

**EVALUATION OF THE IMPACT OF
FOUR NEWLY STATE-FUNDED
CHILD AND ADOLESCENT HEALTH CENTERS IN MICHIGAN**

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JFM Consulting Group is a Detroit-based firm that specializes in advancing social change efforts through research and evaluation, strategy development, and strategic planning. JFM worked in partnership on this evaluation with Ty Partridge, a faculty member at Wayne State University in the Department of Psychology who specializes in child and adolescent development and advanced research methods.

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Executive Summary

INTRODUCTION AND BACKGROUND

In the spring of 2015, the Michigan Department of Health and Human Services (MDHHS) commissioned JFM Consulting Group (“JFM”) to conduct an evaluation of the impact of four newly opened and state-funded Child & Adolescent Health Centers (CAHCs) on students’ health, well-being and educational success. The evaluation investigated the CAHCs’ impact over a two-year school period in areas of priority to MDHHS, including indicators of physical and mental health, experience of stress and coping strategies, health literacy, access to and use of health care, and selected measures of educational behaviors and success.

The evaluation is guided by three main purposes: (1) to expand the growing body of work on the role CAHCs play in promoting child and adolescent health, well-being, and academic success; (2) to inform and promote positive policies that support optimal growth and development among adolescents, particularly adolescents who live in conditions of poverty; and (3) to support ongoing learning about opportunities for continuous improvements in the quality and impact of CAHCs moving forward.

EVALUATION QUESTIONS

The evaluation is designed to answer three primary questions:

- To what extent and in what ways do CAHCs contribute to students’ health, well-being, and success in school?
- At what level and in what ways does CAHCs’ impact on students’ health, well-being, and indicators of academic success vary for different groups of students (for example, for middle school vs. high school students, by gender, or across the four CAHCs)? What factors help to explain these variations?
- What lessons are learned from the evaluation about the strengths, limitations, and opportunities for improvement and increased impact moving forward?

STUDY SAMPLE

MDHHS invited four CAHCs to participate in the evaluation from a pool of 17 newly-funded CAHCs by the MDHHS/Michigan Department of Education (MDE), all of whom agreed to participate. The four participating schools include two rural middle schools in the mid-western side of the state (the Muskegon area), one high school and feeder middle school in northern Michigan (both served by the same CAHC), and one high school in a largely urban/suburban setting in southeastern Michigan.

School-Based Health Centers, called “Child and Adolescent Health Centers” or “CAHCs” in Michigan, promote the health of children, adolescents and their families by providing important primary, preventative, and early intervention health care services in a school-based setting. Services commonly provided include:

- * Health education
- * Mental health care
- * Vision and hearing screening
- * Medication
- * Immunizations
- * Treatment of acute illness
- * Co-management of chronic illness

The Michigan Child and Adolescent Health Center (CAHC) program is jointly funded by the Michigan Department of Health and Human Services (MDHHS) and the Michigan Department of Education (MDE).

The MDHHS and MDE embrace the notion that “healthy kids learn better” and have collaborated to establish the CAHC program with the aim of increasing access to basic health care for children and teens in Michigan.

These CAHCS are located in historically underserved and under-resourced communities, contributing to sustained difficulties in accessing healthcare and mental health care services when needed.

METHODS AND ANALYSES

To answer the evaluation questions, the evaluation utilized a robust integrated dataset comprised of three primary data sources: (1) students' self-reports on the outcome variables obtained via an electronic "Student Survey" administered in four Waves (at the beginning and at the end of the 2015-16 and 2016-17 school years); (2) results from self-administered risk assessments of students who use the clinic, coordinated by the CAHC; and (3) de-identified individual encounter data maintained by the CAHC. The analyses were also informed by the findings from a series of discussion groups with students from each CAHC, discussion groups and/or interviews with (a) CAHC staff members and (b) members of the CAHC's Community Advisory Councils, which included parents.

The evaluation utilized a prospective cohort design that followed 1708 students in grades 6th through 11th grade over a 2- year period. Key research methods included thematic analyses of the qualitative data; exploratory factor analysis (to identify the statistical relationships among student's survey responses); latent growth modeling (to estimate comparative rates of improvement or "growth" among CAHCs users and non-users on our outcome variables); Repeated Measures Anova (to compare rates of improvement among CAHC users and non-users); and Propensity Score Matching (to control self-selection bias and factors other than use of the health center that are correlated with the student outcomes, such as age, gender, self-report of health status, and motivation to improve health).

To provide a broader context for interpreting these results, we analyzed frequency distributions of responses to the survey questions, conducted analyses of the encounter data, and analyzed the findings from the risk assessments completed by students who visit the clinic. The de-identified datasets were linked using unique randomized codes assigned to each student generated by each CAHC's Data Coordinator. Measures of statistical significance were provided alongside analyses of effect sizes to gauge the magnitude of observed differences in outcome measures between users of the clinic and non-users.

RESULTS

The vast majority of students (92.1%) report that their health, in general, is either good, very good, or excellent. While encouraging, this figure masks the frequency and depth of health and mental health issues facing some students. When asked more specific questions about their health and well-being, a different picture starts to emerge, suggesting that stress, depression, suicide ideation, self-harming behaviors, anxiety, anger and feelings of social isolation and disconnectedness from school, for example, are not necessarily uncommon experiences. Over half of students report that they experience seven or more risk factors identified in the risk assessment, for example, and just over one-fifth of students report that ten or more risk factors are relevant to their lives. The evaluation's impact analyses sought to determine the differences that utilizing the newly established CAHCs make in helping to improve students' health, well-being, and educational success. The results are

encouraging. Responses to the three evaluation questions follows.

Evaluation Question 1: To what extent and in what ways do CAHCs contribute to students' health, well-being, and success in school?

Use of a CAHC is positively related to improved outcomes over the two-year period in virtually all outcome areas we studied. Students who used the health centers over the 2-year period showed greater improvements in their self-reports of health and well-being than students who do not use the center (controlling for potentially confounding factors): this held true across the outcome measures studied, whether related to *increased feelings of connectedness with the school, reduction of feelings of isolation, decreased use of negative coping strategies, increased health literacy and reproductive health literacy, or reduced feelings of depression.*

At baseline, students who report the highest levels of poor health, self-reported stress, and mental health issues and lowest levels of positive coping / resilience supports are more likely to use the clinic than those who report less significant difficulties, suggesting that the clinic is reaching and serving students at comparatively higher risk.

Unlike students who used the clinic, students who did not use the clinic tend to report little change or improvement across our four waves on a range of measures of socioemotional outcomes, such as a social isolation, school connectedness, and coping with stress in negative ways.

The magnitude of difference between CAHC users and non-users on our outcome variables is either moderate or strong in all our analyses based on effect size and rates of improvement outcome measures among students who used the clinic.

Evaluation Question 2: At what level and in what ways does CAHCs' impact on students' health, well-being, and indicators of academic success vary for different groups of students (for example, for middle school vs. high school students, by gender, or across the four CAHCs)? What factors help to explain these variations? Throughout the results we report differences among student responses by gender and for middle school vs. high school students. A common pattern was for girls to report comparatively greater risk responses than boys, although boys tended to report disciplinary issues and scored higher on some measures than girls. We plan to analyze the experiences, needs, utilization patterns, and outcomes of different population groups in-depth via a separate contract with the MDHHS in spring/summer 2018.

Evaluation Question 3: What lessons are learned from the evaluation about the strengths, limitations, and opportunities for improvement and increased impact moving forward?

CAHCs play an important role in promoting mental health and well-being among students in historically underserved areas. Mental health issues constituted the main reason students visited the clinic – nearly half of all students who visited the clinic listed mental health as their chief complaint. The CAHCs provided students with a range of mental health services, including routine mental health visits and guidance and support on strategies for coping with depression or suicide ideation, anxiety and stress, and disruptive behavior, for example. Having a health center on-site is particularly important for students who report that they do not have adults or other support systems to turn to for help in coping with high levels of stress and anxiety.

CAHCs help to improve physical health, whether through making sure students are up-to-date with immunizations, helping students with asthma manage their symptoms and stay in school, treating injuries and associated pain, connecting with other specialists or care providers when needed. The evaluation data provided a profile of all such services utilized by students. CAHCs also help students prevent and manage acute illness and troublesome symptoms such as headaches, stomachaches, and upset stomachaches that can interfere with well-being and learning.

CAHCs play an important role in fostering academic progress and success. After providing care and tending to students' needs, CAHCs' staff returned the substantial majority of students who use the CAHC (82.6%) to their class, lunch, or recess, thus increasing opportunities for instructional seat time and enabling students to concentrate on their lessons, rather than on the distractions of attended health problems. Through addressing students' health care and mental health care needs, CAHCs help set the stage for increased learning and academic success.

CAHCs spend time with students that exceeds what typically is possible among traditional primary care practitioners. CAHCs have greater flexibility in scheduling longer and more frequent visits with students than health professionals can provide in other clinical settings. This is particularly important in enabling them to provide more in-depth mental health care to students with complex needs and fostering a sense of trust and connectedness with their school.

CAHCs have achieved widespread support among students, community members, parents, and others. Students who have used the clinic are grateful to have an adult available to help them manage the challenges they face, as many of the qualitative results made clear. The preponderance of students (92%) are satisfied with the care they received at the clinic.

As these examples demonstrate, CAHCs are helping to provide students in historically underserved communities with access to comprehensive, high quality services, monitored by the CAHC sponsor and overseen by MDHHS. They are advancing student-centered health care services through engaging and empowering students to make decisions that directly affect their lives through venues such as the Youth Advisory Councils present at each school. They are assessing and identifying

students' needs for health care and behavioral health as determined via risk assessments, administered to students who visit the clinic, at least once a year. They are providing students with access to adults whom they can trust with private information and turn to for help when needed. According to students, the CAHCs serve as a reliable source of support and care that can be counted on to help them manage the stressors and stress they face in their lives, and to find positive ways of coping with adverse circumstances that are common in communities with sustained concentrations of poverty.

Lessons Learned and Recommendations

Key opportunities for continuing improvement, suggested by the findings and the stakeholders themselves, include the following.

- ✚ **Continue to intensify and deepen the provision of mental health services given the significant and serious need many students have for care and support.** This was a recurrent theme throughout the evaluation and our interviews and discussions with stakeholders.
- ✚ **Provide stress management techniques and cognitive behavior therapy (or other forms of building coping skills) school-wide.** CAHCs can play an important role in helping students manage stress in constructive ways, both at the individual level and through supporting school-wide/primary prevention and stress reduction training and education.
- ✚ **Intensify follow-up and follow-through on referrals.** In only a minority of cases was follow-up noted on the encounter logs.
- ✚ **Continue to build on and increase opportunities for engaging youth, parents, and community members in playing leadership roles through youth advisory groups, community advisory groups.** The discussion groups with students, CAHC and school staff, and community leaders and members made clear students' eagerness and readiness to play a leadership role in promoting the CAHC among their peers and in the community. Student members devised a range of creative strategies for increasing the reach and breadth of impact of CAHCs. Students in general were grateful for the CAHC and, even when they didn't use it, appreciated the fact that "it was there" for them when they needed it.
- ✚ **Increase CAHCs impact school-wide through continuing to increase enrollment levels and through addressing social and environmental determinants of health.** The evaluation examines CAHCs' impact largely *within the clinic and on individual students*. The American Public Health's Center for School, Health and Education has developed a strategic model that extends the impact of CAHCs *beyond the clinic walls* by integrating public health practices and strategies with primary care, focusing on promoting health and academic success school-wide. This model includes conducting needs assessments for all students (not only those who visit the clinic), engaging youth in discussion groups to help identify the root causes of stress and other health/mental health issues identified in the needs assessments, setting priorities based on results, and implementing strategies for advancing population health and equity through primary

prevention, early intervention, and positive systems-level changes in policies and practices.

- ✦ **Explore the reasons that underlie low levels of utilization among those whose needs might suggest more intensive intervention.** As the encounter data indicated, it is not uncommon for students to visit the clinic only once or twice even though the results from the risk assessments and the Student Survey suggest often significant needs and opportunities for more intensive support.
- ✦ **Broaden impact through engaging vulnerable and hard-to-reach students in the CAHC.** The risk assessments and the Student Survey results suggest that most students are benefiting significantly from having a new health center in their school. A continuing need and opportunity exists for enhance outreach and recruitment to engage students in the clinic and to increase the value and impact of the CAHC among vulnerable students who have historically unmet needs but who have not utilized the clinic.
- ✦ **Continue to build the buy-in and partnerships with school and district leaders for CAHCs, as well as with community providers and resources.** Several stakeholders underscored the importance of building and sustaining strong relationships with the educational community given the interdependencies in advancing health and educational success.

CONCLUSIONS

This evaluation points to a range of ways CAHCs can make a positive difference in the lives of students who face the sustained challenges and disadvantages of economic hardship and poverty. CAHCs are proving themselves to provide a critically important mechanism for building strong and resilient youth who are equipped to positively manage the challenges they may face at school, home, and in their personal lives. That CAHCs can make a difference in addressing unmet needs and promoting resiliency among children and adolescents comes as no surprise. That they do so without incurring a major expense to students, families, and communities is a strength that warrants more widespread recognition in public policy. This study adds to the growing collection of research that points to the brighter and healthier futures for children and adolescents as a result of broadening access to and engagement in quality health care provided when needed, in their schools.

Evaluation of Four Newly-Funded Child and Adolescent Health Centers

INTRODUCTION AND BACKGROUND

Michigan provides the largest state-funded school-based health center (SBHC) program in the nation, administering 82 clinical and alternative clinical centers throughout the state (referred to in Michigan as “child and adolescent health centers,” or CAHCs).¹ Serving children and adolescents from historically medically underserved and low-income areas, CAHCs are designed to promote the health of children, adolescents, and their families by providing a range of primary care, preventative care, and early intervention services, including mental health care services. CAHCs provide an important vehicle for expanding access to needed health and mental care services among underserved, uninsured, underinsured, and Medicaid-eligible children and adolescents, helping to mediate the negative effects of poverty on their health, well-being, and readiness to learn and succeed in school. By expanding opportunities for youth to access and utilize quality services as needed, CAHCs reduce inequities in access to quality health care and disparities in health status that result from unmet needs that are sustained over time.²

Michigan’s history of providing school-based and school-linked health center services dates back to the 1980s. In 1987, the Michigan Department of Public Health (now the Michigan Department of Health and Human Services, MDHHS) began to fund these centers, focusing solely on the adolescent population during these early years. Through leveraging federal funding in 2004, CAHC’s clinical services were expanded to include

Clinical Services

CAHCs provide a range of clinical services to children and adolescents 10-21, including the following:

- Primary care
- Preventive care
- Mental health care
- Comprehensive health assessments
- Vision and hearing screening
- Medication
- Immunizations
- Treatment of acute illness
- Co-management of chronic illness
- Health education
- Medicaid outreach and enrollment
- Oral health services or referral
- Referral to specialty care and follow-up

Non-Clinical Services

CAHCs provide a variety of non-clinical services school-wide, outside of the clinic walls. Examples include:

- Health education in classrooms
- Group education for students with particular needs,
- Information to parents and other stakeholders
- Serving as members of community-wide action groups and facilitators of Youth Advisory Groups
- Working as a partner with school leadership in assemblies or special events, such as health fairs or targeted interventions for students with for specific needs, such as bullying or suicide prevention.

CAHC providers

CAHCs commonly engage multi-disciplinary teams of practitioners, including:

- Physicians or nurse practitioners
- Registered nurses,
- Physician assistants,
- Social workers and/or other mental health practitioners
- Other (e.g., dental, vision)

CAHC Sponsors

CAHCs are most frequently sponsored by:

- Community health centers
- Federally Qualified Health Centers and “Look-Alikes”
- Hospitals and medical centers
- A mix of school systems, local health departments, private/nonprofit organizations, and local health departments

¹ School-Based Health Alliance, *2013-14 Census*.

² A full description of minimum requirements for clinical, administrative, and services, is provided in the CAHCP’s, “[Child and Adolescent Health Center Provider Toolkit](#),” page 27.

the elementary age population, ages 5-10. The Michigan Department of Health and Human Services (MDHHS) and the Michigan Department of Education (MDE) jointly fund the Michigan Child and Adolescent Health Center Program (CAHCP). Guided by the belief that healthy kids learn better, MDHHS and MDE have collaborated to establish the CAHC program with the aim of increasing access to basic health care for children and teens in Michigan. The expansion of 17 new state-funded CAHCs in Michigan in 2015 provided an opportunity for investigating the ways in which CAHCs benefit and impact students, both individual students and the student-body overall.

EVALUATION PURPOSE

In the spring of 2015, MDHHS commissioned JFM Consulting Group (“JFM”) to conduct an evaluation of the impact of four newly opened and state-funded school-based CAHCs on students’ health, well-being and educational success. The evaluation investigated the CAHCs’ impact over a two-year school period in areas of priority to the CAHC Program at MDHHS, including physical and mental health, experience of stress and coping strategies, management of chronic conditions, health literacy, access to and use of health care, and selected measures of educational behaviors and success.

The evaluation was guided by three main purposes: (1) to expand the growing body of work on the role CAHCs play in promoting child and adolescent health, well-being, and academic success, (2) to inform and promote positive policies to support adolescents, particularly those living in conditions of poverty; and (3) to support ongoing learning about opportunities for continuous improvements in the quality and impact of CAHCs moving forward.

EVALUATION QUESTIONS

The evaluation is designed to answer three primary questions:

- To what extent and in what ways do CAHCs contribute to students’ health, well-being, and success in school?
- At what level and in what ways does CAHCs’ impact on students’ health, well-being, and indicators of academic success vary for different groups of students (for example, for middle school vs. high school students, by gender, or across the four CAHCs)? What factors help to explain these variations?
- What lessons are learned from the evaluation about the strengths, limitations, and opportunities for improvement and increased impact moving forward?

As described on the pages that follow, evaluation staff developed a robust, integrated dataset including three primary data sources: (1) students’ self-reports on the outcome variables obtained via an electronic survey at the beginning and at the end of each of the 2015-16 and 2016-17 school years; (2) results from self-administered risk assessments among CAHC users, conducted by the CAHC using RAAPS-PH; and (3) encounter data related to students’ use of the CAHC, maintained by the CAHC. The evaluation utilized a prospective cohort design that followed deidentified individual students in

grades 6th through 11th grade over 4 survey Waves. Using Propensity Score Matching, the evaluation controlled for self-selection bias among CAHC user vs. non-user groups, as described on subsequent pages of this report. The evaluation also made extensive use of qualitative data, as presented throughout this report.

SAMPLE OF PARTICIPANTS IN THE EVALUATION

Sample of CAHCs

MDHHS invited four CAHCs to participate in the evaluation from a pool of 17 newly-funded CAHCs by the MDHHS/MDE, all of whom agreed to participate. Criteria for participation included the following:

The CAHC:

- Was a clinical school-based health center model, rather than school-linked and alternate health center model (which provide either a more limited scale or less availability of services)
- Served students from historically under-served communities in Michigan
- Was newly-funded by MDHHS/MDE to establish the infrastructure, equipment, staffing, and to satisfy other requirements for operating a new clinic
- Represented a diverse geographic area overall that included a mix of urban and rural locations
- Was in middle schools and/or high schools
- Served a diverse mix of students by demographic characteristics
- Had the capacity to implement services at a relatively high level after opening
- Had a readiness and interest in participating in the evaluation.

Sample of Students

The four participating schools include two rural middle schools in the mid-western side of the state (the Muskegon area), one high school and feeder middle school in northern Michigan (both served by the same CAHC), and one high school in a largely urban/suburban setting in southeastern Michigan, serving 1708 students overall.

All cohort students were eligible to participate in the evaluation's Student Survey unless their parents or guardians declined to allow them to participate. The survey constitutes the key source of data on students' health status and other outcomes. Given the protective measures taken to assure student privacy and data security, the evaluation applied for and received IRB approval to conduct the evaluation and to enable parent/guardians to *opt their students out* of participating in the evaluation, rather than requiring *parental consent* to participate, which typically results in lower number of students who are allowed to participate in the study.

The communities in which the cohort students live have historically been under-resourced, resulting in limited employment opportunities, transportation difficulties, and barriers to obtaining healthcare, especially health care tailored to adolescents.

Demographics. Roughly even numbers of males and females participated in the Student Survey (49% male and 47.8% female). At one of the high schools, just over three-quarters (77.7%) of students were Black/African American; 17.6% were White, 4% were Hispanic/Latino, with the balance (1%) representing two or more races (these latter statistics were for 2011-12, so there may have been some changes over time). Just under three-quarters of students (72.7%) in this district are classified as economically disadvantaged.

One of the smaller rural schools in the Muskegon area includes 84.6% White students, with less than 10% of students represented in all other groups; 61.7% of students in this district are classified as economically disadvantaged. The other middle school that participated in the evaluation, also not far from the Muskegon area, includes 56.6% White students, 40.2% Hispanic/Latino, and very small proportions of other race/ethnicities. The middle school in northern Michigan consists of 75.6% of White students and 11% two or more races. (Source: MI Student Data, Student Counts, 2016-17)

Insurance status: The majority of cohort students who used the clinic (59.9%) had public insurance; just over one-quarter were covered by private insurance (29.5%); and 8.1% were uninsured. Although this distribution varied to some degree by site, it points to the high proportions of students whose family incomes are sufficiently low so as to qualify for publicly-funded health insurance, coupled by the the subset of students who have no insurance at all.

DATA SOURCES

Key data sources included the following:

The Student Survey is a self-administered, electronic survey designed for the evaluation that provides the primary source of data on CAHC outcomes/impact for the student cohorts, school-wide. The two-year longitudinal study design supports comparative analyses of improvement in the rates of change for the study's outcome variables among CAHC users and non-CAHC users. The evaluation controlled for the effects of potentially confounding factors as will be described subsequently in this report. The Attachments provide additional information on the protocols followed to assure student privacy, as well as information provided to parents/guardians about the evaluation and the opportunity they have to opt their students out of the evaluation.

To provide an incentive for students to participate in the survey and to thank them for their time, they were provided with a \$5.00 gift card if they attended the class sessions during which the survey was administered, even if, after learning about the survey, they chose not to take it. Only a small number of parents/guardians opted their students out of participating in the survey (for example, in Wave 4, only 3% of parents declined to have their student(s) participate in the survey), and only 1% of students themselves chose not to take the survey in the same time period. The preponderance of students who started the survey completed it in its entirety. To increase the accessibility of the survey, it was translated into Spanish by a certified translator; the survey also included an audio function where students could choose to listen to the question being read by multi-cultural youth ages 14-17. The overall average response rate over the four waves was 85.4%.

Rapid Assessment for Adolescent Preventive Services–Public Health (RAAPS-PH). As a matter of protocol, MDHHS requires that state-funded CAHCs assess students’ risk status for morbidity and mortality around which a care plan can then be devised. In an agreement with MDHHS, the participating sites utilized RAAPS-PH (and RAAPS-Older Child for students 12 and under), a self-administered electronic assessment developed by *Possibilities for Change* and a research team at the University of Michigan. RAAPS-PH includes 32 questions related to risk status of youth ages 13-18. RAAPS-PH includes 21 core questions and 11 additional risk factors developed in partnership with the American Public Health Association, which included questions related to social determinants of health - the “upstream” factors or stressors that can contribute to behavioral difficulties in school and the negative effects of social factors, such as homelessness and hunger. Students are assessed on their first visit to the clinic and at least once per year thereafter or as clinically needed.

Because few students were 12 or younger (n=54), we did not analyze their RAAPS-OC risk profiles separately. Using RAAPS-PH, we analyzed students’ risk profiles for risk of poor health, mental health, and academic outcomes using de-identified RAAPS-PH results gathered by the health center.

Student Encounter Data were also integrated into the database. This dataset included information on students’ use of the clinic, the primary predictor variable of the CAHCs’ impact on student outcomes. Drawing data largely from students’ electronic health records, individual encounter data were gathered and linked across data sources over the two-year evaluation period. The three de-identified datasets were linked on the individual level using unique randomized codes assigned to each student generated by the CAHC Data Coordinator. A copy of the encounter log is provided in the Attachments.

