate (Coleman, Bruce, White, Boykin, & Tyler, 2017), and using cultural and meaningful connections between the academic content and students' cultural backgrounds (Boykin & Noguera, 2011; Coleman et al., 2017).

Effective pedagogy and associated professional learning likely increase student learning, as well as teachers' capacity to teach or facilitate high-level student engagement, academic efficacy, and motivation for continued learning (Boykin & Noguera, 2011). Darling-Hammond and Richardson (2009) suggest that workshop professional learning, alone, may be insufficient to support teachers' development. Therefore, ongoing coaching and teacher mentoring yield major contributing factors to sustained teachers' development. Primarily, the goal of increasing teacher effectiveness through ongoing professional learning is to yield better performance and achievement outcomes, such as test scores, motivation, and engagement (Gershenson, Holt, & Papageorge, 2016). Liu and Loeb (2017) found that effective teachers had a positive impact on students' school attendance which, in turn, influenced graduation rates.

V. RECOMMENDATIONS FOR IMPROVEMENT

Recommendations for Evidence-Based Improvement

Final recommendations for this report have been developed by the University of Maryland College Park in consultation with RCA facilitators and leaders at MSDE. Recommendations were developed using the following process:

- Reviewing the ideas, notes, and stakeholder perspectives gathered throughout the RCA process;
- Conducting a scan of the research literature related to the problem statement and prioritized root causes identified throughout the process. Although a comprehensive research analysis was outside the scope of this project, the team reviewed research using the standards of evidence model outlined in the ESSA to offer studies that had moderate or strong evidence of effectiveness (Level 1 or 2 on the ESSA framework);
- Compiling, organizing, and categorizing over 150 recommendations submitted by RCA facilitators.

These recommendations are offered by the University of Maryland College Park in consultation with MSDE. They represent only a portion of the potential strategies and interventions that will become a part of the school's three-year improvement plan developed in concert with the MSDE Title I office.

V. RECOMMENDATIONS FOR IMPROVEMENT

RECOMMENDATION	Four Domains Domain of Rapid School Improvement[1]
Maximize professional learning focused on planning, instruction, and improving learning conditions for students. Establish or significantly strengthen a school-wide cycle of professional learning–coaching, observations, and team planning–that includes an aligned focus across core instructional activities. Several studies link teacher professional learning with improvements in instruction and quality of learning environments (Vescio, Ross, & Adams, 2008). Professional learning opportunities are most effective when they are part of coherent school-wide efforts that link content, assessments, and reflection, rather than episodic professional workshops (Akiba & Liang, 2016). Two effective professional learning strategies include professional learning communities and job-embedded professional learning. *Professional Learning Communities*: Teachers need time spent planning and learning with colleagues in collaborative planning time and/or professional learning communities (PLCs) that are focused on teaching and learning not on administrative or organizational demands. Research shows that PLCs are most successful when they are designed and supported with specific attention to leadership, group dynamics, trust, and respect (Vangrieken, Meredith, Packer, & Kyndt, 2017). PLCs can form around topics that teachers can explore together, plan for, and build upon together using peer observations and deeper capacity-building on areas of need, such as social emotional learning or trauma-informed teaching. Authentic PLCs include the following features: • Teacher-led and based on specific needs of students • Supported by school leaders with training and development activities *Job Embedded Professional Learning:* Research emphasizes the importance ofprofessional learning that emphasizes explicit strategies for conducting active teaching, assessment, observation, and reflection rather than just abstract discussions (Darling-Hammond & Richardson, 2009). Professional learning that examines the educator-student relationship is critical and complements culturally responsive pedagogy. As students continue to explore their self-identities, they likely pay more attention to issues that address their preferences and their budding self-definitions. Thus, acknowledging, respecting, and incorporating aspects of the students' identities throughout the curriculum and teacher-student interaction can facilitate heightened student engagement. In turn, this technique will aid in students' mastery of concepts and academic efficaciousness (Myers & Pianta, 2008).	*Talent Development* *Instructional Transformation*

