GUN VIOLENCE:
PREDICTION, PREVENTION, AND POLICY

APA PANEL OF EXPERTS REPORT

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GUN VIOLENCE: PREDICTION, PREVENTION, AND POLICY

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SUMMARY: CONCLUSIONS AND RECOMMENDATIONS

Gun violence is an urgent, complex, and multifaceted problem. It requires evidence-based, multifaceted solutions. Psychology can make important contributions to policies that prevent gun violence. Toward this end, in February 2013 the American Psychological Association commissioned this report by a panel of experts to convey research-based conclusions and recommendations (and to identify gaps in such knowledge) on how to reduce the incidence of gun violence—whether by homicide, suicide, or mass shootings—nationwide.

Following are chapter-by-chapter highlights and short summaries of conclusions and recommendations of the report's authors. More information and supporting citations can be found within the chapters themselves.

ANTECEDENTS TO GUN VIOLENCE: DEVELOPMENTAL ISSUES

A complex and variable constellation of risk and protective factors makes persons more or less likely to use a firearm against themselves or others. For this reason, there is no single profile that can reliably predict who will use a gun in a violent act. Instead, gun violence is associated with a confluence of individual, family, school, peer, community, and sociocultural risk factors that interact over time during childhood and adolescence. Although many youths desist in aggressive and antisocial behavior during late adolescence, others are disproportionately at risk for becoming involved in or otherwise affected by gun violence. The most consistent and powerful predictor of future violence is a history of violent behavior. **Prevention efforts guided by research on developmental risk can reduce the likelihood that firearms will be introduced into community and family conflicts or criminal activity. Prevention efforts can also reduce the relatively rare occasions when severe mental illness contributes to homicide or the more common circumstances when depression or other mental illness contributes to suicide.** Reducing incidents of gun violence arising from criminal misconduct or suicide is an important goal of broader primary and secondary prevention and intervention strategies. Such strategies must also attend to redirecting developmental antecedents and larger sociocultural processes that contribute to gun violence and gun-related deaths.

ANTECEDENTS TO GUN VIOLENCE: GENDER AND CULTURE

Any account of gun violence in the United States must be able to explain both why males are perpetrators of the vast majority of gun violence and why the vast majority of males never perpetrate gun violence. Preliminary evidence suggests that changing perceptions among males of social norms about behaviors and characteristics associated with masculinity may reduce the prevalence of intimate partner and sexual violence. Such interventions need to be

further tested for their potential to reduce gun violence. **The skills and knowledge of psychologists are needed to develop and evaluate programs and settings in schools, workplaces, prisons, neighborhoods, clinics, and other relevant contexts that aim to change gendered expectations for males that emphasize self-sufficiency, toughness, and violence, including gun violence.**

WHAT WORKS: GUN VIOLENCE PREDICTION AND PREVENTION AT THE INDIVIDUAL LEVEL

Although it is important to recognize that most people suffering from a mental illness are not dangerous, for those persons at risk for violence due to mental illness, suicidal thoughts, or feelings of desperation, mental health treatment can often prevent gun violence. Policies and programs that identify and provide treatment for all persons suffering from a mental illness should be a national priority. Urgent attention must be paid to the current level of access to mental health services in the United States; such access is woefully insufficient. Additionally, it should be noted that behavioral threat assessment is becoming a standard of care for preventing violence in schools, colleges, and the workplace and against government and other public officials. Threat assessment teams gather and analyze information to assess if a person poses a threat of violence or self-harm, and if so, take steps to intervene.

WHAT WORKS: GUN VIOLENCE PREVENTION AT THE COMMUNITY LEVEL

Prevention of violence occurs along a continuum that begins in early childhood with programs to help parents raise emotionally healthy children and ends with efforts to identify and intervene with troubled individuals who are threatening violence. The mental health community must take the lead in advocating for community-based collaborative problem-solving models to address the prevention of gun violence. Such models should blend prevention strategies in an effort to overcome the tendency within many community service systems to operate in silos. There has been some success with community-based programs involving police training in crisis intervention and with community members trained in mental health first aid. These programs need further piloting and study so they can be expanded to additional communities as appropriate. In addition, public health messaging campaigns on safe gun storage are needed. The practice of keeping all firearms appropriately stored and locked must become the only socially acceptable norm.

WHAT WORKS: POLICIES TO REDUCE GUN VIOLENCE

The use of a gun greatly increases the odds that violence will lead to a fatality: This problem calls for urgent action. **Firearm prohibitions for high-risk groups—domestic violence offenders, persons convicted of violent misdemeanor crimes, and individuals with mental illness who have been adjudicated as being a threat to themselves or to others—have been shown to reduce violence.** The licensing of handgun purchasers, background check requirements for all gun sales, and close oversight of retail gun sellers can reduce the diversion of guns to criminals. Reducing the incidence of gun violence will require interventions through multiple systems, including legal, public health, public safety, community, and health. Increasing the availability of data and funding will help inform and evaluate policies designed to reduce gun violence.

1 INTRODUCTION

Dewey Cornell, PhD, and Nancy G. Guerra, EdD

Gun violence is an important national problem leading to more than 31,000 deaths and 78,000 nonfatal injuries every year. Although the rate of gun homicides in the United States has declined in recent years, U.S. rates remain substantially higher than those of almost every other nation in the world and are at least seven times higher than those of Australia, Canada, France, Germany, India, Italy, Japan, South Korea, Spain, Sweden, the United Kingdom, and many others (see Alpers & Wilson, 2013).

Guns are not a necessary or sufficient cause of violence and can be used legally for a variety of sanctioned activities. Still, they are an especially lethal weapon used in approximately two thirds of the homicides and more than half of all suicides in the United States. Every day in the United States, approximately 30 persons die of homicides and 53 persons die of suicides committed by someone using a gun (Centers for Disease Control and Prevention [CDC], 2013a). Guns also provide individuals with the capacity to carry out multiple-fatality shootings that inflict great trauma and grief on our society, and the public rightly insists on action to make our communities safer.

Every day in the United States, approximately 30 persons die of homicides and 53 persons die of suicides committed by someone using a gun.

Gun violence demands special attention. At the federal level, President Barack Obama announced a new "Now Is the Time" plan (White House, 2013) to address firearm violence to better protect children and communities and issued 23 related executive orders to federal agencies. The importance of continued research to address firearm violence is reflected in the 2013 report of the Institute of Medicine (IOM) and the National Research Council (NRC) *Priorities for Research to Reduce the Threat of Firearm-Related Violence*. This report calls for a public health approach that emphasizes the importance of accurate information on the number and distribution of guns in the United States, including risk factors and motivations for acquisition and use, the association between exposure to media violence and any subsequent perpetration of gun violence, and how new technology can facilitate prevention. The report also outlines a research agenda to facilitate programs and policies that can reduce the occurrence and impact of firearm-related violence in the United States.

Psychology can make an important contribution to policies that prevent gun violence. Rather than debate whether "people" kill people or "guns" kill people, a reasonable approach to facilitate prevention is that "people with guns kill people." The problem is more complex than simple slogans and requires careful study and analysis of

the different psychological factors, behavioral pathways, social circumstances, and cultural factors that lead to gun violence. Whether prevention efforts should focus on guns because they are such a powerful tool for violence, on other factors that might have equal or greater impact, or on some combination of factors should be a scientific question settled by evidence.

Toward this end, the American Psychological Association (APA) commissioned this report, with three goals. First, this report is intended to focus on gun violence, recognizing that knowledge about gun violence must be related to a broader understanding of violence. Second, the report reviews what is known from the best current science on antecedents to gun violence and effective prevention strategies at the individual, community, and national levels. Finally, the report identifies policy directions, gaps in the literature, and suggestions for continued research that can help address unresolved questions about effective strategies to reduce gun violence. For over a decade, research on gun violence has been stifled by legal restrictions, political pressure applied to agencies not to fund research on certain gun-related topics, and a lack of funding. The authors of this report believe the cost of gun violence to our society is too great to allow these barriers to remain in place.

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THE ROLE OF MENTAL HEALTH AND MENTAL ILLNESS

An important focus of this report is the role that mental health and mental illness play in why individuals commit firearm-related violence and how this can inform preventive efforts. This focus undoubtedly brings to mind shootings such as those in Newtown, CT, Aurora, CO, and Tucson, AZ. However, it is important to realize that mass fatality incidents of this type, although highly publicized, are extremely rare, accounting for one tenth of 1% of all firearm-related homicides in the United States (CDC, 2013a). Moreover, serious mental illness affects a significant percentage of the U.S. population, with prevalence estimates in the general population as high as 5% (Substance Abuse and Mental Health Services Administration [SAMHSA], 2012). This is quite significant, given that the term *serious mental illness* is typically reserved for the most debilitating kinds of mental disorder, such as schizophrenia, bipolar disorder, and the most severe forms of depression, but can include other mental disorders that result in acute functional impairment.

Although many highly publicized shootings have involved persons with serious mental illness, it must be recognized that persons with serious mental illness commit only a small proportion of firearm-related homicides; the problem of gun violence cannot be resolved simply through efforts focused on serious mental illness (Webster & Vernick, 2013a). Furthermore, the overwhelming majority of people with serious mental illness do not engage in violence toward others and should not be stereotyped as dangerous (Sirotich, 2008).

It also is important to recognize that for the small proportion of individuals whose serious mental illness does predispose them to violence, there are significant societal barriers to treatment. Psychiatric hospitalization can be helpful, but treatment can be expensive, and there may not be appropriate follow-up services in the community. Civil commitment laws, which serve to protect individuals from being unreasonably detained or forced into treatment against their will, can also prevent professionals from treating someone who does not recognize his or her need for treatment.

Other kinds of mental disorders that do not rise to the level of serious mental illness also are associated with gun violence and criminal behavior generally. For example, conduct disorder and antisocial personality disorder are associated with increased risk for violence. (This link is not surprising because violent behavior is counted as one of the symptoms that helps qualify someone for the diagnosis.) Nevertheless, there are well-established, scientifically validated mental health treatment programs for individuals with these disorders, such as multisystemic therapy, that can reduce violent recidivism (Henggeler, 2011). Substance abuse is another form of mental disorder that is a risk factor for violence in the general population and also increases the risk for violence among persons with serious mental illness (Van Dorn, Volavka, & Johnson, 2012).

These observations reflect the complexity of relationships among serious mental illness, mental disorders, and violence. In contrast to homicide, suicide accounts for approximately 61% of all firearm fatalities in the United States (CDC, 2013a), and more than 90% of persons who commit suicide have some combination of depression, symptoms of other mental disorders,

and/or substance abuse (Moscicki, 2001). This suggests that mental health and mental illness are especially relevant to understanding and preventing suicide, the leading type of firearm-related death.

PREDICTION AND PREVENTION

The prediction of an individual's propensity for violence is a complex and challenging task for mental health professionals, who often are called upon by courts, correctional authorities, schools, and others to assess the risk of an individual's violence. Mental health professionals are expected to take action to protect potential victims when they judge that their patient or client poses a danger to others. However, decades of research have established that there is only a moderate ability to identify individuals likely to commit serious acts of violence. Much depends on the kind of violence and the time frame for prediction. For example, there are specialized instruments for the assessment of violence risk among sex offenders, civilly committed psychiatric patients, and domestic violence offenders. However, the time frame and focus for these predictions often are broadly concerned with long-term predictions that someone will ever be violent with anyone rather than whether a person will commit a particular act of targeted violence.

Research has moved the field beyond the assessment of "dangerousness" as a simple individual characteristic applicable in all cases to recognize that predictive efforts must consider a range of personal, social, and situational factors that can lead to different forms of violent behavior in different circumstances. Moreover, risk assessment has expanded to include concepts of risk management and interventions aimed at reducing risk.

Decades of research have established that there is only a moderate ability to identify individuals likely to commit serious acts of violence.

In making predictions about the risk for mass shootings, there is no consistent psychological profile or set of warning signs that can be used reliably to identify such individuals in the general population. A more promising approach is the strategy of *behavioral threat assessment*, which is concerned with identifying and intervening with individuals who have communicated threats of violence or engaged in behavior that clearly indicates planning or preparation to commit a violent act. A threat assessment approach recognizes that individuals who threaten targeted violence are usually troubled, depressed, and despondent over their circumstances in life. A threat assessment leads to interventions intended to reduce the risk of violence by taking steps to address the problem that underlies the threatening behavior. Such problems can range from workplace conflicts to schoolyard bullying to serious mental illness. One of the most influential threat assessment models was developed by the U.S. Secret Service (Fein et al., 2002; Vossekuil, Fein, Reddy, Borum, & Modzelski, 2002) and has been adapted for use in schools, colleges, business settings, and the U.S. military.

The limited ability to make accurate predictions of violence has led some to question whether prevention is possible. This is a common misconception, because *prevention does not require prediction of a specific individual's behavior*. For example, public health campaigns have reduced problems ranging from lung cancer to motor vehicle accidents by identifying risk factors and promoting safer behaviors even though it is not possible to predict whether a specific individual will develop lung cancer or have a motor vehicle accident (Mozaffarian, Hemenway, & Ludwig, 2013). A substantial body of scientific evidence identifies important developmental, familial, and social risk factors for violence. In addition, an array of rigorously tested psychological and educational interventions facilitate healthy social development and reduce aggressive behavior by teaching social skills and problem-solving strategies. It is important that policymakers and stakeholders recognize the value of prevention.

