

[Image description: Outdoor CCTV monitoring, security cameras at school building.]

Providing a Safe Learning Environment for All Students: A Review of School Security Measures

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Please note: This article describes topics related to school violence that may be distressing or sensitive for some readers. Please take care.

School safety has become a growing concern for US schools (Hsieh et al., 2022). In 2018, school gun incidents rocketed to 119 total incidents, which was an increase of more than 100% from the previous year (School Shooting Database, 2023). For the next two years during the COVID-19 pandemic, school gun incidents stayed at this elevated level (115 and 120 incidents, respectively) despite prolonged closures for many of the nation's schools. As schools reopened, school gun violence spiked to 254 incidents in 2021, 305 incidents in 2022, and 361 incidents in 2023 (School Shooting Database, 2023). In the 13-state Midwest & Plains Equity Assistance Center (MAP Center) region, schools have not been immune to these rises in school gun violence with states served by the MAP Center accounting for 25% of all school gun incidents between 2021 and 2023 (See Table 1, p. 9).

Along with unprecedented school gun violence, student disciplinary issues, including incidents of bullying, appear to be increasing (Belsha, 2022; Irwin et al., 2022). Recent survey data indicate that one -third of teachers reported having experienced at least one incident of verbal or threatening violence, and nearly half of all teachers who plan to leave the profession identify school climate and safety as the main reason for wanting to do so (McMahon et al., 2023). In a survey of parents, most (67%) say that they are more worried about school safety now than at any time in the past five years (Motorola Solutions, 2023). These survey findings are cause for concern. A safe learning environment a necessary condition for students' academic, socio-emotional, wellbeing, and physical development (Hong & Espelage, 2012; Kutsyuruba et al., 2015).



[Image description: Monitor of school security surveillance system showing classes and students.]

Responsibility for school safety does not rest solely with parents and students. The strategies that educators employ in schools may influence student behaviors, attitudes, and reactions in critical ways. Although school leaders have adopted various approaches, one of the main responses to safety concerns has been to strengthen school security (Kolbe, 2020). As a result,

schools have dramatically increased the use of video surveillance, school resource officers (SROs), threat assessment teams, and controlled access to school buildings (Hamlin & Li, 2020). The adoption of these measures has changed how many schools look and feel (Hamlin, 2020), but these changes raise important questions about whether security measures truly improve experiences for all students. School security might increase the frequency of interactions with law enforcement and the likelihood of youth ending up in the criminal justice system (Curran et al., 2021; Servoss, 2017). Some scholars have argued that school security ultimately does more harm than good to the learning environment as a whole, particularly in the case of students from low-income households, students of Color, and students with disabilities (Curran et al., 2021). The purpose of this Equity by Design brief is to consider trends in the use of different types of school security measures and to review research evidence on the outcomes of these measures. Aligning with the Equity Assistance Centers' concern with school integration, we will consider how school security measures may differentially impact students across racial and other identity differences. Because a safe and nurturing learning environment is a fundamental need for all students, this brief is central to MAP Center's goal of ensuring equal educational opportunities for all students.

Understanding School Safety

A safe learning environment creates the foundational conditions necessary for students to flourish (Cornell & Mayer, 2010). Students are unlikely to perform optimally unless their fundamental needs for safety are first met. Researchers have consistently found that safety and academic achievement are interrelated; students who report feeling safe in schools also tend to show higher academic performance (Hong & Espelage, 2012). When educators must devote time and resources to school safety challenges, quality instructional time may decrease (Lacoe, 2016; Ripski & Gregory, 2009). Unsafe schools can also have harmful effects on students' socio-emotional and physical health (Nijs et al., 2014). For example, fear of victimization at school may cause toxic stress and poor social and psychological functioning in youth (Schreck & Miller, 2003).

Safety is often understood as students' freedom from physical or bodily harm; however, school safety has more dimensions (Hamlin, 2021). The National Center on Safe Supportive Learning Environments (2023) defines school safety as a state in which "students are safe from violence, bullying and harassment, and the influence of substance use" (top of page, K-12). Others expand this concept to include "an environment that is free from fear. intimidation, violence, and isolation" (Eith & Trump, 2019, p. 45). By using these broader definitions, school safety has 1) physical, 2) emotional, and 3) structural elements. The physical component of safety refers to bodily harm and injury that may happen from school fights, bullying, assaults, and attacks with weapons, but the emotional component comprises one's perceived ability to express thoughts, feelings, and vulnerabilities. It is a sense of security and trust in the school's social or relational environment. Finally, structural safety encompasses a wide range of factors related to the physical

environment, including the safety of buildings, facilities, and campus grounds (e.g., safety standards, indoor air quality, the quality of playgrounds, and the maintenance of adequate health and hygiene standards). In short, school safety is not only protection from physical bodily harm and victimization, it is also thought to be a combination of relationships and systems that foster emotional and social support in ways that elevate dignity, social connection, and thriving.

