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SPECIAL ARTICLE

Guns, Schools, and Mental Illness: Potential Concerns for Physicians and Mental Health Professionals

Ryan Chaloner Winton Hall, MD, and Susan Hatters Friedman, MD

Abstract

Since the recent shootings in Tucson, Arizona; Aurora, Colorado; and Newtown, Connecticut, there has been an ever-increasing state and national debate regarding gun control. All 3 shootings involved an alleged shooter who attended college, and in hindsight, evidence of a mental illness was potentially present in these individuals while in school. What appears to be different about the current round of debate is that both pro—gun control and anti—gun control advocates are focusing on mentally ill individuals, early detection of mental illness during school years, and the interactions of such individuals with physicians and the mental health system as a way to solve gun violence. This raises multiple questions for our profession about the apparent increase in these types of events, dangerousness in mentally ill individuals, when to intervene (voluntary vs involuntary), and what role physicians should play in the debate and ongoing prevention. As is evident from the historic *Tarasoff* court case, physicians and mental health professionals often have new regulations/duties, changes in the physician-patient relationship, and increased liability resulting from high-profile events such as these. Given that in many ways the prediction of who will actually commit a violent act is difficult to determine with accuracy, physicians need to be cautious with how the current gun debate evolves not only for ourselves (eg, increased liability, becoming de facto agents of the state) but for our patients as well (eg, increased stigma, erosion of civil liberties, and changes in the physician-patient relationship). We provide examples of potential troublesome legislation and suggestions on what can be done to improve safety for our patients and for the public.

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Over the past several years, there have been multiple high-profile shootings involving people who were either currently attending universities or had withdrawn from school who appear to have had a mental illness (Table 1). For physicians, highly public occurrences of violence inevitably put the focus on the mental health system, our patients, and our practices. This has raised many concerns, ranging from how best to detect and treat individuals prone to such acts to what interventions should be engaged in by states and institutions of higher learning for the protection of students and the population at large.[1] Many of these violent acts have involved firearms, which raises the questions of whether more laws are needed or if existing regulations need to be tightened[2-10] (Table 2). In addition, recent proposals have been made to increase screening for mental health problems, increase referrals to mental health services, increase funding for mental health in schools, and increase access to mental health care in general as a way to decrease gun violence.[2] Although increases in mental health funding are welcomed, linking it to the recent mass shootings, as was done by a former American Psychiatric Association (APA) president (Figure 1), may be counterproductive by increasing the stigma regarding mental illness and creating the impression that "fixing" the mental health field will de facto prevent or considerably reduce future episodes of violence.[11]

Allegations that the Tucson, Arizona, and Aurora, Colorado, deaths were due to the mental health field being inept have already been made.[12,13] In the Tucson case, several people tried to get Jared Loughner into treatment, with his school even making it a requirement for him to have an evaluation to be eligible to return as a student. He simply chose not to follow up, which then raises the question about the need to change civil commitment laws and allow for easier outpatient forced

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From the Department of Medical Education University of Central Florida College of Medicine, Orlando, FL(R.C.W.H.); Department of Psychiatry University of South Florida, Tampa, FL (R.C.W.H.); Barry Law School, Orlando, FL (R.C.W.H.); Department of Psychiatry and Pediatrics Case Western Reserve University School of Medicine, Cleveland, Ohio (S.H.F.); and Department of Psychological Medicine University of Auckland School of Medicine, Auckland, New Zealand (S.H.F.).

TABLE 1. Individuals Who Have Allegedly Engaged in Serious Violent Acts and Whose Alleged Mental Illness Was "Notable" While They Were "in School"

- Charles Joseph Whitman—A student at the University of Texas who killed 13 people and wounded 32 others from a bell tower on the campus on August 1, 1966, before being shot by authorities
- Prosenjit Poddar—Graduate student at the University of California, Berkeley who, in 1969, stabbed and killed Tatiana Tarasoff, which eventually resulted in a "duty to protect" for psychotherapists
- Wendell Williamson—University of North Carolina law student, who had last seen university psychiatrist Dr Myron B. Liptzin 8 months previously, fired a rifle at people in the streets of downtown Chapel Hill, North Carolina, on January 26, 1995, killing two. He was found not guilty by reason of insanity and sued his former psychiatrist Dr Liptzin for malpractice
- Seung-Hui Cho—Undergraduate student at Virginia Tech who, on April 16, 2007, shot and killed 32 people and wounded 15 others before committing suicide. This case resulted in national and state gun control laws
- Jared Lee Loughner—Former Pima Community College student (suspended from class in 2008 and not allowed to return until cleared by a mental health official) killed 6 people and left 14 people injured, including Congresswoman Gabrielle Giffords, on January 8, 2011
- James Eagan Holmes—Former University of Colorado Anschutz Medical Campus graduate student allegedly killed 12 people and injured 58 others at a movie theater on July 20, 2012
- Adam Lanza—Former Western Connecticut State University student (last attended in 2009) shot 20 children and 6 adults at Sandy Hook Elementary School on December 14, 2012. Suspected to have a mental illness