Prevention measures also should be distinguished from security measures and crisis response plans. Prevention must begin long before a gunman comes into a school or shopping center. Prevention efforts are often conceptualized as taking place on primary, secondary, and tertiary levels:

- *Primary prevention* (also called universal prevention) consists of efforts to promote healthy development in the general population. An example would be a curriculum to teach all children social skills to resist negative peer influences and resolve conflicts peacefully.
- *Secondary prevention* (also called selective prevention) involves assistance for individuals who are at increased risk for violence. Mentoring programs and conflict-mediation services are examples of such assistance.
- *Tertiary prevention* (also called indicated prevention) consists of intensive services for individuals who have engaged in some degree of aggressive behavior and could benefit from efforts to prevent a recurrence or escalation of aggression. Programs to rehabilitate juvenile offenders are examples.

Throughout this report, we discuss evidence-based prevention programs relevant to the issue of firearm-related violence.

Research can help us understand and prevent gun violence. The psychological research summarized in this report can inform public policy and prevention efforts designed to promote public safety and reduce violence. Gun violence is not a simple, discrete category of crime; it shares characteristics with other forms of violence, and it can be a product of an array of cultural, social, psychological, and situational factors. Nevertheless, there is valuable psychological knowledge that can be used to make our communities safer.

ANTECEDENTS TO GUN VIOLENCE: DEVELOPMENTAL ISSUES

2

Robert Kinscherff, PhD, JD; Nancy G. Guerra, EdD; and Ariel A. Williamson, MA

Youth gun violence is often sensationalized and misunderstood by the general public, in part because of increasingly public acts of violence and related media coverage (Snyder & Sickmund, 2006; Williams, Tuthill, & Lio, 2008). In truth, only a small number of juvenile offenders commit the majority of violent juvenile crimes in the United States (Williams et al., 2008). Most juvenile offenders commit "nonperson" offenses, usually in terms of property and technical (parole) violations (Sickmund, Sladky, Kang, & Puzzanchera, 2011).

For example, in 2010, the majority of juvenile offenses were nonperson offenses such as property offenses (27.2%), drug offenses (8.4%), public order offenses (10.7%), technical violations (14.4%), and status offenses (4.6%)—that is, crimes defined by minor (under age 18) status, such as alcohol consumption, truancy, and running away from home (Sickmund et al., 2011). Additionally, young adults between the ages of 18 and 34 are the most likely to commit violent crimes like homicide and to do so using a gun, compared with individuals under 18 (Cooper & Smith, 2011).

A subgroup of youth is particularly vulnerable to violence and victimization. Minority males constitute a disproportionate number of youths arrested and adjudicated, with 60% of all arrested youths identifying as part of a racial/ethnic minority group (Sickmund et al., 2011). Males also outnumber females in arrest rates for every area except status offenses and technical violations. Urban African American males are at substantially greater risk for involvement in gun-related homicides as perpetrators and as victims (CDC, 2013a; Spano, Pridemore, & Bolland, 2012). However, the majority of the infrequent but highly publicized shootings with multiple fatalities, such as those at Sandy Hook Elementary School or the Aurora, CO, movie theater, have been committed by young White males.

But it also is important to understand that most young males of all races and ethnicities—and most people in general—are not involved in serious violence and do not carry or use guns inappropriately.

This presents a picture of a small number of youths and young adults who are at an increased risk for involvement in gun violence. In the United States, these youths are somewhat more likely to be males of color growing up in urban areas. But it also is important to understand that most young males of all races and ethnicities—and most people in general—are not involved in serious violence and do not carry or use guns inappropriately.

How did this small subset of youths and young adults come to be involved in serious gun violence? Is there a

"cradle-to-prison" pipeline, particularly for youths of color living in poverty and in disadvantaged urban areas, that triggers a cascade of events that increase the likelihood of gun violence (Children's Defense Fund, 2009)? A developmental perspective on antecedents to youth gun violence can help us design more effective prevention programs and strategies.

Developmental factors beginning in utero may increase the risk of aggressive behavior and lead to gun violence—especially when guns are readily available and part of an aggressive or delinquent peer culture.

This chapter describes the biological and environmental risk factors that begin early in development and continue into adolescence and young adulthood. Developmental studies that link children's aggressive behavior to more serious involvement in the criminal justice system suggest the accumulation and interaction of many risks in multiple contexts (Dodge, Greenberg, Malone, & Conduct Problems Prevention Research Group, 2008; Dodge & Pettit, 2003). There is no single biological predisposition, individual trait, or life experience that accounts for the development and continuity of violent behavior or the use of guns. Rather, violence is associated with a confluence of individual, family, school, peer, community, and sociocultural risk factors that interact over time during childhood and adolescence (Brennan, Hall, Bor, Najman, & Williams, 2003; Dodge & Pettit, 2003). Risk for gun violence involves similar risk processes, although the complexity and variability of individuals means there is no meaningful profile that allows reliable prediction of who will eventually engage in gun violence. Nevertheless, developmental factors beginning in utero may increase the risk of aggressive behavior and lead to gun violence—especially when guns are readily available and part of an aggressive or delinquent peer culture.

EARLY-ONSET AGGRESSION

Early onset of aggressive behavior significantly increases risk for later antisocial behavior problems. The most consistent and powerful predictor of future violence is a history of violent behavior, and risk increases with earlier and more frequent incidents. Longitudinal work has shown that having a first arrest between 7 and 11 years of age is associated with patterns of long-term adult offending (Loeber, 1982). Children who are highly aggressive throughout childhood and continue to have serious conduct problems during adolescence have been identified as "life-course persistent" (LCP) youths (Moffitt, 1993). Examining longitudinal data from a large birth cohort in New Zealand, Moffitt (1993) created a taxonomy of antisocial behavior that differentiates LCP youths from an "adolescence-limited" subgroup. The latter subgroup characterizes those who engage in antisocial behaviors during adolescence and usually desist by adulthood. By contrast, LCP youths display more severe early aggression in childhood and develop a pattern of chronic violence during adolescence and into adulthood.

Both biological and environmental risks during prenatal development, infancy, and early childhood contribute to the development of early-onset aggression and the LCP developmental trajectory (Brennan et al., 2003; Dodge & Pettit, 2003; Moffitt, 2005). Pre- and postnatal risks associated with early-onset aggression include maternal substance abuse during pregnancy, high levels of prenatal stress, low birth weight, birth complications and injuries (especially those involving anoxia), malnutrition, and exposure to environmental toxins like lead paint (Brennan et al., 2003; Dodge & Pettit, 2003). According to Moffitt (1993), these early developmental risks disrupt neural development and are associated with neuropsychological deficits, particularly in executive functioning and verbal abilities.

Along with neuropsychological deficits, poor behavioral control and a difficult temperament are associated with the development of early-onset aggression (Dodge & Pettit, 2003; Moffitt, 1993). Children with difficult temperaments are typically irritable, difficult to soothe, and highly reactive. These patterns of behavior often trigger negative and ineffective reactions from parents and caregivers that can escalate into early aggressive behavior (Dodge & Pettit, 2003; Wachs, 2006). Family influences, such as familial stress and negative parent–child interactions, can interact with a child's individual characteristics, leading to increased aggressive behavior during childhood.

FAMILY INFLUENCES

Highly aggressive children who engage in serious acts of violence during later childhood and adolescence also are exposed to continued environmental risks throughout development (Dodge et al., 2008). The family context has been found to be quite influential in the development and continuity of antisocial behavior. Particularly for early-onset aggressive youths raised in families that are under a high degree of environmental stress, aggressive child behavior and negative parenting practices interact to amplify early-onset aggression. Examples of family risk factors include low parent–child synchrony and warmth, poor or disrupted attachment, harsh or inconsistent discipline (overly strict or permissive), poor

parental monitoring, the modeling of antisocial behavior, pro-violent attitudes and criminal justice involvement, and coercive parent–child interaction patterns (Dodge & Pettit, 2003; Farrington, Jolliffe, Loeber, Stouthamer-Loeber, & Kalb, 2001; Hill, Howel, Hawkins, & Battin-Pearson, 1999; Patterson, Forgatch, & DeGarmo, 2010).

Prevention research has shown that intervening with at-risk families to improve parenting skills can disrupt the pathway from early-onset aggressive behavior to delinquency in adolescence.

Coercive parent–child interactions have been associated with the emergence of aggressive behavior problems in children (Patterson et al., 2010). In these interactions, children learn to use coercive behaviors such as temper tantrums to escape parental discipline. When parents acquiesce to these negative behaviors, they inadvertently reward children for coercive behaviors, reinforcing the idea that aggression or violence is adaptive and can be used instrumentally to achieve goals. These interaction patterns tend to escalate in their severity (e.g., from whining, to temper tantrums, to hitting, etc.) and frequency, leading to increased aggression and noncompliance (Patterson et al., 2010). Such behaviors also generalize across contexts to children's interactions with others outside the home, including with teachers, other adults, and peers. Indeed, prevention research has shown that intervening with at-risk families to improve parenting skills can disrupt the pathway from early-onset aggressive behavior to delinquency in adolescence (Patterson et al., 2010).

Other family risk factors for youths with early predispositions to aggression may be especially relevant to increased risk for gun violence. For instance, research has shown that many families with children own firearms and do not keep them safely stored at home (Johnson, Miller, Vriniotis, Azrael, & Hemenway, 2006). Although keeping firearms at home is not a direct cause of youth gun violence, the rates of suicides, homicides, and unintentional firearm fatalities are higher for 5–14-year-olds who live in states or regions in which rates of gun ownership are more prevalent (Miller, Azrael, & Hemenway, 2002). Poor parental monitoring and supervision, which are more general risk factors for involvement in aggression and violent behaviors (Dodge et al., 2008), may be especially salient in risk for gun violence. For example, impulsive or aggressive children who are often unsupervised and live in a home with access to guns may be at risk.

The family also is an important context for socialization and the development of normative beliefs or perceptions about appropriate social behavior that become increasingly stable during early development and are predictive of later behavior over time (Huesmann & Guerra, 1997). These beliefs shape an individual's social-cognitive understanding about whether and under what circumstances threatened or actual violence is justified. Children who develop beliefs that aggression is a desirable and effective way to interact with others are more likely to use coercion and violence instrumentally to achieve goals or solve problems (Huesmann & Guerra, 1997). Antisocial attitudes and social-cognitive distortions (e.g., problems in generating nonviolent solutions, misperceiving hostile/aggressive intent by others, justifying acts of violence that would be criminal) can also increase risk for violence (Borum & Verhaagen, 2006; Dodge & Pettit, 2003).

Families can play a role in establishing and maintaining normative beliefs about violence and gun usage. For example, pro-violence attitudes and the criminality of parents and siblings during childhood have been found to predict adolescent gang membership and delinquency (Farrington et al., 2001; Hill et al., 1999). Youths from families that encourage the use of guns for solving problems also may be exposed to such attitudes in other contexts (in communities, with peers, and in the media) and may perceive firearms to be an appropriate means to solve problems and protect themselves.

SCHOOL AND PEER INFLUENCES

The school setting is another important context for child socialization. Children who enter school with high levels of aggressive behavior, cognitive or neurobiological deficits, and poor emotional regulation may have difficulty adjusting to the school setting and getting along with peers (Dodge et al., 2008; Dodge & Pettit, 2003). Highly aggressive children who have learned to use aggression instrumentally at home will likely use such behavior with teachers, increasing the chances that they will have poor academic experiences and low school engagement (Patterson et al., 2010). Academic failure, low school interest, truancy, and school dropout are all correlated with increased risk for problem behavior and delinquency, including aggression and violence (Dodge & Pettit, 2003). This risk is strongest when poor academic achievement begins in elementary school and contributes to school underachievement and the onset of adolescent problem behaviors, such as substance use and drug trafficking, truancy, unsafe sexual activity, youth violence, and gang involvement (Dodge et al., 2008; Guerra & Bradshaw, 2008).

Involvement in these risk behaviors also is facilitated by affiliation with deviant peers, particularly during adolescence (Dodge et al., 2008). Research has shown that children who are aggressive, victimized, and academically marginalized from the school setting may suffer high levels of peer rejection that amplify preexisting aggressive behaviors (Dodge et al., 2008; Dodge & Pettit, 2003). Longitudinal work indicates that experiences of academic failure, school marginalization, and peer rejection interact to produce affiliations with similarly rejected, deviant, and/or gang-involved peers. Friendships between deviant peers provide youths with "training" in antisocial behaviors that reinforce and exacerbate preexisting aggressive tendencies (Dishion, Véronneau, & Meyers, 2010; Dodge et al., 2008). Peer deviancy training is a primary mechanism in the trajectory from overt, highly aggressive behaviors during childhood to more covert processes during adolescence, such as lying, stealing, substance use, and weapon carrying (Dishion et al., 2010; Patterson et al., 2010).

Schools that provide safe environments that protect students from bullying or criminal victimization support student engagement, reduce incidents of student conflict that could result in volatile or violent behavior, and diminish risks that students will bring weapons to school.