The Rise of School Security

A school's security infrastructure refers to the security personnel, technological tools, and physical resources used to protect students in cases of crime, victimization, and emergencies. In 1999, the Columbine mass school shooting in Colorado resulted in 15 deaths. In its aftermath, this tragedy set in motion major changes by spurring an era of expansive investment in school security. Over the past twenty-five years, the growing use of school security has had the effect of creating a 3-billion-dollar industry (Keierleber, 2018). At the time of the Columbine tragedy, only 19% of schools had security cameras, 75% controlled access to buildings, and few had anonymous threat reporting systems in place (NCES, 2022b). By 2020, 91% of schools reported having security cameras, 97% controlled access to buildings; and 66% used anonymous threat reporting systems (NCES, 2022b). Schools are increasingly adopting new technologies, such as bulletproof whiteboards, social media trackers, and threat alert software (Nguyen, 2015).

Nearly half of all public schools now employ SROs (i.e., sworn armed law enforcement) - an increase from one-third of schools doing so only twenty years ago (NCES, 2022a). In the MAP Center Region, all 13 states (IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, OK, SD, WI) have state provisions for SROs. For example, in 2023, Oklahoma moved to expand its use of school resource officers by allocating nearly \$100,000 annually to all school districts for school resource officers and security upgrades. Threat assessment teams (i.e., schoolbased teams that evaluate threats of violence in the school community) have also become commonplace. In the MAP Center region, Ohio mandated all public schools to implement threat assessment teams in 2020 though it has had the highest number of school gun incidents in the 13state region during the past three years (see Table 1).



[Image description: Security guard patrolling at school.]

Research on School Security Measures and Protocols

Given the rise of school security, research offers insights for leaders that can inform how they invest in and implement different security measures. It is important to point out that while informative, research on school security often requires cautious interpretation because most school security studies are non-causal correlational analyses that examine associations between safety outcomes and a particular safety measure. Whether a specific school security measure causes either a positive or negative safety outcome remains uncertain. Moreover, as much as commonly used school security measures improve school safety, they also can have disproportionate impact across student groups.

Security Equipment and Technologies

Schools have rapidly added video surveillance, controlled access, and anonymous threat reporting systems to their security apparatus in the past two decades. Metal detectors have a longer history than most of these measures, being implemented to prevent gun violence as early as the 1980s (Schildkraut & Grogan, 2019). It is estimated that 12% of middle and high schools use metal detectors (NCES, 2022a). In 2020, only 6% of schools performed random checks with metal detectors and 3% did daily searches of students (National Center for Education Statistics, 2022). Metal detectors are most frequently used in cities in lower income schools with higher proportions of Black and Latine students (Addington, 2018). In reviews of published studies, researchers have found that metal detectors consistently reduce student perceptions of school safety (Hankin et al.,

2011) while school administrators express mixed views on their effectiveness (Garcia, 2003).

It is unclear if the benefits of metal detectors outweigh their disadvantages. In the early 1990s, metal detectors were found to be associated with decreases in the carrying of weapons in schools in a study done in New York City (Ginsberg, 1993). Outside of this one study, there is little evidence that metal detectors reduce school violence, but several studies do suggest that metal detectors lower students' perceptions of school safety (Hankin et al., 2011). On the surface, metal detectors are relatively inexpensive. However, the staff needed to operate them appropriately can create costs for school districts (DeAngelis et al., 2011). Along with metal detectors, districts have invested in physical barriers and biometric systems (e.g., fingerprint scanners). Unfortunately, research has not caught up with the scale of investment. Very few studies have tested whether these measures enhance school safety or not. Existing studies largely examine student perceptions of these measures and find that they tend to raise fear and lower perceived safety in urban school communities (Addington, 2018; Hamlin, 2020).