The evaluation used qualitative methods to investigate students’ and other stakeholders’ perspectives on the CAHCs’ impact on student- and school-level outcomes. Methods included discussion groups with both student members of the schools’ Youth Advisory Groups and members of the school’s Community Advisory Group, which was comprised of a diverse range of participants, including parents. Qualitative methods also included discussion groups and/or interviews with CAHC sponsors and staff, school leadership and staff. These discussions explored students’ and stakeholders’ interpretations of key findings from the outcome/impact analyses, experiences with the CAHCs, appraisal of the CAHCs’ strengths and weaknesses, and perceived opportunities for improvement. Key qualitative findings from these analyses are presented throughout the report.³

³ As noted elsewhere in this report, MDHHS has requested that JFM provide enhanced analyses of utilization data, characteristics of students who use or do not use the clinic, and broader contextual factors that help to explain or interpret the results, all toward the aim of deepening an understanding of the features and mechanisms that support positive change. The full set of enhanced and qualitative results will be integrated into the report once these additional data are available.

EVALUATION MEASURES

The table below describes the main outcome areas investigated in the evaluation, the primary predictor variable (use of the CAHC) and covariates, which were held constant in the analyses to isolate the effects of CAHC utilization. These outcomes represent areas of priority to MDHHS and were used to guide the development of Student Survey and the analyses of RAAPS-PH and students' de-identified encounter logs.

As described more fully later in this report, the evaluation included an Exploratory Factor Analysis to reduce the extensive data elements included in the survey. This procedure indicated that a seven-factor solution provided the most efficient reduction of the original items. Qualitative analyses of the factor items content suggested that the survey focused on the following latent constructs: isolation, impact of stress, school connectedness, negative school behaviors, reproductive health literacy (for the high school sample only), health access literacy, and coping with stress in negative ways.

Areas of intended impact	Conceptualization	Indicators
Health	... “The extent to which an individual or group is able to realize aspirations and satisfy needs and to change or cope with the environment. Health is a resource for everyday life, not the objective of living; it is a positive concept, emphasizing social and personal resources, as well as physical capacities. Thus, health refers to the ability to maintain homeostasis and recover from insults. Mental, intellectual, emotional, and social health referred to a person's ability to handle stress, to acquire skills, to maintain relationships, all of which form resources for resiliency and independent living.” ⁴	Self-assessment of health in general, as well as the presence, management, and impact of chronic conditions and mental health
Mental Health	Emotional, psychological, and social well-being that affects thoughts, feelings, actions, management of stress, interactions and choices. ⁵	Degree of stress, management of stress, impact of stress; positive attitudes/resilience; frequency of depression, isolation, exclusion; coping strategies, school connectedness, social support; risk behaviors, adult support
Academic Vulnerabilities	Risks for academic disengagement, missing school, falling behind, disciplinary actions, poor performance, class failure, dropping out	Frequency of arriving to school late, leaving early, missed days; frequency of suspensions, disciplinary actions; interference of stress with academics; self-reported grades; health/mental health effects on school attendance and school behaviors; self-reported grade; difficulty with reading; frequency of getting C's or worse.
Health Literacy	Degree to which individuals have the capacity to access, obtain, process, and understand basic health	Knowledge of how to obtain health services, can talk freely with health provider; know where to go to get care

⁴ World Health Organization, revised definition of “health” See [link](#).

⁵ Drawn from the definition used by the U.S. Department of Health and Human Services, [What is Mental Health?](#)

Areas of intended impact	Conceptualization	Indicators
	information and services needed to make appropriate health decisions. ⁶	
Reproductive Health Literacy	Degree to which individuals have the capacity to access obtain, process, and understand basic information and services needed to make appropriate reproductive health decisions.	Know where to obtain private advice or care for birth control, pregnancy testing, testing or treatment for STDs (asked only of students ages 12 and older)
Exposure to Social/ Environmental Stressors	Social (“upstream”) factors that influence determinants of health, behaviors, academic success/vulnerabilities.	Frequency of homelessness, lack of electricity, lack of enough food to eat; safety in school; safety getting to and from school; exposure to threatening, behaviors, exposure to trauma
Independent Variable and Covariates	Conceptualization	Indicators
Independent Variable: Use of the Clinic	“Use” is defined as having used the health center at least twice for either medical and/or mental health reasons during the two-year study period. At least “twice” was chosen to capture a broader array of reasons for students’ visits and diagnoses than having visited only once, given that many of the students’ first visits relate to sports or physicals/ wellness visits.	Date and length of visit, reasons for visit, care provided, diagnostic categories, disposition, type of provider seen, referrals
Covariates	Factors included in Propensity Score Matching to control for the confounding effects of variables other than utilization of the health center that are associated with intended outcomes.	School-level (middle school vs. high school); age, grade, gender; school; overall health (ratings of health, days of previous school year missed because of being sick, chronic disease); motivation to talk with an adult at school for help or advice

DATA ANALYSIS

The evaluation analyzed the CAHCs’ impact using several methods described in the textbox on page 15. Because the number of cohort students differs significantly across our four sites, the analyses were weighted to assure proportionate representation in the aggregate results, so that no individual school contributed more to the findings than any other school.

Note: while it is conventional practice to assess and report the statistical significance of differences in observed outcomes associated with an intervention, large sample sizes increase the likelihood that even small differences will be statistically significant and therefore may not necessarily be substantively meaningful. Because of evaluation’s large sample sizes, we looked both at statistical significance as well as effect sizes, which helps to gauge the magnitude of improvements over time among clinic users versus non-users. Both statistics are provided in this report.

To provide a broader context for interpreting these results, we also ran frequency distributions of responses to the survey questions overall and by gender, site, and for middle school versus high

⁶ Jennifer A. Manganello; Health literacy and adolescents: a framework and agenda for future research, [Health Education Research](#), Volume 23, Issue 5, 1 October 2008, Pages 840–847. Note: “access” is added to the definitions of health and reproductive literacy

school students for Wave 4. We did not run frequency distributions by race or ethnicity because the distribution of non-White students was concentrated in two schools, thus mixing school-level effects with race/ethnicity. Family income was also not gathered because of the logistical difficulties in obtaining that information.

LIMITATIONS

As is the case with all complex research, there are limitations that require attention when interpreting the results. Three are offered here. First, because it was not a viable option to conduct a randomized control trial nor was it feasible to utilize a quasi-experimental design, we used propensity score matching (PSM) to control for the effects of selection bias and factors other than students' use of the clinic that could explain the study results. We believe that this model provides reasonable controls for what would otherwise be likely confounding factors. We also believe that our "treatment" group (students who utilized the clinic) is well balanced with our measured covariates to reduce selection bias. For additional detail on controls for Selection Bias, see the Attachments.

Second, we suggest that it is important not only to explore the relationships between use of the clinic and outcomes, but the features or conditions that can influence the impact of the CAHC. Relatively few impact evaluations of CAHCs include systematic analyses how specific design features of CAHCs or implementation practices promote or impede successful outcomes. Fortunately, we will be able to explore some of these needs through our enhanced analyses to be conducted for the MDHHS beginning in the spring/summer of 2018.

Third, the evaluation results included only four sites, limiting our ability to generalize our results to other CAHCs. Nevertheless, the evaluation results are largely consistent with and reinforce the of diverse populations of students, whether by demographic characteristics, risk profiles, or other factors. Nevertheless, the evaluation results are largely consistent with and reinforce the results of other students that have looked at similar kinds of outcomes for broad populations of students. These results provide additional support for what are increasingly common finding regarding the role and impact of CAHCs, even among students whose methods vary. There's also an opportunity to further explore the kinds of strategies or tailored interventions that are most effective in meeting the needs of diverse populations of students, whether by demographic, risk profiles, or other factors.

SUMMARY OF PRIMARY EVALUATION METHODS

Factor Analysis was used to identify the statistical relationships among students' survey responses over the two-year period produce several latent "factors" or groups that best represent characterize the concepts embedded in the survey questions. Follow-up qualitative and statistical analyses of the seven factors showed that they could be further refined into several groups described on the following pages. We used Cronbach's alpha to test for how closely related the set of items (questions) are for each factor, with higher levels indicating increased consistency and reliability.

Latent Growth Modelling was used to estimate comparative rates of improvement ("growth") among CAHC users and non-users over the two school years on our outcome variables. These models are a mathematically equivalent variant of multilevel models in which the "nesting" or non-independence of student's responses over time and within school are accounted for. This reduces the bias in statistical estimation that arises from student responses within a school being more similar to each other than to responses between schools and the high degree of correlation between responses from the same student over time.

Repeated Measures Anova was used to compare rates of improvement among CAHC users vs. non-users. We calculated levels of statistical significance and effect sizes to assess the comparative rates of improvement among clinic users- versus non-users.

Propensity Score Matching was used to control for factors beyond use of the health center that are correlated with the student outcomes. Matched variables include age, gender, self-report of health status (ratings of health, days of previous school year missed because of being sick, chronic disease), and likelihood of seeking help from an adult as a way of dealing with stress, which was used to adjust for the possibility that CAHC users might be more motivated than non-users to improve their health, therein reflecting an independent effect of motivation beyond the direct effects of the health center.

We did not match on insurance status, income, or race/ethnicity because these data were only available for students who used the clinic. These data will, however, be incorporated into analyses *among* clinic users, which we will be conducting in a separate series of enhanced analyses to be conducted at the completion of this report.

Results from the Student Survey at Wave 4

The following pages highlight key findings from the Student Survey; the Attachments provide a detailed table of students' responses to all questions during Wave 4. The analysis of these data highlights students' risk responses rather than their positive responses to underscore the range of risks and needs that subgroups of students' experience. So that the results do not disproportionately favor the larger schools, they have been weighted to provide comparable representation among each of the school's students. These responses provide examples of areas of particular risk and/or stress to students; they are presented to provide a contextual foundation of students' views and experiences that are helpful in interpreting the impact analyses, presented later in this report. Key results follow.

Overall health and well-being

Most students have high ratings of their overall health. The vast majority of students (92.1%) report that their health, in general, is either good, very good, or excellent. This was true of males and females and middle school students and high school students alike. As is a common throughout the study findings, girls were significantly more likely than boys to report that they felt really sick at least 3 days in the past 4 weeks.

“Adolescents are generally thought to be healthy, but at least 20% of North American adolescents have a serious health problem.¹ Most adolescent morbidity and mortality are due to intentional and unintentional injuries; alcohol, tobacco, and other drug misuse; depression; unplanned pregnancies; and sexually transmitted infections.² These problems are often rooted in behaviors that are diagnosed not with a laboratory test or a physical examination but through open communication between the physician and the adolescent. In the past few years, several guidelines have been developed for the care of adolescents,^{3,4,5,6} each emphasizing the importance of psychosocial screening.”

Michael S Wilkes¹ and Martin Anderson² West J Med. A primary care approach to adolescent health care 2000 Mar; 172(3): 177–182.

On most days, students report that they are hopeful about the future, believe they can handle whatever comes their way, usually feel better quickly, deal with problems well.

When asked about their experiences with specific kinds of health issues, however, a subset of students report that they have problems in these areas. For example, 14% of students overall report that they felt really sick at least 3 days in the past 4 weeks, and 28% report that they had a headache or stomachache at least 3 days in the past 4 weeks. Girls were more likely than boys to report these problems. Almost one out of every four high school students (23.9%) indicated that they felt so tired they couldn't stay awake in school at least 3 days over the past four weeks.

Source of stress

Students report having felt a lot of stress in the past four weeks at school: 27.8%, at home (13.1%), or in their personal life (19.9%). Greater proportions of girls than boys tended to report a lot of stress at school (33.6%), at home (17.1%) and in their personal lives (26.7%). When students elaborated on these feelings in the discussion groups, it was clear that stress often reached levels that, as the following comment indicates, they were not prepared to handle or cope with.

School connectedness and social support

While most students report a sense of support from and connectedness with the school, roughly one-third did not know at least one adult in their school they could talk with about any personal problem, nor did they believe that that adults at their school understand what their lives are like outside of school.

School culture

Just under half (45.9%) felt that their opinions almost never matter in their school; just over one-quarter of students (28.6%) almost never feel comfortable being themselves at the school.

“I know from personal experience that a lot of kids in my class have had meltdowns – complete total mental breakdowns. It was really hard: we stayed home from school because we can’t deal with this today. It’s really hard to get to that point – and I’m only 17 years old.”

Student from a Youth Advisory Council

Persona/interpersonal Stress

Just under one out of every five students report feeling insecure about themselves did not have someone to turn to for help, felt left out.

Emotional distress

About one-third of students report that, in the past four weeks, they felt angry, lonely, and/or really down about things or depressed. Roughly one out of every five felt like a failure, worried that something bad was going to happen to them, or had trouble relaxing.

Stress management

Students report utilizing a range of strategies for coping with stress in negative ways. For example, at least half of students report that they don’t often or never/almost never talk with friends about what’s bothering them, turn to their family to help them feel better, or talk to an adult at school about what’s bothering them. Instead, they try not to think about it, deal with it by themselves (almost 75%), pretend that things don’t bother them, and tell themselves things will get better.

Impact of stress

Students report that stress causes them to do or feel the following at least fairly often:

- Have physical symptoms, such as getting headaches, stomachaches, or an upset stomach (36.7%), have a hard time sleeping (38.3%);
- Have psychosocial responses, such as getting really angry (30.3%) or wanting to disappear (26.6%)
- Lead to behavioral issues, such as getting really emotional (argue, yell, say or do things they wish they hadn’t) (38.6%), have a hard time controlling what they do or say (27.5%), don’t eat well (too much, too little, unhealthy foods), do things that put their health or safety at risk (14.1%)

Health literacy

A fair number of students did not know or were unsure that they know or could do the following:

- Make health appointment for themselves at the health center (29.8%)
- Know where to go to get help where they won't feel judged or criticized (20.1%)
- Tell a doctor or other health care provider about what they need, even if the provider doesn't ask (18.2%)
- Know what kinds of services are private with their health care provider (16.2%)

Reproductive health literacy

A fair number of students did not know or were unsure where to go to get confidential advice or care if needed related to:

- *Birth control* (45.6%). Note: CAHCs do not provide contraception to students, in accordance with Michigan's state law. This finding relates to students' awareness of authorized locations where contraception could be obtained.
- *Pregnancy testing* (44.8%) or care during pregnancy (52.2%)
- *Testing for STD/STI* (40.8%)
- *Advice or care for emotional problems* (37.2%)

Readiness to use the CAHC if needed. Roughly two-thirds of students reported that they would turn to the school health center for help with something that bothered them in their lives (65.3%)

Academic vulnerabilities. Students report that over the past four weeks, they experienced the following on at least three days:

- Got less than 8 hours of sleep on most school nights (53.5%)
- Had a hard time paying attention in class (26.7%)
- Felt so tired they couldn't stay awake (18.6%)
- Arrived late to first hour of school (12%)

Some students report that they:

- Often or almost always have trouble getting along with their teachers (16.4%)
- Need extra help with school (31.7%),
- Find it hard to pay attention in class because they are worrying about problems outside of school (25.7%)
- Takes them longer to learn new things than it does for most students (26.8%)
- Just under one out of every five students (18.2%) report that they have thought seriously about dropping out of school. The top three reasons: school is boring (10.5%), they don't fit in at school (5.8%) and no adults care whether they finish or not (4%).

Among students who report that they have asthma,

- 14.2% report that their condition has made it hard to keep up with their school work at least fairly often.

- Among students who report that they have a chronic condition other than asthma (like diabetes, life-threatening allergies, migraines, anxiety, or depression), 22.1% report coming to school late or leaving early because of the health problem over the past two months for 3 or more days.

Frequency and impact of having asthma and/or a chronic condition

Just under over one-fifth of students report that they have been told by a doctor or nurse that they have asthma (23%) or a chronic condition, like diabetes, life-threatening allergies, migraines, anxiety, or depression (22%).

Among students who report that they have asthma,

- Just over half (54.5%) report that they do not have an asthma management plan or know if they do
- Have had to use their rescue inhaler one or more days over the past two months (35%)
- Sought medical care once in the past two months because of problems with asthma 1 or more days (20.8%)

Among students who report that they have a chronic condition, fair proportions have found it to be somewhat or very stressful to:

- Miss school or classes because of their condition (47%)
- Deal with people who don't understand their condition (30.1%)
- Feel different from other people because of their condition (21.3%)

On a positive note, students express high levels of overall satisfaction with the CAHC. The Student Survey asked students who had used the clinic about their satisfaction with the clinic. The vast majority (91.6%) was either somewhat (34.3%) or very satisfied (57.3%) with the care they received.

RISK ASSESSMENT: RESPONSES TO THE RAPID ASSESSMENT FOR ADOLESCENT PREVENTIVE SERVICES (RAAPS-PH) among students who visited the CAHC

The following pages provide examples of students' responses to the RAAPS-PH risk assessments completed on their first visit to the CAHC. These data provide a broader context for understanding students' experiences at the beginning of the evaluation and the kinds of challenges they were facing when they first used the clinic. The analyses are offered to deepen an understanding of students' response patterns to the survey. The diagram that follows, used with permission from the American Public Health Association's Center for School Health and Education, portrays the kinds of stressors and risk factors students bring to school with them. The overview of qualitative results helps to describe student and community members' perspectives on and experiences with risk responses such as these. Key results of students' risk responses include the following. (For all results, see the Attachments.)

Top Ten (% Risk Response)	Risk Response: Males, n=155	Top Ten and (% Risk Response)	Risk Response: Females, n=160
4. (25.2%)	During the past month, did you often feel sad or down as though you had nothing to look forward to?	1. (29.4%)	When you are angry, do you do things that get you in trouble?
5. (17.4%)	Have you ever carried a weapon to protect yourself?	2. (27%)	During the past month, have you been threatened, teased, or hurt by someone or has anyone made you feel sad, unsafe, or afraid?
6. (14.8%)	Are you active after school or on weekends for at least 1 hour, on at least 3 or more days each week?	3. (21.6%)	In the past 12 months, did you ever miss school because you had to take - care of someone, work, or had other problems getting to school?
4. (14.3%)	During the past month, have you been threatened, teased, or hurt by someone or has anyone made you feel sad, unsafe, or afraid?	7. (21.4%)	Do you have any serious problems or worries at home or at school?
8. (11.8%)	In the past 12 months, did you ever feel hungry because there was not enough food to eat?	8. (20%)	Have you ever been attracted to the same sex or do you feel that you are gay, lesbian or bisexual?
9. (11.0%)	Do you have any serious problems or worries at home or at school?	9. (18.8%)	Are you active after school or on weekends for at least 1 hour, on at least 3 or more days each week?
10.(11.0%)	In the past 12 months, has reading been hard for you?	10. (18.7%)	In the past 12 months, has reading been hard for you?

The table that follows provide additional information on common risk factors, particularly for females – depression, anxiety, anger, and exposure to threatening behaviors. The Attachments provide a table of all RAAPS-PH findings. Note: a percentage is highlighted in red if the proportion of positive risk responses on a given risk factor is at least 5 percentage points greater than its comparison group (e.g., males vs. females; middle school students vs. high school students).

Risk Factor	Risk Response	Overall N=461	Male n=155	Female n=160	Middle School n=82	High School n=272
Depression, Anxiety, Anger						
During the past month, did you often feel sad or down as though you had nothing to look forward to?	Yes	35.7%	25.2%	43%	49.4%	35.5%
Do you have any serious problems or worries at home or at school?	Yes	19.3%	11%	21.4%	35.6%	16.5%
In the past 12 months, have you seriously thought about killing yourself, tried to kill yourself, or have you purposely cut, burned or otherwise hurt yourself?	Yes	14.1%	7.7%	12.5%	25.6%	8.8%
When you are angry, do you do things that get you in trouble?	Yes	28.9%	28.4%	29.4%	50%	24.1%
Exposure to Threatening Behaviors						
During the past month, have you been threatened, teased, or hurt by someone (on the internet, by text, or in person) or has anyone made you feel sad, unsafe, or afraid?	Yes	22.1%	14.3%	27%	49.4%	16.9%
Has anyone ever abused you physically (hit, slapped, kicked), emotionally (threatened or made you feel afraid) or forced you to have sex or be involved in sexual activities when you didn't want to?	Yes	11.3%	9.7%	10.1%	22%	9.2%

In the past 12 months, have you been in a relationship with someone who has put you down, yelled at you, pushed you, stalked you through social media or texting or tried to control where you go, who you talk to, or what you wear?	Yes	11.5%	6.5%	15.5%	11.4%	13.5%
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Students rarely experience 1 or a few risk factors in isolation – only 8.7% of all respondents, for example, reported 1-3 risk responses, as presented in the table below. Instead, just over half of students (54.6%) experience 7 or more risk factors, and 91% experience at least 4 risk factors. Consistent with other findings, girls are more likely than boys to experience 10 or more risk factors (28.0% vs. 13.9%). These results help to substantiate what many schools and clinicians are already well aware of: students living in communities with concentrated levels of poverty face multiple and complex challenges, which, when taken together, can require intensive and comprehensive services that may not be possible to provide in traditional models of private care.

Frequency of Risk Responses	Gender		
	Overall n=354	Male n=155	Female n=160
1-3	8.7%	11.0%	6.7%
4-6	36.6%	38.7%	34.7%
7-9	33.3%	36.4%	30.6%
10 or more	21.3%	13.9%	28.0%
TOTAL	100.0%	100.0%	100.0%

*** Note: Includes first RAAPS-PH only obtained during students’ first visits to the clinic.**
The differences in the overall percentages identified in tables above are due to missing data on students’ gender or their status in middle school versus high school).

Middle school students report profiles of cumulative risk is similar to the experiences of high school students. Middle school students from the participating CAHCs are more likely than high school students to identify high numbers of risk responses - for example, one-third of all middle school students report experiencing 10 or more risk factors, compared with one-fifth of high school students.

Frequency of Risk Responses	School Status		
	Overall n=461	Middle School n=82	High School n=272
1-3	8.2%	8.3%	8.2%
4-6	36.3%	25.0%	38.0%
7-9	33.8%	33.3%	33.9%
10 or more	21.7%	33.3%	20.0%
TOTAL	100.0%	100.0%	100.0%

Additional Highlights from RAAPS-PH

- **Being threatened by others, feeling sad, unsafe, or afraid.** Almost half of middle school students (49.4%) report that during the past month they were threatened, teased, or hurt by someone (on the internet, by text, or in person) or made to feel sad, unsafe, or afraid (fewer high school students (16.9%) reported this to be true. These percentages were almost twice as high for girls (27%) as for boys (14.3%).
- **Exposure to abuse.** Just over one out of every 10 students (11.3%) report that someone has ever abused them physically (hit, slapped, kicked), emotionally (threatened or made them to feel afraid) or forced them to have sex or be involved in sexual activities that they didn't want. Middle school students were particularly likely to report this to be true (22%).
- **Carrying a weapon.** Almost one out of every five middle school students (18.5%) report having ever carried a weapon (gun, knife, club, other) to protect themselves.
- **Unmet basic needs.** A subset of students reports that in the past 6 months, they had to stay in a shelter, motel, or some other place because they didn't have a home to stay in (n=29 or 7.3% overall). Similar proportions report that they didn't always have running water where they stayed (n=24 or 6%); n=35 (8.8%) reported that they didn't always have electricity.
- **Suicide ideation and self-harm.** One out of every four middle school students provided a risk response to this question: "In the past 12 months, have you seriously thought about killing yourself, tried to kill yourself, or have you purposely cut, burned or otherwise hurt yourself?" As one of the CAHC providers "I can't tell you how often girls who come to the clinic who have suicidal thoughts – and yet they also

"We had multiple CPS cases that are legitimate – I can't guarantee they would be addressed or taken care of if we weren't in the school. The fact that we can address the safety of the kids and their overall well-being has been a huge impact. It's hard on every staff member who works here when we see these kids – your heart breaks for them, but to know that at the end of the day you're in the right place to help them – it's been huge and to see them grow.