The larger school context also can interact with youths' experiences of academic failure, peer rejection, and deviant peer affiliations to influence the continuity of antisocial behavior. Poorly funded schools located in low-income neighborhoods have fewer resources to address the behavioral, academic, mental health, and medical needs of their students. In addition, these schools tend to have stricter policies toward discipline, are less clinically informed about problem behaviors, and have stronger zero tolerance policies that result in more expulsions and suspensions (Edelman, 2007). This contextual factor is important, as youths who are attending and engaged in school are less likely to engage in delinquent or violent behavior, whereas marginalized and rejected youths, particularly in impoverished schools, are at increased risk for aggression and violence at school and in their communities. Schools that provide safe environments that protect students from bullying or criminal victimization support student engagement, reduce incidents of student conflict that could result in volatile or violent behavior, and diminish risks that students will bring weapons to school.

Although few homicides (< 2%) and suicides occur at school or during transportation to and from school (Roberts, Zhang, & Truman, 2012) and widely publicized mass school shootings are rare, research indicates that a small number of students do carry guns or other weapons. In 2011, 5.1% of high school students in Grades 9–12 reported carrying a gun in the 30 days prior to the survey, and 5.4% of students had carried a weapon (gun, knife, or club) on school grounds at least once in the 30 days prior to the survey (Eaton et al., 2012). Studies show that youths who carry guns are more likely to report involvement in multiple problem behaviors, to be affiliated with a gang, to overestimate how many of their peers carry guns, and to have a high need for interpersonal safety. For instance, student reports of involvement in and exposure to risk behaviors at school such as physical fighting, being threatened, using substances, or selling drugs on school grounds have been positively correlated with an increased likelihood of carrying weapons to school (Furlong, Bates, & Smith, 2001).

In another study of high school students, 5.5% of urban high school students reported that they carried a gun in the year prior to the study, but students estimated that 32.6% of peers in their neighborhoods carried guns, a substantial overestimation of the actual gun-carrying rates. Lawful, supervised gun carrying by juveniles is not the concern of this line of research; however, when unsupervised youths carry guns in high-violence neighborhoods, they may be more likely to use guns to protect themselves and resolve altercations. Gun-carrying youths in this study had higher rates of substance use, violence exposure, gang affiliation, and peer victimization (Hemenway, Vriniotis, Johnson, Miller, & Azrael, 2011). Additionally, many gun-carrying youths had lower levels of perceived interpersonal safety (Hemenway et al., 2011). Research has also revealed that deviant peer group affiliations during specific periods of adolescent development may increase the risk for gun violence. For example, research findings have shown that gang membership in early adolescence is significantly associated with increased gun carrying over time. This changes somewhat in late adolescence and young adulthood, when gun carrying is linked more to involvement in drug dealing and having peers who illegally own guns (Lizotte, Krohn, Howell, Tobin, & Howard, 2000).

COMMUNITIES MATTER

The community context is an additional source of risk for the development and continuity of antisocial behavior. Living in extremely disadvantaged, underresourced communities with

high levels of crime and violence creates serious obstacles to healthy development. Recent estimates show that currently in the United States, 16.4 million children live in poverty and 7.4 million of those live in extreme poverty (i.e., an annual income of less than half of the federal poverty level; Children's Defense Fund, 2012). One in four children under 5 years of age is poor during the formative years of brain development. In addition, 22% of children who have lived in poverty do not graduate from high school, compared with 6% of children who have never been poor (Children's Defense Fund, 2012). For families and youths, living in poverty is associated with high levels of familial stress, poor child nutrition, elevated risks of injury, and limited access to adequate health care (Adler & Steward, 2010; Patterson et al., 2010). Ethnic minority youth in the United States are overrepresented in economically struggling communities. These environmental adversities can, in turn, compromise children's health status and functioning in other environments and increase the risk for involvement in violent behaviors, contributing significantly to ethnic and cultural variations in the rates of violence (Borum & Verhaagen, 2006).

In a community context, the degree to which children have access to adequate positive resources (e.g., in terms of health, finances, nutrition, education, peers, and recreation), have prosocial and connected relationships with others, and feel safe in their environment can significantly affect their risk for involvement in violent behaviors. Aggressive children and adolescents who are living in neighborhoods with high levels of community violence, drug and firearm trafficking, gang presence, and inadequate housing may have increased exposure to violence and opportunities for involvement in deviant behavior. Compared with communities that have better resources, disenfranchised and impoverished communities may also lack social, recreational, and vocational opportunities that contribute to positive youth development. Youths with high levels of preexisting aggressive behavior and emerging involvement with deviant or gang-involved peers may be especially at risk for increased violent behavior and subsequent criminal justice involvement when exposed to impoverished and high-crime communities.

Exposure to violence in one's community, a low sense of community safety, unsupervised access to guns, and involvement in risky community behaviors . . . all contribute to youths' involvement in gun carrying and gun violence.

Exposure to violence in one's community, a low sense of community safety, unsupervised access to guns, and involvement in risky community behaviors such as drug dealing all contribute to youths' involvement in gun carrying and gun violence. Decreased community perceptions of neighborhood safety and higher levels of social (e.g., loitering, public substance use, street fighting, prostitution, etc.) and physical (e.g., graffiti, gang signs, and discarded needles, cigarettes, and beer bottles) neighborhood disorder have been associated with increased firearm carrying among youths (Molnar, Miller, Azrael, & Buka, 2004). A study of African American youths living in poverty found that those who had been exposed to violence prior to carrying a gun were 2.5 times more likely than nonexposed youths to begin carrying a gun at the next time point, even when controlling for gang involvement (Spano et al., 2012). This study also indicated that after exposure to violence, youths were more likely to start carrying guns in their communities (Spano et al., 2012).

Studies have shown that apart from characteristics like conduct problems and prior delinquency, youths who are involved in gang fighting and selling drugs are also more likely to use a gun to threaten or harm others (e.g., Butters, Sheptycki, Brochu, & Erikson, 2011). Involvement in drug dealing in one's community appears to be particularly risky for gun carrying during later adolescence and early adulthood, possibly due to an increased need for self-protection (Lizotte et al., 2000). Taken together, these studies show that firearm possession may be due to interactions between the need for self-protection in violent communities and increased involvement in delinquent behaviors.

SOCIOCULTURAL CONTEXT: EXPOSURE TO VIOLENT MEDIA

Child and adolescent exposure to violent media, a more distal, sociocultural influence on behavior, is also important when considering developmental risks for gun violence. Decades of experimental, cross-sectional, and longitudinal research have documented that exposure to violent media, in movies and television, is associated with increased aggressive behaviors, aggressive thoughts and feelings, increased physiological arousal, and decreased prosocial behaviors (e.g., Anderson et al., 2003; Anderson & Bushman, 2001; Huesmann, 2010; Huesmann, Moise-Titus, Podolski, & Eron, 2003). In light of ongoing advances in technology, research has been expanded to include violent content in video games, music, social media, and the Internet (Anderson et al., 2010; IOM & NRC, 2013).

Findings on associations between violent media exposure and aggressive behavior outcomes have held across differences

in culture, gender, age, socioeconomic status, and intellect (e.g., Anderson et al., 2010; Huesmann et al., 2003). Social-cognitive theory on violent media exposure suggests that these images are part of children's socialization experiences, similar to violence exposure in interpersonal and community contexts (Huesmann, 2010). The viewing of violent images can serve to desensitize children to violence and normalize violent behavior, particularly when children have previously developed beliefs that aggression and violence are an acceptable means of achieving goals or resolving conflicts.

It is important to note that the link between violent media exposure and subsequent violent behaviors does not demonstrate a direct causal effect but instead shows how some children may be more susceptible to this risk factor than others. For instance, Huesmann et al. (2003) found that identification with aggressive characters on television and the perception that television violence was real were robust predictors of later aggression over time. Additionally, there is no established link between violent media exposure and firearm usage in particular. However, given the substantial proportion of media that includes interactions around firearms (e.g., in video games, movies, and television shows), the IOM and NRC (2013) recently identified a crucial need to examine specific associations between exposure to violent media and use of firearms. Exposure to violent media, especially for youths with preexisting aggressive tendencies and poor parental monitoring, may be an important contextual factor that amplifies risk for violent behavior and gun use.

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SUMMARY AND CONCLUSIONS

The relatively small number of youths most likely to persist in serious acts of aggression (including increased risk of gun violence) have often experienced the following:

- Early childhood onset of persistent rule-breaking and aggression
- Socialization into criminal attitudes and behaviors by parents and caretakers who themselves are involved in criminal activities
- Exposure in childhood to multiple adverse experiences in their families and communities
- Social dislocation and reduced opportunities due to school failure or underachievement
- Persisting affiliation with deviant peers or gangs engaged in delinquent/criminal misconduct and with attitudes and beliefs that support possession and use of guns
- Broad exposure to sociocultural influences such as mass media violence and depictions of gun violence as an effective means of achieving goals or status

Most youths—even those with chronic and violent delinquent misconduct—desist in aggressive and antisocial behavior during late adolescence, and no single risk factor is sufficient to generate persisting violent behavior. Still, many are disproportionately at risk for becoming perpetrators or victims of gun violence. Homicide remains the second leading cause of death for teens and young adults between the ages of 15 and 24. In 2010, there were 2,711 infant, child, and adolescent victims of firearm deaths. In that year, 84% of homicide victims between the ages of 10 and 19 were killed with a firearm, and 40% of youths who committed suicide between the ages 15 and 19 did so with a gun (CDC, 2013a).[1]

There is no one developmental trajectory that specifically leads to gun violence. However, prevention efforts guided by research on developmental risk can reduce the likelihood that firearms will be introduced into community and family conflicts or criminal activity. Prevention efforts can also reduce the relatively rare occasions when severe mental illness contributes to homicide or the more common circumstances when depression or other mental illness contributes to suicide.

Reducing incidents of gun violence arising from criminal misconduct or suicide is an important goal of broader primary and secondary prevention and intervention strategies. Such strategies must also attend to redirecting developmental antecedents and larger sociocultural processes that contribute to gun violence and gun-related deaths.

[1] The 2010 data shown here are available at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html.

ANTECEDENTS TO GUN VIOLENCE: GENDER AND CULTURE

Eric Mankowski, PhD

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Any account of gun violence in the United States must consider both why males are the perpetrators of the vast majority of gun violence and why the vast majority of males never perpetrate gun violence. An account that explains both phenomena focuses, in part, on how boys and men learn to demonstrate and achieve manhood through violence, as well as the differences in opportunities to demonstrate manhood among diverse groups of males. Although evidence exists for human biological and social-environmental systems interacting and contributing to aggressive and violent behavior, this review focuses on the sociocultural evidence that explains males' higher rates of gun violence.

Reducing the propensity for some males to engage in violence will involve both social and cultural change. Hence, this section reviews existing research on the relationships between sex, gender (i.e., masculinity), and the perpetration and victimization of gun violence in the United States. The intersection of gender, race, ethnicity, and economic disadvantage is also considered in explaining the rates of gun violence across diverse communities. Finally, the relationships between masculinity, gender socialization, and gun violence are analyzed to identify gender-related risk factors for gun violence that can be targeted for prevention strategies and social policy.

SEX DIFFERENCES IN GUN VIOLENCE

Prevalence and Risk

Men represent more than 90% of the perpetrators of homicide in the United States and are also the victims of the large majority (78%) of that violence (Bureau of Justice Statistics, 2008; Federal Bureau of Investigation [FBI], 2007). Homicide by gun is the leading cause of death among Black youth, the second leading cause of death among all male youth, and the second or third leading cause of death among female youth (depending on the specific age group) (e.g., Miniño, 2010; Webster, Whitehill, Vernick, & Curriero, 2012). In addition, roughly four times as many youths visit hospitals for gun-induced wounds as are killed each year (CDC, 2013a).

Even more common than homicide, suicide is another leading cause of death in the United States, and most suicides are completed with a firearm. Males complete the large majority of suicides; depending on the age group, roughly four to six times as many males as females kill themselves with firearms (CDC, 2013a). Among youth, suicide ranks especially high as a cause of death. It is the third leading cause of death of 15–24-year-olds and the sixth leading cause of death for 5–14-year-olds. However, the rate of suicide and firearm suicide gradually increases over the lifespan. In addition to gender and age differences in prevalence, sizable differences also exist among ethnic groups. Firearm suicide generally is at least twice as high among Whites than among Blacks and other racial groups from 1980 to 2010 (CDC, 2013a), and White males over the age of 65 have rates that far exceed all other major groups.

Perpetrator–Victim Relationship and Location

The prevalence of gun violence strongly depends not only on the sex of the offender but also on the offender's relationship to the victim and the location of the violence (Sorenson, 2006). Both men and women are more likely to be killed with firearms by someone they know than by a stranger. Specifically, men are most likely to be killed in a public place by an acquaintance, whereas women are most likely to be killed in the home by a current or former spouse or dating partner (i.e., "intimate partner"). Women compared with men are especially likely to be killed by a firearm used by an intimate partner.

Women are killed by current or former intimate partners four to five times more often than men (Campbell, Glass, Sharps, Laughon, & Bloom, 2007), including by firearm. These sex differences in victimization do not appear to hold in the limited data available on same-sex intimate partner homicide; it is more common for men to kill their male partners than for women to kill their female partners (Campbell et al., 2007). Notably, these sex differences in gun violence, as a function of the type of perpetrator–victim relationships, are also found in nonfatal gun violence when emergency room visits are examined (Wiebe, 2003).

