School-based health care support toolkit: Data on school-based health care’s effect on health and academic outcomes
School Based Health Care Resources

- National School-Based Health Alliance’s literature database: [http://www.sbh4all.org/resources/sbhc-literature-database/](http://www.sbh4all.org/resources/sbhc-literature-database/)

- Health Policy Institute of Ohio’s brief on health services in schools: [https://www.philanthropyohio.org/sites/default/files/PolicyBrief_EducationAndHealth_Part2.pdf](https://www.philanthropyohio.org/sites/default/files/PolicyBrief_EducationAndHealth_Part2.pdf)

- American School Health Association [School Health Resources](https://www.asha.org/school-health/)

- CDC Healthy Schools
  - Includes resources for Basic Information and Academic Achievement & School Health

- Health and Academic Achievement, CDC
  - Compiles evidence showing that the health of students is linked to their academic achievement.


- School Health Profiles is a system of surveys assessing school health policies and practices in states, large urban school districts, territories, and tribal governments. Profiles surveys are conducted every 2 years by education and health agencies among middle and high school principals and lead health education teachers.

- Health and Academic Achievement, Health Promotion, CDC
  - Public health and education professionals can use this resource to share the link between healthy eating, physical activity, and improved academic achievement to engage stakeholders in working together to support healthy school environments.

- School-Based Health Alliance- [About School-Based Health Centers](https://www.sbh4all.org/about)

- The Learning Compact Redefined: A Call to Action.

- Fostering Education Resilience and Achievement in Urban Schools Through School-Family-Youth Partnerships, Julia Bryan, PhD

- First Ring Superintendent’s Collaborative

- Information about [the Ohio PBIS network](https://www.ode.state.oh.us/Topics/OH教育部/PBIS/PBIS-Pages/PBIS.aspx), ODE

- Ohio Department of Education- [Supporting School Wellness Toolkit](https://www.ode.state.oh.us/Topics/OH教育部/SchoolWellness/SchoolWellness.aspx)

- Ohio Department of Education- [Community Partnership Toolkit](https://www.ode.state.oh.us/Topics/OH教育部/CommunityPartnership/CommunityPartnership.aspx)
Research and evaluations have demonstrated that school-based health centers represent cost-effective investments of public resources.

SBHCs Reduce Health Care costs

Research shows that investments in SBHCs generate savings through reduced use of high cost services, thereby increasing access without increasing overall Medicaid expenditures.¹

SBHCs reduced inappropriate emergency room use among regular users.² ³

A study found a reduction in Medicaid expenditures related to inpatient, drug and emergency department use due to the usage of school-based health centers.⁴

SBHCs Increase Health Care Access

SBHCs Target harder-to-reach populations. Two studies found adolescents were 10-21 times more likely to come to a SBHC for mental health services than the community health center network or HMO.⁵ ⁶

A study of school-based health centers found a significant increase in health care access by students who used school-based health centers: 71% of students reported having a health care visit in past year who had access to a SBHC versus 59% of students who did not have access to a SBHC.⁷

A study of student users of health centers found that students who reported depression and past suicide attempts were significantly more willing to use the clinic for counseling services. Those with perceived weight problems reported more willingness to use a school clinic for nutrition information than those who did not feel overweight. Sexually active students were willing to seek information on pregnancy prevention and to have general disease checks.⁸

SBHCs Improve School Performance

A study of elementary school-based health centers found a reduction in hospitalization and an increase in school attendance among inner-city school children for asthma.⁹

Adolescents who received counseling services in a school-based health center significantly decreased their absenteeism and tardiness, while those not receiving counseling slightly increased their absence and tardiness rates.¹⁰


SCHOOL-BASED HEALTH CENTERS:
Improving Health, Well-being and Educational Success

FEBRUARY 2018
In fact, nearly 20 percent of all students in the United States do not graduate from high school on time. For black, Latino and American Indian students, that number jumps to nearly 30 percent. Low educational attainment is a destructive cycle: students who do not graduate face lifelong health risks and medical costs, and are more likely to engage in risky health behaviors. They are less likely to be employed and insured, and earn less — all of which continues the cycle of poverty and disparities.

School-based health centers are “one of the multiple strategies to turn the tide – the tsunami of educational and health issues that many of the nation’s children face as they navigate their elementary and secondary schools, while simultaneously facing the stresses often experienced by their families, peers, and communities."

At the end of the day, school dropout is much more than an educational crisis. It is a public health epidemic. For a more in depth discussion see “The Dropout Crisis: A Public Health Problem and the Role of School-Based Health Care,” available on the Center for School, Health and Education's website.

In 2015, over 13 percent of adults 25 years and older in the U.S. had less than a high school education, and nearly 28 percent of those without a high school diploma lived below the poverty line. The fall of the middle class has left many families homeless and hungry for the first time, and children are disproportionately affected — while children under 18 years represent 23 percent of the U.S. population, they represent 32 percent of all people in poverty. These children struggle in school, distracted by empty bellies and the pressure to quit school, find a job and help their families.

And for girls, teen pregnancy remains the number one reason for quitting school. Teen pregnancy and birth significantly increase dropout rates, with 50 percent of teen mothers graduating from high school versus 90 percent of girls who do not give birth as a teen. Those children of teenage mothers, in turn, are more likely to drop out themselves, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult.

Fortunately, partnerships between education, health and other sectors can change these trajectories. School-based health centers, or SBHCs, increase educational success by providing physical and mental health care that creates a more positive overall school climate that allows students to stay in school and learn. SBHC staff have the trust of students, parents, teachers and other school staff, putting them in an ideal position to identify and address these social barriers to educational success — for the entire student body.

This brief explores the most common barriers to high school graduation and discusses opportunities for SBHCs and their partners to address them at the school-wide population level.

| COMMON REASONS STUDENTS DROP OUT OF SCHOOL |
|-----------------|-----------------|
| **BOYS**        | **GIRLS**       |
| - Disciplinary issues | - Pregnancy |
| - Employment to support their families or start a career | - Parenting |
| - Being held back because of course failure, poor academic performance, low credit accumulation | - Caregiving responsibilities |
| - Chronic absenteeism | - Employment to support their families or start a career |
| - Disengagement from school | - Vulnerability to harassment at school |
THE ROLE OF SCHOOL-BASED HEALTH CENTERS IN KEEPING STUDENTS IN SCHOOL

Students who use SBHCs have better grade point averages and attendance compared to students who do not use such centers. As students’ health and emotional well-being improves, so does their academic performance. At the most basic level, they also do better in school because they miss less school; students enrolled in a SBHC have lower rates of chronic absenteeism than their peers.

Numerous studies have conclusively linked SBHC use to educational and health-related outcomes. Use of SBHCs is associated with:

- Improved educational achievement and attainment
  - Higher GPA
  - Higher grade promotion
  - Reduced suspension rates
  - Reduced non-completion rates
- Improved health and well-being
  - Increased use of vaccination and preventive services
  - Reduced asthma morbidity
  - Fewer emergency department visits and hospital admissions
  - Higher contraceptive use among females
  - Improved prenatal care and higher birth weights
  - Lower illegal substance use and alcohol consumption
  - Reduced violence

Much of the research on school-based health care’s impact on educational success is based on students who come to the school-based health center. Increasingly, though, researchers are looking at the impact of such centers on the overall school population and the community.

SBHCs offer a variety of services and are often open after school, thus addressing the cultural, financial, privacy, and transportation-related barriers to clinical and preventive health care services faced by vulnerable populations.

SBHCs have tremendous potential to improve the health and well-being of the entire student population. By moving outside of the clinic, the centers may have an impact across the overall school learning environment and the community, potentially promoting social mobility and improving health equity.

SCHOOL-BASED HEALTH CARE REMOVES THE BARRIERS TO EDUCATION

“For all kids, and particularly vulnerable kids, we need to pay attention to whether they ate last night, whether they have electricity at home to do their homework, whether they even have a home,” says Terri D. Wright, PhD, MPH, Founder of the Center for School, Heath and Education at the American Public Health Association. “School-based health center staff are in the best position to see the social factors and stressors that affect students, and to work with the school and community to remove those barriers so students can learn.”

Social and behavioral factors that affect education include bullying and school violence, nutrition, teen pregnancy, mental health and chronic stress. The following examples illustrate how SBHCs can address each of these factors.