V. RECOMMENDATIONS FOR IMPROVEMENT

RECOMMENDATION	Four Domains Domain of Rapid School Improvement[1]
Implement Social Emotional Learning (SEL) to explicitly teach SEL skills focused on self-awareness, self-management, social-awareness, relationship skills, and responsible decision-making. Employ a robust SEL program that is inclusive of all school-based staff, including but not limited to, administrators, teachers, school social workers, guidance counselors, and para-professionals. Effective school based SEL programs are comprised of five major components: **1.** Self-awareness **2.** Self-management **3.** Social awareness **4.** Relationship skills **5.** Responsible decision making (CASEL, 2012). These components are more impactful when they are set in an environment in which organizational culture, climate, and conditions all support SEL (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). One goal of SEL programs is to improve the quality of interactions among individuals in schools and within classrooms; therefore, school-level social processes are important to examine when considering an SEL program. Moreover, some evaluation studies find that within low-income urban communities, school climate may be particularly salient (Aber, Jones, Brown, Chaudry, & Samples, 1998; Hughes et al., 2005). Though the Collaborative for Academic, Social, and Emotional Learning endorses the use of evidence-based SEL programs in the context of systemic schoolwide and districtwide approaches (Devaney, O'Brien, Resnick, Keister, & Weissberg, 2006), it is necessary that a systemic approach to SEL programming entails integration of SEL across school activities, both in and outside of the classroom, and even reaching into the community.	*Culture Shift*

[1]The MSDE uses the Center on School Turnaround at WestEd's Four Domains for Rapid School Improvement: A Systems Framework as a framework for continuous improvement. The framework identifies four areas as central to rapid and significant improvement: turnaround leadership, talent development, instructional transformation, and culture shift. The recommendations in this report are aligned to the four domains as a way to organize and frame the improvement efforts. For more information: https://centeronschoolturnaround.org.g

V. RECOMMENDATIONS FOR IMPROVEMENT

RECOMMENDATION	Four Domains Domain of Rapid School Improvement[1]
Implement one or more research-backed strategies to promote positive school climate, including positive discipline, conflict management, anti-bullying, and positive youth development. Research indicates that a positive school climate is strongly linked to student academic outcomes. For example, school climate can influence attendance, achievement, retention, and graduation (MacNeil, Prater, & Busch, 2009; Stewart, 2008; McNeely, Nonnemaker, & Blum, 2002). The US Department of Education has conceptualized school climate as broadly consisting of the domains of safety, engagement, and environment. These domains encompasses students' perceptions of inclusion and belonging; incidents of bullying and the response of students and educators; school connectedness; peer to peer relationships, as well as relationships between teachers and students; school discipline practices; and the state of the physical facilities. According to the National Center on Safe Supportive Learning Environments (2009), "the strength of the linkages between school climate and academic achievement make it essential that all students have the opportunity to attend schools that provide a safe and supportive environment where they can thrive and fully engage in their studies" (www.safesupportivelearning.ed.gov). To address concerns regarding school climate, there are many resources available to educators that can guide efforts to foster a more inclusive and supportive school environment for all students, including Teaching Tolerance (www.tolerance.org/professional-development/school-climate) and the National Center on Safe and Supportive Learning Environments (safesupportivelearning.ed.gov/scirp/action-guides). In schools with indicators that the school climate needs to be improved, there are a wide variety of factors can contribute to poor climate conditions, and conversely, a wide range of strategies exist to address such conditions. These research-based strategies can include: 1) Adopting school-wide alternative, positive discipline systems with clear and well supported expectations and consequences for student behavior, such as Restorative Justice (Augustine et al., 2018; www.alternativesyouth.org/programs/restorative-justice), or Positive Behavioral Intervention Supports (PBIS) (Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008; www.pbis.org); 2) Mandating anti-bullying training for all educators and staff. Training should define what constitutes bullying and how to recognize when it is happening to students so they can effectively intervene (www.stopbullying.gov; www.teachingtolerance.org). 3) Implementing conflict resolution strategies or school-wide program (creducation.net/teachers); and Integrating practices from the "Positive Youth Development" approach into the management of school co-curricular activities and student clubs: (youth.gov/youth-topics/positive-youth-development).	*Cultural Shift*

VI. CONCLUSION AND NEXT STEPS

Collaboratively with the Local School System (LSS) and stakeholders, CSI school teams will develop intervention plans that identify SMART (Specific, Measurable, Achievable, Realistic, Time-Bound) intervention goals with measurable annual outcomes and progress indicators that will guide schools toward meeting annual targets and exit criteria in three years. The outcomes of the RCA must be used to inform the development of the SMART intervention goals and identification of evidence-based strategies included in the intervention plan. Any evidence-based strategy must meet the ESSA evidence requirements (Level 1, 2, or 3). Intervention plans will be approved by the school, LSS, and the MSDE, and monitored annually by staff from the LSS and the MSDE. Additional information and resources are available on the MSDE Resource Hub. https://www.marylandresourcehub.com