A disproportionate number of gun homicides occur in urban areas. Conversely, a disproportionate number of firearm suicides occur in rural (compared with urban) areas (Branas, Nance, Elliott, Richmond, & Schwab, 2004). Although they are highly publicized, less than 2% of the homicides of children occur in schools (Borum, Cornell, Modzeleski, & Jimerson, 2010; CDC, 2008, 2013b). There are even fewer "random" or "mass" school shootings in which multiple victims are killed at the same time. In contrast to patterns of gun homicide more generally, such shootings in U.S. middle and high schools have been disproportionately concentrated in rural and suburban regions (Kimmel & Mahler, 2003).

Gun Access and Possession

A person must own or obtain a gun to be able to commit gun violence. Research shows that there are sex differences in access to and carrying a gun. Males are roughly two to four times as likely as females to have access to a gun in the home or to possess a gun (Swahn, Hamming, & Ikeda, 2002; Vaughn et al., 2012). In turn, gun carrying is a key risk factor for gun violence perpetration and victimization. For example, gun carrying is associated with dating violence victimization among adolescents, with boys more likely to be victimized than girls (Yan, Howard, Beck, Shattuck, & Hallmark-Kerr, 2010).

Conclusions based on sex differences in access to guns should be drawn with some caution, given that there also appear to be sex differences in the reporting of guns in the home. Men report more guns in the home than do women from the same household (e.g., Ludwig, Cook, & Smith, 1998; Sorenson & Cook, 2008), a sex difference that appears to stem specifically from the substantially higher level of contact with and experience in handling and using guns among boys than girls in the same household (Cook & Sorenson, 2006). Nonetheless, the presence of guns in the home remains predictive of gun violence.

The presence of guns in the home remains predictive of gun violence.

GENDER AND GUN VIOLENCE

Robust sex and race differences in firearm violence have been established. Examined next is how the socialization of men as well as differences in living conditions and opportunities among diverse groups of boys and men help explain why these differences occur.

Making Gender Visible in the Problem of Gun Violence

Gender remains largely invisible in research and media accounts of gun violence. In particular, gender is not used to explain the problem of "school shootings," despite the fact that almost every shooting is perpetrated by a young male. Newspaper headlines and articles describe "school shooters," "violent adolescents," and so forth, but rarely call attention to the fact that nearly all such incidents are perpetrated by boys and young men. Studies of risk factors for school shootings may refer accurately to the perpetrators generally as "boys" but largely fail to analyze gender (e.g., Verlinden, Hersen, & Thomas, 2000).

The large sex differences in gun violence should not be overlooked simply because the vast majority of boys and men do not perpetrate gun violence or excused as "boys will be boys." The size of sex differences in the prevalence of gun violence differs substantially within regions of the United States (Kaplan & Geling, 1998) and across countries (e.g., Ahn, Park, Ha, Choi, & Hong, 2012), which further suggests that gender differences in sociocultural environments are needed to explain sex differences in gun violence.

Masculinity, Power, and Guns

Status as a "man" is achieved by the display of stereotypically masculine characteristics, without which one's manhood is contested. Although the particular characteristics defining manhood and the markers of them can vary across subcultural contexts (Connell, 1995), masculinity has, historically, generally been defined by aggressive and risk-taking behavior, emotional restrictiveness (particularly the vulnerable emotions of fear and

sadness, and excepting anger), heterosexuality, and successful competition (Brannon, 1976; Kimmel, 1994; O'Neil, 1981). Such normative characteristics of traditional masculinity are in turn directly related to numerous factors that are associated with gun violence. For example, risk taking is associated with adolescent males' possession of and access to guns (Vittes & Sorenson, 2006).

Social expectations and norms, supported by social and organizational systems and practices, privilege boys who reject or avoid in themselves anything stereotypically feminine, act tough and aggressive, suppress emotions (other than anger), distance themselves emotionally and physically from other men, and strive competitively for power. Men of color, poor men, gay men, and men from other marginalized groups differ substantially in their access to opportunities to fulfill these manhood ideals and expectations in socially accepted ways. For example, men with less formal educational and economic opportunity, who in the United States are disproportionately Black and Latino, cannot fulfill expectations to be successful breadwinners in socially acceptable ways (e.g., paid, legal employment) as easily as White men, and gay men have less ability to demonstrate normative heterosexual masculinity where they cannot legally marry or have children.

At the same time, higher levels of some forms of violence victimization and perpetration (including suicide) are found among these disadvantaged groups. For example, gay youth are more likely than heterosexual males to commit suicide, and African American male youth are disproportionately the victims of gun violence. Such structural discrimination can be seen reflected in implicit cognitive biases against these group members. Virtual simulations of high-threat incidents, such as those used to train police officers, reliably demonstrate a "shooter bias" in which actors are more likely to shoot Black male targets than those from other race-gender groups (i.e., Black women, White men, and White women) (Plant, Goplen, & Kunstman, 2011).

Even to the extent that it is achieved, manhood status is theorized as precarious, needing to be protected and defended through aggression and violence, including gun violence, in order to avoid victimization from (mostly) male peers (Connell, 1995). Paradoxically, as in all competition, the more convincingly manhood is achieved, the more vulnerable it becomes to challenges or threats and thus requires further defending, often with increasing levels and displays of toughness and violence. The dynamic of these expectations of manhood and their enforcement is like a tight box (Kivel, 1998). Boys and men are either trapped inside this box or, in violating the expectations by stepping out of the box, risk being targeted by threats, bullying, and other forms of violence.

Adherence to stereotypic masculinity, in turn, is commonly associated with stress and conflict, poor health, poor coping and relationship quality, and violence (Courtenay 2000; Hong, 2000). Men's gender role stress and conflict are directly associated with various forms of interpersonal aggression and violence, including the perpetration of intimate partner violence and suicide (Feder, Levant, & Dean, 2010; Moore & Stuart, 2005; O'Neil, 2008). Men with more restricted emotionality and more restricted affection with other men are more likely to be aggressive, coercive, or violent (O'Neil, 2008). These dimensions of masculinity also are related to a number of other harmful behaviors that are, in turn, associated directly with gun violence and other forms of aggression (see O'Neil, 2008, for a review). For example, the effect of alcohol consumption on intimate partner violence is greater among men than women (Moore, Elkins, McNulty, Kivisto, & Handsel, 2011), and alcohol consumption may be associated with lethal male-to-male violence at least partly because it is associated with carrying a gun (Phillips, Matusko, & Tomasovic, 2007).

These dimensions of masculinity also are related to a number of other harmful behaviors that are, in turn, associated directly with gun violence and other forms of aggression.

In addition, accumulating research evidence indicates a relationship between gender and many of the factors that are associated with suicide (e.g., substance abuse, unemployment; Payne, Swami, & Stanistreet, 2008). Beliefs in traditional masculinity are related to suicidal thoughts, although differently across age cohorts (Hunt, Sweeting, Keoghan, & Platt, 2006). Men's historic role as economic providers in heterosexual families typically ends with their retirement from the workforce. Suicide rates, including firearm suicide, increase dramatically at precisely this point in the life course (i.e., age 65 and older), whereas they decrease among women this age. The increase in suicide rates among White men at age 65 and older does not occur among Black men, who as a group have much higher levels of unemployment throughout their lives and consequently may not experience the same sense of loss of meaning or entitlement. Male firearm suicide also increases dramatically in adolescence and early adulthood, precisely the years during which young men's sense of manhood is developing.

Beliefs about gender and sexual orientation also help explain sex differences in fatal hate crimes involving guns. Key themes in male gender role expectations are anti-femininity

(Brannon, 1976) and homophobia (Kimmel, 1994). Boys are expected to rid themselves of stereotypically feminine characteristics (e.g., "you throw like a girl," "big boys don't cry"). Gun violence against lesbian, gay, bisexual, and transgendered persons can be understood in this context. One explanation of these hate crimes is that they are perpetrated to demonstrate heterosexual masculinity to male peer group members. These homicides, compared with violent crimes in which the victim is (or is perceived to be) heterosexual, often are especially brutal and are more commonly perpetrated by groups of men rather than individual men or women. However, such homicides appear to be perpetrated less often using firearms, which suggests motives beyond a desire to kill—for example, expressing intense hatred or transferring negative affect directly onto the victim (Gruenwald, 2012).

Male role expectations for achievement of success and power, combined with restricted emotionality, may have dangerous consequences, particularly for boys who suffer major losses and need help.

Male role expectations for achievement of success and power, combined with restricted emotionality, may have dangerous consequences, particularly for boys who suffer major losses and need help. A majority of the males who have completed homicides at schools had trouble coping with a recent major loss. Many had also experienced bullying or other harassment (Vossekuil et al., 2002). Such characteristics cannot and should not be used to develop risk profiles of attackers because school shootings are such rare events, and so many men who share these same characteristics never will perpetrate gun violence. However, when male gender and characteristics associated with male gender are highly common among attackers, it is responsible to ask how male gender contributes to school shootings and other forms of gun violence.

In their case studies of male-perpetrated homicide-suicides at schools, Kalish and Kimmel (2010) speculated that a sense of "aggrieved entitlement" may be common among the shooters. In this view, the young men see suicide and revenge as appropriate, even expected, responses for men to perceived or actual victimization. Related findings emerged from a similar analysis of all "random" school shootings (those with multiple, nontargeted victims) from 1982 to 2001 (Kimmel & Mahler, 2003). With a small number of exceptions, the vast majority were committed by White boys (26 of 28) in suburban or rural (not urban) areas (27 of 28). Many of these boys also had experienced homophobic bullying.

Masculinity and Beliefs About Guns

Sex differences in beliefs about guns may begin at an early age as a function of parental socialization and attitudes. Fathers, particularly White fathers, are more permissive than mothers of their children, particularly sons, playing with toy guns (Cheng et al., 2003). Through the socialization of gender, boys and men may come to believe that displaying a gun will enhance their masculine power. Carrying a weapon is, in fact, instrumental in fulfilling male gender role expectations. Estimates of a person's physical size and muscularity are greater when they display a gun (or large knife) than other similarly sized and shaped objects (e.g., drill, saw), even when the person is only described and not visible. This perception persists despite no apparent correlation between actual gun ownership and size or muscularity (Fessler, Holbrook, & Snyder, 2012). Guns symbolically represent some key elements of hegemonic masculinity—power, hardness, force, aggressiveness, coldness (Connell, 1995; Stroud, 2012).

IMPLICATIONS FOR PREVENTION AND POLICY

Sex Differences in Attitudes Toward Gun Policies

Policies and laws addressing the manufacture, purchase, and storage of guns have been advocated in response to the prevalence of gun violence. Perhaps reflecting their differential access to firearms and differential perpetration and victimization rates, men and women hold different attitudes about such gun control policies. Females are generally much more favorable toward gun restriction and control policies (e.g., Vittes, Sorenson, & Gilbert, 2003).

Prevention Programs Addressing Gender

The foregoing analysis of the link between gender and gun violence suggests the potential value of addressing gender in efforts to define the problem of gun violence and develop preventive responses. Preliminary evidence suggests that correcting and changing perceptions among men of social norms regarding beliefs about behaviors and characteristics that are associated with stereotypic masculinity may reduce the prevalence of intimate partner and sexual violence (Fabiano, Perkins, Berkowitz, Linkenbach, & Stark, 2003; Neighbors et al., 2010). However, the effect of such interventions in specifically reducing gun violence remains to be tested. The skills and knowledge of psychologists are needed to develop and evaluate programs and settings in schools, workplaces, prisons, neighborhoods, clinics, and other relevant contexts that aim to change gendered expectations for males that emphasize self-sufficiency, toughness, and violence, including gun violence.

WHAT WORKS: GUN VIOLENCE PREDICTION AND PREVENTION AT THE INDIVIDUAL LEVEL

4

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A natural starting point for the prevention of gun violence is to identify individuals who are at risk for violence and in need of assistance. Efforts focused on at-risk individuals are considered secondary prevention because they are distinguished from primary or universal prevention efforts that address the general population. Secondary prevention strategies for gun violence can include such actions as providing prompt mental health treatment for an acutely depressed and suicidal person or conducting a threat assessment of a person who has threatened gun violence against a spouse or work supervisor.

To be effective, strategies to prevent gun violence should be tailored to different kinds of violence. One example is the distinction between acts of *impulsive violence* (i.e., violence carried out in the heat of the moment, such as an argument that escalates into an assault) and acts of *targeted* or *predatory violence* (i.e., acts of violence that are planned in advance of the attack and directed toward an identified target). The incidents of mass casualty gun violence that have garnered worldwide media attention, such as the shootings at Sandy Hook Elementary School in Newtown, CT, at a movie theater Aurora, CO, at the Fort Hood military base, and at a political rally in a shopping center in Tucson, AZ, are all examples of targeted or predatory violence. Distinguishing between impulsive violence, targeted/predatory violence, and other types of violence is important because they are associated with different risk factors and require different prevention strategies.

PREDICTING AND PREVENTING IMPULSIVE GUN VIOLENCE

Research on impulsive violence has enabled scientists to develop moderately accurate predictive models that can identify individuals who are more likely than other persons to engage in this form of violence. These models cannot determine with certainty whether a particular person *will* engage in violence—just whether a person is at greater likelihood of doing so. This approach is known as a *violence risk assessment* or *clinical assessment of dangerousness*. A violence risk assessment is conducted by a licensed mental health professional who has specific training in this area. The process generally involves comparing the person in question with known base rates for those of the same age/gender who have committed impulsive violence and then determining whether the person in question has individual risk factors that would increase that person's likelihood of engaging in impulsive violence. In addition, the process involves examining individual protective factors that would decrease the person's overall likelihood of engaging in impulsive violence. Research that has identified risk and protective factors for impulsive violence is limited in that more research has been conducted on men than women and on incarcerated or institutionalized individuals than on those in the general population. Nevertheless, this approach can be effective for determining someone's relative likelihood of engaging in impulsive violence.