Bullying and school violence

In 2015, over 20 percent of high school students were bullied on school property, and nearly 16 percent were cyber-bullied, resulting in adverse educational and health effects. Evidence...
supports the association between being bullied, higher rates of absenteeism, and lower grades; students who experienced both in-person and cyber-bullying were five to six times more likely to miss school because of safety concerns. In addition, students who are bullied have higher rates of emotional and physical distress, likely due to elevated levels of cortisol in bully victims.

SBHCs and their school partners can address bullying and violence:

At the **clinic level**, by providing services and programs to help children cope with, prevent or stop bullying of all forms and violence in school, and by connecting youth to resources.

At the **school-wide population level**, by proactively identifying needs and creating policies and programs (e.g., school safety plans, better physical and emotional school climates), and early intervention programs and services (e.g., mediation and conflict resolution, anti-bullying, gang reduction, suicide prevention).

At the **systems level**, by advocating for safe school and anti-bullying legislation, and by collaborating with community agencies to provide support for students outside of school.

**Hunger, obesity and access to quality food**

Food insecurity and hunger are persistent problems in America. Nearly 21 percent of American children live in food-insecure households, meaning that they do not have access to enough food to fully meet basic needs at all times due to lack of financial resources. While poverty is most often associated with food insecurity, many food-insecure children live in households with an annual income too high for food assistance programs. Hungry children are sick more often, suffer physical and cognitive development impairments, and struggle to concentrate. Consequently, these children tend to miss school and have lower educational attainment. In addition, hungry children tend to have more social and behavioral problems as they have less energy for complex social interactions and cannot adapt as effectively to environmental stresses.

Paradoxically, food insecurity and poverty often go hand in hand with obesity, as families seek out the most accessible and least expensive calories to fill their children’s bellies. Obesity, along with lack of physical education, impacts academic success by causing serious health consequences that can keep kids out of school and lead to mental and emotional health problems.

SBHCs and their school partners can address hunger and obesity:

At the **clinic level**, by helping students cope with stressors related to social determinants influencing obesity and providing physical and mental health services to support healthy weight management.

At the **school-wide population level**, by establishing programs and policies that increase physical activity and access to healthy food and free or reduced-cost breakfast, lunch and snacks.

At the **systems level**, by advocating for district, state and national policies that increase physical activity, access to healthy food options and food security.

**Teen pregnancy prevention**

More pregnant young women drop out of high school than graduate. Teenage pregnancy is the leading cause of dropping out of school for adolescent women; an estimated 30 to 40 percent of female teenage dropouts are mothers. Early parenting also affects young men who drop out to support a child.

SBHCs and their school partners can impact teen pregnancy:

At the **clinic level** (not all centers provide reproductive health services), by providing counseling on making better choices, staying safe and avoiding risky situations; and by providing reproductive health care or referring students to community organizations. In some cases, students and their parents advocate for services. For example, the School-Community Alliance of Michigan and Baldwin Teen Center worked with students and parents to persuade the school board to make family planning services available in schools.

At the **school-wide population level**, by providing a perspective on students’ sexual activity, risks and needs, then working with the school to create authentic and effective prevention programs that students trust.

At the **systems level**, by advocating for policies that ensure students’ right to receive reproductive health information and services. For example, young leaders from Balboa High School, supported by their school-based health center, successfully advocated to place information about students’ rights to receive confidential health care under California law in the curriculum for all San Francisco public schools.
Mental health, depression and suicide

Nearly 45 percent of children and adolescents in the U.S. meet the criteria for at least one mental health disorder, and up to 18 percent experience significant functional impairment due to a mental health disorder. However, 75 percent to 80 percent of youth in need of mental services do not receive them. Barriers to access and follow-up with mental health services include family economic resources, availability of transportation, lack of a formal diagnosis, racial and ethnic minority status, and cultural beliefs and practices.

SBHCs and their school partners can address mental health:

At the clinic level, by providing assessments, mental health and social services, individual and group counseling, and referrals to community resources as needed.

At the school-wide population level, by conducting school-wide assessments of needs, providing programs that ease emotional distress and teach coping skills, promote positive youth development, and create opportunities for youth leadership and peer-to-peer support.

At the systems level, by collaborating with parents and other social and health care providers to identify risk factors and signs of mental health disorders, reduce the barriers to accessing mental health services, and address chronic stressors that may contribute to poor mental health.

Chronic Stress

Chronic stress makes it increasingly difficult for students to be academically successful. Students who live in urban areas are often faced with multiple barriers to educational success, and are at increased risk for poor brain development, and not completing high school. More than half of all absences are linked to chronic stress. Nearly 1 in 4 minority students has missed three or more days of school in the past month due to factors relating to poverty exposure (e.g., transportation, drug use, school safety). Children impacted by chronic stress may be impulsive, distracted, distrustful and/or hyperactive. All of these behaviors ultimately hinder a child’s ability to interact with others and successfully progress through school.

SBHCs and their school partners can address chronic stress:

At the clinic level, by screening all students for food and housing insecurity and other unmet needs and connecting students to support services.

At the school-wide population level, by utilizing a cool-down room for students to prevent outbursts and resultant disciplinary action.

At the systems level, by revising school-wide policies and practices to be less reactive and punitive and more reflective of recent research on the impact of chronic stress on adolescent brain development, behavior, cognition and health.

THE NEXT STEP: LINKING THESE ISSUES INTO A COMPREHENSIVE STRATEGY

These are but a few of the obstacles that affect student success. Often school-based solutions consist of isolated programs, prompted by an incident or crisis. For example, a school might create a limited-term suicide prevention curriculum in reaction to a student suicide. Ideally, comprehensive programs should be developed proactively to reduce potential barriers to learning, increase graduation rates, and improve the health and well-being of all students. By continuing to integrate and evaluate this work, we can strengthen the evidence base and foster adoption by other schools and communities.

WHAT SCHOOL-BASED HEALTH CENTERS CAN DO TO INCREASE EDUCATIONAL SUCCESS AND REDUCE SCHOOL DROPOUT

SBHCs provide excellent, accessible, trusted health care and information for students across the country. They also have the capacity to impact the obstacles that derail students from educational success through programs and policies that benefit every student in the school. Now it is time for SBHCs to be catalysts for change by eliminating or reducing barriers to graduation and preventing school dropout.

It will take collaboration across the school and community to fully realize the potential of SBHCs to bolster educational success and prevent dropout, but there is support for this endeavor. A 2016 poll of parents nationwide found that over two-thirds of respondents want schools to cover physical activity, substance abuse, healthy eating, sex education, basic first aid, and emotional and mental health. Parents support child education, health care and nutrition, and voice concern about racial and ethnic inequities, unsafe neighborhoods and stress. With this support, SBHCs can work with schools, parents, the community, public health and other partners to address the whole needs of their children and improve graduation. SBHCs can:
School-based health centers, together with schools, must be aware of what’s happening in students’ lives, and must know that they can make a difference. We can’t give the parents a job, make the home safe or put food on the dinner table. But we can make sure students get healthy food—maybe all three meals—at school, and we can be aware of the situations they come from. It’s our job to provide supports and opportunities to help them deal with all that’s on their shoulders, and to help them do the best they can.”

— Terri D. Wright, PhD, MPH, Founder, Center for School, Health and Education

1. **Partner with the school and community to identify needs and set the vision for increased graduation rates.**
   - Identify concerns and problems in the school that are impeding students’ ability to be in class, learn and graduate.
   - Be proactive, with a big vision focused on the health and well-being of the school population and with the goal of graduation, rather than reacting to an issue in isolation.
   - Develop policies and programs that can improve the school climate and benefit all students.
   - Identify a strong leader to coordinate stakeholders and community resources into a comprehensive school-wide strategy to increase graduation rates.

2. **Engage teachers and staff.**
   - Instill in every staff member a dedication to helping students graduate.
   - Provide health liaisons to assist teachers with supplemental activities for their health curriculum, such as exercises to improve attention or support groups to decrease teacher stress and burnout.

3. **Engage youth and parents.**
   - Ensure that youth and parents are part of the whole strategy, not just isolated programs.