Video Surveillance

Security cameras and mounted video surveillance are now prevalent in schools according to the US Department of Education (NCES, 2022a). In an analysis of more than 50,000 students in 98 schools, students reported lower perceptions of safety in schools with more widespread use of security cameras – although Black students had higher perceived school safety in schools with more security cameras (Johnson et al., 2018). Fisher and colleagues (2021) found that security cameras were not linked to decreases in school crime, exclusionary discipline, or social disturbances in their analysis of national data. Excepting these studies, the overall evidence base on the effects of school security cameras is underdeveloped. Some scholars have underscored ethical and privacy concerns about school video surveillance (Warnick, 2007). If such surveillance is used, Warnick (2007) argues that schools should adhere to the following guidelines:

- Empower students, teachers, parents, and staff by allowing them access to video surveillance when such access can help them to defend their rights.
- Ensure that students, teachers, parents, and staff know the policies governing the use of school security cameras.
- Limit the use of security cameras and allow for ongoing scrutiny of them in the school community.

Anonymous/Confidential Reporting Systems

Anonymous/Confidential Reporting Systems (or tip lines) provide a way for students, parents, and community members to report threats of school violence (including self-harm) without fear of retribution (Hsieh et al., 2022). School administrators, law enforcement, and mental health professionals usually operate these lines 24 hours a day. Approximately half of middle and high schools say that they use Anonymous/Confidential Reporting Systems. They are mostly used in large, low socioeconomic, and suburban schools (Planty et al., 2020). There are also statewide Anonymous/Confidential Reporting systems. These statewide reporting systems might be one way of extending access to Anonymous/ Confidential Reporting Systems for students in lower income districts in rural and urban areas (Stein-Seroussi et al., 2023). In Table 2 (p. 10), Indiana, Oklahoma, Iowa, and Nebraska currently lack statewide reporting systems within the 13-state MAP region.

Anonymous/confidential Reporting Systems have shown potential to bring to light instances of bullying, threats of gun violence, and cases of possible self-harm (Payne & Elliot, 2011; Stein-Seroussi et al., 2023). To test the effects of these systems, researchers recruited eight schools to participate in Miami's the Say Something Anonymous Reporting System. Then the researchers matched these schools to eleven Miami schools that did not participate in the System (Hsieh et al., 2022). Survey results indicated that students in schools with access to the Say Something reporting system had higher perceived school safety and less exposure to violence. This study is one of the strongest to date on these types of systems, and it suggests that tip lines can produce positive safety outcomes for lowincome and students of Color in cities. Importantly, these systems do not seem to create negative perceptions of school safety as much as other visible security measures (e.g., metal detectors) do.

School Resource Officers and Security Personnel

To help prevent crime and violence on school grounds, 51% of schools have a

school resource officer (SRO) (i.e., sworn officer who routinely carries on firearm) and 65% have at least one security staff member (NCES, 2021). A recurring criticism of SROs is that they facilitate a school-to-prison pipeline by increasing interactions between police and low-income students, students of Color, and students with disabilities. However, the growth of SROs has coincided with a sharp decline (by 75%) of juvenile arrest rates in past thirty years (Office of Juvenile Justice and Delinguency Prevention, 2019). While there continues to be much debate about SROs, all 13 states in the MAP Center region permit SROs and security guards in schools. Table 3 (p. 11) presents state per-pupil spending on SROs and security guards in the MAP Center's 13state region.

Table 4 (p. 12) presents key studies published on SROs. This research suggests a difficult tradeoff when it comes to SROs. Namely, SROs appear to reduce school crime and violence, but they also increase exclusionary discipline, police referrals, and perceived fear in school (Curran et al., 2021). These negative effects tend to accrue more to Black students than to students of other racial/ethnic backgrounds (Weisburst, 2019). Scholars contend that if schools decide to employ SROs and other security personnel, high quality training that stresses relationships with students and approaches to de-escalation is essential. In research, SROs themselves say that having opportunities to develop relationships with students led them to seek alternatives to student arrest (Thurau & Wald, 2009). For leaders employing SROs, there are resources to leverage as well. The National Association of School Resource Officers is

one that provides training for districts with an emphasis on relationships, education, and mentoring.



[Image description: A security guard looks out over students in the cafeteria at lunch time.]