Even those CPS cases trust us enough to come back and even those parents who know the CPS came from us are understanding and are still coming back to us... we're not here to get people in trouble but they know that we have to keep the overall safety and well-being of their child, and we do that on a daily basis."

CAHC health care provider

"I think a lot of the reason for depression is that students, especially female students, don't feel they have anyone to talk to other than their friends, who are going through the same situation. They don't have a safe someone to talk to. They don't feel they can talk with their parents, or if they do, they're blown off and it's not a big deal. Now that they're coming here, we're tackling some of those issues and they can be open and honest. If it's been going on for so long, they're going to have those sad thoughts and it's going to continue to progress. Not having the ability to speak to is a big problem."

CAHC health care provider

(seem to) have the most progress when they are in service, which is reassuring.”

Some CAHC health care providers note a reduction in the frequency of suicide ideation and self-harm during the 2-year period, as noted in the textboxes to the right.

- **Sexual activity.** Only a just over a quarter of all males (28.8%) and over one-third of high school students (38%) report that, if they have had sex, they always use a method to prevent sexually transmitted infections and pregnancy (condoms, female barriers, other).

Although very few respondents report that they had ever been pregnant or had gotten a girl pregnant, high proportions of students (44% overall) report that they do not always use a method to prevent sexually transmitted infections and pregnancy (condom, female barriers, other).

- **Tobacco.** 6.5% of all respondents report that in the past 3 months, they smoked cigarettes or another form of tobacco (cigars, black and mild, hookah, other) or chewed/used smokeless tobacco. Twice as many high school students (12.2%) as middle school students (6.2%) provided this affirmative response.
- **Alcohol.** Relatively low numbers of students (6.7%) report that in the last 3 months, they have drunk more than a few sips of alcohol. There wasn't much variation by gender or school level.
- **Inactivity.** Only 17% of students report that they were inactive after school or on weekends (walking, running, dancing, swimming, biking, playing sports) for at least 1 hour, on at least 3 or more days each week. Middle school students were more likely than high school students to report that they were inactive (28.4% vs. 17.5%, respectively).
- **Academic risk.** Just over one-third of male respondents (39.4%) report that they did not get a C or better in all of their classes. Other population groups report that they missed school because

“When we first started here, we saw a lot of cutting and suicidal ideation – now see those same patients pretty regularly – their overall demeanor and outcome has been a huge impact... you can see that with the kids, with the parents... getting them to communicate with their parents has been a big key. (The mental health therapist) and I work together as long as the patients are ok with that we try to get the whole family involved if we can, not only the medical but the mental health as well. I think the cutting has gone down a lot, along with those suicidal patients. So mental health has been huge... and we're seeing those patients still. They know they can come here and they do come here – it's a safe place to go.”

CAHC health care provider

What's underlying the significant mental health issues facing the students often served by CAHCs? “Poverty, resources, substance abuse, parenting.” There's a lot of substance abuse in the community – kids are exposed at a very young age – in the womb or when they come out. (There's a lot of) poverty in the area – kids say there's nothing for them to do. What do they do here? Boredom (is a problem.)

CAHC staff member

they had a hard time breathing or were coughing or wheezing because they had asthma or thought they might have asthma (10.1% overall). Girls tend to report more often than boys that they had missed school because they had to take care of someone, work, or had problems getting to school.

Overall, the RAAPS-PH results paint a profile of the student body who report that they have been or are exposed to significant and sometimes serious stressors in their lives. In the course of the two-year CAHC evaluation, six high school students from communities within or nearby to the participating school districts took their own lives. By routinely assessing students' risk profiles through RAAPS-PH, CAHCs are better positioned to identify, prevent, or lessen the impact of threats students face in their everyday lives and to help them cope with adverse situations. The following comment, from one of the site's sponsors, elaborates on these ideas.

"We're very familiar with how social determinants of health interfere with success: the students we serve face mountains of challenges rather than molehills of challenges. It's our job is to figure out how to identify and understand compassionately what the need is, what the resources are available in our community, and our role – those forces create a new reality and a better hopeful reality to knock down some of those struggles. Poverty isn't usually subject but there's lots of joy within them that we can forget that they're battling hunger and abuse and violence, especially with kids – you may be the only adult they can talk to. Middle school, high school students don't necessarily gravitate to adults, but if they do, we want to make sure that there's a caring, loving adult there, making a difference. If we can be that or support someone else, then we're all about that."

Sponsor of a CAHC

Encounter Data

The pages that follow describe students' utilization of the CAHCs, including their frequency of use, care provided, and disposition status. The data presented in this section derive from the chart reviews conducted by the sites for the 759 cohort students who used the clinic at least once between September 2015 and May 2017.

One of the central intentions of our enhanced analyses, to be conducted in spring/summer of 2018, is to explore how patterns of use, spacing and frequency of use, reasons for use, and type of practitioner who provided care are associated with the center's impact on the outcome variables for different population groups of students.

As noted in the table on the following page, about 41% of students visited the clinic once, and one-third of students visited the clinic 3 or more times.

Frequency of visits for the 759 cohort students who used the clinic between September 2015 and May 2017

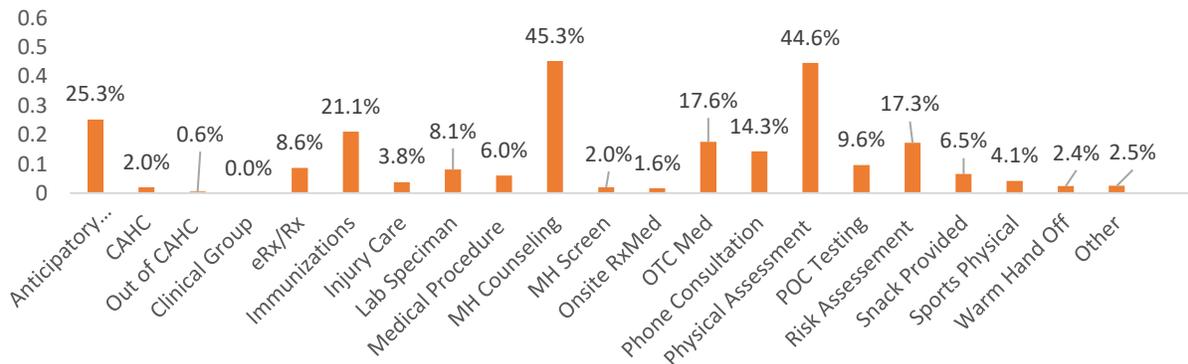
Number of Visits	Number and Percent of Students
1	310 (40.8%)
2	198 (26.1%)
3	87 (11.5%)
4-6	82 (10.8%)
7-10	45 (5.9%)
More than 10 times	37 (4.9%)
Total	759 (100%)

} 66.9%
 } 33.1%

Care provided to students

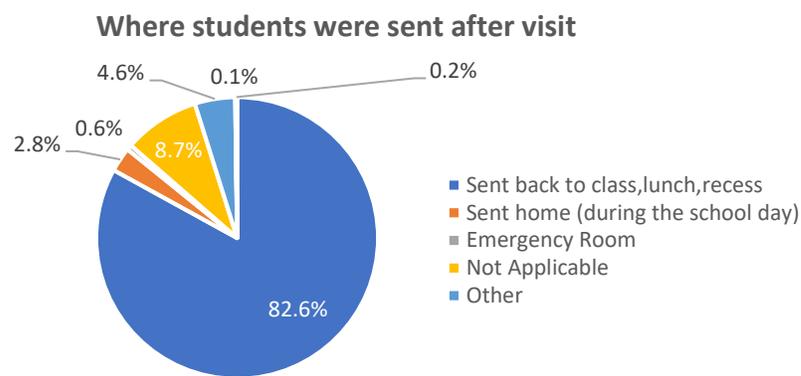
The chart below shows the frequency with which different types of care was provided to students, based on the 4,608 encounter logs submitted to JFM by the CAHCs for cohort students. The most frequent care provided includes mental health counseling (45.3%), physical assessments (44.6%), anticipatory guidance/risk reduction plan (25.3%), immunizations (21.1%), risk assessment (17.3%) and over-the-counter (OTC) medication (17.6%) (note that the total exceeds 100% because multiple services may have been provided in a single visit). The enhanced analyses will examine students' utilization patterns more fully to explore the interconnections between the students' reasons for visiting the CAHC, the care they received, the level and kinds of stressors and/or risk factors students report facing.

Care Provided to Students (from 4,608 encounter logs)

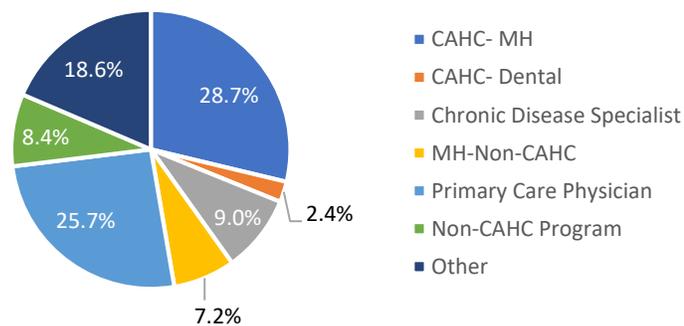


The charts on the next page show where students were sent by the CAHC after their visit at the clinic. As is clear, the vast majority of students (82.6%) were discharged *back to their class, lunch, or recess* after their visit. *Only 2.8% were sent home*. This pattern did not differ between students that

only came to the clinic once versus those who used the clinic multiple times. The fact that students were able to stay in school after receiving care has substantial implications on the amount of instructional seat time available to students, and therefore on their opportunities for learning and staying on track with student lessons. They also are significant for the time their parents or guardians are able to save and remain at work or in other activities, rather than needing to pick their child up, schedule and get them to a health practitioners' office, return them to school, or perhaps just take them home, depending on the time of day. Teachers and schools also benefit for the increased continuity of instruction that managing students' needs on-site affords through reducing disruption in the classroom and the need to schedule make-up sessions.



Among students who received a referral as a part of their visit, where they were referred, either within our outside of the CAHC



The diagram above shows where students who used the CAHC were referred when the student required support or care beyond what that practitioner was able to provide. As is clear, just over one-quarter of students (28.7%) were referred to the CAHC – mental health practitioners, one-quarter were referred to a primary care physician (25.7%), and 8.4% were referred to a community-based

program. A small proportion of students (7.2%) was referred to mental health practitioners outside the CAHC. Roughly one-quarter of students were referred to a primary care physician (25.7%), and 9% were referred to a chronic disease specialist. Our enhanced analyses will document characteristics of students who were referred outside the clinic, such as demographic characteristics, their reason(s) for visiting the clinic, care provided, and diagnostic group.

We also sought to collect data on the student’s follow-up on these referrals. Although 17.3% of students are noted as having followed up on their referral, information on whether students followed up on the referral was not noted in 70.7% of their charts. The factors that underlie these percentages warrant follow-up investigation.

Average time spent with students. One of the strengths of CAHCs is their capacity to spend greater amounts of time with students than is often possible in typical primary care practices. As the table below indicates, the CAHC spent an average of 32.4 minutes during their first visit with cohort students (note that these estimates exclude time spent completing the RAAPS-PH assessment but include reviewing the results of the RAAPS-PH assessment). A greater amount of time (42 minutes) is spent with students who present with mental health issues. Our enhanced analyses will explore the distribution of utilization among students’ subsequent visits to the clinic, beyond their first encounter.

Time Spent in Minutes with Student During First Visit to the Clinic

Based on 759 cohort students who visited the CAHC 1,885 times from October 2015 through April 2017. The time-frames exclude time spent by students on completing RAAPS-PH, the risk profile.

Type of Provider	Mean Time Spent with Students	Standard Deviation	Minimum	Maximum
<i>All providers</i>	32:41	17:43	1:59	120:00
SW/LPC n= 654	42:23	16:39	1:59	120:00
RN n= 5	28:11	6:52	18:59	38:00
NP/PA n= 702	24:03	13:54	3:00	110:00
Other n= 6	22:20	12:13	6:00	35:00
MA n= 9	20:26	10:00	3:00	30:00

Average time spent with practitioners based on diagnosis. As would be expected, the length of time CAHC practitioners spent with students varies substantially according to the reason for the student’s visit and diagnosis. While the lengthiest visits tended to be with students who face mental health issues, other subgroups of students also have particularly complex needs, including (a) students with asthma-related concerns (whose average first visits were 50 minutes long, with a range of 30 - 70 minutes), and (b) health counseling or education on immunizations, prevention/wellness, and reproductive health, which had mean visits of 50 minutes, with a range of 40 – 70 minutes. As a CAHC staff member explained,

You see your primary care, pediatrician – you might see them 5 minutes, 10. The average time spent in the CAHC is closer to 20 minutes – so much more pressure in traditional medical setting to get people through.” (Note: the average time spent with students is actually 32.4 minutes)
CAHC health care provider

“We spend a lot of time with students talking about their inhalers about what they are doing at each step – step a, step z –we talk with parents too. I have more time to educate them than private practitioners sometimes... that’s how we see the numbers improved here. To have that one-on-one education is huge.” (CAHC staff member). In addition, a CAHC provider noted that “How they’re using the CAHC is really different vs. in a traditional setting. For example, on the medical side – some kids come in multiple times a day – have a crisis, calm things down, then it flares up again.”

A CAHC fiduciary noted that, “for the last 20 years – our top four diagnoses have been migraine, abdominal pain, all pain related, and dental... Over time... perhaps we’ll see a bigger impact on emergency room utilization – they’re going to the ER for the same issues (because their) family’s primary care is the ER – that’s no longer the case if you have a CAHC. Just the cost and demand on the system shifts in a more appropriate way.”

Classroom Seat Time Saved

By providing comprehensive health care services on-site at school, school-based health centers are increasingly recognized for their capacity to diagnose, treat, and return students to class without requiring students to leave school. CAHCs also have the advantage of not requiring parents to miss or leave work to tend to their child’s health care needs. Although conducting a comprehensive seat time analysis was beyond the scope of the evaluation, we examined potential instructional seat time saved through the role CAHCs play in providing on-site care for a health need that, if not already met, would require the student leave school – immunizations.

“If my son, who had serious ADD and defiant behavior, could have been seen by the health center, that would have saved me so many days of missing work... I had to leave work all the time. Instead, he could have been returned to class.”

Parent

We modeled our approach after the work of Samira Soleimanpour and Sara Geierstanger from the University of California, San Francisco.⁷ According to the encounter logs for our cohorts of students, 78 students visited the CAHC to be immunized over the two-year evaluation period. During this same time, the CAHCs identified 397 students whose immunizations were not up-to-date and whom, with parent permission, the CAHC immunized. These students otherwise would have been sent home by the front office until their immunizations were up-to-date. We counted each of these cases as one student-day saved by having the CAHC on-site; this likely is a conservative estimate given the probable wait time before the student could be scheduled and immunized by a health care professional. **Using this method, we estimate that approximately 397 student-days of school were saved, along**

“If we weren’t there, parents may need to come all the way from (the closest city), which is 12 miles, pick them up, take them to (back to the city to get care and then come back to school. Students therefore have missed hours of school vs. coming to the center, and going back to class 25 minutes later.”

CAHC health care provider

⁷ Soleimanpour, Samir and Geierstanger, Sara, *Documenting the Link between School-based Health Centers and Academic Success: A Guide for the Field*, pg. May 2014.

with the potential translation into dollar savings from the average daily attendance allowance that would be provided if the student stayed in school.

One of the sites tracked the percent of students who use the CAHC who were returned back to class and determined that 60-70% of these students go back to class. This provider explained that those who are sent home tend to include students who are contagious, fever higher than such and such, clinical guidelines we use, vomiting or diarrhea – then we call the parent and the student goes home. On the mental health side, 70% to 80% of students who visit the clinic go back to class. “Some (students) just need a time-out to talk things through with the counselor, a lot need encouragement can feasibly go back to class. There’s a small percentage where we need to call parent to take student to hospital.”

Another example of saved instructional seat time saved provided by a CAHC staff member was the CAHC’s initiative to educate School District staff and parents on state-of-the-science guidelines on managing cases of lice. In light of this, the District changed its policy on lice, and so students weren’t missing school at the levels they had been before.

Another one of the CAHCs’ providers described the CAHC’s role in keeping *high-risk kids who are missing school in school*. As this staff member noted, “When we have those high-risk kids we know they’re missing truancy, missing 20-30 days of school for the same types of issues – (we ask) what is going on? We try to get that trust with the students and then getting to the point where we can involve the family... almost every single one of those patients we’re involving family and they’re in school, and we’re not seeing truancy issues like that. That’s one of the biggest things – knowing they can come down to the clinic if they have issues... We sent them back to class.”

EVALUATION RESULTS: IMPACT ANALYSIS

This section presents the results from our impact analyses. These analyses use weighted means to control for differences in sample size across sites. The magnitude of the differences in rates of change across wave between clinic users and non-users have been color coded per the following scheme:

-  **Strong positive effect** -- use of the clinic is associated with strong and positive rates of improvement
-  **Moderate or small effect on students' rate of improvement in our outcome variables**
-  **Small positive effects or medium-to-strong negative effect** (i.e., the outcomes do not improve for users at greater rates than non-users or the effect size is small)

OVERALL FINDINGS:

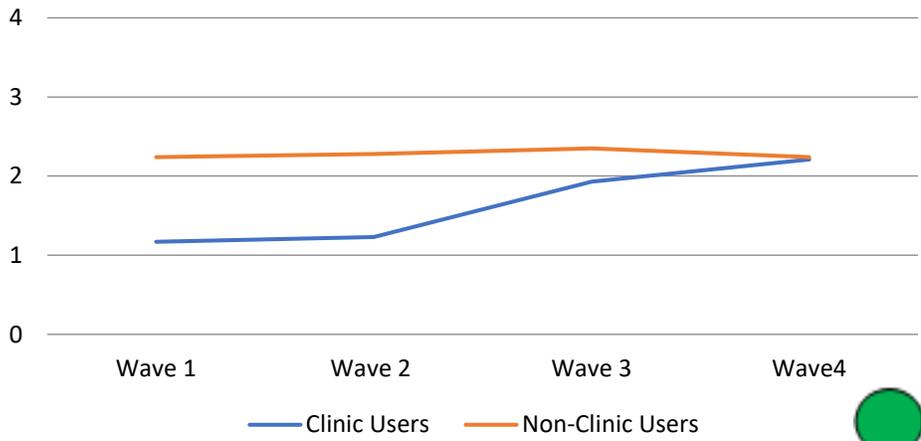
Clinic use is positively related to improvements over the two-year period in virtually all outcome areas we studied. Students who used the health centers over the 2-year period showed greater improvements in their self-reports of health and well-being than students who do not use the center; this holds true across the outcome measures studied, whether related to increased feelings of connectedness with the school, reduction of feelings of isolation, decreased use of negative coping strategies, increased health literacy and reproductive health literacy, or reduced feelings of depression, for example.

At baseline, students who report the highest levels of poor health, self-reported stress, and mental health issues lowest levels of positive coping / resilience supports are more likely to use the clinic than those who report lower levels of difficulty, suggesting that the clinic is reaching and serving students at comparatively higher risk.

Unlike students who used the clinic, students who have not used the clinic tend to report little change or improvement across our four waves on a range of measures of socioemotional outcomes (for example, stress, depression, anxiety and anger).

The magnitude of difference between CAHC users and non-users on our outcome variables was either moderate or strong in all our analyses based on analyses of effect size or rates of improvement.

School Connectedness



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

Results

- Students who use the clinic experience significantly greater rates of improvement in their self-reported levels of school connectedness over the two-year period than non-users, whose reports of school connectedness remain largely unchanged.
- The effect size of clinic use on school connectedness is strong, suggesting that participation in a CAHC is associated with strong and positive rates of improvement over the two years.
- Students who used the CAHC during the two-year period report lower levels of school connectedness at baseline than students who did not use the clinic, suggesting that the clinic is reaching and serving students at comparatively greater risk of feeling disconnected from their schools.

Variable	Coefficient	Significance	95% C.I.
Intercept	1.98	P<.001	1.93 – 2.03
Clinic Use on Intercept	.52	P<.001	.51 - .53
Slope	.04	P <.01	.038 – .042
Clinic Use on Slope	.13	P<.001	.127 - .133
Gender on Intercept	.33	P<.001	.31 - .35
Gender on Slope	.02	P<.05	.019 - .021
HSvMS on Intercept	.03	n.s.	.029 - .031
HSv.MS on Slope	.002	n.s.	.0018 - .0022

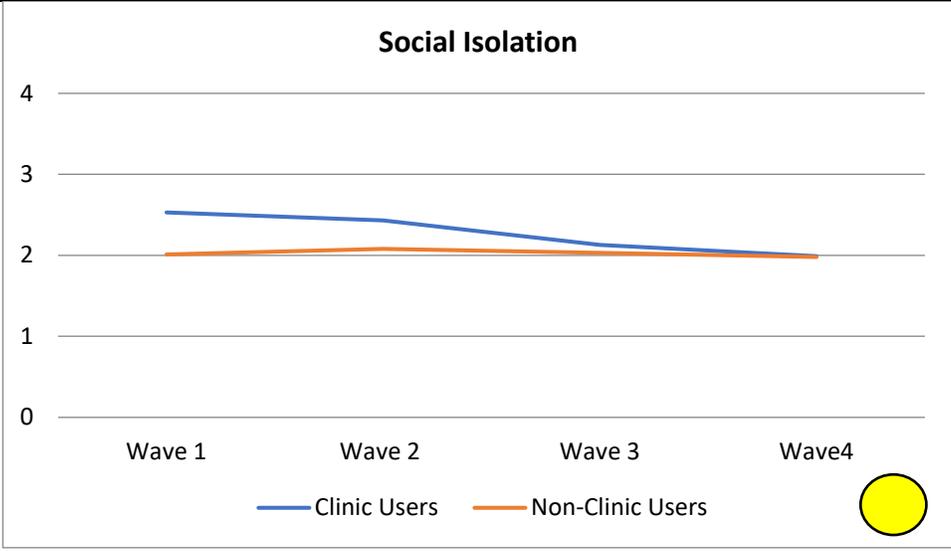
The factor "School Connectedness" is comprised of the following interrelated dimensions: I care about this school, I feel a part of this school, my opinions are respected at this school, I feel good about being in this school, adults value what students have to say at school, at least one person at school knows me well, I know at least one adult in this school I could talk to. The Cronbach's alpha for this scale is good (alpha: .840)

Importance. "School connectedness - the belief held by students that adults and peers in the school care about their learning as well as about them as individuals - is an important protective factor. Research has shown that young people who feel connected to their school are less likely to engage in many risk behaviors, including early sexual initiation, alcohol, tobacco, and other drug use, and violence and gang involvement.

"Students who feel connected to their school are also more likely to have better academic achievement, including higher grades and test scores, have better school attendance, and stay in school longer."

"Efforts to improve child and adolescent health typically have featured interventions designed to address specific health risk behaviors, such as tobacco use, alcohol and drug use, violence, gang involvement, and early sexual initiation. However, results from a growing number of studies suggest that greater health impact might be achieved by also enhancing protective factors that help children and adolescents avoid multiple behaviors that place them at risk for adverse health and educational outcomes. Enhancing protective factors also might buffer children and adolescents from the potentially harmful effects of negative situations and events, such exposure to violence.... School connectedness is a particularly promising strategy."

Source: Drawn from the Center for Disease Control and Prevention, "School Connectedness. Note: additional source citations are provided the publication.



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

Results

- ✦ **Students who use the clinic report greater rates of reduction in feeling socially isolated over the two-years than non-users, whose risk responses for social isolation remain essentially unchanged.**
- ✦ The effect size of utilizing the clinic is moderate, indicating that although students who use the clinic have a greater rate of reduction in feelings of socially isolation than student who do not use the clinic, the difference in the rate of change between users and non-users is not large.
- ✦ At baseline, somewhat greater proportions of students who used the CAHC reported feelings of social isolation than those who did not, suggesting that CAHCs are reaching and serving students who are at increased risk for feeling socially isolated, albeit not at substantially greater levels.
- ✦ Rates of change are significantly higher for girls than boys, with girls reporting higher levels of feeling isolated than boys over the two-year period. They also show more of a significant reduction in self-reported isolation.