APPENDICES

Appendix A: List of Stakeholders

Day 1
April 24, 2019

Name	Position
Kelly Humble	*Social Studies Staff Developer*
Bobbi O'Brien	*Literacy Coach*
Caroline Cook	*Teacher, Career and Technical Education Department Chair*
Ernestine Eoller	*Assistant Principal*
Max Alukwu	*Assistant Principal*
Christian Licier	*Assistant Principal*
Tiffany Williams	*Assistant Principal*
Daniel Callahan	*Staff Developer*
Rochelle Randolph Seward	*504 Chair, Educational Associate*
Nicole Scruggs	*Title 1, Comprehensive Support and Improvement*
Vance Benton	*Principal*
Kelly O'Brien Gruerra	*English as a Second Language and Spanish Staff Developer*

Day 2
May 1, 2019

Name	Position
Kelly Humble	*Social Studies Staff Developer*
Bobbi O'Brien	*Literacy Coach*
Caroline Cook	*Teacher, Career and Technical Education Department Chair*
Tina Edler	*Assistant Principal*
Max Alukwu	*Assistant Principal*
Christian Licier	*Assistant Principal*
Tiffany Williams	*Assistant Principal*
Daniel Callahan	*Staff Developer*
Rochelle Randolph Seward	*504 Chair, Educational Associate*
Catherine Jacques	*Observer*
John Dingzon	*Student Government Association*
Nicole Humphreys	*Program Associate*
Deborah Knowles	*Baltimore Teachers Union Representative*
Jason Casey	*Parent*
Andrew Mitchell	*Community Liaison*
Alex Funk	*Mathematics Representative*
Cassie Smith	*Director of Program Administration*

APPENDICES

Appendix B: Bios of Facilitators

Sean Coleman, Ph.D. currently serves as Director of the Doctoral Program in Educational Leadership and is Assistant Professor in the Department of Educational Studies and Leadership at Bowie State University. Previously, Coleman served as the founding program coordinator to the Human Development Degree Program at the University of the District of Columbia, answering the mayor's call to increase early childhood educators' highly-qualified training and designation. Coleman's research and evaluation experience at the Center for Research of Students Placed At Risk (CRESPAR) at Howard University and the Center for Social Organization of Schools at Johns Hopkins University involved the development and implementation of various reliable assessments related to cultural phenomenology, cognition and learning, and best practices in instructional pedagogy. Coleman was the director of Assessment & Evaluation and Training for CRESPAR/Capstone Institute where he facilitated the development and implementation of comprehensive school reform initiatives nationally and abroad, along with several other initiatives related to K-12 and postsecondary education. While at the Washington, DC Public Charter School Board, Coleman provided direct oversight and support to a portfolio of charter school boards as they worked toward school success and student achievement. Coleman's career began as a certified elementary school teacher, which also included new teacher induction instructor, professional development facilitator, new teacher induction committee member, grade-level chairperson, and school-based management team member.

Lori Wilen has worked in a wide variety of educational settings, all in the Washington, DC Metro region, for over twenty years. Wilen obtained her Master's in Education from Harvard University in School Leadership. Her undergraduate degree is from the University of Maryland, College Park in Elementary Education with a concentration in Spanish. She began as an elementary classroom teacher in Washington, DC Public Schools (DCPS) and ended her classroom teaching career a decade later in a DC public charter school. Wilen then worked for Expeditionary Learning (now EL Education) as a school designer, supporting schools in implementing rigorous and engaging academic learning and building the socio-emotional and leadership components of the whole school. After graduate school, Wilen returned to the DC region to work as an instructional coach and then later managed instructional coaches in DCPS. She was then asked to lead the roll-out of the Common Core in mathematics for the District as the director of STEM. Since the birth of her oldest child, Wilen has served as an educational consultant in the region. She has supported teachers as leaders and learners, written curriculum for aspiring educators, and has evaluated many of the charter schools in the area with the charter school board. Wilen has two young children and greatly enjoys yoga and meditation.

APPENDICES

Appendix C: Citations of research

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