Some risk factors for impulsive violence are static—for example, race and age—and cannot be changed. But those factors that are dynamic—for example, unmet mental health needs for conditions linked with violence to self (such as depression) or others (such as paranoia), lack of mental health care, abuse of alcohol—are more amenable to intervention and treatment that can reduce the risk for gun violence. Secondary prevention strategies to prevent impulsive gun violence can include having a trained psychologist or other mental health professional treat the person's acute mental health needs or substance abuse needs. There must be a vigorous and coordinated response to persons whose histories include acts of violence, threatened or actual use of weapons, and substance abuse, particularly if they have access to a gun. This response should include a violence risk assessment by well-trained professionals and referral for any indicated mental health treatment, counseling and mediation services, or other forms of intervention that can reduce the risk of violence.

There must be a vigorous and coordinated response to persons whose histories include acts of violence, threatened or actual use of weapons, and substance abuse, particularly if they have access to a gun.

Youths and young adults who are experiencing an emerging psychosis should be referred for prompt assessment by mental health professionals with sufficient clinical expertise with psychotic disorders to craft a clinical intervention plan that includes risk management. In some cases, secondary prevention measures may include a court-ordered emergency psychiatric hospitalization where a person can receive a psychiatric evaluation and begin treatment. Criteria for allowing such involuntary evaluations vary by state but typically can occur only when someone is experiencing symptoms of a serious mental illness and, as a result, potentially poses a significant danger to self or others. There is an urgent need to improve the effectiveness of emergency commitment procedures because of concerns that they do not provide sufficient services and follow-up care.

PREDICTING AND PREVENTING TARGETED OR PREDATORY GUN VIOLENCE

Acts of targeted or predatory violence directed at multiple victims, including crimes sometimes referred to as rampage shootings and mass shootings,[2] occur far less often in the United States than do acts of impulsive violence (although targeted violence garners far more media attention). Acts of targeted violence have not been subject to study that has developed statistical models like those used for estimating a person's likelihood of impulsive violence. Although it seems appealing to develop checklists of warning signs to construct a profile of individuals who commit these kinds of crimes, this effort, sometimes described as psychological profiling, has not been successful. Research has not identified an effective or useful psychological profile of those who would engage in multiple casualty gun violence. Moreover, efforts to use a checklist profile to identify these individuals fail in part because the characteristics used in these profiles are too general to be of practical value; such characteristics are also shared by many nonviolent individuals.

Because of the limitations of a profiling approach, practitioners have developed the behavioral threat assessment model as an alternative means of identifying individuals who are threatening, planning, or preparing to commit targeted violence. Behavioral threat assessment also emphasizes the need for interventions to prevent violence or harm when a threat has been identified, so it represents a more comprehensive approach to violence prevention. The behavioral threat assessment model is an empirically based approach that was developed largely by the U.S. Secret Service to evaluate threats to the president and other public figures and has since been adapted by the U.S. Secret Service and U.S. Department of Education (Fein et al., 2002; Vossekuil et al., 2002) and others (Cornell, Allen, & Fan, 2012) for use in schools, colleges and universities, workplaces, and the U.S. military. Threat assessment teams are typically multidisciplinary teams that are trained to identify potentially threatening persons and situations. They gather and analyze additional information, make an informed assessment of whether the person is on a pathway to violence—that is, determine whether the person poses a threat of interpersonal violence or self-harm—and if so, take steps to intervene, address any underlying problem or treatment need, and reduce the risk for violence.

[2] The FBI (n.d.) defines *mass murder* as incidents that occur in one location (or in closely related locations during a single attack) and that result in four or more casualties. Mass murder shootings are much less common than other types of gun homicides. They are also not a new phenomenon. Historically, most mass murder shootings occurred within families or in criminal activities such as gang activity and robberies. *Rampage killings* is a term used to describe some mass murders that involve attacks on victims in unprotected settings (such as schools and colleges, workplaces, places of worship) and public places (such as theaters, malls, restaurants, public gatherings). However, these shootings are often planned well in advance and carried out in a methodical manner, so the term *rampage* is a misnomer.

Behavioral threat assessment is seen as the emerging standard of care for preventing targeted violence in schools, colleges, and workplaces, as well as against government officials and other public figures. The behavioral threat assessment approach is the model currently used by the U.S. Secret Service to prevent violence to the U.S. president and other public officials, by the U.S. Capitol Police to prevent violence to members of Congress, by the U.S. State Department to prevent violence to dignitaries visiting the United States, and by the U.S. Marshals Service to prevent violence to federal judges (see Fein & Vossekuil, 1998). The behavioral threat assessment model also is recommended in two American national standards: one for higher education institutions (which recommends that all colleges and universities operate behavioral threat assessment teams; see ASME-Innovative Technologies Institute, 2010) and one for workplaces (which recommends similar teams to prevent workplace violence; see ASIS International and Society for Human Resource Management, 2011). In addition, a comprehensive review conducted by a U.S. Department of Defense (2010) task force following the Fort Hood shooting concluded that threat assessment teams or threat management units (i.e., teams trained in behavioral threat assessment and management procedures) are the most effective tool currently available to prevent workplace violence or insider threats like the attack at Fort Hood.

Empirical research on acts of targeted violence has shown that many of those attacks were carried out by individuals motivated by personal problems who were at a point of desperation. In their troubled state of mind, these individuals saw no viable solution to their problems and could envision no future. The behavioral threat assessment model is used not only to determine whether a person is planning a violent attack but also to identify personal or situational problems that could be addressed to alleviate desperation and restore hope. In many cases, this includes referring the person to mental health services and other sources of support. In some of these cases, psychiatric hospitalization may be needed to address despondence and suicidality. Nonpsychiatric resources also can help alleviate the individual's problems or concerns. Resources such as conflict resolution, credit counseling, job placement assistance, academic accommodations, veterans' services, pastoral counseling, and disability services all can help address personal problems and reduce desperation. When the underlying personal problems are alleviated, people who may have posed a threat of violence to others no longer see violence as their best or only option.

UNDERSTANDING SCHOOL SHOOTINGS

Thirteen years before the shooting at Sandy Hook Elementary School, the Columbine High School shootings (in April 1999) shocked the American public and galvanized attention on school shootings. The intensified focus led to landmark federal research jointly conducted by the U.S. Secret Service and the U.S. Department of Education (Fein et al., 2002; Vossekuil et al., 2002) that examined 37 incidents of school attacks or targeted school shootings and included interviews with school shooters. Known as the Safe School Initiative, the findings from this research shed new light on ways to prevent school shootings, showing that school attacks are typically planned in advance, the school shooters often tell peers about their plans beforehand and are frequently despondent or suicidal prior to their attacks (with some expecting to be killed during their attacks), and most shooters had generated concerns with at least three adults before their shootings (Vossekuil et al., 2002). This research and subsequent investigations indicate that school attacks—although rare events—are most likely perpetrated by students currently enrolled (or recently suspended or expelled) or adults with an employment or another relationship to the school. The heterogeneity of school attackers makes the development of an accurate profile impossible. Instead, research supports a behavioral threat assessment approach that attends to features such as:

- threats, including behaviors or statements reflecting thoughts or plans for a school attack (often these are confided to peers);
- ready access to a firearm or other lethal weapon and unusual preparation or practice for use; and
- mental health symptoms, including depression with accompanying feelings of desperation and despondency.

These findings led to the development of the U.S. Secret Service/U.S. Department of Education school threat assessment model (Vossekuil et al., 2002) and similar models (see, for example, the *Virginia Student Threat Assessment Guidelines;* Cornell et al., 2012). After the shooting at Sandy Hook Elementary School in 2012, Virginia passed a law requiring threat assessment teams in Virginia K-12 public schools. Threat assessment teams were already required by law for Virginia's public colleges and universities following the Virginia Tech shootings in 2007. Other states have passed or are debating similar measures for their institutions of higher education and/or K-12 schools. Threat assessment teams are recommended by the new federal guides on high-quality emergency plans for schools and for colleges and universities (U.S. Department of Education, 2013).

PREDICTING AND PREVENTING VIOLENCE BY THOSE WITH ACUTE MENTAL ILLNESS

When treating a person with acute or severe mental illness, mental health professionals may encounter situations in which they need to determine whether their patient (or client) is at risk for violence. Typically, they would conduct a violence risk assessment if the clinician's concern is about risk for impulsive violence, as discussed previously. Clinicians also can conduct—or work with a team to help conduct—a threat assessment if their concern involves targeted violence. The available research suggests that mental health professionals should be concerned when a person with acute mental illness makes an explicit threat to harm someone or is troubled by delusions or hallucinations that encourage violence, but even in these situations, violence is far from certain. Although neither a violence risk assessment nor a threat assessment can yield a precise prediction of someone's likelihood of violence, it can identify high-risk situations and guide efforts to reduce risk. It is important to emphasize that prevention does not require prediction; interventions to reduce risk can be beneficial even if it is not possible to determine who would or would not have committed a violent act.

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When their patients (or clients) pose a risk of violence to others, mental health professionals have a legal and ethical obligation to take appropriate action to protect potential victims of violence. This obligation is not easily carried out for several reasons. First, mental health professionals have only a modest ability to predict violence, even when assisted by research-validated instruments. Mental health professionals who are concerned that a patient is at high risk for violence may be unable to convince their patient to accept hospitalization or some other change in treatment. They can seek involuntary hospitalization or treatment, but civil commitment laws (that vary from state to state) generally require convincing evidence that a person is imminently dangerous to self or others. There is considerable debate about the need to reform civil commitment laws in a manner that both protects individual liberties and provides necessary protection for society.

There is no guarantee that voluntary or involuntary treatment of a potentially dangerous individual will be effective in reducing violence risk, especially when the risk for violence does not arise from a mental illness but instead from intense desperation resulting from highly emotionally distressing circumstances or from antisocial orientation and proclivities for criminal misconduct. When individuals with prior histories of violence are released from treatment facilities, they typically need continued treatment and monitoring for potential violence until they stabilize in community settings. Jurisdictions vary widely in the resources available to achieve stability in the community and in the legal ability to impose monitoring or clinical care on persons who decline voluntary services.

Furthermore, if unable to obtain civil commitment to a protective setting, mental health professionals must consider other protective actions permitted in their jurisdictions, which may include warning potential victims that they are in danger or alerting local law enforcement, family members, employers, or others. Whether their particular jurisdiction mandates a response to "warn or protect" potential victims or leaves this decision to the discretion of the clinician, mental health professionals are often reluctant to take such actions because they are concerned that doing so might damage the therapeutic relationship with their patient and drive patients from treatment or otherwise render effective treatment impossible.

Another post-hospitalization strategy is to prohibit persons with mental illness from acquiring a firearm. The Gun Control Act of 1968 prohibited persons from purchasing a firearm if they had been involuntarily committed to a psychiatric inpatient unit. The Brady Handgun Violence Act (1994), known as the Brady Law, began the process of background checks to identify individuals who might attempt to purchase a firearm despite prohibitions. There is some evidence that rates of gun violence are reduced when these procedures are adequately implemented, but research, consistent implementation, and refinement of these procedures are needed (Webster & Vernick, 2013a).

PREDICTING AND PREVENTING GUN-BASED SUICIDE

Suicide accounts for approximately 61% of all firearm fatalities in the United States—19,393 of the 31,672 firearm deaths reported by the CDC for 2010 (Murphy, Xu, & Kochanek, 2013). When there is concern that a person may be suicidal, mental health professionals can conduct suicide screenings and should rely on structured assessment tools to assess that person's risk to self. Behavioral threat assessment also may be indicated in such situations if the potentially suicidal individual may also pose a threat to others.

More than half of suicides are accomplished by firearms and most commonly with a firearm from the household (Miller, Azrael, Hepburn, Hemenway, & Lippmann, 2006). More than 90% of persons who commit suicide had some combination of symptoms of depression, symptoms of other mental disorders, and/or substance abuse (Moscicki, 2001). Ironically, although depression is the condition most closely associated with attempted or completed suicide, it is also less likely than schizophrenia or other disorders to prompt an involuntary civil commitment or other legal triggers that can prevent some persons with mental illness from possessing firearms. As in behavioral threat assessment, suicide risk may be reduced through identifying and providing support in solving the problems that are driving a person to consider suicide. In many cases the person may need a combination of psychological treatment and psychiatric medication.

Tragic shootings like the ones at Sandy Hook Elementary School and the movie theater in Aurora, CO, spark intense debate as to whether specific gun control policies would significantly diminish the number of mass shooting incidents. This debate includes whether or how to restrict access to firearms, especially with regard to persons with some mental illnesses. Another line of debate concerns whether to limit access to certain types of firearms (e.g., reducing access to high-capacity magazines). Empirical evidence documents the efficacy of some firearms restrictions, but because the restrictions often are not well implemented and have serious limitations, it is difficult to conduct the kind of rigorous research needed to fairly evaluate their potential for reducing gun violence.

Despite these limitations and gaps, there is some scientific evidence that background checks reduce the rate of violent gun crimes by persons whose mental health records disqualify them from legally obtaining a firearm.

