Injury prevention is fundamental to the school’s mission of educating young people. Injuries among school-age children and adolescents are common, costly, and counter-productive to efforts to improve academic performance. The good news is that a large and growing body of evidence documents effective strategies that schools can implement to prevent injuries among young people.\(^1\)

Injuries are usually classified as violence or unintentional injury.\(^2\) Violent injuries are caused by intentional acts such as assault, sexual violence, homicide, and suicide, and result in physical harm to oneself or others. The most common unintentional injuries are motor vehicle crashes, drownings, and falls. Although unintentional injuries are commonly thought of as accidents, the public health field is phasing out use of that term. “Accident” implies that the event (e.g., a car crash) was destined to happen, that nothing could have been done to prevent it from occurring, when in fact there are steps that can be taken to prevent almost every injury.

Unintentional injuries are, by far, the leading cause of death for young people of school age (5-19). Approximately 53 percent of all deaths in this age group result from unintentional injuries, with motor vehicle crashes accounting for 71 percent of these deaths. Homicide and suicide are the second and fourth leading causes of death among 5-19 year olds, accounting for approximately 12 percent and 9 percent of deaths, respectively.\(^3\)

Annually, 1 in 14 students suffers an injury.\(^4\) Behaviors that contribute to both fatal and nonfatal injuries are relatively common among U.S. students in grades 9-12:

- 36 percent of students reported being in a physical fight one or more times during the past year;
- 19 percent carried a weapon on one or more days during the past month;

**Injury Prevention: A Critical Component for School Success**
17 percent seriously considered attempting suicide over the past year;
10 percent rarely or never wore a seatbelt when riding in a car driven by someone else; and,
10 percent drove after drinking alcohol during the past month.5

Moreover, injuries on school campuses are common and costly. Nearly 4 million young people suffer a substantial injury at school each year, resulting in an estimated $3.2 billion in medical spending and $115 billion in lost productivity.6 At the same time, school-related injuries result in considerable legal costs for school systems: a cost analysis of school-related injuries found that between 1996 and 2002, school districts were ordered to pay an award or make a settlement in 66 percent of the cases plaintiffs that brought cases to court. The study reported that the median award was $50,000; however, awards went as high as $15 million. In addition to the awards paid to plaintiffs, school districts must incur additional costs related to insurance premiums, legal fees, and lost staff time.7 Annual school injury medical payments, averaged across all primary and secondary schools, indicate costs of $82,000 per secondary school and $11,000 per primary school. (Middle school and high school students suffer 72 percent of all school-related injuries.9)

Injuries also have a strong impact on academic achievement. Many nonfatal, unintentional injuries result in restricted activity, school absences, and days of instruction missed.9

Violence, or the fear of violence, may also contribute to absences from school and mental health problems that can impair school performance. Students who feel rejected by or bullied by their peers, are more likely to have poor psychological adjustment and low self-esteem, and higher rates of loneliness, depression and absenteeism.10 Students must feel safe and secure in order to be motivated to learn.11 Unfortunately, many students do not feel safe due to a variety of circumstances. For example, evidence from a nationally representative sample of 15,600 students in grade 6-10 found that 17 percent reported having been bullied during the school term and 19 percent reported bullying others.12 In addition, of the 22.3 million children in the U.S. between the ages of 12-17, approximately 1.8 million have been the victims of a serious sexual assault, 3.9 million the victim of a serious physical assault, and nearly 9 million have witnessed serious violence.13 These are the children in schools throughout the United States. Many of them are afraid to venture into the hallway or cafeteria for fear of being bullied, suffer from depression that makes it difficult to get out of bed each morning, or cannot concentrate because of the shooting in their neighborhood they saw the night before. For these young people, recent research has indicated that curricula and classroom management will improve academic achievement to a point, after which achievement scores will level-off or plateau,14 something that is understandably frustrating for students, teachers, administrators, and families. Research with young people who have been exposed to community violence indicates that exposure to violence is correlated with low academic achievement, as demonstrated by grade point average and standardized achievement scores.15

The negative correlation between academic achievement and injury is not surprising, given the research on brain development. Children who are repeatedly exposed to violence or the threat of violence are continually on guard for the slightest sign of potential danger. These children are constantly in a “fight or flight” mode that is adaptive in consistently threatening or stressful environments. However, the “fight or flight” mode might be maladaptive for the school environment, (e.g., misinterpretations of looks given by other students as threatening may result in a violent or “fight” response).