Variable	Coefficient	Significance	95% C.I.
Intercept	2.11	P<.001	2.08 - 2.13
Clinic Use on Intercept	.17	P<.001	.16 - .18
Slope	.008	P <.05	.006 - .010
Clinic Use on Slope	.03	P<.05	.029 - .031
Gender on Intercept	.58	P<.001	.57 - .59
Gender on Slope	.01	P<.05	.009 - .011
HSvMS on Intercept	.23	P<.05	.21 - .25
HSv.MS on Slope	.001	n.s.	.0007 - .0013

The factor “Social Isolation,” is closely associated with students’ reports of the following feelings: not feeling accepted, feeling left out, feeling insecure about self, not having someone to turn to for help, being treated unfairly, feeling lonely, feeling really down or depressed, feeling like a failure, worried that something bad was going to happen, stressed about personal life* The Cronbach’s alpha for this scale is high (alpha = .909)

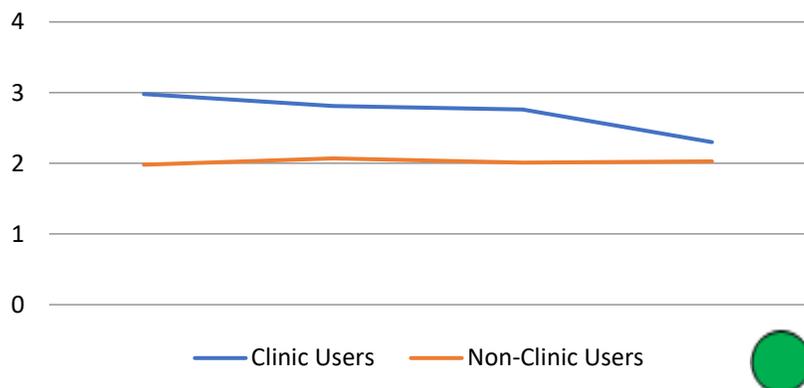
Importance. Students who experience a sense of social isolation over time are vulnerable to “falling through the cracks,” not fitting in, and not receiving services because of internalized and often “invisible” coping strategies vs. engaging in and more readily recognizable externalized behaviors. Becoming withdrawn and having feelings of being isolated and depressed put teens at significant risk for a wide range of escalating negative outcomes, including self-medicating behavior, suicide ideation and self-harm, substance use, becoming victims of relationship violence.

“Intimacy and belongingness are intrinsic human needs.¹ Interpersonal connections offer many benefits; they provide a frame of reference for social identity, as well as being a source of support and relief in times of stress. Relationships may be particularly important in childhood, when identity is developing, and lifetime trajectories of emotional and behavioral problems are taking shape. To the extent that positive social relationships are rewarding and desirable, the absence or loss of such relationships may be detrimental to individuals’ well-being. Furthermore, children with emotional or behavioral disorders could experience difficulties integrating in social environments.”

Source: Matthews, Timothy, Danese, Andea et al., “[Social Isolation and Mental Health at Primary and Secondary School Entry: A Longitudinal Cohort Study.](#)” Journal of the American Academy of Child and Adolescent

Many of the students' responses on questions in the survey were related to feelings of social isolation. We conducted additional factor analyses to explore the presence of sub-constructs or sub-factors related to this broader construct of social isolation. Four sub-factors emerged: 1) inadequate social support/feelings of not belonging, 2) feelings of depression, 3) lack of hopefulness, and 4) not feeling safe. Because small numbers of student reported concerns over safety, we focus on the first three constructs only.

Exclusion/Inadequate Social Support



Exclusion/Inadequate Social Support. This construct is comprised of the following indicators: in past four weeks: felt stress in personal life; didn't have someone to turn to for help; felt stress at home, had problems with boyfriend/girlfriend felt left out, feel treated unfairly; didn't feel accepted; worried about problems outside of school; feel insecure about self, got really emotional, didn't talk to a counselor. The Cronbach's alpha for this scale is high (alpha = .918)

Importance:

"The recent American Psychological Association (APA) survey, *Stress in America Survey* (2013), show that "U.S. adolescents perceive higher levels of stress than adults, with many reporting that they feel overwhelmed (31 percent), depressed (30 percent) or tired due to stress (36 percent) during the school year. Of importance, these experiences are associated with unhealthy eating, sleeping and exercise patterns that take a toll on the teens' physical and mental health, not only in the short term but also well into adulthood. It is thus not surprising that the incidence of many forms of psychopathology spikes during adolescence, with 22.2 percent experiencing mental disorders with severe impairment and distress." (Merikangas et al., 2010)."

"In contrast to a strong focus on adolescence as a risk period of development, much less attention has been paid to identifying protective factors that reduce this risk. Perhaps one of the most important — and easily implemented — protective factors is that of social support from close relationships. Certainly, the benefits of social support are not unique to adolescence: Support facilitates coping with stress and is associated with widespread benefits for physical and mental health across life, in humans and non-human animals. Mechanistically, social support seems to provide a buffer that reduces or blocks physiological stress responses to stressful situations. This social buffering occurs throughout life."

Source: Hostinar, Camelia E., "Social support as a buffer against stress in early adolescence.: *American Psychological Association*, December 2014.

n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

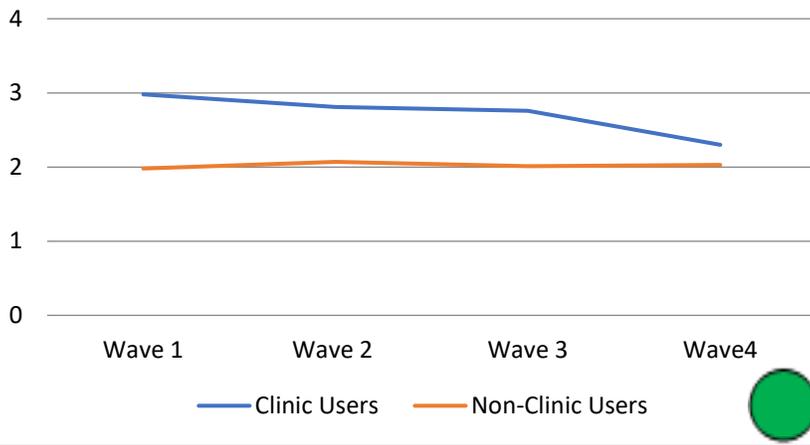
Results

- Students who use the clinic experience greater rates of reduction in feelings of exclusion or inadequate social support over the two-years than non-users, whose risk responses for not having adequate social support remain essentially unchanged.
- The effect size of use is strong, indicating that students who use the CAHC show strong and positive improvements in feeling socially excluded or having inadequate social support over time.
- At baseline, greater proportions of students who used the CAHC reported higher levels of exclusion/inadequate support than students who did not use the CAHC, suggesting that CAHCs are reaching and serving students who are at greater risk of feeling excluded and less supported than their counterparts.

Girls have higher levels of stress across all four waves compared to boys but show a significant decrease across waves.

Variable	Coefficient	Significance	95% C.I.
Intercept	2.46	P<.001	2.45 - 2.47
Clinic Use on Intercept	.63	P<.001	.61 - .65
Slope	.17	P <.001	.0169 - .0171
Clinic Use on Slope	.09	P<.001	.083 - .097
Gender on Intercept	.29	P<.001	.28 - .30
Gender on Slope	.11	P<.001	.010 - .012
HSvMS on Intercept	.06	n.s.	.03 - .09
HSv.MS on Slope	.001	n.s.	.0008 - .0012

Feeling Down or Depressed



The factor "Feelings of Depression" is comprised of the following interrelated topics from the survey: past 4 weeks felt lonely, really down about things or depressed, like a failure, worried that something bad was going to happen to me. Among CAHC-users, RAAPS also assessed feelings of being "The Cronbach's alpha for this scale is high (alpha = .931)

Importance: As described by the National Institutes of Health, "in 2015, an estimated 3 million adolescents aged 12 to 17 in the United States had at least one major depressive episode in the past year. This number represented 12.5% of the U.S. population aged 12 to 17." Also see the chart provided by the NIH and SAMSHA at left.

Source: National Institutes of Mental Health, [Major Depression Among Adolescents](#).

"Depression in adolescents is a serious public health concern. Recent epidemiological data show that approximately 11 percent of youth will experience depression, and these episodes are associated with downstream negative consequences later in adolescence (e.g., academic difficulties, risky behavior engagement, non-suicidal self-injury) and adulthood (e.g., lower income levels, higher divorce rates, suicidality). Most notably, an alarming 75 percent of individuals experiencing depression during adolescence will make a suicide attempt in adulthood (Nock, Green, et al., 2013). *Note: The original article that includes citations and references, available [here](#).*

Source: Auerbach, Randy P., American Psychological Association: Science Brief: Depression in adolescents: Causes, Correlates, and Consequences."

Note: We ran a separate analysis of "hopefulness" among CAHC users vs. users. At baseline, CAHC users reported lower levels of hopefulness about the future than non-users; over the two-year period, however, these feelings improved at significantly greater rates than for non-users.

Implications for CAHCs: CAHCs can have a potentially strong impact through strengthening mental health education for school staff and administrators and fostering strong outreach to troubled students. Shifting the focus from disciplinary responses to mental health care responses could dramatically improve school outcomes.

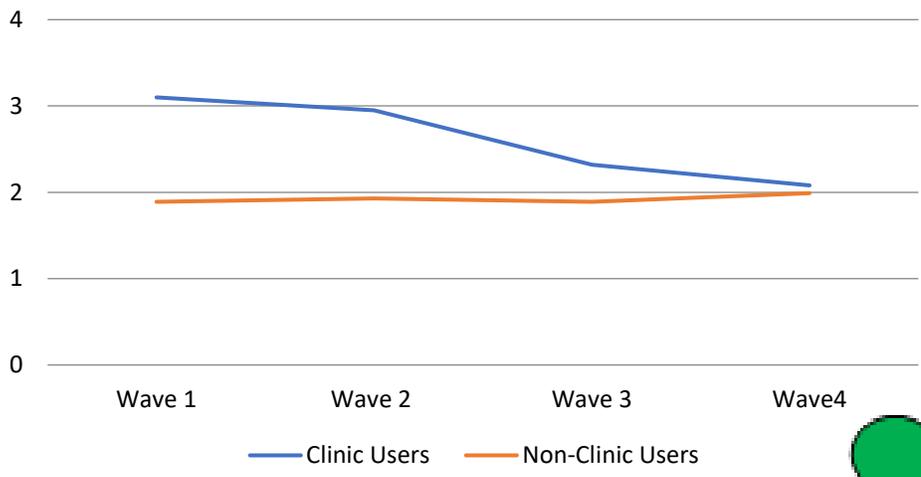
n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4 All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

Results

- Students who use the clinic experience greater rates of reduction in their reports of depression over the two-years than non-users, whose risk responses for depression remain essentially unchanged.
- The effect size of utilizing the clinic is strong, indicating that utilizing a CAHC is strongly and positively associated with a decline in students' reported levels of feeling down or depressed
- At baseline, greater proportions of students who used the CAHC reported feelings of depression than those who did not use the CAHC, suggesting that CAHCs are reaching and serving students who are at increased risk for experiencing depression.

Variable	Coefficient	Significance	95% C.I.
Intercept	2.61	P<.001	2.609 - 2.611
Clinic Use on Intercept	.47	P<.001	.469 - .471
Slope	.18	P <.001	.017 - .019
Clinic Use on Slope	.09	P<.001	.089 - .091
Gender on Intercept	.68	P<.001	.679 - .681
Gender on Slope	.12	P<.001	.112 - .128
HSvMS on Intercept	.03	n.s.	.007 - .043
HSv.MS on Slope	.001	n.s.	.0015 - .0025

Learning and Behavioral Issues in School



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

Results

- CAHC users exhibit greater rates of reduction in school behaviors that can interfere with learning and promote behavioral issues than non-users, whose risk responses were largely unchanged during the two years. The effect size is strong, indicating that CAHC use is strongly and positively associated with improvements in students' reports of learning and/or behavioral issues.
- At baseline, students who used the CAHC over the two-year period report comparatively greater challenges with learning and behavioral issues at school than non-users, suggesting that CAHCs are reaching students whose needs for guidance and support are the greatest.
- Boys are significantly more likely than girls to report negative school behaviors across the Waves.
- Rates of negative school behaviors among students who do not use the clinic, although the most disruptive students are more likely to drop-out or not be present in school, resulting in the perception of aggregate improvement over time.
- Students who use the clinic tend to have more disciplinary issues at school than non-users. This perhaps is not surprising given that most of the students' disruptive behaviors are likely to be attributable to mental health concerns.

Variable	Coefficient	Significance	95% C.I.
Intercept	2.71	P<.001	2.65 - 2.77
Clinic Use on Intercept	.52	P<.001	.51 - .53
Slope	.04	P<.01	.038 - .042
Clinic Use on Slope	.13	P<.001	.127 - .133
Gender on Intercept	.33	P<.001	.31 - .35
Gender on Slope	.02	P<.05	.019 - .021
HSvMS on Intercept	.03	n.s.	.029 - .031
HSv.MS on Slope	.002	n.s.	.0018 - .0022

The factor "Learning and Behavioral Issues in School" is comprised of the following interrelated areas explored in the student survey: needing extra help with schoolwork, takes longer to learn things compared to others, having had an out-of-school suspension, having skipped school, having had an in-school suspension, trouble getting along with teachers, having had discipline problems at school (latter two lower correlations). The Guttman's lambda-5 for this scale is adequate (alpha = .728)

Importance

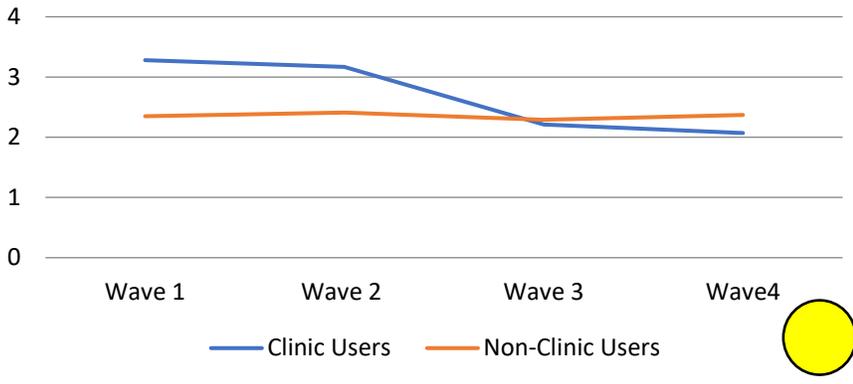
"Prior research has noted a positive relationship between school-based health center (CAHCs) access and use and better academic outcomes including attendance, drop-out, grade point average, and school tardiness. Several pathways have been posited to explain this relationship: CAHCs may improve access to health care, improve health status, and/or reduce health risk behaviors, and thereby remove barriers to learning as well as increase school attachment or connectedness. For example, CAHC users were more likely to report higher levels of school assets such as caring relationships with adults, high expectations, and meaningful participation; an important mechanism by which CAHCs may indirectly support positive academic outcomes."

Sources :J Sch Nurs. 2016 Aug; 32(4): 241-245. Citations provided in the original article. Published online 2016 Mar 23. doi: 10.1177/1059840516634805

Children and youth facing learning and behavioral issues in school often have coexisting conditions, such as mood disorders, anxiety, PTDS, substance abuse, ADHD, learning problems, or cognitive disorders. Many factors may contribute to a child developing conduct disorder, for example, including brain damage, abuse or neglect, genetic vulnerability, school failure, and traumatic life experiences. Youngsters with conduct disorder are likely to have ongoing problems if they and their families do not receive early and comprehensive treatment.

Source: Paraphrased from the American Academy of Child and Adolescent Psychiatry, "Conduct Disorders," No. 33, August 2013.

Coping in Negative Ways with Stress



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

The factor “Negative Methods for Coping” is comprised of the following interrelated topics from the survey: try to think about something else; try not to think about it; tell myself that it will get better; pretend things don't bother me; deal with stress by myself. The Cronbach's alpha for this scale is good (alpha = .837)

Importance.

“Extensive research on the biology of stress now shows that healthy development can be derailed by excessive or prolonged activation of stress response systems in the body and brain. Such toxic stress can have damaging effects on learning, behavior, and health across the lifespan.... Toxic stress responses can occur when a child experiences strong, frequent, and/or prolonged adversity—such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence, and/or the accumulated burdens of family economic hardship—without adequate adult support. This kind of prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems, and increase the risk for stress-related disease and cognitive impairment, well into the adult years.”

“When toxic stress response occurs continually, or is triggered by multiple sources, it can have a cumulative toll on an individual's physical and mental health—for a lifetime. The more adverse experiences in childhood, the greater the likelihood of developmental delays and later health problems, including heart disease, diabetes, substance abuse, and depression. Research also indicates that supportive, responsive relationships with caring adults as early in life as possible can prevent or reverse the damaging effects of toxic stress response.”

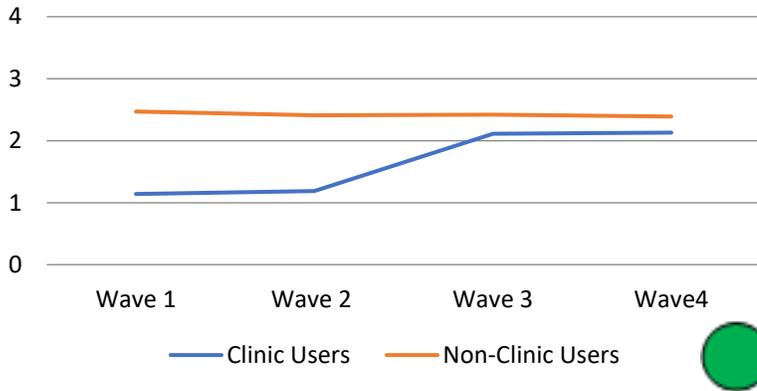
Source: Center for the Developing Child, Harvard University, Key Concepts: Toxic Stress.

Results

- Students who use the clinic are more likely than those who don't to cope with stress in negative ways at Wave 1 and to significantly improve those skills over time. Students who don't use the clinic tend to sustain negative coping strategies throughout the two-year period.
- The effect size of using the CAHC is moderate, suggesting that while clinic users were more likely to report decreases in using negative coping strategies than non-users, the difference between the two is not strong.
- Given baseline differences between students who use the clinic and those who don't, CAHCs appear to be reaching and serving students at greater risk of using negative coping strategies.
- Girls appear to be at much higher risk for coping with stress in negative ways. The scientific literature suggests that there are fewer culturally accepted ways for girls to positively cope with stress than for boys; they also report overall higher levels of stress from more sources than boys.

Variable	Coefficient	Significance	95% C.I.
Intercept	2.81	P<.001	2.79 - 2.83
Clinic Use on Intercept	1.08	P<.001	1.07 - 1.09
Slope	.83	P<.001	.828 - .831
Clinic Use on Slope	.47	P<.001	.46 - .48
Gender on Intercept	1.41	P<.001	1.40 - 1.42
Gender on Slope	.52	P<.001	.517 - .523
HSvMS on Intercept	.57	P<.05	.56 - .58
HSv.MS on Slope	.03	n.s.	.0025 - .0642

Positive and Resilient Attitude



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct

Results

- Students who use the CAHC report significantly greater rates of improvement in feeling positive or resilient than non-users, whose reports of their attitudes and/or resiliency remain largely unchanged.
- The effect size is strong, indicating that CAHC use is strongly and positively associated with improvements in students' attitudes and resiliency.
- At baseline, students who used the CAHC during the two-year period were less likely to report positive feelings about themselves and their future than students who did not use the clinic, suggesting that the clinic is reaching and serving students who are at greater risk in their abilities to handle what comes their way.

Variable	Coefficient	Significance	95% C.I.
Intercept	1.49	P<.001	1.47 - 1.52
Clinic Use on Intercept	.81	P<.001	.80 - .82
Clinic Use on Slope	.69	P<.001	.0687 - .069
Clinic Use on Slope	.13	P<.001	.127 - .133
Gender on Intercept	.003	n.s.	.001 - .005
Gender on Slope	.002	n.s.	.0019 - .0021
HSvMS on Intercept	.01	n.s.	.009 - .001
HSv.MS on Slope	.002	n.s.	.0019 - .0021

The factor "Positive and Resilient Attitude" is comprised of the following interrelated topics from the survey: feel good about self; feel relaxed, feel happy; can handle whatever comes their way; proud of their grades; on most days, feel they deal with problems well. The Cronbach's alpha for this scale is high (alpha = .931)

Importance. As ChildTrends describes, "As is true for physical health, mental health encompasses more than the absence of disorders. Researchers have considered a number of dimensions of positive mental health, one of which is "resilience."

"Resilience has been defined as "the ability of an individual to function competently in the face of adversity or stress." An adolescent who is resilient is likely to enter adulthood with a good chance of coping well— even if he or she has experienced difficult circumstances in life. This Adolescent Health Highlight presents key research findings on characteristics that are associated with resilience; describes program strategies that promote resilience; discusses links between resilience and avoidance of risk-taking behaviors; and provides helpful resources on the topic of resilience."

"Characteristics of resilience: An adolescent who is resilient has an advantage when it comes to meeting the challenges and responsibilities of adulthood, even if he or she has experienced circumstances such as poverty, health problems, or strained family relationships.1"

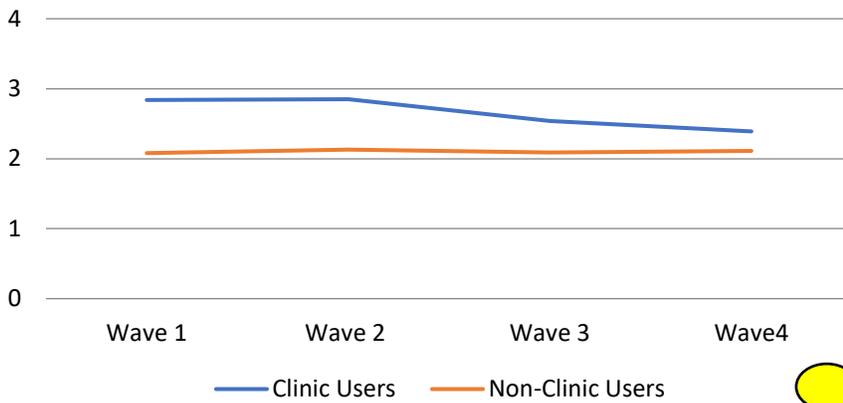
"In the context of mental health, resilience can be viewed as the ability to handle stress positively. Adolescents' stress can come from multiple directions— school; relationships (with friends, romantic partners, and parents); hormonal and physical changes associated with adolescence; impending decisions about college and career; pressures to conform or to engage in risky behaviors; family financial problems; dangerous neighborhoods; and more."

"Resilience can also be viewed as the product of the stressors an adolescent is currently bearing; the adolescent's genetic temperament; his or her competence both for independence and for seeking help when appropriate; and the social support provided by family members and others.1"

"Research has identified a number of characteristics of adolescents that are associated with resilience. Among these characteristics are having:2 • One or more adults providing caring support; • An appealing, sociable, easygoing disposition; • Good thinking skills ("intelligence" as traditionally defined, but also judgment and social skills); • One or more talents (things a person does really well); • Belief in oneself and trust in one's ability to make decisions;3 and • Religiosity or spirituality.7"

Source: Child Trends, [Adolescent health Highlight: January 2013](#).

Academic Performance



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct.

The factor “Academic Performance” is comprised of the following interrelated topics from the survey: because of stress have a hard time getting school work done; have a hard time paying attention in class; not doing as well as had hoped in classes; feel so tired couldn’t stay awake in school. The Cronbach’s alpha for this scale is adequate (alpha = .778)

Importance: According to the Division for Adolescent and School Health within the Centers for Disease Control and Prevention, “The academic success of America’s youth is strongly linked with their health, and is one way to predict adult health outcomes.”