4. **Partner with school and public health professionals to measure impact in terms of health outcomes and educational success, especially the impact on dropout rates.**
   - Track educational metrics such as absenteeism, suspensions and dropout along with health indicators.
   - Reframe school dropout as a public health issue and encourage public officials to think of the dropout problem as central to community health.

SBHCs have made great strides in improving public and community health. Still, we sit at the convergence of a national school dropout crisis, obesity epidemic, and exponential increase in bullying and school violence. Bolstered by their successes and support, SBHCs must continue to create and measure programs that serve the students, the school and the community. At the same time, communities must continue to create and sustain SBHCs to fulfill their promise of improving the health, well-being and educational success of all students.
REFERENCES


ABOUT APHA
APHA champions the health of all people and all communities. We strengthen the public health profession, promote best practices and share the latest public health research and information. We are the only organization that influences federal policy, has a nearly 150-year perspective and brings together members from all fields of public health. Learn more at www.apha.org.

ABOUT CSHE
APHA’s Center for School, Health and Education advances school-based health care as a proven strategy for preventing school dropout. We work with health and education partners to develop and implement public health strategies school-wide to improve the well-being and educational success of all students. Learn more at www.schoolbasedhealthcare.org.

ACKNOWLEDGEMENTS
CSHE gratefully acknowledges everyone who contributed to the development of this issue brief.
Benefits of School-Based Health Centers

Research and evaluations have demonstrated that school-based health centers represent cost-effective investments of public resources.

- A study by Johns Hopkins University found that school-based health centers reduced inappropriate emergency room use among regular users of school-based health centers. (5,9)

- A study of school-based health center costs by Emory University School of Public Health attributed a reduction in Medicaid expenditures related to inpatient, drug and emergency department use to use of school-based health centers. (1)

- School-based health centers have demonstrated that they attract harderto-reach populations, especially minorities and males, and that they do a better job at getting them crucial services such as mental health care and high-risk behavior screens. Two studies found adolescents were 10-21 times more likely to come to a SBHC for mental health services than the community health center network or HMO. (3,4)

- A national multi-site study of school-based health centers conducted by Mathematica Policy Research found a significant increase in health care access by students who used school-based health centers: 71% of students reported having a health care visit in past year compared to 59% of students who did not have access to a SBHC. (6)

- A study of elementary school-based health centers conducted by Montefiore Medical Center found a reduction in hospitalization and an increase in school attendance among inner-city school children for asthma (10). Another study on school-based health care’s effects on asthma found decreases in hospitalization rates of 75-85% and improvements in the use peak flow meters and inhalers. (7)

- Adolescents who received counseling services in a school-based health center significantly decreased their absenteeism and tardiness, while those not receiving counseling slightly increased their absence and tardiness rates. (2)

- A study of student users of health centers found that students who reported depression and past suicide attempts were significantly more willing to use the clinic for counseling services. Those with perceived weight problems reported more willingness to use a school clinic for nutrition information than those who did not feel overweight. Sexually active students were willing to seek information on pregnancy prevention and to have general disease checks. (8)

- Dallas school-based health centers found that medical services helped decrease absences by 50% among students who had three or more absences in a six-week period; students who received mental health services had an 85% decline in school discipline referrals. (11)
The Ohio School-Based Health Alliance knows that Healthy Kids Learn Better

For **30 years**, school-based health centers (SBHCs) in Ohio have been **improving** the health and education **outcomes of the students that they serve**.

School-based health centers and integrated models of school-based care in Ohio have grown to **over 85 traditional school health clinics** and **more than a dozen mobile health units** that provide **health services to students** across the state.

**FAQs**

**What is school-based health (care)?**
School-based health care is a partnership between a school and a hospital, federally qualified health center, health care organization and/or health department to deliver care at a school. The school supplies the space; the health care partner supplies equipment and a medical professional to provide care. The care may be a discrete service or services, like immunization, or it may be more comprehensive, like general primary care that can be found in a pediatrician’s office.

Much of the recent focus of school-based health has been on school-based health centers. Traditionally, any health care service that is available in a pediatrician’s or primary care provider’s office is available at a school-based health center. The school-based health center may become the child’s “medical home” or regular health care provider in circumstances when the child does not have a regular doctor, but these centers also work to connect or reconnect children to community pediatricians or other medical homes. School-based clinic staff can also consult with a student’s doctor to make sure they get the best care both in and out of school.

**Why is school-based health important?**
A child who is not healthy, who must miss school for medical reasons, has increased obstacles to academic achievement. **Only 54% of Ohio’s children have an established medical home** – that is, a provider who has a relationship with a family and is concerned with preventive care and overall health. Only 39% of children enrolled in Medicaid have regular well visits. Only 44.5% have dental visits. Half of kids who fail vision screenings do not get follow-up care.

School-based health brings these services to children where they are, in school. School-based care allows students to miss a minimum of class time to address health concerns that are not otherwise being addressed.

**What services are provided?**
A traditional school-based health clinic typically provides the same services a pediatrician or primary care provider does, including:

- Physicals
- Blood work
- Immunizations
- Prescriptions
- Chronic disease care, such as for asthma and diabetes
- Behavioral health screening and care

School-based centers also can refer students to specialized providers, and they link families to ongoing care outside of school hours. Some school-based centers go beyond traditional primary care and offer dental, vision and other services.
Who provides the services?
The services are usually provided through a hospital, health care organization or health department that is independent of the school or school district but works in partnership with them. The individual providing the services is most often a nurse practitioner, who is licensed to treat patients and prescribe medicine.

How and where are they provided?
A school-based health appointment typically occurs in a fixed space inside the school that has been converted into a medical office. Some hospitals and health systems have mobile, traveling medical offices which can travel from school to school, so that a fixed space is not needed.

How are they paid for?
School-based health services are paid for in the same ways that other medical visits are, through the billing of private insurance or Medicaid. The entire goal of school-based health is to provide care to young people who need it, and school-based health staff may be able to help connect children to Medicaid coverage and other important resources.

Grants, donors, and government agencies often help with the start-up costs of a school-based clinic.

Is a school-based health provider the same thing as a school nurse?
No, but they work hand-in-hand, and a school benefits from having both.

School nurses:
- Act as the first line of triage for children who have health need
- Administer already-prescribed medication
- Provide health care education to students and staff
- Help with emergency planning for students who have a chronic health condition
- Provide state-mandated screening like those for hearing, vision and dental.

School-based health centers compliment the work of school nurses by providing primary care appointments and services, as described above.

Is there parental involvement in school-based health?
School-based centers partner with parents and caregivers for children’s health, just as pediatricians and primary care providers do. Parents and caregivers provide consent for care for services and are welcome to attend visits either in-person or on the phone. School-based health providers also typically connect with parents both before and after the visit, through interactions on the phone and in-person, and through after-visit summaries.
Pediatricians working toward health equity require health care delivery mechanisms that take on dual roles: mitigating the health effects of a maladaptive social ecosystem while simultaneously working to improve the ecosystem itself. School-based health centers (SBHCs) perform these dual roles by providing medical, mental/behavioral, dental, and vision care directly in schools where young people spend the majority of their time, maximizing their opportunity to learn and grow. Evidence Acquisition. Databases were searched extensively for research studies published between January 2000 and December 2018. Evidence Synthesis. The authors began with 3 recent high-impact reviews that covered SBHC history, health outcomes, cost-benefit, and impact on health equity. Informed by these articles, the authors organized the evidence into 4 broad categories of impact: Financial, Physical Health (including medical, vision, and dental), Mental Health, and Educational Outcomes. Using these 4 categories, the authors then performed a robust literature search using PubMed for studies that fit into these themes. Conclusions. SBHCs increase access to health services for children, families, and communities, which ultimately leads to positive short- and long-term outcomes in service of a broad range of stakeholders. Educational impact requires further attention on both outcomes and methodological approaches. Three current public health topics of importance were identified that SBHCs might be well-suited to address: Youth Gun Violence, Adverse Childhood Experiences, and the Health of American Indian/Alaskan Native communities in the United States.