In addition, ongoing exposure to stress can also impact retention of information. Students can only retain new information if the frontal and cortical areas of the brain are activated; these areas are responsible for motor control, planning, impulse control, and reasoning. Activation of these areas requires the child or young person to be calm, something that is unlikely for a child that is always in the “fight or flight” mode. This child develops survival techniques, which require him/her to think in the present in order to evaluate the immediate threat and act quickly. Only the present is of concern, because that is where the threat exists; the future is of no concern. This has direct implications for the child’s behavior in school. For these young people, the prospect of either a future reward or of a future consequence is not motivating.16

Thus, schools’ ability to improve academic performance is dependent upon effective strategies that address unintentional injuries and violence; implementation of these strategies cannot only improve academic performance, but also social-emotional well-being and pro-social behavior.17 Injury prevention has the strong potential for increasing many components of well-being, not just while in school, but throughout the lifecycle.18

The Centers for Disease Control and Prevention (CDC) has developed several documents to help schools and school
administrators in their efforts to implement effective strategies to prevent school injury. The seminal document is the School Health Guidelines to Prevent Unintentional Injuries and Violence.19 The Guidelines are based upon an extensive literature review and expert panel consensus; they set forth recommendations to prevent injury. The recommendations are comprehensive, addressing the social and physical environment, health education, physical education and physical activity programs, health services, crisis response, family and community, and staff members. Together, they provide a blueprint for encouraging safe and secure school environments for students and staff:

1. Establish a social environment that promotes safety and prevents unintentional injuries, violence, and suicide. The social environment encompasses the formal and informal school policies and norms. To foster a safe social environment, schools can ensure high academic standards for students and provide support and leadership for students and staff to promote academic success and safety. Sometimes students experience barriers to learning that are a direct result of experiences with violence or injury. As previously discussed, adverse events such as witnessing violence or being the victim of a serious unintentional injury, can have an adverse effect on a child’s ability to learn. Barriers to learning also exist for students who are living in poverty, have different learning styles, or have special health care needs. Schools must address these barriers if these students are to succeed academically. Mechanisms to reduce these barriers include mentoring, tutoring, counseling, academic assistance in the classroom, and school-based activities or services to promote mental health.

Other steps schools can take to foster a safe social environment include:

- designating a person responsible for coordinating safety activities;
- establish a climate that demonstrates respect and does not tolerate bullying or harassment;
- develop and implement written policies about injury prevention;
- infuse injury prevention into multiple school activities and classes;
- establish and communicate unambiguous disciplinary policies;
- assess injury prevention strategies and policies regularly; and,
- encourage students’ feelings of connectedness to their school.

Several studies have found that students who feel connected to school (experience a sense of caring and closeness to teachers and the overall school environment)20 are more likely to succeed academically,21 participate in more extra curricular activities, wear seat belts and bicycle helmets, and report better overall health.22 Students who are connected to their school are also less likely to perpetrate violence, drink alcohol, carry weapons,23 or to report suicidal ideation or emotional distress.24 Conversely, students who are disconnected are more likely to have negative outcomes. Students who feel disconnected to their school are more likely to report declining health status, increasing school nurse visits, cigarette use, and lack of extra-curricular involvement.25 Implementing harsh discipline policies or strategies (e.g., out of school suspension or expulsion the first time a student is caught cheating) do not encourage connectedness. In fact, they are more likely to result in student reports of disconnectedness.26 Students are more likely to feel connected to their school if they have opportunities for meaningful input into school policies and if the classroom material engages their interests.27

2. Provide a physical environment, inside and outside school buildings, that promotes safety and prevents unintentional injuries and violence. The physical environment of a school includes walkways and grounds, playgrounds, sports fields, parking lots, driveways, school vehicles, gymnasi ums, classrooms, shop and vocational education classrooms, cafeterias, corridors, and bathrooms as well as other environments in which students engage in school activities. Schools can provide a safe physical environment by maintaining structures, playgrounds, and other equipment; school buses and other vehicles; and physical grounds. Schools also should attempt to make repairs immediately after hazards have been identified, actively supervise all student activities, and ensure that the school environment is free from weapons. A safety and hazard assessment should be conducted, minimally, on an annual basis.