Results

- ✚ **Students who use the clinic report significantly greater reductions in the impact of stress on their academic performance than non-users, whose risk responses for academic performance remain unchanged.**
- ✚ The effect size is moderate, suggesting that while clinic users were more likely to report improvements in academic performance, the difference between the two is not strong.
- ✚ At baseline, students who used the CAHC were more likely to report that stress was having a negative impact on their academic performance than those who did not use the CAHC, suggesting that CAHCs are reaching and serving students whose level of stress is putting them at increased risk for poor academic performance.

Variable	Coefficient	Significance	95% C.I.
Intercept	2.39	P<.001	2.38 - 2.41
Clinic Use on Intercept	.26	P<.001	.257 - .263
Slope	.36	P<.001	.359 - .361
Clinic Use on Slope	.13	P<.001	.129 - .133
Gender on Intercept	.19	P<.001	.31 - .35
Gender on Slope	.12	P<.001	.11 - .13
HSvMS on Intercept	.39	P<.001	.383 - .397
HSv.MS on Slope	.11	P<.001	.105 - .115

“Healthy Students Are Better Learners

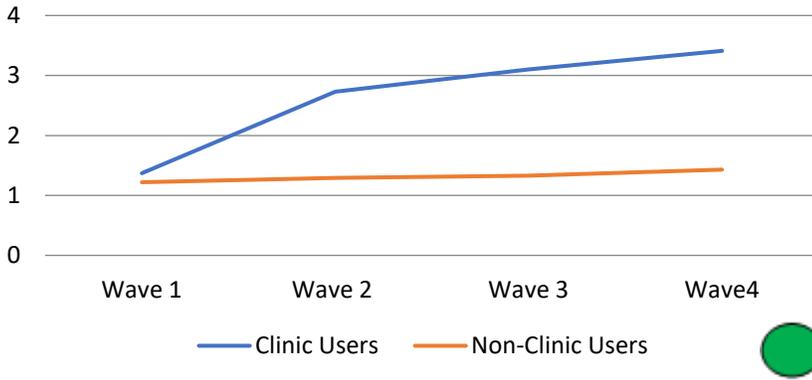
Health-risk behaviors such as early sexual initiation, violence, and substance use are consistently linked to poor grades and test scores and lower educational attainment.”¹⁻³

“In turn, academic success is an excellent indicator for the overall well-being of youth and a primary predictor and determinant of adult health outcomes.⁴⁻⁶Leading national education organizations recognize the close relationship between health and education, as well as the need to foster health and well-being within the educational environment for all students.”⁷⁻¹⁰

“Schools are the Right Place for a Healthy Start”

“Schools play a critical role in promoting the health and safety of young people and helping them establish lifelong healthy behaviors. Research shows that school health programs reduce the prevalence of health risk behaviors among young people and have a positive effect on academic performance. CDC analyzes research findings to develop guidelines and strategies for schools to address health risk behaviors among students and creates tools to help schools implement these guidelines.”

Health Literacy



n=1614 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct

The factor “Health Literacy” is comprised of the following interrelated dimensions... report that they know or would do the following at least fairly often:

...I would tell a health provider what I need, even if they don't ask, I know what kinds of services are confidential/private, I could talk honestly with a health care provider about any problems or needs, make health care appointments for myself at the health center; know where to go to get help where I wouldn't feel judged or criticized, know where to go to get health care when I need it. The Cronbach's alpha for this scale is good (alpha = .869)

Importance: “Health literacy is commonly defined as ‘the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions’. While there is a large body of literature concerning health literacy and adults, few studies have focused on adolescents. Adolescents may have less interaction with the health care system and lower health care costs than adults, but they are increasingly involved with their health care, especially those with chronic illness. They are frequent users of mass media and other technology to access health information and are a target group for many health-related educational interventions. Adolescents are also at a crucial stage of development, learning skills they will carry with them into adulthood. The goal of this paper is to provide a summary of issues justifying the importance of studying health literacy as it relates to adolescents and to provide a framework and suggestions for future research.”

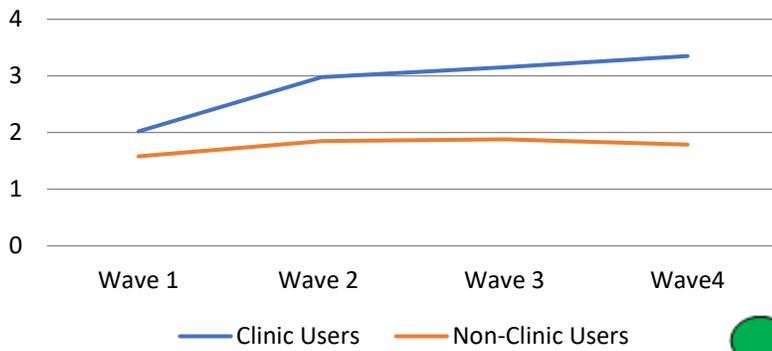
Source: Jennifer A. Manganello; Health literacy and adolescents: a framework and agenda for future research, [Health Education Research](#), Volume 23, Issue 5, 1 October 2008, Pages 840–847,

Results

- Students who used the clinic were significantly more likely than those who didn't use the clinic to report greater improvements in health literacy over the course of the two-year period than non-users, whose reports of health literacy remained largely unchanged.
- The effect size of clinic use on health literacy is strong, suggesting that clinic use is strongly and positively associated with improvements in students' reports of health literacy.
- Students' reports of on measures of health literacy at baseline were comparably low at baseline regardless of whether they used the CAHC or not.

Variable	Coefficient	Significance	95% C.I.
Intercept	1.31	P<.001	1.30 – 1.32
Clinic Use on Intercept	.003	n.s.	-.001 – .005
Slope	1.14	P <.001	1.13 – 1.15
Clinic Use on Slope	.97	P <.001	.968 – .972
Gender on Intercept	.57	P<.001	.569 – .571
Gender on Slope	.81	P<.001	.808 – .812
HSvMS on Intercept	.62	P<.001	.614 – .626
HSv.MS on Slope	1.02	P<.001	1.01 – 1.03

Reproductive Health Literacy



n=1261 matched students over the two-year project period. Estimates were generated from a conditional latent growth model using Mplus v5.4. All scales were reverse coded so that higher scores can be interpreted as having higher self-reports of the construct. See the methods section and the Appendices for additional detail on Propensity Score Matching, used to control for other factors that may also be influencing study outcomes.

Results*

- Students who used the clinic were significantly more likely than those who didn't use the clinic to report greater improvements in reproductive health literacy over the course of the two-year period than non-users, whose reports of reproductive health literacy remained largely unchanged.
- The effect size of clinic use on reproductive health literacy is strong, suggesting that clinic use is strongly and positively associated with improvements in students' reports of reproductive health literacy.
- At baseline, students who used the clinic during the two-year period were significantly more likely to report higher levels of reproductive health literacy than non-users, though not by a large margin.

Variable	Coefficient	Significance	95% C.I.
Intercept	1.86	P<.001	1.84 - 1.88
Clinic Use on Intercept	.17	P<.05	.12 - .22
Slope	.72	P <.001	.718 - .722
Clinic Use on Slope	.65	P<.001	.649 - .651
Gender on Intercept	.97	P<.001	.89 - 1.06
Gender on Slope	.53	P<.001	.516 - .544

The factor "Reproductive Health Literacy" is comprised of the interrelated topics from the survey: ...I know where to go to get private advice or care for birth control; pregnancy testing; pregnancy care; testing or treatment for sexually transmitted disease; emotional issues (questions related to reproductive health were asked of high school students only). The Cronbach's alpha for this scale is high (alpha = .877)

Importance

- "Sexual activity is a part of human development for many young people in the United States. As they develop, adolescents and young adults need access to comprehensive and non-stigmatizing information about sexual and reproductive health, support networks to have the pregnancies they want, and high-quality, affordable and confidential contraceptive services..."
- The proportion of U.S. females aged 15–19 who used contraceptives the first time they had sex... was 79% in 2011–2013.
- Current federal law requires health insurance plans to cover the full range of female contraceptive methods, including counseling and related services, without out-of-pocket costs. However, some minors may not use insurance to access contraceptive services because they are not aware that these services are covered or because of confidentiality concerns.
- Adolescents and young adults aged 15–24 accounted for nearly half (9.7 million) of the 19.7 million new cases of STIs in the United States in 2008. This disproportionate share likely reflects larger age-based disparities in access to preventive services and care.
- In 2013, about 448,000 U.S. women aged 15–19 became pregnant. Seventy two percent of adolescent pregnancies occurred among the oldest age-group (18–19-year-olds)."

Source: Excerpted from The Guttmacher Institute, ["Fact Sheet: Adolescent Sexual and Reproductive Health in the United States."](#)

Other Areas of Impact Investigated: Students with Asthma and Chronic Conditions

In addition to the preceding analyses, we investigated whether utilizing the CAHC was associated with improvements in students' experiences with and management of asthma and chronic conditions. We conducted repeated measures ANOVA with weighted means to control for site differences in sample size. Across the full sample, 12.1% of students reported having been diagnosed with asthma by a health care professional (n=206) and 10.1% of students report having been diagnosed with a chronic health condition other than asthma, such as diabetes, life-threatening allergies, migraines, anxiety, or depression (n=172). Among students who answered "yes" to either of these conditions, a substantial proportion (83%) used the CAHC more than one time. Because of the unbalanced design, we did not analyze the differences between clinic users and non-users. We did, however investigate the following, which show encouraging trends.

Descriptive Profiles of Students with Asthma and/or a Chronic Condition Across the 4 Waves of the Survey (n=206)

- Fewer students reported that they missed school because of problems with asthma over time (across the four Waves) ($F[3,106]=7.026, p<.001$). High school students were more likely than middle school students to report that they missed fewer school days because of problems with asthma ($f[3,103]=5.36, p=.002$).
- Students with asthma were significantly less likely to report that problems with their condition made it hard for them to keep up with school work over time ($F[3,96]=3.05, p=.032$). Again, this was not true among students with a chronic condition other than asthma.
- There was a significant increase over time in the number of students who report having an asthma management plan across the four Waves ($\chi^2[2]=13.04, p<.01$). This improvement was more pronounced among high school students ($\Delta\chi^2[1]=4.75, p<.05$).
- There was a significant increase over the two years in the number of students who reported that an adult at school helped them manage their asthma or condition ($F[3,109]=3.672, p=.015$). This effect was stronger for girls than boys ($F[3,80]=5.27, p=.002$) and for high school students than for middle school students ($F[3,75]=4.63, p=.005$).

There were, however, few significant improvements observed over time for students with chronic conditions.

- For example, there were no significant trends in the number of students who had asthma who reported that they visited the doctor's office, urgent care center, or the hospital emergency room over the two-year period. Middle school students were significantly more likely than high school students, however, to report that they visited a doctor, urgent care center, or emergency room because of problems with asthma.
- There were no significant changes across the four Waves in the number of days students report they had to use their rescue inhalers.

- The trend toward fewer students reporting that they missed school because of problems with a chronic condition other than asthma was not observed among students who reported that they have a chronic condition other than asthma. Girls were more likely to report that they missed greater numbers of school days than boys ($F[1,115]=16.414, p<.001$). Significantly more girls than boys also report that it was hard for them to keep up with their schoolwork ($F[1,90]=9.37, p=.003$) as a result of their condition.
- There were no significant trends in how stressful students found the need to visit a doctor or health provider often for their asthma or a chronic condition over time. However, girls found needing to leave school more stressful than boys ($F[1,195]=15.60, p<.001$).
- There were no there were no significant trends over time how stressful students found it to get services when they needed them for asthma or their conditions. Girls, however, reported significantly greater levels of stress in getting needed services than boys ($F[1,198]=7.06, p=.009$).
- There was no significant trend in how stressful students found it to deal with people who didn't understand their condition. Girls, however, reported greater levels of stress than boys ($F[1,192]=16.12, p<.001$) and middle school reported more stress than HS students ($F[1,199]=6.90, p=.009$).

These effects will be explored more fully in our subsequent enhanced analyses to be conducted from January – May under separate contract for the MDHHS in the spring/summer of 2018.

ADDITIONAL QUALITATIVE ANALYSES: RESULTS FROM THE STUDENT DISCUSSION GROUPS AT THE END OF YEAR 1

In addition to developing the quantitative database, the evaluation staff conducted discussion groups with student participants in their school's Youth Advisory Councils (YACs) at the end of the first year, as well as conducted discussion groups with CAHC staff and members of the Community Advisory Councils (CACs) at each of the schools at varying points in the project period. The CACs were comprised of a range of participants, including parents, leaders and staff at community programs, school, and CAHC staff members. These qualitative data provide additional context for understanding the kinds of challenges students frequently face and the role CAHCs play in helping students manage these needs in positive ways.

The discussion groups focused primarily on stakeholders' reactions to and interpretations of key findings from the school-wide survey, as well as their interpretations of aggregate risks identified in student cohort's first visits to the CAHC. *Of interest as well was in documenting students' early impressions of the CAHC and some of the challenges encountered as CAHCs sought to establish themselves during the clinic's first year.*

Our security guards are like our coaches so it's kind of like a relationship.... it's not like the security guards that are always mean and yelling at you and all that stuff.... I promise you, everybody in the school is cool with every security guard. ... It's not like they just take your side, but they're also building relationships.

Student

What students liked about their schools. We started the discussion groups with students by asking them what they especially liked about their schools.

Their responses tended to focus on participation in or attending the schools' sports events, the sense of community their schools' town or city provided, and standout teachers and staff who were especially positive with and committed to supporting students. One student, however, responded that she liked "nothing - There's nothing outstanding about this school."

What students like about the Health Center after its First Year of Operation

Four main themes evolved after students' first year with the health center:

- The **convenience** of having the clinic ready accessible to meet their needs. Some commented on the ease of getting sports physicals; several commented on the fact that "if something is wrong with a student, they can just come down" to the clinic -- "it's free, we don't have to pay."
- Its **physical feel, appearance** – several students commented on the space itself. For example, one student described, it's clean, organized: "It doesn't feel like a health center– it's comfortable. I like how the walls aren't white like an insane asylum - it's brown, warm...we've also got the mural... they've got kids pictures up there – it's awesome."
- The clinic staff are **trustworthy**. As one student described, "I like it because if they're not sure about something, they'll call a higher medical person to answer their question and then you get the answer right there." Another explained, "if something's wrong (with a student), they can just come down." In addition, students noted that "it's not busy – you can probably be in and out – it's quick."
- **There's less need to miss school:** One student commented, "when they get in, they get looked at, and when they're fine, they go back to class." Another student indicated that "I love the health center, especially being an athlete – I can't miss so many days of school – I can't go to the doctor's office to get physicals or stuff like that – it's so nice, it's right there – it's so nice."

"(The CAHC) doesn't feel like a health center– it's comfortable. I like how the walls aren't white like an insane asylum. They're brown, warm... we've also got the mural... they've got kids pictures up there – it's awesome."

Student

Improved Access to Health Care

Students and community members also commented on the increased access the health center provided to health care services when needed. One student explained that, prior to the opening of the health center, some students and parents had to travel a half-an-hour or more to get to the closest medical facility; another parent noted that it took her child 50+ minutes to get to school on the school bus. She noted that "the health center help people have access to what they haven't had before." Another noted that "we had to travel 30-40 minutes to get a physical before... the health center keeps you from missing a whole class day." In addition, dental services were also at a distance from them school or home for some students, requiring them to "take off school" or forego services because that parents may not be able to get off of work. In the course of the evaluation, one site

started providing access to a dental hygienist 3 days/week and a dentist 1 day/ week, which helped to bring more students to the clinic and to reduce the sometimes serious unmet dental issues that many children who live in conditions of poverty face.

A superintendent at one of the sites, a strong advocate for CAHCs, suggested that the District’s partnerships with the CAHCs have increased in the course of the two-year period, particularly with the MDHHS satellite office, which has resulted in increased numbers of families receiving day care assistance, food assistance, cash assistance, medical assistance, program assistance with unmet basic needs, such as heat, electric, water services. As the superintendent explained, “the caseloads are so high had to put two eligibility helpers - these partnerships created more volume – 15-20 unscheduled visits daily. The frustration is getting kids access to services. The superintendent also mentioned partnerships with nearby family services, local churches, non-profit to serve and empower kids – non-paid trained consultants that mentor kids through trauma – on-site twice a week all day at each elementary school.”

Another member of a community advisory council commented about the lack of alternatives to the CAHC to access mental health services:

“A lot of parents have to work – a lot of kids so don’t get appointments b/c parents would have to take off work and if they take off work they lose their jobs. (Having a HC) has been tremendous for our kids...”

Member of the Community Advisory Council

“It will be interesting to see how students use the mental health service – there are some families who don’t want their kids talking to someone... some of it’s cultural, some of it’s for fear of getting in trouble for whatever is going on at home – some don’t want anybody to air their dirty laundry ... I think though that many of our students are finding that it’s a safe place, that they feel comfortable b/c it’s in a school. The kids are getting the parents to come in to let them receive services or to get financial help as well...”

Member of the Community Advisory Council

“... Try to get your kid to see Community Mental Health – good luck with that – unless they are suicidal or homicidal, they can be seen from local community mental health people – that part is OK but for the parent who has a kid ADD or ODHD or bipolar and your medical doctor has said they need psychiatric opinions on this kid, if don’t have strong private health insurance, you’re not getting in there, or Medicaid for your kid, you’re not getting in there. There’s essentially one child psychiatrist available – (that involves) travel, a very long wait –the response is delayed. I used to work in a wealthier community – young people had many more resources available, transportation was not an issue – not the case here – lack of resources is really shocking to people who have lived in urban or suburban areas. “

One CAHC staff member described the impact of having a CAHC in terms of serving historically unaddressed mental health needs of students:

“The (CAHC) has been very successful, staff have done a fantastic job. (The center) has had a huge impact – increasing access is huge. Mental health care is our primary need in this community with low access – not being able to get in for not having insurance, transportation – that’s been a huge

issue here. Being able to have it in-house, behavioral health onsite to provide intensive interviews to meet the needs – counseling, therapy, suicidal – not having to send the out right away to have someone available to do that screening – it’s absolutely huge – it’s become a part of our intervention, ensuring they have access and are healthy and able to learn. I can’t say enough about it.”

Barriers to Using the Health Center: Reflections on the CAHCs’ first year

When asked about any barriers that made it difficult to use the health center, four interrelated themes emerged, as described below, many of which were identified by students and CAHC staff.

Requirement for parental consent. Some students noted that not having parent consent means that you can’t use the health center. As one student described, “If you don’t have a parent’s consent form then you can’t come even if something is terribly wrong with you...They give you a whole packet before you’re able to come here.” Others echoed the theme of reliance on their parent’s permission in order to be seen at their health center. Another student noted that some parents don’t want to risk having their personal or family issues discussed with “staff you don’t know.”

“It’s not a constant barrier but we need to get across that the staff is more friendly than regular doctors. I feel like that they don’t really know them. The people from the high school who DO use the health center keep coming back – they’re loyal – it’s just the fact that the kids don’t really know who the staff are...they don’t know those people. I really think that personally, I would talk to (a particular clinic staff member) about anything.”

CAHC health provider

Discomfort discussing private, personal issues with staff you don’t know.

As one student explained, “if you don’t say anything to anybody, you won’t get judged.” Another agreed: “Some people just don’t want to talk to anybody – probably because they feel it’s too personal or either like they don’t want anybody to know.” One student noted that as the health center became better known and their friends started using it, these issues lessened. As one student described, “why didn’t people use it? Probably because it was new” and the clinic hadn’t yet developed its reputation as a safe and trustworthy place.”

Privacy, Stigma. Along the same lines, some students commented, “you don’t want to talk to anybody...probably because they feel it’s too personal or either like they don’t want anybody to know.” Another noted that: “I feel like some don’t want to go to a counselor because they don’t want to talk with a stranger with their problems and they don’t know how far they’ll take it.” A member of the community advisory council noted that, “There’s always some difficulty in saying you have a problem – there’s that stigma, it’s everywhere, especially in this age range.”

Process for using the clinic didn’t work well in the beginning in large measure because some students were required to get passes from a teacher, noting that it “felt somewhat awkward to get and use passes (in front of others) and be excused from class.” Another explained that some of the teachers wouldn’t accept the (permission) slips (to leave class). A student suggested that “teachers

and staff need to understand what this is really about – this year they’ll understand... some teachers stop you in the hall or might not let you get a pass – teachers don’t necessarily understand.... it’s a growing process.”

Confidentiality. Some students worried about their confidentiality – whether they could trust that what is shared will be kept confidential... Others, however, suggested that “because it’s the health center, it’s a lot stricter – they could lose their jobs.” Concerns over confidentiality diminished over time as students formed relationships with CAHC staff members.

Students’ recommendations for increasing students’ use of the clinic: advertise more, “make themselves known,” “help students understand more about what the clinic does and how to use it.” As one student described, “the clinic should get the word out, make students more comfortable with coming here... a sign would help because not many people may know where it is.” Others echoed the theme that it would be helpful for the “staff to get out to interact with all students more... (without that) that’s probably why students won’t open up to them.”

Effects of Stress

A dominant theme in the results of the Student Survey, RAAPS-PH, discussion groups, and interviews was the prevalence and seriousness of stress in the lives of many of the students in the participating schools. As one student described, “mental health is a big part of our needs... people are down and depressed.” Another commented that, “Within my friend group - and I know a lot of different people, I’m a well-rounded person – I know more than 10 people who I know personally who have had mental breakdowns – just breakdowns because of school and because of things... If they were to take a step and the health center advocated more for mental health, there would be a lot fewer struggling.”

A community member who works with students described the increasing seriousness of students’ mental health issues and health care needs and the importance of broadening access to adolescent mental health services:

“A few years ago we were not seeing the overwhelming numbers who are coming in with serious mental health issues – its pervasive - more and more of an issue every day to the point that I’ve adjusted my staff members, who are volunteers, to bring on board licensed social workers and

Increasing student enrollment and use of the clinic

“Just let us know that it’s OK for us to come in here and talk to them when we need somebody to talk to.”

- “Make us feel comfortable enough to get to talk to them.”
- “... Yeah, like be on our side like if we tell them something about a teacher, they don’t have to say, well, maybe it’s you. Maybe it’s not the teacher.”
- “It would be helpful if the HC could put into words that students can understand what it means that something is confidential”.

Students from a Youth Advisory Council

master's social workers who are willing to spend time with these kids to work with them... some of these youngsters have some serious, legitimate issues..."

Sources of Stress – School

Students discussed three sources of stress: school, at home, and in their personal lives. Key themes follow.

School pressures – “teachers don’t understand the demands on students.” When asked what kinds of things lead students to feel under a lot of stress at school, the following response was common: “tests-- a lot of tests on the same day, and Friday and end of week quizzes.” Students spent a fair amount of time discussing their suggestion, that “it’d be helpful if they (tests, quizzes) were spaced out, if we had more time to study for one class. (Instead) we have to multi-task when we have all those classes, then everything is due, we’re scrambling.” Students also underscored that adults need to understand better what students’ lives outside of school are like - sports, jobs, volunteers, commitments, medical issues. One student commented that some teachers feel that theirs is the only class that you have so it gets overwhelming.”

Another student explained that “we’re stressed because of sports – we get home late – practice and homework don’t really mix. Not much time to do all school work – no time for myself – there’s so little down time... It’s difficult to try and balance everything. Teachers don’t understand that we do more than school.” Another student noted: “... If you miss a class on Friday because of sports (for like invitational or something) and you come back on Monday... they don’t care... they’ll still just give you the work and I’m like I missed a lessons... they’re like OK, like basically do it yourself... you get notes from somebody else, and they’re like the worst notes... Or they put everything on colleges, it’s like ‘oh when you get into college’ --oh yea, that’s the golden one.”

In addition, “outside of school situations can bring stress to school work, too. Missing like three days, you’re already failing the class.” Students suggested that it’d be helpful to “learn how to manage our time to relieve our stress.” A number of students also described their frustrations with teachers who are ill-prepared for class or who cover material too quickly or who are not otherwise available to students to help students learn the material in ways that are helpful to students.