Keywords
school based health, mental health, behavioral health, adverse childhood experiences, gun violence, American Indian and Alaskan native health

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Thus, SBHCs have to display superior health and educational outcomes, while also being as financially sustainable as traditional pediatric primary care services. This narrative review begins with a summary of the structure and latest policy initiatives related to SBHCs. Next the evidence pertaining to financial, physical, mental, and educational impact of SBHCs is evaluated. Finally, the authors explore the impact SBHCs might have on 3 current public health challenges that are closely tied to both education and health care sectors in

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the United States. These are gun violence in schools, adverse childhood experiences (ACE), and the rising premature death rates of young people in the American Indian and Alaskan Native (AI/AN) community.

Methods

The authors conducted a literature search to review the current evidence pertaining to SBHCs (Figure 1). The authors began with 3 recent high-impact reviews that covered SBHC history, health outcomes, cost-benefit, and impact on health equity. Informed by these articles, the authors organized evidence according to 4 broad categories (financial, physical, mental, and educational outcomes). Using these 4 categories, the authors then performed a robust search using PubMed for literature that would fit into these themes. The PubMed search began by reviewing abstracts of sources cited in the 3 above-mentioned review articles. In addition, keyword and MESH search in PubMed was conducted using the following: (“SBHC” OR “school based health”) AND (“financial OR economic OR cost OR “Delivery of Health Care/economics”[Mesh] OR “Health Care Costs”[Mesh]), (“medical OR “Diseases Category”[Majr] OR “Diagnosis”[Majr]), (“mental OR behavioral OR “Mental Health”[Mesh] OR “Psychiatry and Psychology Category”[Majr]) OR “Behavioral Medicine”[Majr]), and (“Education”[Majr]).

In total, more than 300 articles were examined for this review. Inclusion criteria included peer-review articles whose main findings related to financial, physical, mental, or educational outcomes (Table 1). A study was excluded if it was written prior to year 2000 or did not relate to categories of interest. When possible, the authors highlighted evidence that had not been incorporated into prior reviews of SBHCs. Each author was given 1 of the 4 categories to research and draft their review. The initial decision to include an article from a given category required only one author. The first author was then responsible for reviewing the evidence, collating each section, and ensuring studies were cited appropriately.

For the purposes of identifying future directions, 3 current topics were identified by the authors as having particular public health importance that SBHCs might be well-suited to address: youth gun violence, adverse childhood experiences (ACES), and the health of American Indian/Alaskan Native (AI/AN) communities in the United States. The terms used to identify literature on these 3 topics were (“Adverse Childhood Experiences OR toxic stress OR child trauma”), (“American Indian OR Alaskan native OR native American”), and (“gun violence OR firearm”). For this second literature search, the decision to include an article or not was left to the first author. Literature review began in October 2017 and concluded in December 2018.

Ethical Approval and Informed Consent

Ethics approval was not required for this systematic review. Informed consent was not required for this systematic review.

Purpose and Structure of SBHCs

In order to increase access to health care, SBHCs were started in the 1960s in Massachusetts, Dallas, and Minneapolis as a part of the American Academy of
SBHCs have the potential to address sequelae of health disparities and poverty. Poverty and mental health outcomes for children are clearly linked. Impoverished children are more likely to have parents with substance abuse or mental health disorders, more likely to be
abused or neglected, be placed in foster care, have a parent who is absent or incarcerated, or to be exposed to violence, trauma, and/or the death of a parent. They are also at higher risk for teenage pregnancy, depression, obesity, unintentional injuries, homicide, suicide, or diabetes, and are more likely to be hungry, have problems with vision, oral health, or hearing. These medical and mental health problems are associated with decreased scholastic performance and educational achievement, which is in turn strongly associated with future risk-taking behavior and higher rates of morbidity and mortality. Children growing up in poverty and those experiencing health disparities require models of care that better serve their health care needs. SBHCs integrate with the education system to improve access, quality, and cost for these disadvantaged pediatric populations.

Financial Benefits

Public sector grants (ie, local, state, and federal) offset losses to SBHCs associated with non-reimbursable services and uninsured patients. For example, 7 in 10 SBHCs report receiving state dollars for operations. Eighteen states report dedicating nearly $85 million to SBHCs. And as of 2014, sixty-five local health departments from across the country administer approximately 135 SBHCs as part of their public health mission. In addition to government contributions, SBHC partners (eg, hospitals and schools) often provide both cash and in-kind support to underwrite operations. For example, as of 2014 in the United States, more than 100 hospital systems sponsored 330 SBHCs. Private sector support (eg, foundations, private insurers, and corporations) is less common than public grants and partnerships. Nevertheless, more than 40% of SBHCs receive funds from private foundations.

SBHCs provide financial savings to children and their families. Health care provided by SBHCs prevents secondary losses of time and productivity for parents who would otherwise have to leave work to bring their children to appointments. SBHCs prevent unnecessary ED visits and unintended pregnancies. For example, Guo et al found that when they demonstrated financial savings to stakeholders after children with access to a SBHC showed decreased emergency room utilization in comparison with those from non-SBHC schools. SBHCs also provide services to patients and their families at reduced costs or for free by leveraging favorable state and federal policies, a diverse array of sponsorships (grants and in-kind donations), as well as employing traditional funding mechanisms such as third-party insurance payments. For example, for students enrolled in Medicaid, total health care costs and costs for mental health services were lower for students in schools with SBHCs compared with students in schools without SBHCs.

SBHCs have also demonstrated a cost-benefit to society. According to a review by Ran et al, after adjusting to the 2013 consumer price index, each SBHC provided a total social benefit ranging from US$15 028 to US$912 878, with cost-benefit ratios from 1.38:1 to 3.05:1. Estimates vary based on geography, school characteristics, and categories of health benefits considered as social benefits, with avoided emergency department visits and delayed or avoided teen pregnancies providing the most benefit. Medicaid especially benefits from the cost savings associated with SBHCs, with estimated savings ranging from $30 to $969 per visit and between $46 to $1166 per Medicaid enrolled student in schools with SBHCs.

SBHCs have continued to invest in sustainability. Nine in 10 SBHCs seek reimbursement for services from public and private health insurers. On average, SBHCs bill 4 different patient revenue sources, which cover one third (33.6%) of program costs. While fee-for-service remains the standard payment method for SBHCs (78.3%), some sites receive monthly or annual capitated payments for primary care (34.8%), “pay for performance” supplements (26.7%), or monthly or annual capitated payments for care coordination (18.8%). As a result of these diverse sponsorships and sustainability efforts, SBHCs provide financial benefits to both children and families that lack access to affordable health care. Children and adolescents who lack health insurance, are underinsured, come from low-income backgrounds, or those with special health care needs are at particular high risk for substandard access to health maintenance, well-child care, mental health services, and dental disease. The majority of SBHCs in the United States currently provide these necessary services.

Physical Health Outcomes

Physical health includes medical, vision, and dental health. SBHCs are defined first by their ability to provide medical care. SBHC services that improve physical health include preventive care (eg, administering immunizations), managing and coordinating care of chronic illnesses (eg, asthma and obesity), and decrease health-risk behaviors (eg, tobacco, drug, and alcohol use). More than 83% of SBHCs provide treatment and management of chronic health conditions. Students with chronic health conditions may suffer academic setbacks, increased disability, fewer job opportunities, and limited community interactions as they enter adulthood.
SBHCs have had success treating many pediatric chronic conditions including asthma, obesity, children with special health care needs, and substance abuse (eg, alcohol, tobacco, and other drugs).5

SBHCs have also improved prenatal care.3,5 For example, Barnet et al showed that teens who received prenatal care at an SBHC comprehensive adolescent pregnancy prevention program (CAPP) had lower odds of delivering a low-birth weight baby than those who received CAPP at a hospital-based setting.40 They also provide reproductive health services that address issues such as teen pregnancy and sexually transmitted infections. For example, SBHCs have been credited for a major decline in black teen pregnancy rates in adolescents in Denver, CO.41 The biggest strength of on-site reproductive health is being able to provide care when students decide they want or need a service.