School Threat Assessment, Emergency Preparedness, and Crisis Response

In the 1990s, rises in school crime and violence precipitated the adoption of zero tolerance policies in schools (Trout et al., 2022). Zero tolerance typically mandates punitive discipline, such as suspension and expulsion, for certain offenses. Nonetheless, there is little support for these policies in the literature with many researchers contending that zero-tolerance policies amplify disparities in exclusionary discipline for Black students with little to no benefit in overall school safety (American Psychological Association Zero Tolerance Task Force, 2008; Curran, 2016). It is estimated that approximately 62% of schools use certain zero tolerance policies (Rand American School Leader Panel, 2022) but many schools have begun replacing these policies with Positive Behavioral

Interventions, Restorative Justice, and other less punitive disciplinary approaches.

As an alternative to zero-tolerance, schoolbased threat assessment aims to identify threats or conflicts and to formulate administrative actions for responding before violence occurs. Threat assessment teams consist of teachers, administrators, and other school personnel. Around 64% of schools use threat assessment (NCES, 2021) and nine states require schools to have threat assessment teams. In a review of 23 studies, the use of threat assessment was related to improvements in school climate and safety but was also associated with disparities in the number of threat identifications received by male students, Black students, and students with disabilities (Ross et al., 2022). Some studies have found that threat assessment do not lead to disparities among white, Black, and Latine students in out-of-school suspension, school transfers, and legal actions (Cornell et al., 2018). In Florida, which mandates that schools have threat assessment teams, Maeng et al. (2023) examined 1,102 cases and found that Black, Latine, and white students with whom a threat assessment was conducted had comparable disciplinary and law enforcement outcomes to those who did not. These divergent findings suggest that it may be how schools implement threat assessment that determines its overall effectiveness.

Among other formal safety protocols, 96% of schools have a written plan that describes procedures to deal with an active shooter event; about 75% of schools had such plans only fifteen years ago (NCES, 2021). School teams also develop formal plans and procedures to respond to natural disasters and medical emergencies. These written strategies are often accompanied by routine drills, which can have negative effects on children who are required to participate in such drills. Even though research is quite limited on the unintended negative effects of active shooter and other emergency drills, leaders may need to use drills judiciously and to consider approaches to lessening potential emotional distress that may be induced when drills are done (Schildkraut & Nickerson, 2022).



[Image description: Feminine-presenting high school student holding a sign that says, "Fear has no place in school!"]

Conclusion

For over 25 years, schools have become fortified against violence by strengthening security measures. Polls suggest that the public largely supports investments in school security (Burton et al., 2021). In many cases though, the sizable investment in security lacks a firm evidence base supporting it. One concern is that limited funds are being diverted to security measures that have little rigorous evidence underpinning their use. Heavy security, police patrols, metal detectors, physical barriers, and video surveillance may reduce actual incidents of victimization while simultaneously lowering perceptions of school safety among parents, teachers, and students (Cornell & Mayer, 2010; Mowen & Freng, 2019). Leaders need to consider which safety strategies have shown promise under credible research designs, and which approaches require more research before further investments can confidently be made in them. When implementing security measures, leaders also need to anticipate potential downsides and provide training to ensure that security measures do not end up doing more harm than good. Without high-quality training, some studies indicate that school security can be overly focused on preventing physical harm in ways that could have negative side-effects on the psychological aspects of student safety.

To mitigate potential problems with school security, the President's Task Force on 21st Century policing proposed the following guidance for school leaders (Kearns, 2015):

- Remove procedures that push students into the juvenile justice system.
- Promote alternatives to heavy security and punitive discipline, such as <u>restorative justice</u>, conflict resolution, and behavioral skills strategies.
- Use instructional approaches that help students to acquire <u>positive behavioral</u> competences and to redirect their energies on learning.
- Use proportional responses when reacting to student misbehavior.
- Place limits on the use of SROs and reduce their involvement in school discipline.

Schools have adopted strategies (e.g., SEL programs, restorative practices, and counseling services) that are responsive to federal guidance. They can elicit feedback from parents and the local community to develop balanced safety plans. Additionally, schools may consider employing proactive approaches to school safety by engaging in professional development that centers the facilitation of safe and inclusive school culture and climates. The combination of programs, professional development, and partnerships that work alongside security measures may be critical to ensuring school security measures are used in ways that contribute to safe and positive learning environments.

Table 1. Recent school gun incidents in 13-state MAPCenter Region (2021-2023)

State	School Gun Incidents (#)
Ohio	56
Illinois	51
Michigan	29
Indiana	21
Wisconsin	21
Minnesota	13
Missouri	13
Oklahoma	11
Kansas	9
lowa	5
North Dakota	2
Nebraska	2
South Dakota	0
Total Incidents	233

Source. The K-12 School Shooting Database documents incidents when a gun is brandished, is fired, or a bullet hits school property for any reason. Author's calculations.