Peer pressure, disrespect. Another theme that emerged from the discussion groups, particularly at one of the schools, related to the feelings of being judged, disrespected, bullied. Students explained that stress in school was caused by “kids in the school, everything like judging on what they wear or how hair is or what they look like, that type of thing, or like social media and like cyber bullying and stuff.” Another commented: “A lot of students feel like if you’re not like the other students, it’s a problem or like everybody got to be the same... in reality, that’s not what makes the world go round, like everybody got to be their own person.” Another commented on the stress of being judged by the clothes you wear – especially boys – like “without \$1,000-dollar pants on, you can’t hang with us.” One student mentioned that sometimes things go too far: “I never thought (cyber-bullying) was until like I found out a couple of incidents had happened, so I guess that’s a real big thing.” One

student commented: "... That's just society too – society is so cruel on who you are... there's not much we can do about that."

Not being treated fairly. We asked students in the Youth Advisory Group why they thought girls reported more frequent stress and higher levels stress than boys in our Student Survey. One student described it this way: "Guys move on with stress; girls hold it in because if you're worried that sharing problems create problems for others, they want to keep it to themselves. Guys work out to relieve their stress, with girls it's harder – we beat up on ourselves, girls stress out more; girls are more emotional than guys, guys are more laid back, girls tend to beat themselves up more." Another student commented, "What stresses the ladies out? Relationships. Females take relationships to the heart... we're so serious on this one."

"We (girls) don't express it – keep it all inside – boys are more likely to do something about it, let it all out."

Student

"Boys aren't necessarily not having as much stress, they're just not showing it because they have to be the tough guys and the girls are wearing it on their shoulders... teachers are sending them more to administration to get them the help that they need. By the time boys do show it, they're in more danger."

CAHC staff member

A female student athlete commented: "I feel like there's more pressure on the girls because we are not allowed to ask for more help like the boys do... the boy athletes are coming in late for class, don't do their homework, if they want to take a test they just call up a teacher and then get help with the teacher for the test and just like a whole double standards thing. We get treatment too, but not like that, not like the boys do... we've got to actually do our stuff, do our work. Also boys always get higher praise in their sports than girls, who might be better than the boys." Another student athlete described the stresses this way: "In sports I mess up a lot – the coach or parents might say – 'oh my God, why did you let that happen, what are you doing?'"

Not being able to talk to teachers. The following student captures a feeling some other students felt of not being relevant, understood, respected by teachers.

"It's not like you're trying to be a teacher's pet or whatever. You know, you just need somebody to talk to sometimes and I feel like if teachers always say you can come talk to me, they would not come talk to you. They were just like you blowing me off. Some teachers they like to be sarcastic and I just really don't like that. Hate that." Trying to make jokes when you're trying to be serious? "Yeah. If you're frustrated and the teachers might take it as you going off on them or you giving them a nasty attitude or it's nothing like that. I need help, like help me understand. Right, it's a frustration, not an anger type of thing? "Yeah, and then they send you to the principal's office."

Student member of the Youth Advisory Council

Sources of Stress – Home

We also asked students about the stresses they may face at home. Some students explained that parents have their own health and mental health problems to deal with – some students were not inclined to add to their problems by sharing their own. As one member of a community advisory group explained, “there seem to be a lot of children who have parents who have a lot of serious mental health issues and physical health issues as well. We’re finding that the children are ... really worried that they’re going to become mentally ill. It’s almost to the point where every little thing, every health issue they are concerned about – we’re getting to the point of being able to stabilize them. I hadn’t anticipated that...” Other students suggested that their parents tend to trivialize stress, that they don’t understand why students are stressed.

“Anger issues are big – feelings of powerlessness come across. A lot of it is home things – nobody listens to them. I hear the same things often – mom’s already on her phone; nobody is listening – anger episodes are going to come out more as they try to get some of that attention.”

CAHC health care provider

“Kids are good at hiding how they feel because can’t talk with their parents, they don’t understand the process students go through.... Parents also have their own problems to deal with.”

CAHC health care provider

Another student commented, “parents don’t really understand what is going on in our lives. Parents aren’t well informed about school, not very aware of how the school system works.” Students suggested that it would be useful for the health center to send more information home to parents because “there have been a lot of changes since they were in school, it was easier for them. They don’t really try to understand. They don’t try to get involved.” Despite that, one student suggested, a lot of kids

“A lot of kids going between several different households, a lot who are doubled up with other families because of homeless, and a lot who absolutely cannot keep up with the academic pressure that’s put on them. They can’t read at a level needed to keep up with how fast-paced it is. They have high goals – they can’t keep up in middle school and by the time they’re in high school, they just give up. We can’t get them to a level where their academics can stay high enough to get in. A low SAT won’t help them with scholarships.”

Community Advisory Council member

experience tensions surrounding relationships at home. As one student explained, parents don’t just get divorced-- kids now a days go through their parents’ divorce.”

Sources of Stress - Students’ Personal Lives

We asked students about any stresses in their personal lives. Students identified several experiences in their personal lives that cause stress, including the following.

Boredom. As one student described, “Our town... there isn’t much to do – there really isn’t – bowling alley, movie theater, Wall-Mart – we have beautiful lakes and beaches but that’s only a few months every year. Kids get bored. When they get bored, they talk about drama, drugs and

alcohol.” This theme was repeated at another school: “Where do young people usually go to hang out? Nowhere. There’s nothing to do (here). There’s nothing (here) for real.”

Fear that something is wrong with them – as one member of a community advisory group commented, “Kids don’t want to have the realization that *that’s* what’s wrong with them – that’s what my problem is. I feel like they’re afraid of accept what they have.” One student suggested that it might help to “have an assembly at the high school about the kinds of problems kids are having - more kids will then understand what kids are dealing with. Like – oh! We’re similar in this sense – we all have this thing going on – we can all work together and have power over that.”

Safety. Another source of stress raised by students from one school, is violence and a fear for their safety. One student explained: “Our community, like oh my God, like since I’ve been living here like it’s never been like I feel it’s so unsafe now. It’s been so much like crime-wise or so much stuff like that... growing up it’s gotten worse...it’s like people (teens) you wouldn’t have even thought of doing stuff... they sometimes do it just for attention, to stay in the group. Gang banging. Wind up in gang bang jail.”

Not getting enough sleep. Many students commented on how hard it is to get enough sleep with the demands on them and, in turn, how hard it is to function in school or in their personal lives and stay positive when they aren’t getting enough sleep. The following comments were typical.

- “I get headaches when I don’t sleep... or if I haven’t eaten...”
- “When we come to school, you sleep in class, now you missed this more of your work and it isn’t as good as it should be, so now you have a bad grade and stuff like that... and it makes you want to quit, give up...move... like depression kind of.”
- “I get no sleep. I am too tired. I go to sleep at two o’clock – I wake up at six. I went to bed at 3:00. You take a nap and you wake up at like 12 and you try to go back to sleep and be like 3. I don’t want to sleep no more.”
- “You’d go home (after practice) and you’ll end up falling asleep from all the practice that you did so you can’t do homework. You plan to do it later but you’re tired.”
- “If you’ve got a job... you go home then go straight to work. Got to come home by 8 or 9. By then you want to get a shower and just chill, do no homework.... you go to bed around 12: o’clock, wake up and be sleepy.”

One student explained that “by handling stress through keeping it to ourselves, stress is not reduced, it’s just not talked about.”

Student

Managing Stress

The discussion groups also explored how students manage the stress they face. In addition to not often not talking with their parents, they also don't want to burden their friends: "Sometimes (my really good friends and I) talk with each other about our stresses, but a lot of the time if I know she's going through rough times, I don't want to burden her with my problems. I think it's kind of putting others first – they've got problems of their own."

"We don't know how to handle stress – we hide it or deal with it ourselves." According to one student, "one of the biggest things about dealing with our stresses by ourselves is that on TV and in our community right now – our problems aren't as bad as what others are going through, so we should just deal with it by ourselves. Students also said it was stressful for them to be asked by a friend to help them with their problems because they didn't know what to do to or how to help them. As one student described, "I know of friends who will come to me for help, but I don't know how to help them. You want to help them, but you don't know how."

"Handling on our own creates more stress – we put so much pressure on ourselves – it builds up, keeps going – we're always having it, not sharing it, not worrying others."

Student

We asked students how well it worked for them to handle stress privately, to deal with it themselves. Several students laughed and said, "*not well at all!*" Several students recommended that it would be helpful if the health center could teach them ways to cope or how to help others cope... how to manage stress.

Disciplinary issues. Students also talked about how often teachers or others misunderstand them or their behaviors and the unfairness of disciplinary actions that they view to be unjust or inappropriate.

- "Teachers will think of anything you do to send you out of the class and like that's their favorite thing to do, just write you up or send you out of class. Nine times out of ten they're getting frustrated because they can't teach, and nobody can do it – and then they get frustrated because nobody is doing it because nobody gets it."
- "I guess like when a teacher doesn't understand where the person is coming from so it like escalates. I get into a whole argument and then say something out of control, from anger...and then the teacher decided to take it to heart and stuff so then they've got to write them up and everything..."

"If you're frustrated and the teachers might take it as you going off on them or you giving them a nasty attitude – it's nothing like that. I need help, like help me understand...and then they send you to the principal's office."

Student

SUMMARY AND CONCLUSIONS

This final section explores some of the leading results and conclusions of this research, organized by the evaluation questions established at the beginning of this research.

Evaluation Question 1: To what extent and in what ways do CAHCs contribute to students' health, well-being, and success in school? Several broad themes emerge in response to this question.

Clinic use is positively related to improvements over the two-year period in virtually all outcome areas we studied. Students who used the health centers over the 2-year period showed greater improvements in their self-reports of health and well-being than students who do not use the center: this held true across the outcome measures studied, whether related to increased feelings of connectedness with the school, reduction of feelings of isolation, decreased use of negative coping strategies, increased health literacy and reproductive health literacy, or reduced feelings of depression, for example.

At baseline, students who report the highest levels of poor health, self-reported stress, and mental health issues and lowest levels of positive coping / resilience supports are more likely to use the clinic than those who report lower levels of difficulty, suggesting that the clinic is reaching and serving students at comparatively higher risk.

Unlike students who used the clinic, students who did not use the clinic tend to report little change or improvement across our four waves on a range of measures of socioemotional outcomes, such as a social isolation, school connectedness, and coping with stress in negative ways.

The magnitude of difference between CAHC users and non-users on our outcome variables is either moderate or strong in all our analyses based on effect size and rates of improvement outcome measures among students who used the clinic.

Evaluation Question 2: At what level and in what ways does CAHCs' impact on students' health, well-being, and indicators of academic success vary for different groups of students (for example, for middle school vs. high school students, by gender, or across the four CAHCs)? What factors help to explain these variations?

Throughout the results we report differences among student responses by gender and for middle school vs. high school students. A common pattern was for girls to report comparatively greater risk responses than boys, although boys tended to report disciplinary issues and scored higher on some measures than girls. We plan to analyze the experiences, needs, utilization patterns, and outcomes of different population groups in-depth via a separate contract with the MDHHS in spring/summer 2018.

Evaluation Question 3: What lessons are learned from the evaluation about the strengths, limitations, and opportunities for improvement and increased impact moving forward?

The CAHCs play an important role in promoting mental health and well-being among students in historically underserved areas. Mental health issues constituted the main reason students visited the clinic – nearly half of all students who visited the clinic listed mental health as their chief complaint. The CAHCs provided students with a range of mental health services, including routine mental health visits and guidance and support on strategies for coping with depression or suicide ideation, anxiety and stress, and disruptive behavior, for example. Having a health center on-site is particularly important for students who report that they do not have adults or other support systems to turn to for help in coping with stress and anxiety in positive, healthy ways.

The CAHCs help to improve physical health, whether through making sure students are up-to-date with immunizations, helping students with asthma manage their symptoms and stay in school, treating injuries and associated pain, connecting with other specialists or care providers when needed. The evaluation data provided a profile of all such services utilized by students. CAHCs also help students prevent and manage acute illness and troublesome symptoms such as headaches, stomachaches, and upset stomachaches that can interfere with well-being and learning.

The CAHCs play an important role in fostering academic progress and success. After providing care and tending to students' needs, the CAHCs returned the vast majority of students who use the CAHC (82.6%) to their class, lunch, or recess, thus increasing opportunities for instructional seat time and enabling students to concentrate on their lessons, rather than on the distractions of attended health problems. Through addressing students' health care and mental health care needs, CAHCs help set the stage for increased learning and academic success.

The CAHCs spend time with students that exceeds what typically is possible among traditional primary care practitioners. CAHCs have greater flexibility in scheduling longer and more frequent visits with students than health professionals can provide in other clinical settings. This is particularly important in enabling them to provide more in-depth mental health care to students with complex needs and fostering a sense of trust and connectedness with their school.

The CAHCs have achieved widespread support among students, community members, parents, and others. Students who have used the clinic are grateful to have an adult available to help them manage the challenges they face, as many of the qualitative results made clear. The preponderance of students (92%) are satisfied with the care they received at the clinic.

As these examples demonstrate, the CAHCs are helping to provide students in historically underserved communities with access to comprehensive, high quality services, monitored by the CAHC sponsor and overseen by MDHHS. They are advancing student-centered health care services through engaging and empowering students to make decisions that directly affect their lives through venues such, as the Youth Advisory Councils present at each school. They are assessing and

identifying students' needs for health care and behavioral health as determined via RAAPS-PH, administered to students who visit the clinic, at least once a year. They are providing students with access to adults whom they can trust with private information and turn to for help when needed. According to students, they serve as a reliable source of support and care that can be counted on to build their capacities to talk to about the stressors and stress they face in their lives, and to manage and cope with adverse circumstances that are common in communities that have high and sustained high concentrations of poverty.

Lessons Learned and Recommendations

The full report presents a range of lessons learned from the evaluation. An overview of key opportunities for continuing improvement, suggested by the findings and the stakeholders themselves, include the following.

- ✚ **Continue to intensify and deepen the provision of mental health services given the significant and serious need many students have for care and support.** This was a recurrent theme throughout the evaluation and our interviews and discussions with stakeholders.
- ✚ **Provide stress management techniques and cognitive behavior therapy (or other forms of building coping skills) school-wide.** CAHCs can play an important role in helping students manage stress in constructive ways, both at the individual level and through supporting school-wide/primary prevention and stress reduction training and education.
- ✚ **Intensify follow-up and follow-through on referrals.** In only a minority of cases was follow-up noted on the encounter logs.
- ✚ **Continue to build on and increase opportunities for engaging youth, parents, and community members in playing leadership roles through youth advisory groups, community advisory groups.** The discussion groups with students, CAHC and school staff, and community leaders and members made clear students' eagerness and readiness to play a leadership role in promoting the CAHC among their peers and in the community. Student members devised a range of creative strategies for increasing the reach and breadth of impact of CAHCs. Students in general were grateful for the CAHC and, even when they didn't use it, appreciated the fact that "it was there" for them when they needed it.
- ✚ **Increase CAHCs' impact school-wide through continuing to increase enrollment levels and through addressing social and environmental determinants of health.** The evaluation examines CAHCs' impact largely *within the clinic and on individual students*. The American Public Health's Center for School, Health and Education has developed a model that extends the impact of CAHCs *outside the clinic walls* by integrating public health practices and strategies with primary care, focusing on promoting health and academic success school-wide. This model includes conducting needs assessments for all students (not only those who visit the clinic), engaging youth in discussion groups to help identify the root causes of stress and mental health issues

identified in the needs assessments, setting priorities based on results, and implementing strategies for advancing population health and equity through primary prevention, early intervention, and positive systems-level changes in policies and practices.

- ✦ **Explore the reasons that underlie low levels of utilization among those whose needs might suggest a need for more intensive intervention.** As the encounter data indicated, it is not uncommon for students to visit the clinic only once or twice even though the results from RAAPS-PH and the Student Survey suggest often significant needs and opportunities for more intensive support.
- ✦ **Broaden impact through engaging vulnerable and hard-to-reach students in the CAHC.** RAAPS-PH risk assessments and the Student Survey results suggest that most students are benefiting significantly from having a new health center in their school. A continuing need and opportunity exists for enhance outreach and recruitment to engage students in the clinic and to increase the value and impact of the CAHC among vulnerable students who have historically unmet needs but who have not utilized the clinic.
- ✦ **Continue to build the buy-in and partnerships with school and district leaders for CAHCs, as well as with community providers and resources.** Several stakeholders underscored the importance of building and sustaining strong relationships with the educational community given the interdependencies in advancing health and educational success.

CONCLUSIONS

This evaluation points to a range of ways CAHCs can make a positive difference in the lives of students who face the sustained challenges and disadvantages of economic hardship and poverty. CAHCs are proving themselves to provide a critically important mechanism for building strong and resilient youth who are equipped to positively manage the challenges they may face at school, home, and in their personal lives. That CAHCs can make a difference in addressing unmet needs and promoting resiliency among children and adolescents comes as no surprise. That they do so without incurring a major expense to students, families, and communities is a strength that warrants more widespread recognition in public policy. This study adds to the growing collection of research that points to the brighter and healthier futures for children and adolescents as a result of broadening access to and engagement in quality health care provided when needed, in their schools.

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Attachment A FREQUENCY DISTRIBUTIONS OF RESPONSES TO THE STUDENT SURVEY

Wave 4 – May 2017 Overall, By Gender, and by Middle School vs. High School

Topics of the Survey Questions	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
Health and Well-Being:⁸						
The vast majority of students indicate that their health, in general, is either <i>good, very good, or excellent</i> .	92.1%	92.8%	92.3%	95%	90.8%	Q1
<i>On most days, students report that they...</i>						
▪ Are hopeful about the future	88.3%	88.3%	88.2%	87%	89.2%	Q4e
▪ Believe that they can handle whatever comes their way	87.2%	92%	83%	85.4%	88.7%	Q4c
▪ Feel they have a lot to be proud of	86.2%	87.7%	86.4%	85.2%	87.2%	Q4f
▪ Are full of energy	84.2%	87.4%	81.9%	87.7%	81.6%	Q4a
▪ Usually feel better quickly when sick	74.2%	79.4%	69.1%	75.9%	73.2%	Q4d
▪ Deal with problems well	83.8%	87.2%	80.6%	80.5%	86.4%	Q4b
<i>Most students describe themselves as...</i>						
▪ Happy, <i>at least fairly often</i>	86.1%	87.6%	86.2%	90.2%	84.6%	Q6b
▪ Feeling good about themselves, <i>at least fairly often</i>	81.1%	85.5%	78.5%	83.4%	81.1%	Q63

Health Issues	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>Students report that they experienced the following at least 3 days in the past 4 weeks</i>						
▪ Felt really sick	14%	10.9%	16.3%	14%	14%	Q2a
▪ Had a headache or stomachache	28%	17.3%	39%	28.5%	27.6%	Q2b
▪ Missed more than half-a-day of school because you were sick or didn't feel well	6.5%	5.5%	7.2%	6.9%	6%	Q2f
▪ Felt so tired couldn't stay awake in school	18.6%	17.9%	19.0%	11.9%	24.1%	Q2d
<i>Percent of students who estimated they missed school at least 10 times because they were sick or didn't feel well</i>	11.4%	3.5%	7.1%	4.1%	12.2%	Q3
▪ On most school nights, % who did not get at least 8 hours of sleep	53.3%	49.4%	57%	34.1%	67.2%	Q5

⁸ **Note:** This table provides the proportion of cohort students who provide positive risk responses to the questions in the Student Survey. So that the results do not disproportionately favor the larger schools, they have been weighted to provide comparable representation among each of the schools' students. These responses identify areas of particular risk and/or stress to students; they are descriptive only and not a part of the impact analysis.

<ul style="list-style-type: none"> In the past 4 weeks, number of days you missed at least half a day of school because you were sick or didn't feel well (% who indicated more than five days) 	3.2%	3.5%	2.4%	2.6%	3.1%	Q2f
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Sources of Stress	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
Students report having felt <u>a lot of stress</u> in the past four weeks...						
<ul style="list-style-type: none"> At school 	27.8%	20.5%	33.6%	17.3%	34.0%	Q8a
<ul style="list-style-type: none"> At home 	13.1%	8.0%	17.1%	10.7%	14.4%	Q8b
<ul style="list-style-type: none"> In their personal lives 	19.9%	11.9%	26.7%	17.6%	20.6%	Q8c

Connectedness and Social Support	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
While most students report a sense of support from and connectedness with the school, a fair number did <u>not</u> agree that...						
<ul style="list-style-type: none"> They felt like they were part “part of this school” 	31.3%	31.4%	29.4%	28.1%	33.6%	Q18c
<ul style="list-style-type: none"> Knew at least one adult in their school they could talk with about any personal problems 	39.3%	42%	39.2%	40.4%	37.9%	Q18h
<ul style="list-style-type: none"> Adults at their school understand what students’ lives are like outside of school (almost never) 	32.7%	28.1%	36.8%	32.7%	32.1%	Q20d
<ul style="list-style-type: none"> There is at least one adult in the school who knew them well (strongly disagree and disagree) 	26.1%	26.9%	23.7%	23.6%	27.4%	Q18d
<ul style="list-style-type: none"> They care about this school 	30.4%	31.1%	27.6%	22.1%	36.5%	Q18b
<ul style="list-style-type: none"> They are involved in activities at their school, like student clubs, sports, or other after-school activities 	35.4%	37.5%	32.8%	30.0%	39.4%	Q18i
<ul style="list-style-type: none"> Overall, they feel good about being in this school (strongly disagree disagree) 	26%	25.7%	23.8%	17.3%	30.1%	Q18a

School Culture	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<ul style="list-style-type: none"> Students in my school <u>almost never</u> treat one another with respect 	30%	23.5%	35.8%	24.7%	33.2%	Q20f
<ul style="list-style-type: none"> Adults in my school <u>almost never</u> value what students have to say 	18.4%	16.6%	19.5%	13.7%	21%	Q20g
<ul style="list-style-type: none"> My opinions are <u>almost never</u> respected in this school 	45.9%	44.4%	46.4%	41.7%	49.1%	Q18e
<ul style="list-style-type: none"> They are <u>almost never</u> comfortable being themselves at this school disagree or strongly disagree 	28.6%	26.2%	29.6%	28.0%	27.6%	Q18g
Over the past 4 weeks, felt <u>some or a lot of stress</u> around the following:						
<ul style="list-style-type: none"> Not doing as well as they had hoped in their classes 	34.3%	31.6%	36.2%	27.6%	38.9%	Q9a
<ul style="list-style-type: none"> Not feeling safe in school 	6.1%	5.6%	5.1%	6.3%	4.6%	Q9i

▪ Not feeling safe getting to or from school	4.3%	4.3%	3.6%	3.9%	3.8%	Q9h
Personal/Interpersonal Stress	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>Percent of students who felt <u>some or a lot of stress</u> in the past four weeks, because they ...</i>						
▪ Felt they were treated unfairly	16.1%	14.3%	16.8%	17.8%	14.6%	Q9g
▪ Felt insecure about themselves	23.4%	14.5%	30.8%	25.1%	22%	Q9d
▪ Did not feel accepted	16.6%	14%	18.1%	19.4%	14.3%	Q9f
▪ Did not have someone to turn to for help	18.4%	14.5%	24.0%	18.2%	18.5%	Q9c
▪ Felt left out	18.9%	13.3%	23.9%	19.8%	17.9%	Q9b
▪ Had problems with a boyfriend/girlfriend	16%	14.4%	19.9%	12.6%	18.4%	Q9e

Unmet Basic Needs						
<i>Over the past six months ...</i>						
▪ Had to stay in a shelter, motel, or some other place because you didn't have a home to stay in	4.5%	6.0%	2.1%	3.3%	5.4%	Q10s
▪ Always have running water	5.6%	6.4%	4.4%	4.5%	6.5%	Q10b
▪ Always have electricity where you stayed	5.5%	7.0%	3.8%	4%	6.6%	Q10c
▪ Ever feel hungry because there wasn't enough food to eat	10.8%	12.9%	7.8%	7.3%	13.4%	Q10d