The often-debated Brady Law (1994) does not consistently prevent persons with mental illness from acquiring a firearm. The prohibition applies only to persons with involuntary commitments and omits both persons with voluntary admissions and those with no history of inpatient hospitalization. The law does not prevent a person with a history of involuntary commitment from obtaining a previously owned firearm or one possessed by a friend or relative. Additional problems with implementing the Brady Law include incomplete records of involuntary commitments, background checks limited to purchases from licensed gun dealers, and exceptions from background checks for firearms purchased during gun shows.

Despite these limitations and gaps, there is some scientific evidence that background checks reduce the rate of violent gun crimes by persons whose mental health records disqualify them from legally obtaining a firearm. A study of one state (Connecticut) found that the risk of violent criminal offending among persons with a history of involuntary psychiatric commitment declined significantly after the state began reporting these individuals to the National Instant Criminal Background Check System (Swanson et al., 2013). This study supports the value of additional research to investigate strategies for limiting access to firearms by persons with serious mental illness.

In contrast, access to appropriate mental health treatment *can* work to reduce violence at the individual level. For example, one major finding of the MacArthur Risk Assessment study (Monahan et al., 2001) was that getting continued mental health treatment in the community after release from a psychiatric hospitalization reduced the number of violent acts by those who had been hospitalized. In other studies, outpatient mental health services, including mandated services, have been effective in preventing or reducing violent and harmful behavior (e.g., New York State Office of Mental Health, 2005; N.Y. Mental Hygiene Law [Kendra's Law], 1999; O'Keefe, Potenza, & Mueser, 1997; Swanson et al., 2000).

There is abundant scientific research demonstrating the effectiveness of treatment for persons with severe mental illness such as schizophrenia and bipolar disorder. However, there are social, economic, and legal barriers to treatment. First, there is a persistent social stigma associated with mental illness that deters individuals from seeking treatment for themselves or for family members. Public education to increase understanding of and support for persons with serious mental illness and to encourage access to treatment is needed.

Second, mental health treatment, especially inpatient hospitalization, is expensive, and persons with mental illness often cannot access this level of care or afford it. Commercial insurers often have limitations on hospital care or do not cover intensive services that are alternatives to inpatient admission. Public sector facilities such as community mental health centers and state-operated psychiatric hospitals have experienced many years of shrinking government support; demand for their services exceeds their capacity. Many mental health providers limit their services to the most acute cases and cannot extend services after the immediate crisis has resolved.

Third, there are complex legal barriers to the provision of mental health services when an individual does not desire treatment or does not believe he or she is in need of treatment. A severe mental illness can impair an individual's understanding of his or her condition and need for treatment, but a person with mental illness may make a rational decision to refuse treatment that he or she understandably regards as ineffective, aversive, or undesirable for some reason (e.g., psychiatric medications can produce unpleasant side effects and hospitalization can be a stressful experience).

When an individual refuses to seek treatment, it may be difficult to determine whether this decision is rational or irrational. To protect individual liberties, laws throughout the United States permit involuntary treatment only under stringent conditions, such as when an individual is determined to be imminently dangerous to self or others due to a mental illness. People who refuse treatment but are not judged to be imminently dangerous (a difficult and ambiguous standard) fall into a "gray zone" (Evans, 2013). Some individuals with serious mental illness pose a danger to self or others that is not imminent, and often it is not possible to monitor them adequately or determine precisely when they become dangerous and should be hospitalized on an involuntary basis. In other situations, the primary risk posed by the individual does not arise from mental illness but from his or her willingness to engage in criminal misconduct for personal gain.

Some individuals with serious mental illness pose a danger to self or others that is not imminent, and often it is not possible to monitor them adequately or determine precisely when they become dangerous and should be hospitalized on an involuntary basis.

Furthermore, when a person is committed to a psychiatric hospital on an involuntary basis, treatment is limited in scope. Once the person is no longer regarded as imminently dangerous (the criteria differ across states), he or she must be released from treatment even if not fully recovered; that person may be vulnerable to relapse into a dangerous state. In some cases of mass shootings, persons who committed the shooting were known to have a serious mental illness, but authorities could not require treatment when it was needed. In other cases, authorities were not aware of an individual's mental illness before the attempted or actual mass shooting incident.

A related problem is that the onset or recurrence of serious mental illness can be difficult to detect. Symptoms of mental illness may emerge slowly, often in late adolescence or early adulthood, and may not be readily apparent to family members and friends. A person hearing voices or experiencing paranoid delusions may hide these symptoms and simply seem preoccupied or distressed but not seriously ill. A person who has been treated successfully for a serious mental illness may experience a relapse that is not immediately recognized. There is a great need for public education about the onset of serious mental illness, recognition of the symptoms of mental illness, and increased emphasis on the importance of seeking prompt treatment.

WHAT WORKS: GUN VIOLENCE PREVENTION AT THE COMMUNITY LEVEL

5

Ellen Scrivner, PhD, ABPP; W. Douglas Tynan, PhD, ABPP; and Dewey Cornell, PhD

Prevention of violence occurs along a continuum that begins in early childhood with programs to help parents raise healthy children and ends with efforts to identify and intervene with troubled individuals who threaten violence. A comprehensive community approach recognizes that no single program is sufficient and there are many opportunities for effective prevention. Discussion of effective prevention from a community perspective should include identification of the community being examined. Within the larger community, many stakeholders are affected by gun violence that results in a homicide, suicide, or mass shooting.

Such stakeholders include community and public safety officials, schools, workplaces, neighborhoods, mental health and public health systems, and faith-based groups. Some gangs might be viewed as a community. When it comes to perpetrating gun violence, however, a common thread that exists across community groups is the recognition that someone, or possibly several people, may have heard something about an individual's thoughts and/or plans to use a gun. Where do they go with that information? How do they report it so that innocent people are not targeted or labeled unfairly—and how can their information initiate a comprehensive and effective crisis response that prevents harm to the individual of concern and the community?

To date, there is little research to help frame a comprehensive and effective prevention strategy for gun violence at the community level. One of the most authoritative reviews of the body of gun violence research comes from the National Research Council of the National Academy of Sciences (see Wellford, Pepper, & Petrie, 2004). In reviewing a range of criminal justice initiatives designed to reduce gun violence, such as gun courts, enhanced sentencing, and problem-based policing, Wellford et al. concluded that problem-oriented policing, also known as place-based initiatives or target policing, holds promise, particularly when applied to "hot spots"—areas in the community that have high crime rates. They included studies on programs such as the Boston Gun Project (see Kennedy, Braga, & Piehl, 2001), more commonly known as Operation Ceasefire, in their review and concluded that although many of these programs may have reduced youth homicides, there is only modest evidence to suggest that they effectively lowered rates of crime and violence, given the confounding factors that influence those rates and are difficult to control. In other words, the variability in the roles of police, prosecutors, and the community creates complex interactions that can confound the levels of intervention and affect sustainability.

Wellford et al.'s (2004) conclusions were supported by the findings of the 2011 Firearms and Violence Research Working Group (National Institute of Justice, 2011), which also questioned whether rigorous evaluations are possible given the reliability and validity of the data. Wellford et al. advocated for continued research and development of models that include collaboration between police and community partners and for examination of different evaluation methodologies.

There are varied prevention models that address community issues. When it comes to exploring models that specifically address preventing the recent episodes of gun violence that have captured the nation's attention, however, the inevitable conclusion is that there is a need to develop a new model that would bring community stakeholders together in a collaborative, problem-solving mode, with a goal of preventing individuals from engaging in gun violence, whether directed at others or self-inflicted. This model would go beyond a single activity and would blend several strategies as building blocks to form a workable systemic approach. It would require that community service systems break their tendencies to operate in silos and take advantage of the different skill sets already available in the community—for example:

- Police are trained in crisis intervention skills with a primary focus on responding to special populations such as those with mental illness.
- Community members are trained in skilled interventions such as Emotional CPR (http://www.emotional-cpr.org) and Mental Health First Aid (http://www.mentalhealthfirstaid.org)—consumer-based initiatives that use neighbor-to-neighbor approaches that direct people in need of care to appropriate mental health treatment.
- School resource officers are trained to show a proactive presence in schools.

Some models developed through the community policing reform movement may be relevant because they are generally acknowledged to have been useful in reducing violence against women and domestic violence and in responding to children exposed to violence.

Each group may provide a solution to a piece of the problem, but there is nothing connecting the broad range of activities to the type of collaborative system needed to implement a comprehensive, community-based strategy to prevent gun violence. From a policy and practice perspective, no one skill set or one agency can provide the complete answer when it comes to developing a prevention methodology. However, some models developed through the community policing reform movement may be relevant because they are generally acknowledged to have been useful in reducing violence against women and domestic violence and in responding to children exposed to violence. These community policing models involve collaborative problem solving as a way to safeguard the community as opposed to relying only on arrest procedures. Moreover, they engage the community in organized joint efforts to produce public safety (Peak, 2013).

Another initiative, Project Safe Neighborhoods (PSN; www.psn.gov), is also relevant. PSN, a nationwide program that began in 2001 and was designed specifically to reduce gun violence, has some similarity to the community policing model. PSN involved the 94 U.S. attorneys in cities across the country in a prominent leadership role, ensured flexibility across jurisdictions, and required cross-agency buy-in, though there seems to have been less formalized involvement with mental health services. Nevertheless, it used a problem-solving approach that was aimed at getting guns off the streets, and the results of varied outcome assessments demonstrate that it was successful in reducing gun violence, particularly when the initiatives were tailored to the gun violence needs of specific communities (McGarrell et al., 2009).

A common approach used by PSN involved engaging the community to establish appropriate stakeholder partnerships, formulating strategic planning on the basis of identification and measurement of the community problem, training those involved in PSN, providing outreach through nationwide public service announcements, and ensuring accountability through various reporting mechanisms. The PSN problem-solving steps, with some adaptations, could provide a useful strategy for initiating collaborative problem solving with relevant community stakeholders in the interest of reducing gun violence and victimization through prevention.

The models discussed here illustrate how community engagement and collaboration helped break new ground in response to identified criminal justice problems, but they could be strengthened considerably by incorporating the involvement of professional psychology. The need for collaboration was again highlighted at a Critical Issues in Policing meeting (Police Executive Research Forum, 2012) as part of a discussion on connecting agency silos by building bridges across systems. Because police and mental health workers often respond to the same people, there is a need for collaboration on the best way to do this without compromising their roles. This emphasis takes the discussion beyond the student/school focus and expands it to include the use of crisis intervention teams (CIT) and community advocacy groups as additional resources for achieving the goal of preventing violence in the community.

The CIT model was another result of community policing reform that brought police and mental health services together to provide a more effective response to the needs of special

populations, particularly mental health-related cases. Developed in Memphis in 1988 but now deployed in many communities across the country, the CIT model trains CIT officers to deescalate situations involving people in crises and to use jail diversion options, if available, rather than arrests. Although research on the effectiveness of CITs is generally limited to outcome studies in select cities, the model continues to gain prominence. In fact, the National Alliance on Mental Illness (NAMI) has established a NAMI CIT Center and is promoting the expansion of CIT nationwide. Studies by Borum (2000), Steadman, Deane, Borum, and Morrissey (2000), and Teller, Munetz, Gil, and Ritter (2006) have illustrated that high-risk encounters between individuals with mental illness and police can be substantially improved through CIT training, particularly when there are options such as drop-off centers, use of diversion techniques, and collaborations between law enforcement, mental health, and family members. Each plays a significant role in ensuring that city or county jails do not become de facto institutions for those in mental health crises.

Crisis intervention teams were also a major focus of a 2010 policy summit (International Association of Chiefs of Police [IACP], 2012). The summit, hosted by SAMHSA, the Bureau of Justice Assistance, and IACP, produced a 23-item action agenda. Although the summit focused on decriminalizing the response to persons with mental illness and was not directed specifically at dealing with people who perpetrate gun violence, some of their recommendations did apply. The central theme of the agenda encouraged law enforcement and mental health service systems to engage in mutually respectful working relationships, collaborate across partner agencies, and establish local multidisciplinary advisory groups. These partnerships would develop policy, protocols, and guidelines for informing law enforcement encounters with persons with mental illness who are in crisis, including a protocol that would enable agencies to share essential information about those individuals and whether the nature of the crisis could provoke violent behavior. They further recommended that these types of protocols be established and maintained by the multidisciplinary advisory group and that training be provided in the community to sensitize community members to signs of potential danger and how to intervene in a systematic way.

A Police Foundation (2013) roundtable on gun violence and mental health reported that some police departments have reached out to communities and offered safe storage of firearms when community members have concern about a family member's access to firearms in the home. As a service to the community, the police would offer to keep guns secured in accessible community locations until the threat has subsided and the community member requests the return. The police would also confer with mental health practitioners regarding a designated family or community member on an as-needed basis. This strategy is consistent with a community threat assessment approach in which law enforcement authorities engage proactively with the community to reduce the risk of violence when an individual poses a risk.

GUN VIOLENCE IN SCHOOLS

Gun violence in schools has been a national concern for more than 2 decades. Although school shootings are highly traumatic events and have brought school safety to the forefront of public attention, schools are very safe environments compared with other community settings (Borum et al., 2010). Less than 2% of homicides of school-aged children occur in schools. Over a 20-year period, there have been approximately 16 shooting deaths in U.S. schools each year (Fox & Burstein, 2010), compared with approximately 32,000 shooting deaths annually in the nation as a whole (Hoyert & Xu, 2012).