Vision screening is provided by 84% of SBHCs.8 Some offer full vision services, including provision of eyeglasses. In addition, nearly 18% of SBHCs have oral health providers as a member of staff, and 20% provide oral health exams by a dentist or dental hygienist on-site. Poor access to oral health care remains one of the most persistent health disparities in the United States and is one of the largest causes of chronic disease and absenteeism.42 SBHCs solve this problem by bringing dental services to children in school.43

Mental Health Outcomes

Confronted with the large and persistent unmet mental health needs of children and youth, schools in the United States have become the most common provider of children’s mental health care.44 However, they have neither the resources nor the expertise to do so. Nearly 1 in 5 US children have a mental, emotional, or behavioral disorder, such as anxiety, depression, or attention-deficit/hyperactivity disorder.45 Early diagnosis and treatment are critical, but access to mental health care can be a challenge due to shortages in the availability and affordability of child psychiatrists, psychologists, or behavior therapists. Minority racial/ethnic pediatric populations, as well as those living in poverty, are more likely to lack access to mental health resources.46

SBHCs are in a unique position not only to identify mental health problems among children and adolescents but also to provide treatment or links to appropriate services. Evidence shows students with either public or no health insurance are more likely to access SBHC mental health services.47 Nearly 70% of SBHCs offer mental health care services through licensed clinical social workers, psychologists, and/or substance abuse counselors.9,30,48 Services most often provided include substance use counseling, violence prevention, suicide prevention, dating violence, mental health diagnoses, grief and loss therapy, crisis intervention, and medication management or administration.5 In addition, they often treat depression, anxiety, social conflict, sequelae of toxic stress, and attention disorders.8 Females seek mental health services more often; however, evidence shows that SBHCs are successful in reaching males as well.

Increasing availability of SBHC mental health services has been shown to reduce depressive episodes and suicide risk among adolescents. For example, in one study of 168 Oregon public schools, students with increased access to mental health through SBHCs at 14 different schools were less likely to report depressive episodes (odds ratio [OR] = 0.88, P < .01), suicidal ideation (OR = 0.84, P < .01), and suicide attempts (OR = 0.82, P < .01) from 2013 to 2015 compared with all other schools in the study. Students who exhibit high-risk behaviors or had more complex mental health difficulties such as suicide, depression, and difficulty with sleep are more likely to seek services at an SBHC.49

Limited research on mental health delivery models in SBHCs exist. One qualitative study of 43 key stakeholders in a network of 14 SBHCs describes various types and levels of integration between health and mental health services.50 Specifically, the authors identified 3 mental health delivery models: (1) coordinated care, where medical and mental health is provided in separate locations and coordinate care from a distance; (2) co-located care, where medical and mental health services are provided in the same location but have separate operational systems; and (3) integrated care, where medical and mental health providers share treatment plans. The latter “integrated care” model within an SBHC appears related to greater screening and detection of mental health problems. Nevertheless, the various types of mental health care delivery models reflect the heterogeneity of the communities that SBHCs serve. In caring for highly underserved populations, key determinants of the depth of mental health integration into SBHCs include staffing and operations, partnerships, and community engagement. As SBHCs expand and move toward interconnected systems of care, further research is needed to study these systems’ effects on children’s health, mental health, and academic achievement.50

Ultimately there remains a large need for school-based mental health that effectively partners with families, schools, and other community systems.51 For example, mental health has been implicated as a top risk factor for mass school shootings (ie, “rampage shootings”).52 The American Public Health Association (APHA) has endorsed SBHCs as a key mechanism
Education Outcomes

The CDC considers academic success both a strong indicator and outcome of the overall health and well-being of a child. Children must learn how to be healthy and must be healthy to learn. Academic success is a social determinant of pediatric and adult health. For example, it has been shown that chronic health conditions decrease academic achievement, and safe school environments improve health behaviors and academic performance. As emphasis on school accountability grows, increasingly fewer resources at the federal, state, and local levels create a need to understand whether SBHCs have an impact on academic achievement.

The evidence linking SBHC presence to educational outcomes, however, is limited and mixed. The link between SBHC services and academic performance is indirect and intangible. As such, it is methodologically more challenging to study (challenges discussed below in Future Directions). For example, in a 2011 study, the authors reported that SBHC use decreased dropout rates. However, after the methodological concern of time-dependent bias was brought to their attention, the authors reanalyzed their data and retracted their results, finding no statistical relationship between SBHC use and dropout rates. It was unclear whether SBHC use affected graduation or simply attending school through graduation had an effect on measured SBHC use.

Nevertheless, SBHC utilization has been associated with improved academic outcomes, such as improved GPAs, attendance, grade promotion, college preparation, and reduced rates of suspensions. The APHA supports SBHCs because they “[create] school-wide programs that address bullying, violence, anger, depression and other social and emotional issues that impede academic achievement.” Additionally, a growing body of evidence suggests that SBHCs improve academic performance indirectly by increasing school connectedness, particularly in lower income youth populations. The CDC defines school connectedness as “the belief held by students that adults and peers in the school care about their learning as well as about them as individuals.” In one study, SBHC usage was significantly associated with school connection (bonding, attachment, and commitment), which was positively related to GPA and promotion to the next grade level.

The close relationship between schooling and health have become the focus of significant philanthropy efforts. Organizations such as The Primary School (established by Priscilla Chan, a pediatrician, and her husband Mark Zuckerberg, founder of Facebook), Communities in Schools, and the Children’s Aid Society believe that at-risk children’s health and learning can improve when students, teachers, and families have access to health experts and services in schools.

Future Directions

Many questions remain regarding the effects of SBHCs on their student populations. Gaps in the evidence base of SBHCs’ impact may reflect methodologic challenges in evaluating SBHCs. These challenges include selection bias, sample size and statistical power, heterogeneity in services delivered or received, displacement effects (ie, when students replace SBHC with other sources of health care such as ED visits), historical effects (eg, child maturation), and clustering effects (eg, students at the same schools are usually more similar to each other than students at a different school).

Bersamin and colleagues discuss 5 promising approaches that can improve the rigor of SBHC evaluation that address these challenges.

Many opportunities remain where further research is needed. Most important issues are related to mental health integration and educational impact of SBHCs. Regarding the latter, the link between SBHCs and educational outcomes remains tenuous. More methodologically robust design and analysis is required by, for example, linking educational data to health records. However, there remain large legal barriers to negotiating exchange of information about students. Finally, most studies on the benefits of SBHCs have focused on on-site SBHCS in minority populations, low-income schools, urban settings, and older groups of students. Further research must also focus on the sustainability of SBHCs in different environments including off-site
clinics, rural settings, schools in mid- to high-income communities, and with younger children. Experimenting with telemedicine, as well, could provide SBHCs additional utility and save costs to the health care system, as it has been shown to do with asthma in young people.51

Targets for research that have not yet been discussed much in the literature pertaining to harmful societal issues such as youth gun violence, ACEs, and the rising premature death rates of young people in the AI/AN community. Regarding the first, US youth perpetrate and experience very high rates of violence compared with youth from many other developed nations. Over 17 000 American children and teens are injured or killed each year due to gun violence. This translates to nearly 46 youth shot each day leading to 7 fatalities.62 Gun violence cost the US $229 billion in 2015, or an average of $700 per gun in America.53 The societal costs of firearm assault injury include work loss, medical/mental health care, emergency transportation, police/criminal justice activities, insurance claims processing, costs to employers, and decreased quality of life. Gun violence is a prime example of an issue situated at the intersection of clinical medicine and population health, as well as a driver of children and teen’s maladaptive social ecosystems. In a scoping review of youth violence, Bushman et al call for research that establishes how mental health services can be effectively harnessed to support youth experiencing serious social and emotional difficulties.52

Future research should investigate whether SBHCs prevent youth gun violence, possibly by way of providing mental health care to those youth most at risk.

Another potential area of research is ACE. The effects of ACEs exposure extend well beyond the immediate act of harm and include severe mental, physical, and behavioral health disorders across the life course.63,64 These include increased risk for sexually transmitted diseases, self-inflicted injury, substance abuse, and violence. Ultimately, the annual US economic burden for childhood maltreatment (ie, ACEs) is $124 billion.64 Associated downstream costs to society include health care costs, productivity losses, child welfare costs, violence/crime costs, special education costs, and suicide death costs. Recently, a 4-year national effort culminated during which stakeholders engaged in creating a comprehensive national research and action agenda on ACEs. Research now prioritizes relationship-centered health care as well as family and community engagement in order to mitigate the effect of ACEs-related stress and trauma, establish resilience, promote positive health skills, and improve child health and well-being.65 While SBHCs have engaged in trauma-informed care, research that has measured or evaluated their effectiveness is lacking. Future research ought to focus on whether young people with high ACE scores receiving trauma-informed care experience better outcomes in schools with SBHCS compared with those without.