Emotional Distress	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>A fair number of students report that, in the past four weeks, they felt the following at <u>least fairly often</u>:</i>						
▪ Angry	35.5%	30%	40.5%	30.3%	39.3%	Q6f
▪ Lonely	32.3%	27.7%	35.4%	28.3%	35.2%	Q6g
▪ Really down about things or depressed	30.2%	22.6%	36.8%	26.7%	32.8%	Q6h
▪ Like a failure	21.3%	18.3%	22.8%	19.9%	22.3%	Q6i
▪ Worried that something bad was going to happen to them	22.3%	18.3%	25.7%	20%	24.1%	Q6j
▪ Have trouble relaxing	21.2%	17.7%	23.5%	20.4%	21.6%	Q2g

Stress Management	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>Students who report that they <u>never/almost never or not very often</u> deal with stress by doing the following:</i>						
▪ Turn to their family to help them feel better	61.7%	63.9%	59.3%	61%	62.1%	Q12b
▪ Talk to an adult at school for help or advice	80.5%	80.7%	80.3%	80.8%	80.1%	Q12e
▪ Talk with friends about what’s bothering them	50.7%	61.2%	40.1%	54.6%	47.6%	Q12g
▪ Try not to think about it	57.8%	52.7%	63.4%	54%	61%	Q12a
▪ Deal with it by themselves	74.7%	72%	77.4%	71.8%	77.1%	Q12f
▪ Try to think about something else	57.8%	40%	22%	36.1%	27.8%	Q12d
▪ Pretend that things don’t bother them	60.2%	49.7%	70.8%	58.5%	61.4%	Q12c
▪ Tell yourself that things will get better	37.7%	42.2%	32.4%	46.6%	31%	Q12i

Impact of Stress	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>Students report that stress causes them to do or feel the following <u>at least fairly often</u>:</i>						
<i>Physical Symptoms:</i>						
▪ Get headaches, stomachaches, or an upset stomach	36.7%	25.5%	47.5%	34.4%	38.3%	Q11d
▪ Have a hard time sleeping	38.3%	31.4%	44.7%	33.2%	42.1%	Q11a
<i>Psychosocial Issues:</i>						
▪ Get really angry	30.3%	25.5%	34%	27.3%	32.6%	Q11h
▪ Want to disappear	26.6%	18.1%	33.9%	24%	28.2%	Q11e
<i>Behavioral Issues:</i>						
▪ Have a hard time controlling what do or say	27.5%	22.4%	31.8%	28.7%	26.8%	Q11b
▪ Get really emotional (argue, yell, say or do things you wish you hadn’t)	38.6%	29%	47%	36.2%	40.1%	Q12h
▪ Got into a physical fight	3.4%	4.2%	1.3%	2.9%	3.7%	Q7a
▪ Don’t eat well (too much, too little, unhealthy foods)	31.7%	22.1%	40.3%	24.7%	37.2%	Q11c
▪ Do things that put your health or safety at risk	14.1%	14.4%	11.9%	14%	14.2%	Q11g
▪ Get sent to the principal’s office because of behaviors that got them into trouble	6.8%	9.2%	3.4%	7.2%	6.4%	Q7b
<i>Ability to focus:</i>						
▪ Have a hard time getting school work done	35.5%	34.1%	35.6%	27.1%	41.5%	Q11b

Reproductive Health Literacy (not asked of middle school students)	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>A fair number of students did NOT know or were unsure where to go to get confidential advice or care if needed related to...</i>						
▪ Birth control	45.6%	45.8%	30.2%	---	42.4%	Q27a
▪ Pregnancy testing	44.8%	42.8%	28.7%	---	40.8%	Q27b
▪ Care during pregnancy	52.2%	43.9%	38.7%	---	49.1%	Q27c
▪ Advice or care for emotional problems	37.2%	33.6%	24%	---	34.7%	Q27d
▪ Testing for STD/STI	40.8%	32.2%	30.9%	---	40.6%	Q27e

Health Literacy	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>A fair proportion of students were not very sure that they know or could do the following:</i>						
▪ Know where to go to get health services when needed	8.6%	10.7%	5.6%	6.0%	9.7%	Q28a
▪ Know what kinds of services are private with their health care provider	16.2%	17.8%	13.5%	14.6%	16.4%	Q28b
▪ Make health care appointment for themselves at the health center	29.8%	31.8%	27.4%	34.6%	25.9%	Q28c
▪ Tell a doctor or other health or other health care provider about what you need, even if they don't ask	18.2%	17.8%	17.1%	20.6%	15.2%	Q28d
▪ Talk honestly with a health care provider about any problems or need you might have	16.5%	16.8%	14.6%	16.9%	14.9%	Q28e
▪ Know where to get help where you won't feel judged or criticized	20.1%	20.3%	18.3%	20%	18.6%	Q28f

Utilization of Health Care	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
▪ Roughly two-thirds of all students reported that they would turn to the school health center for help with something that bothered them in their lives	65.3%	66.4%	63.9%	61.3%	68.2%	Q16
▪ Some students were unsure whether they would turn to the school health center for help	9.4%	9.4%	9.7%	11.1%	9.4%	Q33
▪ Related to school this year, the percent of students that visited a doctor or health care provider because they didn't feel well, or needed medical care more than 5 times.	6.2%	4.3%	7.7%	6.4%	5.7%	Q14
▪ % of students whose last visit with a dentist for a check-up/to get their teeth cleaned was two or more years ago or never.	5.6%	5.9%	5.2%	3.0%	7.3%	Q26

Academic Vulnerabilities	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
<i>Students report that over the past 4 weeks, they experienced the following at least 3 days</i>						
▪ Had a hard time paying attention in class	26.7	27%	25.7%	23.6%	29.1%	Q2c
▪ Arrived late to first hour of school	12%	12.4%	11.1%	3%	18.9%	Q2e
▪ Felt so tired they couldn't stay awake	18.6%	17.9%	19%	11.9%	23.9%	Q2d
▪ Missed more than a half day of school because they were sick or didn't feel well	6.5%	5.5%	7.2%	6.9%	6%	Q2f
▪ Got less than 8 hours of sleep on most school nights	53.5%	49.3%	57%	35.3%	66.9%	Q5
Some students report that its <u>often or almost always true</u> that they have trouble getting along with their teachers.	16.4%	21.7%	10.5%	12.6%	19.5%	Q20h
A subset of students estimated that they missed more than ten days of school this past school year because they were sick or didn't feel well	11%	8.2%	13%	12.2%	9.3%	Q3
A small group of students report that they missed or skipped school without an adult's permission over the last two months <u>at least 3 times</u>	14.9%	14.8%	14.4%	7.2%	16.4%	Q21
<i>A minority of students report that they give their best effort for <u>not many or none</u> of their classes.</i>	15.6%	20.6%	9%	11.7%	18.6%	Q24
<i>A proportion of students estimate that their grades at school this year were <u>mostly C's and D's</u> or lower</i>	12.2%	15%	8.8%	12.6%	13.1%	Q19
<i>Some student report that it is <u>often or almost always true that:</u></i>						
▪ I need extra help with school work	31.7%	35%	28.2%	23%	38.7%	Q20b
▪ It's hard to pay attention in class because I'm worrying about problems out of school	25.7%	24.2%	27.2%	22.3%	28.7%	Q20c
▪ It takes me longer to learn new things than it does for most students	26.8%	28.6%	25%	22.6%	30.4%	Q20e
<i>A number of students report that they have thought seriously about dropping out of school. Top three reasons they provide:</i>	18.2%	17.3%	17.1%	13.9%	21.7%	Q23
▪ School is boring	10.5%	10.6%	9.3%	8.3%	15.4%	Q23a
▪ I don't fit in at school	5.8%	5.7%	4.7%	6.8%	5%	Q23a
▪ No adults that care whether I finish or not	4%	3.8%	3.1%	12.2%	4.8%	Q23a

Frequency and Impact of Having Asthma and/or a Chronic Condition	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
Percent of students who have been told by a doctor or a nurse that they have asthma.	23%	21.3%	22.9%	28.5%	27.6%	Q29
Among students who report that they have asthma,						
▪ ...Percent who do NOT have an asthma management plan or do not know if they do	54.5%	58.8%	50%	52.5%	55.6%	Q29e
▪ ...Have had to leave school early because of problems with asthma (for example, you were wheezing, had a whistling in your chest, had difficulty breathing) 3 or more days.	11.9%	5.8%	14.2%	8.6%	11.8%	Q20a
▪ ...Have had to use their rescue inhaler 1 or more days over the past two months	35%	26.4%	42.9%	37.7%	35.3%	Q29d
▪ ...Sought medical care at least once in the past two months because of problems with asthma 1 or more days. ⁹	20.8%	8.4%	14.8%	23.3%	22%	Q29c
▪ ...Report that their condition made it hard to keep up with their school work at least fairly often	14.2%	15.1%	17.2%	12.9%	13.1%	Q20b

Impact of Having a Chronic Condition	Overall n=1595	Male n=807	Female n=788	MS n=676	HS n=864	Q#
Other than asthma, 156 students who have been told by a health provider that they have a health problem that can continue from year-to-year, like diabetes, life-threatening allergies, migraines, anxiety, or depression.	22%	9.5%	25.2%	24.1%	22.2%	Q30
Among students who report that they have a chronic condition, the percent who report that they						
▪ Have come to school late or had to leave early because of this health problem, over the past two months 3 or more days	22.1%	7.7%	20%	21.3%	26.1%	Q30a
Impact of Asthma and/or Another Chronic Condition						
Over the past two months, students with asthma or another chronic health problem who found it <u>somewhat</u> or <u>very stressful</u> to...						
▪ Miss school or classes because of their condition	47%	42.6%	50.5%	52.2%	42.9%	Q31c
▪ Deal with people who don't understand their condition	30.1%	14%	40.4%	24.4%	23.2%	Q31d
▪ Feel different from other people because of their illness	21.3%	15.6%	26.5%	24.6%	18.7	Q31e

⁹ Difference in percentage between total and by gender due to missing data on gender variable

▪ Have trouble getting services when needed	10.6%	8.9%	10.4%	8.7%	11%	Q31b
▪ Needing to visit a doctor or health provider a lot	11.2%	7.7%	12.9%	7.8%	11.9%	Q31a
▪ Missing after-school activities	12.6%	11.6%	13.4%	11.6%	13.2%	Q31f
▪ Having trouble getting to appointments	7.8%	7%	8.1%	6.5%	8.8%	Q31g
▪ Having trouble getting medicine	8.1%	7.3%	8.1%	7.6%	8.4%	Q31h

Appraisal of the CAHC

Overall, 92% of the students who reported using the CAHC (n=738) were either somewhat (34.3%) or very satisfied (57.3%) with the care they received.

Attachment B

RISK RESPONSES FOR STUDENTS' FIRST RAAPS-PH, BY TYPE OF RISK UTILIZING THE RAPID ADOLESCENT ASSESSMENT FOR PREVENTION SERVICES (RAAPS-PH)

Note: a percentage is **highlighted in red** if the proportion of positive risk responses on a given risk factor is at least 5 percentage points greater than its comparison group (e.g., males vs. females; middle school students vs. high school students). The numerator in each case is the total number of students with a positive risk response; the denominator is all students in the group being studied (e.g., females vs. males)

RISK FACTOR	RISK RESPONSE	Overall n= 461	Male n= 155	Female n= 160	Middle School n=82	High School n=272
Unmet Basic Needs						
In the past 6 months, have you ever had to stay in a shelter, motel, or some other place because you didn't have a home to stay in?	Yes	7.3%	2.4%	2.9%	4.9%	3.8%
In the past 6 months, did you always have running water where you stayed?	No	6%	6.3%	5.8%	1.2%	8.5%
In the past 6 months, did you always have electricity?	No	8.8%	3.1%	5.7%	1.2%	6.6%
In the past 12 months, did you ever feel hungry because there was not enough food to eat?	Yes	12.5%	11.8%	10.1%	9.9%	13.6%

Exposure to Threatening Behaviors						
During the past month, have you been threatened, teased, or hurt by someone (on the internet, by text, or in person) or has anyone made you feel sad, unsafe, or afraid?	Yes	22.1%	14.3%	27%	49.4%	16.9%
Has anyone ever abused you physically (hit, slapped, kicked), emotionally (threatened or made you feel afraid) or forced you to have sex or be involved in sexual activities when you didn't want to?	Yes	11.3%	9.7%	10.1%	22%	9.2%
Have you ever carried a weapon (gun, knife, club, other) to protect yourself?	Yes	14.1%	17.4%	8.8%	18.5%	15.7%
In the past 12 months, have you been in a relationship with someone who has put you down, yelled at you, pushed you, stalked you through social media or texting or tried to control where you go, who you talk to, or what you wear?	Yes	11.5%	6.5%	15.5%	11.4%	13.5%

Risk Behavior – Alcohol, Drugs, Substance Abuse, Tobacco						
In the past 3 months, have you smoked cigarettes or any other form of tobacco (cigars, black and mild, hookah, other) or chewed/used smokeless tobacco?	Yes	6.5%	3.9%	6.9%	12.2%	6.2%
In the past 12 months have you driven or ridden in a car drunk, high, or while texting or ridden in a car with a driver who was?	Yes	6.9%	4.5%	7.5%	7.3%	7.3%
In the past 3 months, have you smoked marijuana, used other street drugs, steroids, or sniffed inhalants ("huffed" household products)?	Yes	7.4%	5.8%	8.1%	7.3%	8.4%
In the past 3 months, have you drunk more than a few sips of alcohol (beer, wine coolers, liquor, other)?	Yes	6.7%	5.8%	6.3%	7.3%	5.5%
In the past 3 months, have you used someone else's prescription (from a doctor or other health provider) or any nonprescription (from a store) drugs to sleep, stay awake, concentrate, calm down, or get high	Yes	6.3%	1.9%	5.6%	4.9%	4.4%

RISK FACTOR	RISK RESPONSE	Overall n= 461	Male n= 155	Female n= 160	Middle School n=82	High School n=272
Risk Behaviors – Eating Issues, Nutrition, Physical Activity						
In the past 12 months, have you tried to lose weight by taking diet pills or laxatives, making yourself vomit (throw up) after eating, or starving yourself?	Yes	9.4%	3.2%	3.8%	13.6	3.3%
Are you active after school or on weekends (walking, running, dancing, swimming, biking, playing sports) for at least 1 hour, on at least 3 or more days each week?	No	17%	14.8%	18.8%	28.4%	17.5%

Risk Behavior- Sexual Activity/Reproductive Health						
Have you ever been pregnant or gotten a girl pregnant?	Yes	1.3%	0.8%	2.2%	2.5%	1.4%
If you have had sex, do you always use a method to prevent sexually transmitted infections and pregnancy (condoms, female barriers, other)?	No	44.2%	28.8%	50.7%	60.7%	38%

Academic Risk						
In the past 12 months, has reading been hard for you?	Yes	19.8%	11%	18.7%	28.4%	14.6%
On your last report card did you get a C or better in all your classes?	No	39.4%	39.4%	30.9%	43.8%	39.9%

Adult Support						
Do you have at least one adult in your life that you can talk to about any problems or worries?	No	11.1%	7.1%	10%	8.5%	9.1%

Depression, Anxiety, Anger						
During the past month, did you often feel sad or down as though you had nothing to look forward to?	Yes	35.7%	25.2%	43%	49.4%	35.5%
Do you have any serious problems or worries at home or at school?	Yes	19.3%	11%	21.4%	35.6%	16.5%
In the past 12 months, have you seriously thought about killing yourself, tried to kill yourself, or have you purposely cut, burned or otherwise hurt yourself?	Yes	14.1%	7.7%	12.5%	25.6%	8.8%
When you are angry, do you do things that get you in trouble?	Yes	28.9%	28.4%	29.4%	50%	24.1%

Other						
In the past 12 months, did you ever miss school because you had to take care of someone, work, or had other problems getting to school?	Yes	17.8%	10.2%	21.6%	25.9%	16.9%
In the past 12 months, did you ever miss school because you had a hard time breathing, or you were coughing or wheezing because you have asthma or think you might have asthma?	Yes	10.1%	7.1%	12.3%	12.5%	9.9%
Have you ever been attracted to the same sex or do you feel that you are gay, lesbian, or bisexual?	Yes	14%	5.2%	20%	14.8%	15%
In your everyday life have you felt stressed because someone has treated you differently based on your race, ethnicity, gender identity, or sexual orientation?	Yes	11.9%	7.1%	14.4%	17.3%	11.7%

Attachment C

METHODS & IMPLEMENTATION

The evaluation utilizes three main sets of student-level data: the *Student Survey*, a self-administered electronic survey that provides the primary source of data on impact; *CAHC encounter data*, which serves as the primary predictors of intended outcomes, and *RAAPS-PH (needs/risk assessment data)*, which serves to provide clinic-wide profiles of the kinds of risks and stressors the cohorts of students face in aggregate and by population groups, as well as to control for risk status as a predictor variable in multivariate analyses of CAHCs' impact on student-level outcomes.

The three datasets are linked by JFM via a unique code assigned by the CAHC to each student. These limited data sets were stripped any and all of the 18 direct identifiers, as defined by 45 U.S.C. sec. 164.514. No data obtained by JFM included the identity of subjects. JFM was never able to readily identify nor did it attempt to identify, the subjects' identity with any other potentially identifiable information, such as demographic information.

Each site's Evaluation Coordinator played a key role in data collection for the CAHC evaluation. Main functions included the following:

- Developing a Codebook in which a unique, randomly generated 4-digit code was assigned to each student in the selected cohorts
- Arranging all logistics and requirements to enable the Student Survey to be administered across all 4 Waves
- Assuring adherence to all student privacy and data security requirements
- Replacing all direct identifiers (e.g., student's names) with the four-digit code assigned to each student in the designated cohorts enrolled in the school for all data sources
- Collecting or assembling encounter data for students in the cohort
- Assisting in the planning for qualitative assessments
- Managing logistics and communications between the evaluation team, school faculty/administration, and students.

Key Elements of the Administration of the Student Survey

As previously mentioned, the self-administered Student Survey provides the primary source of data on the evaluation's outcomes and impact variables. It includes 42 Likert-scale questions on a range of areas related to students' health, well-being, and educational success and takes roughly 30 minutes to complete. A full class period (55 minutes) is needed to accommodate the CAHC staff members' introductory greetings, review the students' rights and information about the survey, answer students' questions, label the students' survey with their unique code, obtain student assent and/or decline to participate, administer the survey, and deliver the \$5.00 gift card to each student at the completion of the class period.

Development of the instrument. The Student Survey was informed by an extensive review of other publicly available and validated instruments that measure similar constructs among adolescents. We obtained permission to use several questions from CHIP-AE, an instrument used by Michigan State University in partnership with the Michigan Department of Education and the Michigan Department of (then) Community Health prior evaluations of CAHCs' impact for MDHHS. The Student Survey was pilot-tested with a diverse sample of students by age and race/ethnicity at a non-participating CAHC that included middle school and high school students. It also was reviewed by members of a diverse

Evaluation Advisory Group established provide input, feedback, and guidance on the survey. Advisory group members included CAHC leadership/staff and clinical and programmatic staff connected with the CAHCP at the MDHHS.

Scheduling the administration of the surveys. Under the principal's guidance and in communication with the teachers, the CAHC Coordinator was responsible for scheduling class times for students to take the Student Survey. JFM prepared materials for the principal/front office to distribute to the faculty that described the study. JFM also provided talking points for the CAHC Coordinator and the Principal to share with interested parties.

Ability to opt-out. JFM developed and provided to each site a detailed information sheet that describes parents'/guardians' rights to opt their child out of the Student Survey as they prefer. The CAHC Coordinator coordinated the distribution of this form with the front office per the school's protocols for delivering important information to parents/guardians. The information sheet explains the purpose of the survey, the information to be collected, information on confidentiality and the protection of privacy during the collection, management, analysis and reporting of data, and the minimal risks presented to students who complete the survey. If parents/guardians did not want their student to participate in the survey, they will indicate as such on the "opt out" form and submit the form to the main office or their children's teacher at their child's school. These forms were made available in English and certified in Spanish.

Administration of the survey. A member of JFM's evaluation team was on-site during the initial administration of the survey to answer any questions about the survey and to help troubleshoot any technical issues related to the electronic administration. While on site, the Evaluation Coordinators at each site received hands-on training from a member of the evaluation team for subsequent administrations of the survey. The Data Coordinator consulted with the principal on preferred strategies for administering the survey to students who may have been absent during the scheduled survey administration dates.

Accessibility was a key feature in the design of the electronic instrument. It was understood that some students' first language is Spanish; therefore, the survey was made available in both English and in Spanish, though the Spanish version was rarely accessed. To ease the process of reading the survey, students have the option of clicking on a button to have the questions read by pre-recorded multi-cultural 14-17-year-old male and female youth. The audio function was provided in both English and Spanish.

As students arrived in the prearranged Survey Administration room at each school (typically a computer lab or in a student classroom outfitted with a laptop cart), students were welcomed by the Evaluation Coordinator and other CAHC staff present. The CAHC staff asked for students' names; the Evaluation Coordinator would then refer to the Codebook to find that student's unique code number. Once the student's code number was located, a laminated card with the student's corresponding code number was presented. Students were allowed to choose their own seating arrangements, provided they did not cause disruptions for other students. To assure student privacy, JFM staff were not present during the distribution of the code cards to further protect each student's identity. As an additional measure of privacy, JFM provided each site privacy panels and required their use to block the screen from neighboring terminals.

The CAHC Data Coordinator began the session with instructions followed by a request for students to enter their four-digit code in on the first screen, to double check the code they just entered for accuracy, and then to click the “next” button thereby accessing the Student Information Sheet describing the survey, students’ rights, and details of the survey process. Students who did not want to participate in the survey, students opted out by a parent/guardian, and students finishing early were instructed to quietly work on homework or other matters while the other students completed the survey.

Students received their incentive/gift by returning their laminated code card to the CAHC staff member or Evaluation Coordinator. Regardless of whether they chose to participate, students received a \$5 gift card at the end of the survey to thank them for the time they invested in learning about the CAHC, the evaluation, making a decision, and, for those who decided to proceed, in taking the survey. To make sure that every student in attendance received a gift card and to avoid providing duplicates, the distribution of the gift card was tied to the return of the laminated code card.

After the initial survey administration, the Data Coordinator was instructed to review his/her records to determine which students do not have an “opt-out” form on file, but did not take the survey due to absence. The Data Coordinator worked with the school principal (or his/her designee) to determine the most efficient way to administer make-up sessions.

Additional notes. The electronic survey was self-administered by students under the guidance of the clinic’s Evaluation Coordinator and staff. After Wave 1, one school was unable to reserve adequate computer time to continue to administer the survey for all students electronically; the survey was therefore delivered to these students by paper. Students at Wayne State University’s research lab, supervised by a faculty member at WSU’s Department of Psychology who served as a consultant to the evaluation, double-entered the survey results to assure accuracy. Where discrepancies existed, they were corrected by the students.

We *sampled* all cohort students in Wave 3 to balance the need to obtain sufficient numbers of randomly selected students to participate in Wave 3 of the evaluation while also helping contain the intensive resources required to administer each of the study’s four waves. After obtaining approval from MDHHS, the school leadership, and the four sites to do so, we randomly selected a sample of classrooms in the cohort to participate in Wave 3. We selected our sample at the classroom-level given the disruption and logistical difficulties of randomly select students from within classrooms.

All cohort classrooms were equally likely to be chosen with the exception of classes that served students with special needs and students from honors classes. The number of classrooms sampled for each site was based on the proportion of total students in that site and the average classroom size. Although this process generated missing data, this method did not bias subsequent statistical estimates because the data were missing by design. We also sampled sufficient numbers of students to assure that there would a minimal impact on statistical power while maintaining the representativeness of the sample. We agreed to allow two of the smaller schools who requested that all cohort students be allowed to take the survey because given the minimal impact that doing so on study costs. As described elsewhere, our results were weighted to assure that no single school dominated the overall results and conclusions.