Although school shootings are highly traumatic events and have brought school safety to the forefront of public attention, schools are very safe environments compared with other community settings.

The Gun-Free Schools Act of 1994 made federal education funding contingent upon states requiring schools to expel for at least one year any student found with a firearm at school. This mandate strengthened the emerging philosophy of zero tolerance as a school disciplinary policy. According to the APA Zero Tolerance Task Force (2008), this policy was predicated on faulty assumptions that removing disobedient students would motivate them to improve their behavior, deter misbehavior by other students, and generate safer school conditions. The task force found no scientific evidence to support these assumptions and, on the contrary, concluded that the practice of school suspension had negative effects on students and a disproportionately negative impact on students of color and students with disabilities.

After the 1999 shooting at Columbine High School, both the FBI (O'Toole, 2000) and the U.S. Secret Service (Vossekuil et al., 2002) conducted studies of school shootings and concluded that schools should not rely on student profiling or checklists of warning signs to identify potentially violent students. They cautioned that school shootings were statistically

too rare to predict with accuracy and that the characteristics associated with student shooters lacked specificity, which means that numerous nonviolent students would be misidentified as dangerous. Both law enforcement agencies recommended that schools adopt a behavioral threat assessment approach, which, as noted in Chapter 4, involves assessment of students who threaten violence or engage in threatening behavior and then individualized interventions to resolve any problem or conflict that underlies the threat. One of the promising features of threat assessment is that it provides schools with a policy alternative to zero tolerance. Many schools across the nation have adopted threat assessment practices. Controlled studies of the *Virginia Student Threat Assessment Guidelines* have shown that school-based threat assessment teams are able to resolve student threats safely and efficiently and to reduce school suspension rates (Cornell et al., 2012; Cornell, Gregory, & Fan, 2011; Cornell, Sheras, Gregory, & Fan, 2009).

THE ROLE OF HEALTH AND MENTAL HEALTH PROVIDERS IN GUN VIOLENCE PREVENTION

The health care system is an important point of contact for families regarding the issue of gun safety. Physicians' counseling of individuals and families about firearm safety has in some cases proven to be an effective prevention measure and is consistent with other health counseling about safety. According to the 2012 policy statement of the American Academy of Pediatrics (AAP):

> The AAP supports the education of physicians and other professionals interested in understanding the effects of firearms and how to reduce the morbidity and mortality associated with their use. HHS should establish a program to support gun safety training and counseling programs among physicians and other medical professionals. The program should also provide medical and community resources for families exposed to violence.

The AAP's *Bright Futures* practice guide (see http://brightfutures.aap.org) urges pediatricians to counsel parents who possess guns that storing guns safely and preventing access to guns reduce injury by as much as 70% and that the presence of a gun in the home increases the risk for suicide among adolescents. A randomized controlled trial indicates that health care provider counseling, when linked with the distribution of cable locks, has been demonstrated to increase safer home storage of firearms (Barkin et al., 2008). The removal of guns or the restriction of access should be reinforced for children and adolescents with mood disorders, substance abuse (including alcohol), or history of suicide attempts (Grossman et al., 2005). Research is needed to identify the best ways to avoid unintended consequences while achieving intended outcomes.

In recent years, legal and legislative challenges have emerged that test the ability of physicians and other medical professionals to provide guidance on firearms. For example, in 2011 the state of Florida enacted the Firearm Owners' Privacy Act, which prevented physicians from providing such counsel under threat of financial penalty and potential loss of licensure. The law has been permanently blocked from implementation by a U.S. district court. Similar policies have been introduced in six other states: Alabama, Minnesota, North Carolina, Oklahoma, Tennessee, and West Virginia. The fundamental right of all health and mental health care providers to provide counseling to individuals and families must be protected to mitigate risk of injury to people where they live, work, and play.

The fundamental right of all health and mental health care providers to provide counseling to individuals and families must be protected to mitigate risk of injury to people where they live, work, and play.

It is apparent that long before the events at Sandy Hook Elementary School, many public health and public safety practitioners were seeking strategies to improve responses to violence in their communities and have experienced some success through problem-solving projects such as PSN and CIT. Yet there is still a need to rigorously evaluate and improve these efforts. In the meantime, basic safety precautions must be emphasized to parents by professionals in health, education, and mental health.

Public health messaging campaigns around safe storage of firearms are needed. The practice of keeping firearms stored and locked must be encouraged, and the habit of keeping loaded, unlocked weapons available should be recognized as dangerous and rendered socially unacceptable. To keep children and families safe, good safety habits have to become the only socially acceptable norm.

WHAT WORKS: POLICIES TO REDUCE GUN VIOLENCE

6

Susan B. Sorenson, PhD, and Daniel W. Webster, ScD, MPH

The use of a gun greatly increases the odds that violence will result in a fatality. In 2010, the most recent year for which data are available, an estimated 17.1% of the interpersonal assaults with a gunshot wound resulted in a homicide, and 80.7% of the suicide attempts in which a gun was used resulted in death (CDC, 2013a). By contrast, the most common methods of assault (hands, fists, and feet) and suicide attempt (ingesting pills) in 2010 resulted in death in only 0.009% and 2.5% of the incidents, respectively (CDC, 2013a).[3]

As shown in Figure 1, in the past 30 years, the percentage of deaths caused by gunfire has stabilized to about 68% for homicides and, as drug overdoses have increased, dropped to 50% for suicide. There are more gun suicides than gun homicides in the United States. In 2010, 61.2% (19,392) of the 31,672 gun deaths in the United States were suicides (CDC, 2013a).

Much of the public concern about guns and gun violence focuses on interpersonal violence, and public policy mirrors this emphasis. Although there is no standard way to enumerate each discrete gun law, most U.S. gun laws focus on the user of the gun. Relatively few focus on the design, manufacture, distribution, advertising, or sale of firearms (Teret & Wintemute, 1993). Fewer yet address ammunition.

The focus herein is on the lifespan of guns—from design and manufacture to use—and the policies that

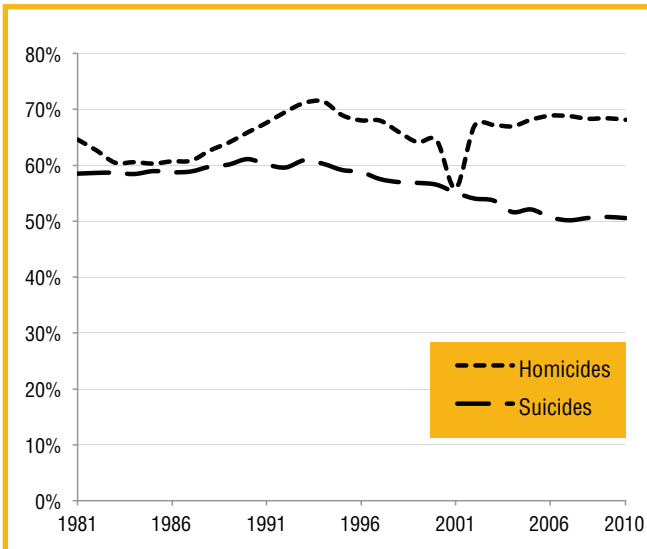

Figure 1. Deaths Attributed to Firearms, 1981–2010

Note. The data are from the Web-Based Injury Statistics Query and Reporting System (WISQARS™), Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2013. Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html

[3] The 2010 data used to calculate current rates shown here are available at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html and http://www.cdc.gov/injury/wisqars/nonfatal.html.

could address the misuse of guns. It is critical to understand how policies create conditions that affect access to and use of guns. Because they constitute the largest portion of guns used in homicides (FBI, 2012a), handguns are the focus of most laws. Despite the substantial human and economic costs of gun violence in the United States and the ongoing debate about the effectiveness of gun regulations, scientifically rigorous evaluations are not available for many of these policies (Wellford et al., 2004). The dearth of such research on gun policies is due, in part, to the lack of government funding on this topic because of the political influences of the gun lobby (e.g., Kellermann & Rivara, 2013).

DESIGN AND MANUFACTURE

The type of handguns manufactured in the United States has changed. Pistols overtook revolvers in manufacturing in the mid-1980s. In addition, the most widely sold pistol went from a .22 caliber in 1985 to a 9 mm or larger (e.g., .45 caliber pistols) by 1994 (Wintemute, 1996), with smaller, more concealable pistols favored by permit holders as well as criminals. This shift has been described as increasing the lethality of handguns, although, according to our review, no research has examined whether the change in weapon design has led to an increased risk of death. Such research may not be feasible given that the aforementioned weapons—that is, small, concealable pistols—still likely constitute a small portion of the estimated 283 million guns in civilian hands in the United States (Hepburn, Miller, Azrael, & Hemenway, 2007). The disproportionate appearance of such pistols among guns that were traced by law enforcement following their use in a crime has been attributed to the ease with which smaller guns can be concealed and their low price point (Koper, 2007; Wright, Wintemute, & Webster, 2010).

The dearth of such research on gun policies is due, in part, to the lack of government funding on this topic because of the political influences of the gun lobby.

Ammunition, by contrast, is directly related to lethality. Hollow-point bullets are used by hunters because, in part, they are considered a more humane way to kill. The physics of hollow-point bullets are such that, upon impact, they will tumble inside the animal and take it down. Some bullets have been designed to be frangible, that is, to break apart upon impact and thus cause substantial internal damage. By contrast, the physics of full metal jacket bullets are such that, unless they hit a bone, they are likely to continue on a straight trajectory and pass through the animal, leaving it wounded and wandering. Hollow-point bullets are used by law enforcement to reduce over-penetration (i.e., when a bullet passes through its intended target and, thus, risks striking others).

Some design features would substantially reduce gun violence. One of the most promising ideas is that of "smart guns" that can be fired only by an authorized user. For example, young people, who are prohibited due to their age from legally purchasing a firearm, typically use a gun from their own home to commit suicide (Johnson, Barber, Azrael, Clark, & Hemenway, 2010; Wright, Wintemute, & Claire, 2008) and to carry out a school shooting (CDC, 2003). If personalized to an authorized adult in the home, the gun could not be operated by the adolescent or others in the home, thus rendering it of little use to the potential suicide victim or school shooter. During the Clinton administration, the federal government made a modest investment in the research and development of personalized firearms. There also was considerable private investment in technologies that would prevent unauthorized users from being able to fire weapons. Efforts to create these "smart guns" have resulted in multiple patent applications. Armatix GmbH, a German company, has designed and produced a personalized pistol that is being sold in several Western European nations and has been approved for importation to the United States. Although the cost of this new personalized gun is very high, it is believed that personalized guns can be produced at a cost that would be affordable by many (Teret & Merritt, 2013).

The assault weapons ban (the Violent Crime Control and Law Enforcement Act of 1994), enacted for a 10-year period beginning in 1994, provided a good opportunity to assess the effectiveness of restricting the manufacturing, sale, and possession of a certain class of weapons. "Assault weapons," however, are difficult to conceal and are used rarely in most street crime or domestic violence. Assault weapons are commonly used in mass shootings in which ammunition capacity can determine the number of victims killed or wounded. Because multiple bullets are not an issue in suicide, one would not expect changes in such deaths either. Perhaps not surprisingly, an effect of the ban could not be detected on total gun-related homicides (Koper, 2013; Koper & Roth, 2001).

Unfortunately, prior research on the effects of the federal assault weapons ban did not focus on the law's effects on mass shootings or the number of persons shot in such shootings. Assault weapons or guns with large-capacity ammunition feeding devices account for half of the weapons used in mass shootings such as at Sandy Hook Elementary School (see Follman & Aronson, 2013). Mass shootings with these types

of weapons result in about 1.5 times as many fatalities as those committed with other types of firearms (Roth & Koper, 1997).

DISTRIBUTION

The distribution of guns is largely the responsibility of a network of middlemen between gun manufacturers and gun dealers. When a gun is recovered following its use (or suspected use) in a crime, law enforcement routinely requests that the gun be traced—that is, the serial number is reported to the manufacturer, who then contacts the distributor and/or dealer who, in turn, reviews records to determine the original purchaser of a specific weapon. The number of gun traces is such that the manufacturers get many calls about their guns each day. One researcher estimated that Smith and Wesson, with about 10% of market share, received a call every 7–8 minutes about one of their guns (Kairys, 2008). Thus, one could reasonably expect that manufacturers would have some knowledge of which distributors sell guns that are disproportionately used in crime, and distributors would, in turn, know which retailers disproportionately sell guns used in crime.

Following in the footsteps of cities and states that had successfully sued the tobacco industry under state consumer protection and antitrust laws for costs the public incurred in caring for smokers, beginning in the late 1990s cities and states began to file claims against firearm manufacturers in an attempt to recover the costs of gun violence they incurred. In response, in 2005, Congress enacted and President George W. Bush signed the Protection of Lawful Commerce in Arms Act, which prohibits civil liability lawsuits against "manufacturers, distributors, dealers, or importers of firearms or ammunition for damages, injunctive or other relief resulting from the misuse of their products by others" (15 U.S.C. §§ 7901-7903). Thus, the option of using litigation, a long-standing and sometimes controversial tool by which to address entrenched public health problems (e.g., Lytton, 2004), was severely restricted.