Regular safety assessments should include a review of the location and operational status of smoke alarms, sprinklers, and fire extinguishers. Approximately 6,000 structure fires occur in schools annually, resulting in 139 injuries and direct property damage exceeding $63 million. Despite these statistics, only 52.1 percent of the reported fires in school settings were in structures with working smoke alarms and/or fire alarms. Automatic fire suppression systems, such as sprinklers, existed in just over 24 percent of the schools experiencing a fire.28

3. Implement health and safety education curricula and instruction that help students develop the knowledge, attitudes, behavioral skills, and confidence needed to adopt and maintain safe lifestyles and to advocate for health and safety. In 2000, a total of 75 percent of schools required students to receive instruction on unintentional injury prevention; 80 percent on violence prevention; and 40 percent on suicide prevention.29 This is a good start; however, there is room for improvement. Schools
can require comprehensive health education for students in grades pre-kindergarten through grade 12. Just as math and reading are taught in a planned, sequential manner throughout a student’s academic career, comprehensive health education should be, as well. The type of instruction and the way it is delivered are also important. Prevention programs and curricula should be grounded in theory and have scientific evidence of effectiveness with a population of students similar to the target population. For example, if your school is an urban primary school with predominantly minority youth, the ideal program would be one that has demonstrated effectiveness with a similar population. Several agencies and organizations have developed lists of evidence-based programs. For example, the U.S. Department of Education Office of Safe and Drug Free Schools has a list of promising and exemplary programs for safe, disciplined, and drug-free schools (online at www.ed.gov/admins/lead/safety/exemplary01/report_pg3.html); Harborview Medical Center reviews childhood injury prevention interventions (online at depts.washington.edu/hiprc/practices/index.html), and the CDC has best practices for youth violence prevention (online at www.cdc.gov/ncipc/dvp/bestpractices.htm).

To actively engage students in health education material, teachers should use active learning strategies, interactive methods, and proactive classroom management that allow students to practice skills in a calm, orderly, and supportive environment. In addition to selecting an appropriate program and using active teaching techniques, the school administration must support these efforts or they will be of limited success. Wilson-Brewer surveyed violence prevention programs in schools nationwide and reported: (1) almost all programs had difficulty securing sufficient and stable funding to acquire staff, operate programs of significant scale and duration, and maintain continuity over time; and, (2) half of programs working with school systems faced overworked, stressed, and burned-out teachers. When school personnel are asked to implement a program they have not selected, they feel overburdened with work. At the same time, if they do not perceive support for programs of sufficient scale, they resist implementation. Schools must devote staffing and resources (including a budget, facilities, staff development, and class time to the prevention of unintentional injuries and violence in order for these efforts to be successful).

4| **Provide safe physical education and extracurricular physical activity programs.** Physical activity programs can be positive alternatives to risky behavior and provide students the opportunity to learn skills that can lead to life-long participation in physical activities. Unfortunately, with increased physical activity comes the increased risk of physical activity-related injury. Schools can improve the safety of all physical activity programs by developing and enforcing safety rules, promoting unintentional injury prevention and nonviolence, requiring the use of protective equipment, ensuring the safety of the physical environment, and properly training all physical education staff members and volunteers. In addition, teachers, families, and coaches are important role models for students. As role models, they can significantly impact student behavior by modeling and encouraging students to exhibit nonviolent behaviors prior to, during, and following sporting activities; follow safety rules; and use protective equipment such as helmets, face and mouth guards, and appropriate reflective gear.

5| **Provide health, counseling, psychological and social services to meet the physical, mental, emotional, and social health needs of students.** Improving the mental, emotional, and social health of students is not the primary responsibility of schools. However, although many students need these services, the services are not being accessed through the healthcare system. Primary care physicians identify and refer 19 percent of the children they see to a mental health specialist, but nearly 60 percent of these children never make it to a mental health specialist. Given the lack of follow-up with specialists, the school may be the only place that students are able to receive psychological and social services. Schools and students benefit when these services are utilized: mental health has been directly linked to academic achievement. Children who report depressive symptoms (intrusive thoughts, decreased motivation, and low energy) also report low academic performance. Conversely, when students participate in social-emotional learning programs (SEL), they are better able to manage emotions, such as anger or stress that can interfere with learning; to work cooperatively with classmates; and to set and work toward academic goals.
opment of these skills has a positive impact on attendance and graduation rates and contributes to reductions in suspensions, expulsions, and grade retentions.37

To implement these services most efficiently, schools can coordinate school-based counseling, psychological, social and health services with the educational curriculum. For example, counseling, psychological, social, and health services staff members can conduct classroom-based education about the risk factors for unintentional injury, violence, and suicide; they can also serve as representatives on the school safety committee or the school health council. Currently, coordination appears to be an area in need of improvement. A representative survey of 83,000 public elementary, middle, and high schools in the U.S. found that 70 percent of schools considered competing priorities for the use of funds, such as a focus on improving academic achievement, a moderate or major impediment to delivery and coordination of mental health services. The study also found that nearly 32 percent of schools rarely or never held interdisciplinary meetings among mental health staff, conducted joint planning sessions between mental health and other staff, or shared mental health resources with each other.38