Key Elements of the collection of the RAAPS risk assessment data

This section describes key elements related to the administration of the RAAPS risk-assessment.

The self-administered assessment provides clinic-wide profiles of the kinds of risks and stressors the cohorts of students face. It includes 32 yes/no questions related to behaviors associated with risk. The Michigan Department of Health and Human Services (MDHHS) requires that state-funded CAHCs assess students on intake for risk status and unmet needs for care. Although CAHCs are free to choose their screening tool, most of the existing CAHCs use the Rapid Assessment for Adolescent Preventive Services (RAAPS).

RAAPS-PH was developed by *Possibilities for Change* in partnership with a clinical and research team from the University of Michigan. In an agreement with the MDHHS, the four case study sites will use an expanded version of RAAPS, RAAPS-Public Health, which includes RAAPS' core questions and 11 additional risk factors, including questions related to social determinants of health (the “upstream” factors or stressors that can contribute to behavioral difficulties in school and broader health, such as homelessness and hunger).

Administration of the instrument. While most students completed RAAPS-PH through self-administered electronic surveys, some sites provided students with paper copies during a contained period because of technical difficulties with the electronic system, which was undergoing updating and expansion at the time the surveys were administered. The sites' Evaluation Coordinators provided JFM with de-identified completed surveys for cohort students with their code numbers only. Paper copies were double-entered by students at the WSU research lab under the leadership and supervision of a WSU faculty member who advised on statistical analyses and provided interpretations of the results. One note of distinction between paper and electronic whereas the electronic assessment does not provide an option to skip out of a question, students had the option with the paper copy – thus, we found that the paper copies were more frequently incomplete, particularly in regard to the “public health” questions, which were located on the flip side of the survey. Additional drawback using paper versions more labor intensive and would at times contain illegible and inconsistent use of comments in the margins

Additional notes. JFM provided technical guidance on steps for exporting RAAPS-PH data into spreadsheets. It was the responsibility of the CAHC Coordinator (or his/her designee) to replace the student's name with the unique code assigned for the CAHC evaluation before submitting the data to JFM. As is true throughout, RAAPS-PH results submitted to JFM were stripped of any of the 18 direct identifiers. The Coordinator was asked to periodically send password protected batches of RAAPS-PH data to JFM utilizing security and privacy measures described in the Data Sharing Agreement.

Key Elements of the collection of clinic encounter data

Encounter-level data serve as the primary predictors of the CAHCs' impact on student health, well-being, and educational success. Data elements include dates of visit, time in and time out of visit, insurance status, reasons for the visit/chief complaints, categories of care provided, diagnostic category, where the student went after the visit, type of provider seen, whether there was a referral and, if so, where the student was referred and any follow-up on the referral by the student. These data are used to distinguish between users and non-users of the health center and support analyses that investigate variations in utilization patterns among students enrolled in the health center.

Process. As is the case for all student-level data utilized by JFM, encounter data was void of HIPAA's 18 direct identifiers and only contained each student's unique de-identified code for the purpose of linking data. In some cases, the CAHC's encounter-level data were recorded directly onto a physical

paper log *during* a student visit. In other cases, data was retrieved from an after visit summary or other query of the student's electronic health record and recorded into an electronic or paper log sometime after the student's visit. The paper logs were transmitted to JFM via email in password protected files, and electronic submissions were accessed through a secure website.

JFM staff worked closely with the Michigan Department of Health and Human Services' Clinical Consultant to provide expert guidance. The Clinical Consultant helped to develop clear and comprehensive coding guidelines and also ensured that there was sufficient interrater reliability through a data audit process. As needed, corrective action was taken by each site in response to the results of the audit.

Attachment D

MANAGEMENT OF POTENTIAL THREATS TO VALIDITY

This section describes several standard threats to validity management and our response to them.

- **Selection bias.** A challenge in evaluations that compare users vs. non-users of a program or service is the possibility of *selection bias* – i.e., the possibility that (a) students who choose to enroll in a CAHC and use services may differ in systematic ways from those who don't and (b) improved health outcomes may be a function of these differences, rather than use of the CAHC itself. *Propensity Score Matching* reduces selection bias through matching the comparison groups (users vs. non-users) according to their estimated likelihood of using services – i.e., controlling for covariates that predict students' use of services, such as demographic characteristics and risk profile.
- **Context bias.** Another source of potential bias is group differences in students' environments, which can increase or decrease the likelihood of using the CAHC; this is also controlled for statistically through the use of a multi-group multi-level model. We identified factors that are related to CAHC usage and account for them statistically.
- **Regression to the mean.** Assessments at one point in time happen to be extreme for that sample. Because we are conducting multiple assessments the average scores across all four waves of data collection will adjust for time-specific responses which were atypical.
- **Maturation** (changes in academic and health outcomes that would occur in the absence of a CAHC). Because propensity score matching creates a statistically equivalent control group which is also being assessed over time, any changes in academic or health outcomes that are due to maturation or exposure to some common event will be equivalent in both groups which isolates the impact of CAHC use.
- **“Healthy volunteer” effects and/or motivational differences.** We controlled for the possibility that CAHC users might be more motivated or inclined to seek care to improve their health than non-users, therein reflecting an independent effect of motivation beyond the direct effects of the health center. We utilized survey responses to the following question to adjust for this effect: “People deal with stress in different ways. How often do you deal with stress by... talking to an adult at school or help or advice.”
- **Temporal precedence** (e.g., the utilization of the CAHC produces the academic and health outcomes rather than vice versa). Because data were available at the beginning of the first school year in which students had access to the CAHC, any changes in health or academic outcomes occurred after the CAHC was put into place.
- **Other – Missing Data.** The use of full-information maximum likelihood estimation reduces threats to internal validity resulting from *missing data*. This method uses complete data to calculate estimates that are unbiased and have been shown to be relatively unaffected by the presence of missing data. The use of school wide assessments of the designated cohorts reduces threats to internal validity created by the *Hawthorn effect* (changes in behavior due to simply being assessed). Since both users and non-users completed the survey, any changes in health or

academic outcomes that are due to the student reacting to the assessment survey were spread equally across user and non-user groups. To maximize the external validity of the evaluation findings, the selection of case study CAHC sites was intentionally aimed at selecting a subsample that is reasonably representative of the larger urban and rural communities in which the CAHCs are located.

Attachment E

ADDITIONAL NOTES ON DATA ANALYSIS

This section describes the statistical analyses used in the evaluation in greater detail than as presented in the report.

Multi-Level Modelling. The evaluation used a *multi-group multi-level modeling* approach to evaluate the impact that CAHCs have on the selected health and academic outcomes. Multi-level modeling accounts for the fact that student-level changes may be correlated with the CAHC/school students they attend, characteristics of the communities in which those schools/CAHCs are located, as well when the assessments are conducted (i.e., the “assessment wave,” Fall yr1, Spring yr1, etc.)

The multilevel model was estimated with the assessment wave as the predictor at level one of the model. This provides an estimate of the average trajectory of change in academic and health outcomes across the selected CAHCs and the degree of variability between students in that trajectory of change in outcomes. The level 2 model assessed student-level variables that predict individual differences in the rate of improvement in academic and health outcomes. These predictors will include frequency of CAHC utilization, reason for visit, time to first use of the CAHC, risk status, age, gender, and insurance status.

We also assessed the degree to which CAHC utilization is associated with improvements in academic, health, and mental health outcomes over time, and whether there were differences in improved outcomes between schools and CAHCs. We analyzed differences between students in changes in academic, health and mental health outcomes using a multilevel regression model to simultaneously estimate changes in outcomes over time and between-student differences in those changes. Because we are further interested in evaluating the degree to which school and CAHC differences are associated with differences in the change in outcomes for students, we used multi-group multilevel regression modeling.

Exploratory Factor Analysis. We conducted an exploratory factor analysis using maximum likelihood estimation for factor extraction and a promax oblique rotation was conducted to determine the underlying factor structure of the survey (our “outcomes.”) This procedure indicated that a seven-factor solution provided the most efficient reduction of the original items. Qualitative analysis of the factor item content suggested that the survey assessed the following latent constructs: Isolation, Impact of Stress, School Connectedness, Negative School Behaviors, Reproductive Health Literacy¹⁰, Health Access Literacy, and Negative Stress Coping.

The first two factors alone accounted for approximately 30% of the variance among the items and were comprised of more than 10 items each. Secondary exploratory factor analyses were conducted on just the items comprising those two factors respectively. The results of these analyses indicated that the initial factor of Isolation could be reduced to four more refined factors: Feelings of exclusion, feelings of depression, hopefulness and not feeling safe at or around school. The second factor, the impact of stress, could be further reduced to three subordinate factors: positive and resilient attitude, negative impact of stress on school, and negative physical consequences of stress.

¹⁰ Only for the high school sample.

We assessed the degree to which CAHC utilization is associated with improvements in health and academic outcomes over time, and whether there are differences in improved outcomes between schools and CAHCs. We analyzed differences between students in changes in academic, health and mental health outcomes using a **multilevel regression model** to simultaneously estimate changes in outcomes over time and between-student differences in those changes.

Because we are further interested in evaluating the degree to which school and CAHC differences are associated with differences in the change in outcomes for students, we employed a **multi-group multilevel regression model** in which separate multilevel regression models will be estimated for each CAHC/school simultaneously under the condition that the multilevel regression model estimates be identical for each CAHC/School. Where there are CAHC/school-level differences, this analysis then indicated that the results of the multilevel regression must be unique to each CAHC/school. Follow-up analyses will then be conducted to provide results for each CAHC/School individually.

Description of power analyses/sample sizes. The evaluation conducted statistical power analyses to assure a sufficiently high probability that the quantitative models will detect an effect of specific kinds of health issues utilizing CAHC services, if one exists, on our selected outcome measures. Power analyses help to assure, with a high level of confidence, that the statistical models yield valid results about CAHCs' impact. Several factors influence statistical power, including the degree of certainty we seek (e.g., we want to say with 95% certainty that the CAHC is having an impact on the outcomes being evaluated), the magnitude of the impact the CAHC has on the outcomes (e.g., that the models will be able to detect relatively small effect sizes, where they exist), and the number of students needed in the sample to provide valid results. Because the calculation of statistical power and required sample size for a minimum acceptable power varies for different types of statistical analyses, we calculated minimum sample sizes for the Cox hazard regression model and the multi-group multilevel model separately.

Using on a power calculation method for Cox Hazard regressions developed by Willett & Singer (1991), we determined that the CAHC impact analysis requires a minimum sample of 252 students across all CAHCs to have an 80% chance of detecting significant and valid results. The software Optimal Design (Raudenbush and Byrk, 2002) was used to calculate the minimum sample size for the multilevel model, which found a minimum sample of 290 students across all four CAHCs. This sample size provides an 80% chance of detecting a significant effect where one exists. It is important to note that these are minimum acceptable sample sizes and that larger sample sizes allow for greater statistical precision and the ability to assess the impact of CAHCs on specific risk groups (e.g., students with asthma) within each CAHC/school with greater refinement and confidence. Because the CAHCs' estimations of the numbers of students they'll serve is far higher than these levels, we expect to be able to conduct fairly refined subpopulation analyses of CAHCs' impact across student populations.

As noted earlier, we investigated differences between CAHC users and non-users, as well as differences in impact among CAHC users based on student and CAHC/school characteristics. Based on the estimated enrollments from the CAHC proposals, **there was ample power for both of these analyses even after adjusting for non-participation and attrition.** Missing data were analyzed using pattern missing analysis (Graham & Schaffer, 2002) and Little and Rubin's MCAR test (Little & Rubin, 1987). The multilevel modeling analyses employed a Full Information Maximum Likelihood (FIML) estimation using an Estimation-Maximization (EM) algorithm, which allows for the complete data set to be used without missing values (Graham & Schaffer, 2002).

Propensity Score Matching was used to control for potential selection biases and other systematic differences between the students who use the CAHC and those that do not. Propensity Score Matching provides an alternative to randomized control trials which are often untenable to implement, as is the case in this evaluation.¹¹

Using these latent factors as outcomes, we then conducted a series of latent variable growth models to determine whether or not there were statistically significant differences in rates of change in each latent construct across the four waves of data collection between students who used the clinic and those who had not. From the larger sample of students, a propensity matched sample was drawn in which clinic users were statistically matched with non-users on age, gender, health risk status, and whether they indicated that they would seek out advice/help from an adult at school if they were having a problem.

Propensity score matching essentially creates a statistical profile for each individual on these variables and assigns a propensity “score,” then students who have used the clinic and those that have not used the clinic are paired based on the similarity of their propensity score (see Guo, 2015). All variables used in the propensity matching procedure were taken from the wave 1 assessment conducted in December/January of 2016. Students that do not have a statistical propensity match are not included in the analysis sample. After propensity score matching we retained a sample of 1776. Any missing data are assumed to either be missing at random or missing by design, as such, growth model estimates used a full information maximum likelihood estimation routine that allows for the modeling of complete data (See Graham 2009, 2012 for review).

Propensity scores provide conditional probability estimates of receiving treatment given a set of measured covariates. These can be expressed as a binary logistic regression of the form, $P(T_i|X_i=x)$, where P is the probability of person i receiving treatment T , given that person i has a specific set of values x on the vector of conditioning or covariate variables X . These covariate variables X are potential confounds related to self-selecting into treatment which might be an alternative explanation for mean differences in the outcome for those receiving treatment and those in a control group.

Using this approach, an individual propensity score can be calculated in the form of a logit or log odds such that $\log^e(P/1-P)$ yields a log odds or logit estimate of the likelihood of receiving treatment given the values of the covariates for that person. Once these logits are calculated individuals in the treatment group and the control group are matched based on their propensity scores or individual logit values. Since these values are not usually exactly the same, a method is needed to determine how closely a control propensity score needs to be to a treatment propensity score to be considered a match.

There are several ways of calculating matches - we used a “nearest neighbor matching” processes which involve calculating the smallest absolute difference between any two pairs of individuals’ propensity scores among all the treatment (CAHC users) and control group (CAHC non-users) pairs. Any difference that falls within the range of that minimum distance is considered a match. Propensity score predictor variables may include race/ethnicity, age, gender, grade, insurance status, positive risk status for specific risk factors, composite measures of risk status, as discussed on previous pages.

¹¹ From Guo, Shenyang and Fraser, Mark W., *Propensity Score Analysis: Statistical Methods and Applications*, Sage, 2015.

Attachment F -ENCOUNTER LOG

STUDENT DE-IDENTIFIED CODE: _____

UTILIZATION DATA LOG
De-identified Student-Level Data, CAHC Evaluation
(Supports seat time and utilization analyses)¹ Already in EHRs — July 2016

Date of Visit: _/_/___	Chief Complaints (Reasons for Visit)	Care Provided	Diagnostic Category	Where Did Student Go After Visit?	Type of Provider Seen	Referral and Where Referred	Follow-up by student on referral?
Date entered:	<input type="checkbox"/> Academic concerns <input type="checkbox"/> Acute illness <input type="checkbox"/> Alcohol/tobacco/substance <input type="checkbox"/> Asthma-related <input type="checkbox"/> Basic needs (e.g., hunger, utilities) <input type="checkbox"/> Community-related concerns <input type="checkbox"/> Health counseling/education <input type="checkbox"/> Immunizations <input type="checkbox"/> Injury <input type="checkbox"/> Mental health <input type="checkbox"/> DisBeh <input type="checkbox"/> Withdrawn Behavior <input type="checkbox"/> Dep/SI <input type="checkbox"/> Anxiety/Stress <input type="checkbox"/> Routine MH issue <input type="checkbox"/> Other: _____ <input type="checkbox"/> Non-asthma chronic condition/ LT illness specify: _____	<input type="checkbox"/> Anticipatory Guidance/RR plan <input type="checkbox"/> Clinical Group <input type="checkbox"/> eRx/Rx <input type="checkbox"/> Immunizations <input type="checkbox"/> Injury care <input type="checkbox"/> Lab specimen <input type="checkbox"/> Medical procedure <input type="checkbox"/> MH counseling <input type="checkbox"/> MH group <input type="checkbox"/> MH screen <input type="checkbox"/> Onsite Rx Med <input type="checkbox"/> OTC Med <input type="checkbox"/> Phone consultation Specify: _____ <input type="checkbox"/> Physical assessment <input type="checkbox"/> POC testing <input type="checkbox"/> Risk assessment <input type="checkbox"/> Snack provided <input type="checkbox"/> Warm Hand Off <input type="checkbox"/> CAHC <input type="checkbox"/> Out of CAHC <input type="checkbox"/> Other: _____	<input type="checkbox"/> Acute illness <input type="checkbox"/> Alcohol/tobacco/substance <input type="checkbox"/> Asthma-related <input type="checkbox"/> Health counseling/education <input type="checkbox"/> Immunizations <input type="checkbox"/> Injury <input type="checkbox"/> Mental Health <input type="checkbox"/> Dep <input type="checkbox"/> Anx <input type="checkbox"/> MoodDis <input type="checkbox"/> Adjustment Disorder/Rxn <input type="checkbox"/> ADD/ADHD <input type="checkbox"/> ODD <input type="checkbox"/> PTSD <input type="checkbox"/> Other: _____ <input type="checkbox"/> STE or <input type="checkbox"/> CTS; Describe: _____ <input type="checkbox"/> Non-asthma chronic cond'n or long-term illness-Specify: _____ <input type="checkbox"/> Pregnancy-related concern <input type="checkbox"/> Preventive/wellness <input type="checkbox"/> Reproductive health <input type="checkbox"/> SHS <input type="checkbox"/> STI <input type="checkbox"/> Other <input type="checkbox"/> School/community-related concerns (e.g., social issues, safety concerns) <input type="checkbox"/> Symptom complaint <input type="checkbox"/> HA <input type="checkbox"/> Stomach <input type="checkbox"/> Tooth <input type="checkbox"/> Dysm <input type="checkbox"/> SOB Other - Specify: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Sent back to class, lunch, recess <input type="checkbox"/> Sent home (during school day) <input type="checkbox"/> PCP <input type="checkbox"/> SW/LPC (school) <input type="checkbox"/> Emergency Room <input type="checkbox"/> Urgent Care <input type="checkbox"/> Other: _____ <input type="checkbox"/> Not applicable	<input type="checkbox"/> RN <input type="checkbox"/> MA <input type="checkbox"/> NP/PA <input type="checkbox"/> SW/LPC <input type="checkbox"/> Med Dir <input type="checkbox"/> Other (specify)	Reason: <input type="checkbox"/> Illness-related <input type="checkbox"/> Injury-related <input type="checkbox"/> Mental health <input type="checkbox"/> Other – Specify: _____ To Provider: <input type="checkbox"/> CAHC - MH <input type="checkbox"/> CAHC Dental <input type="checkbox"/> CAHC HED <input type="checkbox"/> CAHC Nutrit. <input type="checkbox"/> CAHC Provider <input type="checkbox"/> Chronic disease specialist <input type="checkbox"/> MH-Non-CAHC <input type="checkbox"/> Primary Care P. To Program: <input type="checkbox"/> Non-CAHC program-Specify: _____ Other – Specify: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending
Time in:							
Time out:							
Insurance status: <i>Check all that apply</i>							
<input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Uninsured							
MA/RN time with Student	<input type="checkbox"/> Pregnancy-related concern <input type="checkbox"/> Preventive/wellness <input type="checkbox"/> Reproductive health <input type="checkbox"/> School-related concerns <input type="checkbox"/> Symptom complaint <input type="checkbox"/> HA <input type="checkbox"/> Tooth <input type="checkbox"/> Stomach <input type="checkbox"/> Dysm <input type="checkbox"/> Shortness of breath Specify: _____ <input type="checkbox"/> Other: _____						
<input type="checkbox"/> 5 minutes <input type="checkbox"/> 10 minutes <input type="checkbox"/> 15 minutes <input type="checkbox"/> 20 minutes <input type="checkbox"/> >20 min's							

¹ Adapted from a template developed by Soleimanpour, Samira & Geierstanger, Sara. Documenting the Link between School-Based Health Centers & Academic Success: A Guide for the Field, May 2014.

Attachment G

PARENT/GUARDIAN OPT OUT LETTER

Parent/Guardian Information with “Decline to Participate” Option IRB in an Evaluation of (school’s name) New School-Based Health Center

Purpose. You are being asked to allow your child to participate in a survey being conducted at (school) regarding the impact that having a new health center at your child’s school on students’ health, well-being, and educational success. The survey is part of a larger evaluation conducted by JFM Consulting Group (“JFM”) on behalf of the Michigan Department of Health and Human Services. As a part of the evaluation, your child may also be invited to participate in student focus groups to discuss their experiences with the Child and Adolescent Health Center and how it can be strengthened or expanded to best meet students’ needs.

Recruitment. Your child has been selected because he/she is enrolled in either the 5th, 6th, 7th (or 9th, 10th, or 11th) grade at a (name of school), where a new Child and Adolescent Health Center (CAHC) recently opened. All students in these grades are invited to participate in the evaluation whether or not they use the health center.

Voluntary Participation /Withdrawal:

Your child’s participation in this evaluation is completely voluntary. You may decide that your child can take part in this evaluation and then change your mind. You are free to withdraw your child at any time. Your decision about permitting your child in the evaluation will not change any present or future relationships with the CAHC, your child’s school, your child’s teacher, your child’s grades or any other services you or your child are entitled to receive.

Procedures. If you decide to allow your child to participate, your child will be asked to complete a 41 question survey at the beginning and at the end of the 2015-2016 and 2016-2017 school years. The survey is available in English, Spanish, and audio versions (by headphones for privacy) in both languages. Your child also has the full opportunity to choose to participate or not, to skip any question as desired, or to stop taking the survey altogether.

The survey will be self-administered electronically and takes about 30 minutes to complete. It includes questions about your child’s access to health care, general health, mental health, engagement in select health/risk behaviors, use of wellness care, health literacy, selected measures of educational success, including improved instructional seat time, selected self-report measures of school behaviors, and their views about the school’s overall climate.

In addition, if your child uses the health center, these survey data will be linked with data that describes their use of the clinic. Only combined results of students overall will be shared with others who are interested in learning what students want and need in order to stay healthy and successful in school. If you would like to review the survey you can contact the CAHC (*add site specific phone number*) or JFM consulting at 313.818.3006.

Benefits. Your child’s participation in the survey will help health care providers at the health center better understand students’ needs and identify opportunities for increasing the value and impact of the services they provide. Gaining an understanding of the impact of school-based health centers also helps the Michigan Department of Health and Human Services understand more fully how

health centers benefit youth and communities in their decisions to fund and expand access to school-based health care.

Risks. Participating in this evaluation presents minimal risks to your child. Although the survey is not expected to create any distress, if your child becomes uncomfortable at any point in the survey or focus group, he/she can stop participating in it and/or skip questions he/she prefers not to answer. Beyond this, there may be risks involved from taking part in this evaluation that are not known to evaluators at this time.

Costs. There are no costs to you or your child to participate in this evaluation.

Compensation. Your child will receive a small gift to thank them for their time participating in this evaluation, as approved by the school and district. Examples may include a \$5.00 gift card at a local shop and healthy snacks.

Confidentiality. Your child's survey responses will be completely confidential and private with the CAHC to the extent permitted by law. JFM, who will be analyzing the survey results, will not have access to students' names nor can readily identify students based on their responses. Students will be given a code number assigned by the CAHC, which will be kept in a secure, locked location within the health center.

Questions: If you have any questions about this evaluation now or in the future, you may contact Janet Zimmerman at JFM at 313.818.3006 or your school's CAHC, at [insert telephone number].

Participation. If you do not wish to have your child participate in the evaluation, you may fill out the form on the following page and return it to a teacher or to the main office at your child's school. Thank you!

Decline to Allow Your Child to Participate in the Evaluation of Child and Adolescent Health Centers

Please return this completed form to any of your children's teachers.

I do not allow my child _____ to participate in the evaluation.

Print Student's Name

Printed Name of Parent/Guardian

Signature of Parent/Guardian

Date