Finally, despite being particularly well-suited to serve the AI/AN population in the United States, evidence on the use of SBHC in this community is lacking. Between 2011 and 2014, AI/ANs had the highest premature mortality rates in the United States, driven mainly by suicide, accidental deaths (primarily drug overdoses), and chronic liver disease and cirrhosis.66 The largest reported mortality increases were in young people. From 1999 to 2014, mortality in 25-year-old AI/ANs increased 2.7% for men and 5% for women each year. This likely underestimates the mortality burden, however, since nearly 40% of AI/ANs are recorded as the wrong race (usually white) on their death certificates according to a 2016 CDC report.66

If this epidemic among young people and the quality and access barriers they face, SBHC services align well with necessary efforts to address health equity issues among the AI/AN community.

Conclusions

SBHCs may promote social mobility and improve health equity by meeting the needs of disadvantaged populations and removing barriers to health care services.3 Their financial and physical benefits are well documented but more research is needed on their impact on mental health and educational outcomes. Further research opportunities exist related to the impact of SBHCs on pressing health-related societal concerns in vulnerable populations.

Author Contributions

All authors contributed equally to the first draft. The first author took on the responsibility of editing and submitting all subsequent manuscripts drafts. The last author provided mentorship throughout the writing process.

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58. Strolin Goltzman J, Sisselman A, Melekis K, Auerbach C. Understanding the relationship between school-based...


Benefits of School-Based Health Centers

Research and evaluations have demonstrated that school-based health centers represent cost-effective investments of public resources.

- A study by Johns Hopkins University found that school-based health centers reduced inappropriate emergency room use among regular users of school-based health centers.  
- A study of school-based health center costs by Emory University School of Public Health attributed a reduction in Medicaid expenditures related to inpatient, drug and emergency department use to use of school-based health centers.  
- School-based health centers have demonstrated that they attract harder-to-reach populations, especially minorities and males, and that they do a better job at getting them crucial services such as mental health care and high-risk behavior screens. Two studies found adolescents were 10-21 times more likely to come to a SBHC for mental health services than the community health center network or HMO.  
- A national multi-site study of school-based health centers conducted by Mathematica Policy Research found a significant increase in health care access by students who used school-based health centers: 71% of students reported having a health care visit in past year compared to 59% of students who did not have access to a SBHC.  
- A study of elementary school-based health centers conducted by Montefiore Medical Center found a reduction in hospitalization and an increase in school attendance among inner-city school children for asthma. Another study on school-based health care’s effects on asthma found decreases in hospitalization rates of 75-85% and improvements in the use peak flow meters and inhalers.  
- Adolescents who received counseling services in a school-based health center significantly decreased their absenteeism and tardiness, while those not receiving counseling slightly increased their absence and tardiness rates.  
- A study of student users of health centers found that students who reported depression and past suicide attempts were significantly more willing to use the clinic for counseling services. Those with perceived weight problems reported more willingness to use a school clinic for nutrition information than those who did not feel overweight. Sexually active students were willing to seek information on pregnancy prevention and to have general disease checks.  
- Dallas school-based health centers found that medical services helped decrease absences by 50% among students who had three or more absences in a six-week period; students who received mental health services had an 85% decline in school discipline referrals.  

Mental health disorders are the most common health issues faced by our nation’s school-aged children. One in five children suffers from a mental health or learning disorder, and 80% of chronic mental disorders begin in childhood. There is an urgent need to identify the signs of these conditions early in life if children are to get the care and support they need to thrive.

Children struggling with mental health and learning disorders are at risk for poor outcomes in school and in life, and outdated approaches to discipline are only making matters worse. Instead of putting kids further at risk, schools should be identifying and supporting at-risk children. A widely deployed, integrated system of evidence-supported, school-based mental health and preventive services is needed. If we want to help our children and our schools, we cannot wait.

This report examines:

- **Negative effects (suspension, dropout) of mental health disorders in school**
- **Early intervention and prevention programs**
- **School-wide behavior plans and targeted interventions**

Schools present an important opportunity for recognizing early signs of mental health problems in children. K-12 enrollment in the United States is around 55 million, providing our best chance to reach the 17.1 million young people who will be affected by mental health disorders before the age of 18. Working together, parents, educators and professionals can ensure that all children reap the benefits of education and receive the support they deserve.

**Introduction**

Just as success in school has profound effects in many parts of life, identifying and providing mental health interventions for children in school can have benefits far beyond the classroom. School communities give teachers and administrators important opportunities to share information and work with parents and families. With their concentrations of children and trained caregivers, schools are an ideal place to leverage evidence-based mental health knowledge and make a transformative impact on the mental health landscape of this country.

There is tremendous variability in how schools identify and manage mental health problems in children. Many schools don’t have adequate training or resources to recognize and appropriately help children adjust to emotional and behavioral problems. There are an alarming number of incidents in which children with behavioral issues are reprimanded, suspended or expelled from school. Disciplinary infractions in school often land children in trouble with the law because of zero-tolerance policies — the so-called school-to-prison pipeline that pulls troubled or needy students inexorably towards jail. At the same time, youth with anxiety disorders and depression go unrecognized. Dropout rates are as high as 40% among those enrolled in special education programs because of learning, attention or emotional problems.
Schools are by no means ignoring these issues. The results of the only nationally representative sample of adolescents in the United States revealed that schools can and do provide services for youth with attention and behavior problems that are more obvious to teachers and are more common in youth with learning problems. Federal mandates for evaluation and treatment of children with specific learning difficulties have also facilitated care for these children. In fact, young people with access to mental health services in school-based health centers are **10 times more likely to seek care for mental health or substance abuse** than those who do not.4 But we do not yet have true parity between mental and physical health care, nor do robust mental health services in schools currently exist.

Today, optimal models of care pair school-wide behavior and discipline systems with services using community partners for targeted help. In this report, we provide examples of interventions and approaches that are working to help children with specific disorders and to improve the mental health of all children in the school environment. These programs can work for children today and spur innovation that will help more children tomorrow through the sensible integration of universal approaches with individualized, focused attention from professionals partnering with educators in the school environment.

*N.B. Because this report does not generally cover clinical approaches to mental health care, interventions and outcomes are described using the common school-based language of symptoms and behaviors, not diagnoses.*

**Child Mental Health Disorders Are Common**

The prevalence of mental health disorders among young people in this country approximates that of adults, and their impact may be even greater in youth because these disorders strike during critical periods of educational, emotional and social development.

17.1 million young people have or have had a diagnosable psychiatric disorder.5 Put another way, one out of every five children in the US meets criteria for a major mental disorder.

20% of US children have a mental health disorder

Fifty percent of mental health disorders begin before age 14 and 75% before age 24, affecting the learning and school experience for all children.
These are disorders of childhood and adolescence that, if untreated, will have a marked effect on students’ ability to learn and function in the school environment. For instance:

- 75% of social phobia manifests by age 15
- 75% of separation anxiety disorder manifests by age 10
- 75% of oppositional defiant disorder manifests by age 14
- 75% of ADHD manifests by age 8

Anxiety disorders such as social phobia can make students twice as likely to drop out or fail a grade; ADHD, mood and anxiety symptoms and disruptive behavior at age 6 predict math and reading achievement at age 17, and combinations of mental health disorders (including substance abuse) are predictors for low levels of lifetime educational attainment.

**Mental Health Impacts in Schools**

Children with mental health and learning disorders face frequent discipline and school failure, which can lead to problems later in life. These trajectories can be corrected, but only with recognition and intervention.

Emotional and behavioral problems can lead to office discipline referrals, school avoidance, suspension and being left back. Mental health and learning disorders can also lead students to drop out of school entirely. The consequences of these school-related discipline problems down the road are serious: underemployment and unemployment, prison, and reduced quality of life.

**Problems start early.**

- Expulsions in prekindergarten are almost twice as common — **89% higher** — when classrooms don’t have regular access to a psychiatrist or psychologist. Only 23% of pre-K programs nationwide have on-site psychiatrists/psychologists or scheduled visits.

- Being at risk for mental health problems **in first grade** leads to a 5% drop in academic performance in just two years.