Table 2. Statewide Reporting Systems in 13-state MAPRegion

State	Statewide Reporting Systems		
Ohio	Confidential System		
Illinois	Confidential System		
Michigan	Confidential System		
Indiana	None		
Wisconsin	Confidential System		
Minnesota	In Progress		
Missouri	Confidential System		
Oklahoma	None		
Kansas	Anonymous System		
Iowa	None		
North Dakota	Anonymous System		
Nebraska	None		
South Dakota	Confidential System		
Source US Departme	Source US Department of Justice (2023)		

Source. US Department of Justice (2023).

Table 3. State per-pupil spending on personnel in MAPCenter's 13-state region

State	School Resource Officers	Security Guards
Ohio	36.28	20.78
Illinois	41.07	77.36
Michigan	16.41	21.04
Indiana	68.31	14.53
Wisconsin	47.19	19.66
Minnesota	33.13	10.55
Missouri	46.49	20.11
Oklahoma	18.18	4.14
Kansas	30.58	15.10
lowa	20.06	7.81
North Dakota	55.43	16.13
Nebraska	25.47	50.66
South Dakota	34.08	14.83

Source. Urban Education Institute. Author's calculations.

Table 4. Statewide Key studies of SROs and Safety

Author	Research Design	Main Findings
Sorensen et al. (2021)	Variation in student exposure to SROs (Sample: 450 middle schools)	SROs decrease serious violence in schools, but also increase out-of-school suspensions, transfers, expulsions, and police referrals.
Owens (2017)	Variation in schools receiving grants from the US DOJ to hire SROs (Sample: over 200,000 law enforcement agencies nationally)	Police jurisdictions that received grants to hire SROs found more violence, weapons, and drug offenses in schools. SROs led to more arrests of youth but increased overall school safety.
Weisburst (2019)	Individual student variation in exposure to SROs (Sample: 2.5 million students in Texas public middle schools)	SRO exposure increased school discipline for low-level offenses and suspensions were greater for Black students.
Zhang (2019)	Comparison of matched schools (Sample: 238 middle and high schools in West Virginia)	SROs increased reports of drug-related offenses and out- of-school suspensions but decreased violent crimes and school disorder.

About the Author



[Image description: Professional phtoto: Dr. Daniel Hamlin. Masculinepresenting white man.]

Dr. Daniel Hamlin is an Assistant Professor in the Department of Educational Leadership and Policy Studies at the University of Oklahoma, and the MAP Center Equity Fellow for Oklahoma. His research examines the effects of school governance on nontested measures of school performance with an emphasis on school climate, parental involvement and student safety. Hamlin's work appears in a number of scholarly journals, including the American Educational Research Journal, Educational Policy, and Urban Education. He has written research reports for organizations, such as People for Education and Education Next, that have received extensive coverage in the media. Hamlin has received grants from the National Science Foundation, the Ontario Ministry of Education, and the Mathematics of Information Technology and Complex Systems research organization. He has

also served as a grant reviewer for the US Department of Justice. Hamlin earned his Ph.D. in Educational Leadership and Policy from the Ontario Institute for Studies in Education at the University of Toronto where he received the Ken Leithwood Outstanding Thesis of the Year award for his dissertation examining charter schools on non-tested outcomes in Detroit, Michigan. In the classroom, Hamlin has been recognized for instructional excellence, receiving the Derek Bok Award for Excellence in Teaching from Harvard University as well as six teaching awards from Sejong University.

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The mission of the Midwest & Plains Equity Assistance Center is to ensure equity in student access to and participation in high quality, research-based education by expanding states' and school systems' capacity to provide robust, effective opportunities to learn for all students, regardless of and responsive to race, sex, and national origin, and to reduce disparities in educational outcomes among and between groups. The Equity by Design briefs series is intended to provide vital background information and action steps to support educators and other equity advocates as they work to create positive educational environments for all children. For more information, visit http:// www.greatlakesequity.org.

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Recommended Citation: Hamlin, D. (2024). Providing a safe learning environment for all students: A review of school security measures. *Equity by Design* [Brief]. Midwest & Plains Equity Assistance Center.

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The contents of this document were developed under a grant from the U.S. Department of Education (S004D220003). However, the content does not necessarily represent the policy of the Department of Education, and endorsement by the Federal Government should not be assumed.

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