Whether the injury is a head injury that occurs during a football game, a suicide that occurs during spring break, or a homicide that occurs in the school cafeteria, there are areas of overlap in the ways in which schools can prepare for and respond to these events. Preparedness and response can focus on the entire school population rather than just those who were directly impacted by the incident. For example, prior to the occurrence of an injury, schools can: a) establish strong links with community resources and identify providers to bring services into the schools; b) work with local emergency medical services to develop emergency plans for assessing, managing, and referring injured students and staff to appropriate levels of care; and c) have explicitly defined protocols in place to facilitate identification of students in need of services. To increase the effectiveness of these protocols, schools can practice plans annually, analyze them for effectiveness, and revise them based on the analysis of results. After an injury has occurred, schools can examine the incident to learn how to prevent injuries from occurring in the future and track information about injuries that occur on school property, gathering information such as location, time of day, and type of injury. The results of these tracking or surveillance efforts can directly inform prevention efforts.

6| Establish mechanisms for short- and long-term responses to crises, disasters, and injuries that affect the school community. Schools need to be prepared for crises of all types (environmental, death or serious injury of a student or staff member, a suicide or suicide attempt, or terrorism) in order to respond quickly, appropriately, and effectively. Schools can develop a written plan for responding to crises; prepare staff, students, and partners to implement the plan in the event of a crisis; and have short- and long-term responses and services in place. Given recent crises and natural disasters, schools have become exceedingly aware of the value of a crisis plan. In the development of a crisis response plan, schools should review district and state crisis intervention manuals and modify them according to local needs. A school-level crisis plan may include the formation of a crisis response team with one person as the designated coordinator. In addition to school personnel, the team may also include representation from: law enforcement; fire and rescue; EMS; mental health agencies; parent-teacher organizations; hospitals, domestic violence shelters; health, social service, and emergency management agencies; rape crisis shelters; the faith community; teachers unions; and organizations such as the Red Cross.

A school’s crisis response plan should assign roles and responsibilities to all team members and partners and should consider the potential need for assistance from the district, other schools, or outside groups. Schools should be prepared for events that may impact multiple schools in a geographic area (such as a natural disaster or terrorist attack), for a crisis in the community that may necessitate assistance by the school, and for potential failures in traditional communication systems.

As any educator knows, the key to success is repetition and practice. Thus, prior to a crisis, schools should ensure that key staff members are up-to-date on CPR and first aid training and that all students and staff members are familiar with and have practiced evacuation procedures. Schools may also want to consider developing a “go box.” A go box can be a valuable resource for the crisis response team in its efforts to coordinate an immediate response. The box could contain phone numbers for emergency responders and other key agencies, a bullhorn, walkie-talkies, a battery-operated laptop computer, a complete list of students, a map of the building, and a floor plan.39

After a crisis has occurred, schools should consider the benefits of re-opening as early as possible. First, following a trauma, children benefit from a return to normal routines;40 crises disrupt routines and fill children with a sense of uncertainty. A return to school helps children feel safe and secure. Second, the school can provide resources for students and staff. Schools may want to consider bringing in grief counselors for students and staff. In addition, being with others directed affected by the crisis can help to normalize reactions.

To prepare for the long-term impact of crises, schools may want to put into place procedures for identifying students and staff who require ongoing counseling and psychological...
services. Schools should also anticipate that anniversary dates and other special events may be difficult, reminding students and staff of the trauma, and may want to consider having additional services available.

7) Integrate school, family, and community efforts to prevent unintentional injuries, violence, and suicide. Children grow and develop in families, neighborhoods, and schools. It is important for children to receive consistent messages regarding injury prevention from all systems in which they operate. If parents, for example, send a message that violence is acceptable, then the school’s message of nonviolence is less likely to be internalized. Schools can help ensure consistency in message by involving families in an integral way, in the school environment. Unfortunately, sometimes schools face barriers to family involvement. Some families may have had negative experiences during their own schooling; some have language barriers; some are working long hours and/or multiple jobs; and some are elderly. To overcome these multiple barriers, schools need to think beyond parent education and brainstorm ways to support families in the school community and foster their active participation in their child’s school. The focus should be on familial involvement both with one’s child and with the broader school community—families should feel invested not only in the success of their child, but in the broader success of the school. Schools can encourage families to volunteer to provide supervision for students on the playground, in the cafeteria, or on school trips; to actively participate in school committees and parent teacher organizations; and to communicate on a regular basis with school staff. Schools may also want to consider developing a parent room where parents are welcome to come during school hours to visit with each other, read about current school events, and talk with school staff.