**Students in special education are at high risk.**

- **More than 77,000 children** in special education receive suspensions or expulsions for more than 10 cumulative days in a year—including children with autism, anxiety and learning disorders. Those suspended or expelled for more than 10 days include 5.7% of children with emotional disturbance and 2.6% of students with “other health impairments” (OHI), like ADHD.

- In one study of special education students, the suspension/expulsion rate for students with emotional disturbances was 64%.

**Despite the stereotype that all special education takes place in separate or “special” classrooms,** students served under the Individuals with Disabilities Education Act (IDEA) are very much a part of “mainstream” education because of inclusionary policies that “push in” instead of “pull out.” Ninety-five percent of students served under IDEA attend regular schools, and 61.1% of them spend more than 80% of their time in “mainstream” or general classrooms.
Mental health and learning disorders are tied to higher dropout rates. The dropout rate for all students is 7%; for students served under IDEA it is 21.1%; for the subset of students served under IDEA with emotional disturbance, the dropout rate climbs to 38.7%.

27,985 children aged 14–21 with autism, emotional disturbance or other health impairments including ADHD drop out each year. And 45,846 students with specific learning disorders drop out each year as well.\(^1\)

Dropout leads to prison. High-school dropouts are 63 times more likely to be jailed than four-year college graduates.\(^2\)

70.4% of youth involved in the juvenile justice system meet criteria for a psychiatric diagnosis,\(^3\) and 68% of state prison inmates have not completed high school.\(^4\)

Dropout leads to poor quality of life.

- Persons without a high-school education live 9.2 fewer years than persons who graduate from high school.\(^5\)

Higher prevalence of ADHD and LD exacerbates discipline problems.\(^6\)

- States in regions with above-average rates of ADHD and LD (FL, District of Columbia) suspend children at twice the national average.
- States in regions with below-average rates of ADHD and LD (UT, WY, ID) suspend children at half the national average.\(^7\)
Suspension and Zero Tolerance

All children face rising rates of suspension, especially minority children; the ill effects of harsh discipline are not limited to children with a mental health diagnosis. But the “zero tolerance” focus on mandatory punishment for certain behaviors targets children with impulse or emotion regulation control problems often caused by mental health disorders.

The use of out-of-school suspension nearly doubled, from 1.7 million in 1974 to 3.1 million in 2001.\(^22\)

In the same period, enrollment in public elementary and secondary schools increased just 7.5%, from 44 million to 47.6 million.\(^23\)

One study found that 95% of out-of-school suspensions were for nonviolent, minor disruptions such as tardiness or disrespect.\(^24\)

A Texas study of one million students over the course of six school years found the following:
- 54% experienced at least one in-school suspension over the study period.
- 31% experienced an out-of-school suspension.
- 3% were state-mandated suspensions and expulsions.
- 97% of suspensions were discretionary, in response to conduct codes.

Compared to their typical peers, suspended students were two times as likely to repeat a grade, and three times more likely to be in contact with the juvenile justice system within a year.\(^25\)

These trends are compounded for minority children, particularly those with mental health and learning disorders. More than 25% of boys of color served under IDEA receive an out-of-school suspension.

- Black children make up 18% of preschool enrollment, but represent 48% of preschool children who have received more than one out-of-school suspension.
Although black students represent 16% of student enrollment, they represent 27% of students referred to law enforcement and 31% of students subjected to a school-related arrest.\textsuperscript{26}

![16%](School enrollment of black children as percentage of total)

![27%](Law enforcement contact rate of black children as percentage of total)

![31%](School-related arrest rate of black children as percentage of total)

**What Can We Do?**

Given the prevalence of mental health issues in school, it makes sense to focus prevention and intervention efforts there. The emerging research on clinical mental health services in school is promising.

- Access to mental health services in school-based health centers leads to a tenfold increase in treatment for mental health or substance abuse.\textsuperscript{27}

- **Expulsions in prekindergarten are reduced by more than 47%** when classrooms have regular access to a psychiatrist or psychologist.\textsuperscript{28}

![47%](Reduction in preschool expulsions with access to mental health professional)

However, a dedicated mental health presence in school-based health centers has not yet become a reality on a national scale. A critical shortage of mental health professionals like child and adolescent psychiatrists and clinical child psychologists translates to a knowledge gap in schools concerning how to best manage and mitigate mental health disorders. There are approximately 8,300 practicing child psychiatrists in the United States; the estimated number needed to satisfy demand is 12,600.\textsuperscript{29,30}

![8,300](Number of child psychiatrists)

![12,600](Estimated demand)

Today, schools rely on referrals, community partnerships and universal prevention programs to address the demonstrated need and decrease risk for poor outcomes.

In the following section we look at promising interventions at various levels that help children to stay in school and improve mental health, both generally and in terms of specific disorders and symptoms. In their own way, each of the following examples of school-based interventions can address one of the persistent problems and poor outcomes described in the previous section. **If educators, policymakers, parents and mental health professionals come together to advocate for sensible integration of these approaches, mental health promotion in school may provide a stunning return on investment.**
Prevention and Early Intervention

Intervening early in school helps prevent behavioral issues from developing into problems that lead to suspension, expulsion and dropping out. Enlisting parents and teachers can make these interventions more effective—and prevention approaches can be effective at various developmental stages, as indicated below.

Infancy and Early Childhood

**The Incredible Years** is a widely disseminated program engaging teachers, parents and children to reduce disruptive behavior disorders, violence and delinquency. It has been used with general populations and adapted for children with early onset conduct problems and other risk factors, including socioeconomic status and other mental health disorders. The program is designed to train parents and teachers to help children from birth through school age.

Studies show robust positive effects of the intervention for decreasing disruptive behavior and increasing prosocial behavior. A meta-analysis of research studies reported a **15.5% improvement across domains of behavior** for children whose families and school communities participated in the Incredible Years prevention program.

Childhood

**Teacher-Child Interaction Training (TCIT)** is a classroom intervention for children aged 3–7, based on an individualized treatment for disruptive behavior and family conflict called Parent-Child Interaction Therapy (PCIT).

One study showed that after teacher training and coaching, positive teacher behavior improved more than 100%, from 9% of interactions to 20% of interactions. Focused positive encouragement — “labeled praise” — increased fivefold.

Another study showed significant improvement in ratings of resilience and behavioral control.

One assumption behind TCIT is that by improving the classroom environment, teachers will have more time and attention for teaching and encouraging each child, and young students will experience more of the benefits of focused early education and fewer of the distractions and ill effects of problematic behavior and disruption.

**The Good Behavior Game (GBG)** is a classroom-based behavioral management program shown to have long-lasting effects in preventing later poor outcomes. In a study, first and second graders in GBG classrooms were divided into teams that “compete” for rewards by adhering to teacher-defined rules for behavior. All teams can win by keeping the number of infractions down. The goal of the intervention is to encourage a positive learning environment and healthy social communication.
GBG is effective in reducing problem behaviors in the classroom, and it also has significant effects many years later. A follow-up study of children in GBG classrooms when they reached the age of 19–21 found significantly lower rates of drug and alcohol use disorders, regular smoking, antisocial personality disorder, delinquency and incarceration for violent crimes and suicide thoughts.

Young adult outcomes for children in the GBG group showed a 50% reduction in risk of drug abuse or dependence; a 35% risk reduction for alcohol abuse or dependence; a 59% decreased risk for regular smoking; and a 32% reduction in risk of developing antisocial personality disorder.\(^\text{35}\)

![Graph showing risk reductions]

**Middle Childhood and Early Adolescence**

**Daily Report Card (DRC)** is another evidence-based behavior modification program developed for children with disruptive behavior disorders including ADHD. The DRC intervention works as a collaboration between school and home, and is constructed to address and reward progress related to problem behaviors identified in a child’s individualized education plan (IEP). Each DRC intervention is unique to the child and to the relationship between child, teacher and parents.

One study showed that children aged 6–12 with ADHD participating in the DRC intervention were:

- Twice as likely to be rated as unimpaired at the end of the study when compared to the control group.\(^\text{36}\)

**Universal Programs and Screening**

One of the most important components of early intervention for behavioral and emotional health concerns is early identification. School is the ideal place for this.