ADVERTISING

Advertisements for guns have largely disappeared from classified ads in newspapers. By contrast, advertising in magazines, specifically gun magazines, is strong (Saylor, Vittes, & Sorenson, 2004). Such advertising is subject to the same Federal Trade Commission (FTC) regulations as other consumer products. In 1996, several organizations filed a complaint with the FTC after documenting multiple cases of what they asserted to be false and misleading claims about home protection (for specific examples, see Vernick, Teret, & Webster, 1997). As of November 1, 2013, the FTC had not ruled on the complaint. However, the firearm industry changed its practices such that by 2002, self-protection was an infrequent theme in advertisements for guns (Saylor et al., 2004). To our knowledge, current advertising has not been studied. New issues relevant to the advertising of guns include online advertisements by private sellers who are not obligated to verify that purchasers have passed a background check, online ads from prohibited purchasers seeking to buy firearms, the marketing of military-style weapons to civilians, and the marketing of firearms to underage youth (for examples and more information, see Kessler & Trumble, 2013; Mayors Against Illegal Guns, 2013; McIntire, 2013; Violence Policy Center, 2011).

SALES AND PURCHASES

Gun sales have been increasing in the United States. The FBI reported a substantial jump in background checks (a proxy for gun sales) in the days following the Sandy Hook Elementary School shootings. In fact, of the 10 days with the most requests for background checks since the FBI started monitoring such information, 7 of them were within 8 days of Sandy Hook (FBI, 2013). Guns can be purchased from federally licensed firearm dealers or private, unlicensed sellers in a variety of settings, including gun shows, flea markets, and the Internet.

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Responsible sales practices (for examples, see Mayors Against Illegal Guns, n.d.) rely heavily on the integrity of the seller. And usually that responsibility is well placed: Over half (57%) of the guns traced (i.e., submitted by law enforcement, usually in association with a crime, to determine the original purchaser of the weapon) were originally sold by only 1.2% of federally licensed firearm dealers (Bureau of Alcohol, Tobacco and Firearms [ATF], 2000). However, there are problems. Sometimes a person who is prohibited from purchasing a gun engages someone else, who is not so prohibited, to purchase a gun for him or her. The person doing the buying is called a "straw purchaser." Straw purchase attempts are not uncommon; in a random sample of 1,601 licensed dealers and pawnbrokers in 43 states, two thirds reported experiencing straw purchase attempts (Wintemute, 2013b).

Two studies tested the integrity of licensed firearm dealers by calling the dealers and asking whether they could purchase a handgun on behalf of someone else (in the studies, a boyfriend or girlfriend), a straw purchase transaction that is illegal. In the study of a sample of gun dealers listed in telephone directories of the 20 largest U.S. cities, the majority of gun dealers indicated a willingness to sell a handgun under the illegal straw purchase scenario (Sorenson & Vittes, 2003). In a similar study of licensed gun dealers in California, a state with relatively strong regulation and oversight of licensed gun dealers, one in five dealers expressed a willingness to make the illegal sale (Wintemute, 2010). Programs such as the ATF and National Sports Shooting Council's "Don't Lie for the Other Guy," which provides posters and educational materials to display in gun stores as well as tips for gun dealers on how to identify and respond to straw purchase attempts, have not been evaluated.

It is important to be able to identify high-risk dealers because, in 2012, the ATF had insufficient resources to monitor federally licensed gun dealers (Horwitz, 2012); there were 134,997 unlicensed gun dealers in April 2013 (ATF, 2013). Some states have recognized the limited capacity of the ATF and the weaknesses of federal laws regulating gun dealers and enacted their own laws requiring the licensing, regulation, and oversight of gun dealers (Vernick, Webster, & Bulzacchelli, 2006) and, when enforced, these laws appear to reduce the diversion of guns to criminals shortly after a retail sale (Webster, Vernick, & Bulzacchelli, 2009). Undercover stings and lawsuits against gun dealers who facilitate illegal straw sales have also been shown to reduce the diversion of guns to criminals (Webster, Bulzacchelli, Zeoli, & Vernick, 2006; Webster & Vernick, 2013b).

Misdemeanants who were legally able to purchase handguns committed crimes involving violence following those purchases at a rate 2–10 times higher than that of handgun purchasers with no prior convictions.

To help ensure that guns are not sold to those who are prohibited from purchasing them, the National Instant Criminal Background Check System ([NICS], part of the Brady Law) was developed so that the status of a potential purchaser could be checked immediately by a federally licensed firearm dealer. Prohibited purchasers include, but are not limited to, convicted felons, persons dishonorably discharged from the military, those under a domestic violence restraining order, and, in the language of the federal law, persons who have been adjudicated as mentally defective or have been committed to any mental institution (see 18 U.S.C. § 922(g) (1)-(9) and (n)). About 0.6% of sales have been denied on the basis of these criteria since NICS was established in 1998 (FBI, 2012b).

A substantial portion of firearm sales and transfers, however, is not required to go through a federally licensed dealer or a background check requirement; this includes, in most U.S. states, private party sales including those that are advertised on the Internet and those that take place at gun shows where licensed gun dealers who could process background checks are steps away. Some evidence suggests that state policies regulating private handgun sales reduce the diversion of guns to criminals (Vittes, Vernick, & Webster, 2013; Webster et al., 2009; Webster, Vernick, McGinty, & Alcorn, 2013).

The ability to check the background of a potential purchaser nearly instantly means that in many states, someone who is not a prohibited purchaser can purchase a gun within a matter of minutes. Ten states and the District of Columbia have a waiting period (sometimes referred to as a "cooling-off" period) for handguns ranging from 3 (Florida and Iowa) to 14 (Hawaii) days (Law Center to Prevent Gun Violence, 2012). The efficacy of waiting periods has received little direct research attention.

With the exception of misdemeanor domestic violence assault, federal law and laws in most states prohibit firearm possession of those convicted of a crime only if the convictions are for felony offenses in adult courts. Research has shown that misdemeanants who were legally able to purchase handguns committed crimes involving violence following those purchases at a rate 2–10 times higher than that of handgun purchasers with no prior convictions (Wintemute, Drake, Beaumont, & Wright, 1998). Wintemute and colleagues (Wintemute, Wright, Drake, & Beaumont, 2001) examined the impact of a California law that expanded firearm prohibitions to include persons convicted of misdemeanor crimes of violence. In their study of legal handgun purchasers with criminal histories of misdemeanor violence before and after the law, denial of handgun purchases due to a prior misdemeanor conviction was associated with a significantly lower rate of subsequent violent offending.

Persons who are legally determined to be a danger to others or to themselves as a result of mental illness are prohibited by federal law from purchasing and possessing firearms. A significant impediment to successful implementation of this law is that the firearm disqualifications due to mental illness often are not reported to the FBI's background check system. As mentioned in Chapter 4, in 2007 Connecticut began reporting

these disqualifications to the background check system. In a ground-breaking study, Swanson and colleagues (2013) studied the effects of this policy change on individuals who would most likely be affected—that is, those who were legally prohibited from possessing firearms due solely to the danger posed by their mental illnesses. They found that the rate of violent crime offending was about half as high among those whose mental illness disqualification was reported to the background system compared with those whose mental illness disqualification was not reported.

Federal law allows an individual to buy several guns, even hundreds, at once; the only requirement is that a multiple-purchase form be completed (18 U.S.C. § 923(g)(3)(A)(2009)). Large bulk purchases have been linked to gun trafficking (Koper, 2005). Policies such as one-handgun-a-month have rarely been enacted. Evaluations of these laws document mixed findings (Webster et al., 2009, 2013; Weil & Knox, 1996).

The United States was one of the signers of the Geneva Convention, which prohibits the use of hollow-point bullets in war (the goal being to wound but not kill wartime enemies), but hollow-point bullets are available to civilians in the United States. A hunting license is not a prerequisite for the purchase of hollow-point bullets in the United States. California passed a law requiring a thumbprint for ammunition purchases; the law was ruled "unconstitutionally vague" by a Superior Court judge in 2011, but some municipalities (e.g., Los Angeles, Sacramento) have similar local ordinances in effect.

OWNER

In 2004, a national survey found that 20% of the U.S. adult population reported they own one or more long-guns (shotguns or rifles), and 16% reported they own a handgun (Hepburn et al., 2007). Self-protection was the primary reason for owning a gun. Most people who have a gun have multiple guns, and half of gun owners reported owning four or more guns. In fact, 4% of the population is estimated to own 65% of the guns in the nation.

Nationally representative studies suggest that the mental health of gun owners is similar to that of individuals who do not own guns (Miller, Barber, Azrael, Hemenway, & Molnar, 2009; Sorenson & Vittes, 2008). However, gun owners are more likely to binge drink and drink and drive (Wintemute, 2011).

In perhaps the methodologically strongest study to date to examine handgun ownership and mortality, Wintemute and colleagues found a strong association between the purchase of a handgun and suicide: "In the first year after the purchase of a handgun, suicide was the leading cause of death among handgun purchasers, accounting for 24.5 percent of all deaths" (Wintemute, Parham, Beaumont, Wright, & Drake, 1999). The risk of suicide remained elevated (nearly twofold and sevenfold, respectively, for male and female handgun purchasers) at the end of the 6-year study period. Men's handgun purchase was associated with a reduced risk of becoming a homicide victim (0.69); women's handgun purchase, by contrast, was associated with a 55% increase in risk of becoming a homicide victim. A waiting period may reduce immediate risk but appears not to eliminate short- or long-term risk for suicide.

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Risk can extend to others in the home. Efforts to educate children about guns (largely to stay away from them), when tested with field experiments, indicate they are generally ineffective (e.g., Hardy, 2002). Child Access Prevention (CAP) laws focus on the responsibilities of adults; adults are held criminally liable for unsafe storage of firearms around children. CAP laws have been associated with modest decreases in unintentional shootings of children and the suicides of adolescents (Webster & Starnes, 2000; Webster, Vernick, Zeoli, & Manganello, 2004).

USER

Most gun-related laws focus on the user of the gun (e.g., increased penalties for using a gun in the commission of a crime). Some research suggests that having been threatened with a gun, as well as the perpetrator's having access to a gun and using a gun during the fatal incident, is associated with increased risk of women becoming victims of intimate partner homicide (Campbell et al., 2003). Regarding sales, note that persons with a domestic violence misdemeanor or under a domestic violence restraining order are prohibited by federal law from purchasing and possessing a firearm and ammunition. Research to date indicates that firearm restrictions for persons subject to such laws have reduced intimate partner homicides by 6% to 19% (Vigdor & Mercy, 2006; Zeoli & Webster, 2010).

As with initial discussions about motor vehicle safety, which focused on what was then referred to as the "nut behind the wheel," current discussions about gun users sometimes involve terms such as "good guys" and "bad guys." Although intuitively appealing, such categories seem to assume a static label and do not take into account the fact that "good guys" can become "bad guys" and "bad guys" can become "good guys." One way an armed "good guy" can become a "bad guy" is to use a gun in a moment of temporary despondence or rage (Bandeira, 2013; Wintemute, 2013a).

Research on near-miss suicide attempts among young adults indicates that impulsivity is of concern. About one fourth of those whose suicide attempt was so severe they most likely would have died reported first thinking about suicide 5 minutes before attempting it.

Research on near-miss suicide attempts among young adults indicates that impulsivity is of concern. About one fourth of those whose suicide attempt was so severe they most likely would have died reported first thinking about suicide 5 minutes before attempting it (Simon et al., 2001). Although an estimated 90% of those who attempt suicide go on to die of something else (i.e., they do not subsequently kill themselves; for a review, see Bostwick & Pankratz, 2000), for those who use a gun, as noted in opening paragraph of this chapter, there generally is not a second chance.

CONCLUSION

Given the complexity of the issue, a multifaceted approach will be needed to reduce firearm-related violence (see, for example, Chapman & Alpers, 2013). Not all ideas that on the surface seem to be useful actually are. For example, gun buyback programs may raise awareness of guns and gun violence in a community but have not been shown to reduce mortality (Makarios & Pratt, 2012). Such data can inform policy. President Obama's January 2013 executive orders about gun violence include directing the CDC to research the causes and prevention of gun violence. The federal government has since announced several funding opportunities for research related to gun violence. And the recent Institute of Medicine and National Research Council (2013) report called for lifting access restrictions on gun-related administrative data (e.g., data related to dealers' compliance with firearm sales laws, gun trace data) that could be used to identify potential intervention and prevention points and strategies. So perhaps more data will be available to inform and evaluate policies designed to reduce gun violence.

The focus of this section has largely been on mortality. The scope of the problem is far greater, however. For every person who dies of a gunshot wound, there are an estimated 2.25 people who are hospitalized or receive emergency medical treatment for a nonfatal gunshot wound (Gotsch, Annest, Mercy, & Ryan, 2001). And guns are used in the street and in the home to intimidate and coerce (e.g., Sorenson & Wiebe, 2004; Truman, 2011).

Single policies implemented by themselves have been shown to reduce certain forms of gun violence in the United States. Adequate implementation and enforcement as well as addressing multiple intervention points simultaneously may improve the efficacy of these laws even more. After motor vehicle safety efforts expanded to include the vehicle, roadways, and other intervention points (vs. a focus on individual behavior), motor vehicle deaths dropped precipitously and continue to decline (CDC, 1999, 2013a). A multifaceted approach to reducing gun violence will serve the nation well.

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