Schools also need to educate, support, and involve family members in injury prevention efforts. Families want to keep their children safe, but sometimes need information in order to do so. Schools can educate families about the importance of injury prevention through workshops, newsletters, Internet sites, public television, and other community activities. Topics to be discussed may include risk factors for suicide and violence; effective measures to prevent injuries, such as using bicycle helmets and restricting access to alcohol, poisons, medicines, and firearms; implementing graduated approaches to beginning driving; requiring seat-belt use; and using conflict resolution techniques.

To support families, schools should be prepared to link families with school and community-based programs such as booster seat loaner programs, conflict resolution training, and mental health services. Schools should consider formalizing relationships with community partners. Schools that have formal agreements with community organizations are more likely to have an overall collaborative approach—50 percent of schools with formal agreements had staff attend meetings with community providers as compared to 39 percent of schools without formal agreements. Schools can build relationships with community organizations by making school facilities available for community-sponsored leagues and community events. Community-based injury prevention organizations such as Mothers Against Drunk Driving and Boys and Girls Clubs of America can be provided access to school facilities during nonschool hours and can be invited to make presentations during school hours to students, staff, or parent teacher organizations. Schools can also encourage student and family participation in the community by having students complete service projects with local community agencies and by organizing activities such as a clean-up of a local playground.

8) For all school personnel, provide regular staff development opportunities that impart the knowledge, skills, and confidence to effectively promote safety and prevent unintentional injury, violence, and suicide, and support students in their efforts to do the same. Pre-service education is one avenue through which schools can provide support to staff. Injury prevention pre-service education can focus on topics such as the ways in which environmental changes and conflict resolution can be integrated into academic subjects. For example, teachers can begin a discussion with students about how Martin Luther King, Jr., used his conflict resolution skills or health education classes can include a component on motor vehicle safety. Staff development can also include general classroom techniques to promote a safe environment such as proactive classroom management, cooperative learning, social skills training, and environmental modification. Schools should consider offering staff development whenever new or revised injury prevention curricula, policies, or equipment are introduced. It is important to include all staff, such as administrators, bus drivers, cafeteria workers, and grounds and custodial staff, in injury prevention efforts—every staff person has a vital role to play in injury prevention at school.

In addition to ensuring that staff members are knowledgeable about injury prevention, staff should be trained and supported as positive role models for a safe and healthy lifestyle. Schools can support positive role modeling by providing health promotion programs that include unintentional injury, violence, and suicide prevention and first aide and CPR education. Schools can also encourage staff members to engage in activities and programs designed to reduce stress such as physical activity and counseling.
Some schools may need to gradually phase-in these recommenda-
tions; other schools may be able to implement all of the recom-
endations immediately; schools should tailor efforts to the rea-
nalness of the school community. Fortunately, there are tools available to assist in determining where to start and focus injury prevention efforts. For example, the School Health Index (SHI)—available online at www.cdc.gov/healthyyouth/shi—is a self-assessment mechanism to help schools determine areas of strength and weakness in injury prevention and general student and school wellness efforts. The SHI can be particularly helpful in helping schools to develop action plans to address areas in need of improvement and develop a time line that is tailored to the school. In addition, the forthcoming Safety Chapter of NASBE’s Fit, Healthy, and Ready to Learn: A School Health Policy Guide provides information about evidence-based policies and practices that schools may want to consider integrating into injury prevention action plans. The important factor is not where a school starts in the process, but the fact that the process is initiated. Prioritization of injury prevention efforts requires coordination, collaboration, and support from a variety of different agencies, organizations, and individuals. However, until injury prevention becomes a national and local priority, schools are destined to have limited success in improving academic achievement. Moreover, prioritizing injury prevention over the long-term results in reductions in costs, absenteeism, and violent behavior; and in improvements in academic achievement, graduation rates, and in student and staff wellness.

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6 Miller and Spicer, “How Safe Are Our Schools?”


8 Miller and Spicer, “How Safe Are Our Schools?”


Injury Prevention...

29 Centers for Disease Control and Prevention, School Health Guidelines to Prevent Unintentional Injuries and Violence; also Barrios et al., "CDC School Health Guidelines to Prevent Unintentional Injuries and Violence."


33 Centers for Disease Control and Prevention, School Health Guidelines to Prevent Unintentional Injuries and Violence.


36 R. W. Blum, C. A. McNeely, and P. M. Rinehart, Improving the Odds: The Untapped Power of Schools to Improve the Health of Teens (Minneapolis, MN: Center for Adolescent Health and Development, University of Minnesota, 2002).


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