Chile has a widespread universal intervention plan for mental health in its schools, called Skills for Life. It begins in first grade with:

- Screening using instruments like the TOCA-R and a clinical scale called the Pediatric Symptom Checklist.
- Students identified at risk in first grade receive an intervention in second grade in the form of workshops administered by trained bachelor’s-level psychologists.

**Skills for Life:**

- Is in 20% of Chilean schools
- Has screened over 1 million students in 10 years
- Identifies as at-risk, and provides support to, 16.4% of first-grade students
Students who complete the intervention workshops, compared with those who did not, are less likely to remain at risk, less likely to be held back after third grade and less likely to have poor attendance.\(^{37}\)

Why Screen?

Many mental health studies of schoolchildren rely on broader teacher reports of behavior and functioning. One of these scales, the Teacher Observation of Classroom Adaptation–Revised (TOCA-R), is used to assess interventions addressing:

- Aggressive and disruptive behaviors
- Concentration problems
- Prosocial behaviors
- Emotion regulation\(^{38}\)

Studies have shown that TOCA-R scores may predict later poor outcomes like school dropout, unemployment and mental health disorders, alerting professionals that early intervention may be warranted. It must be noted that large-scale screening often results in “false positive” assessments of risk; effective programs must follow screening with more sensitive appraisals of an individual child.

Social-Emotional Learning Approaches

In addition to prevention, screening and individual interventions, researchers are looking at the effects of entire curricula that reinforce good citizenship and behavior. Big-picture changes can be the ideal backdrop for individual improvement.

An emerging approach to encouraging positive mental health and behavior in young people is to adopt social and emotional learning (SEL) curricula in schools. A wide variety of models and interventions have been developed to explicitly teach these skills and decrease problems in emotional regulation and interpersonal interactions.

A meta-analysis of 213 studies including more than 270,000 students suggests that SEL programs and interventions have a broad positive effect. Students in SEL programs showed:\(^{39}\)

- 22% improvement in SEL skills
- 10% increase in “positive social behaviors”
- 10% decrease in “emotional distress”
- 11% improvement in academic performance
The Promoting Alternative Thinking Strategies Curriculum (PATHS) is administered by Head Start teachers over the course of nine months. Like other SEL interventions, it is based on explicit instruction in SEL curricula. Teachers rate children who have completed PATHS as:

- more cooperative
- more emotionally aware
- more interpersonally skilled\(^{40}\)

The intervention shows:

- Significant increase in emotional vocabulary
- Reduction in false attribution of negative emotions

Like other universal interventions, it has not been shown to have a significant effect on more clinical symptoms like lack of inhibitory control or attention deficit.

**Restorative Justice**

To reduce the negative effects of disciplinary action, some programs work explicitly to bring down the number of suspensions and expulsions—and replace them with more constructive responses.

Restorative Discipline/Justice includes strategies to both prevent children from breaking the rules and intervene after an infraction has occurred. Some elements are focused on reducing the likelihood of student rule breaking (proactive circles where students and teachers talk about their feelings and expectations) and others on intervening afterwards (e.g., restorative conferences where the parties talk about what happened). In all cases the focus is on avoiding punishment for the sake of punishment.

In a district implementing restorative approaches over a period of six years, the suspension rate fell for students of all races and ethnicities. The reduction was 47% for all students; 41% for black students; 53% for Latino students; and 61% for white students.\(^{41}\)
Multi-Tiered Systems of Support

We already have programs in many schools that integrate concepts of SEL and restorative justice. These programs are showing positive results; the next step is to integrate them more fully with individualized interventions.

Positive behavioral interventions and supports (PBIS) is a large-scale behavioral intervention in widespread use in schools in the United States. It is intended to effect systemic change in school discipline and behavioral outcomes through training, reporting and constant feedback.

PBIS is an example of a “multi-tiered system of supports” (MTSS) or “response to intervention” (RTI) model. All students and classrooms receive a “universal intervention” aimed at improving academic success, discipline and school functioning through a set of positive behavioral expectations.\(^{42}\)

At the second “tier,” students identified as “at risk” receive more targeted interventions with the expectation that with support they will move back to tier one.

At the third tier, students with significant academic, behavioral or emotional problems receive individualized and evidence-based interventions designed with the aid of individualized evaluation.

PBIS is intended to provide support in mainstream settings to reduce the need for special education. The universal, “tier one” application of PBIS is called “School-wide PBIS,” or SWPBIS, and is in place in approximately 17,000 US schools.\(^{43}\)

A four-year randomized controlled trial looked at 12,334 children in 37 schools. Children in PBIS schools were 33% less likely to receive an office discipline report (ODR),\(^{44}\) and suspended 10% less often than children in comparison schools.\(^{45}\)

The universal school-wide intervention has small but significant positive effects on:

- Disruptive behaviors
- Concentration problems
- Emotion regulation
- Prosocial behavior
Targeted Interventions

Interventions that address specific concerns in specific populations of children are vital to mental health efforts in schools. Community partnerships have proven invaluable to many programs.

Aside from one-on-one mental health care from an office-based professional, clinicians have begun to develop school-based mental health interventions that leverage the environment to deliver care.

Below are two examples, one focused on aggression and the other on traumatic stress.

**Second Step** is an evidence-based prevention program for 4- to 14-year-olds that addresses impulsive and aggressive behavior, promotes anger management, and teaches problem-solving skills.

A study of 790 students showed that teacher and parent reports were not affected by the intervention—a common problem in school-based trials of behavioral approaches. But behavior observations by professional observers indicated significant decreases in physical aggression and increases in prosocial behavior.46

Analysis of the program in 3,616 middle school students showed a 42% decrease in physical aggression and a 20% decrease of bullying in special education environments.48

**Cognitive Behavioral Intervention for Trauma in Schools (CBITS)** is an evidence-based intervention for children with symptoms of post-traumatic stress disorder (PTSD). Children are identified by experienced school personnel and treated by a trained professional working with the school.

PTSD is a significant problem in young people, particularly in the poor urban environments CBITS was developed to serve.

- Lifetime PTSD in children 14–18: 5%49

CBITS is a novel group intervention that lasts for 12 sessions (10 group and 2 individual) and can be delivered by school-based mental health personnel. A study of 126 students with PTSD and depression symptoms showed that, compared to no intervention, 86% reported less severe PTSD symptoms and 67% reported less severe depression symptoms.50
Conclusions

Despite the best efforts of so many devoted educators, children who struggle with mental health and learning disorders still face an array of serious challenges and obstacles in school. Most schools today are ill-equipped to evaluate and provide or refer for treatment, and we face major problems with the way we mete out discipline and promote the school-to-prison pipeline. Nevertheless, there is a silver lining for a nation that has a history of advocating for children who face barriers to learning and where there is a general consensus regarding the need to allocate more resources among the political and educational communities. The tools to improve the school environment for all children are being developed, and our task is to bring these promising, evidence-based approaches to more schools across the nation.

Mental health in school means many things — from social-emotional competency to an atmosphere of respect to supports for children with learning disorders, ADHD, PTSD and more. The landscape of “mental health in schools” is fractured, but these different areas of concern mirror all the things Americans want school to do for their children. In the words of Robert Balfanz, the education reformer and director of the Everybody Graduates Center, the ideal is “to be able to say to any child, in any part of the United States, ‘Your schools will educate you, challenge you, care for you, support you, and graduate you ready to succeed in the world.’”

Schools have already made the effort to accommodate and encourage children facing different hurdles to learning and success: physical handicaps, for instance. The education reform movement in the United States has made great strides in transforming curricula and other aspects of the educational system. Social, emotional and behavioral health is the necessary next step for building better schools to nurture healthy brains and happy children. Now it is time for schools to make a change for children struggling with mental health disorders.

Schools must continue to innovate and integrate approaches to school-based mental health — bringing the systemic focus of programs like PBIS into closer alignment with intensive individualized interventions while encouraging developmental awareness through early screening and progress monitoring. Schools must become the prime driver behind improving the mental health of America’s children. But to do this, evidence-based practices must be adopted at a large scale, and partnerships between educators and mental health professionals from the policy level on down to the individual child must be encouraged.

Imagine the differences our schools could make for children if they supported programs like these, and if they were equipped with the information they need to truly assess what is wrong and how to make it right. At last, we might have created a mental health safety net for all.