medication to truly reduce dangerousness since most violent acts are perpetrated by people who are not in treatment or are not adherent with medications.[11] However, such changes often raise concerns about people's civil liberties, rights to self-determination, and least restrictive/intrusive treatment options. In Aurora, Colorado, James Holmes had been seen by campus mental health professionals, but the event still occurred—raising the question of whether the mental health system failed. This impression is likely to be further enforced when existing lawsuits against Holmes' psychiatrist for "failing to protect the public" go to court.[13] However, in many ways, this is an unfair criticism because recently revealed court documents indicate that his psychiatrist had indeed notified campus police 1 month before the shootings as she was legally required to do.[14] The campus police's response was to deactivate Holmes' access card for the campus, which illustrates both the practical limitations and some of the peril that physicians actually face when it comes to questions of violence prevention and the practice of medicine. To put it colloquially, a physician's ability to prevent imminent violence many times depends on "how good their dance partner is" (eg, local law enforcement's willingness/ability to carry out a civil commitment/warnings, school administration's willingness to take action, support from family, and the patient's willingness to engage in treatment).

TABLE 2. Summary of Concerns With the 2013 SAFE Act Voiced to Governor Cuomo by the Medical Society of the State of New York and the New York State Psychiatric Association on January 11, 2013 and March 1, 2013

- "Medical science does not permit even the most experienced clinician to predict with certainty who will commit acts of violence with a weapon or firearm"[9]
- Legislation must assure that the circumstances that enable the reporting are well defined
- Legislation must assure that the professionals reporting are properly qualified and trained to know that a report needs to be made
- Legislation must assure that the report is made directly to law enforcement so that immediate action can be taken to avert the potential event
- Legislation must assure that the reporting professional is protected from liability if they have acted without malice or intentional misconduct
- Legislation must clarify discrepancies between the new law and existing laws (eg, HIPAA) regarding reporting
- Legislation needs to not be so broad that it leads to reporting of persons who do not pose a serious and imminent threat to society

HIPAA = Health Insurance Portability and Accountability Act; SAFE = Secure Ammunition and Firearms Enforcement.
Data from references 9 and 10.

ARE THE *TARASOFF* LAWS EFFECTIVE?

The 1969 murder of University of California, Berkeley student Tatiana Tarasoff by graduate student Prosenjit Poddar and the subsequent lawsuit gave rise to a formalized duty for mental health professionals to nonpatients regarding violence risk.[15-18] The specifics of the case are illustrative when we ponder how risks are considered. Indeed, months before the murder, Poddar had voluntarily informed a university psychologist of his violent thoughts. The psychologist contacted the police, who interviewed but did not detain or commit a "rational-appearing" Poddar. Despite this attempt to intervene, Tatiana Tarasoff was killed months later.[15] The therapist and school settled out of court after the California Supreme Court found there was a "duty to protect." In its brief to the California Supreme Court, the APA argued that psychiatrists did not have a standard for predicting dangerousness.[15-17,19] They further argued that creating a duty for psychiatrists to a third party would lead to risks that outweighed the benefits. Subsequent legislation has sought to limit

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this duty and liability in many jurisdictions, due to what seemed to be an ever-expanding third-party population—such as victims in car accidents, unidentifiable victims of shootings, and victims of actions that occurred months after the patient dropped out of treatment.[16-18]

Even though the effects of the *Tarasoff* case have been limited by subsequent legislation, many physicians still find it hard to maintain a balance between the very real concern about malpractice suits, maintaining the physician-patient relationship, and when to violate confidentiality. Further, police departments across the United States have varying experience with *Tarasoff* warnings, which results in unpredictable outcomes.[20] Although contacting the police may discharge one's duty to protect or warn in certain states, it may not be the most effective way to actually accomplish the goal, as seen in both the Aurora and the original *Tarasoff* case (Table 3). It is important to remember this as a profession because it highlights the fact that even after 35 years of increased reporting requirements, 35 years of additional regulations/laws, and more than 35 years of medical advances (eg, new medications, new violence risk assessment research), the violence, even with the willing help of physicians, could not be stopped in these cases.

CURRENT GUN LAWS AND RESTRICTIONS ON MENTALLY ILL INDIVIDUALS

The Brady Handgun Violence Prevention Act of 1993 mandated both background checks and a waiting period for purchasing handguns.[21-25] This Act was prompted by the disabling shooting of White House Press Secretary James Brady by John Hinckley in his attempted assassination of President Ronald Reagan in 1981. However, legislation limiting individuals committed to mental hospitals from owning a gun actually dates back to the Omnibus Crime Control and Safe Streets Act and the Gun Control Act of 1968.[21-25] The National Instant Criminal Background Check System (NICS), which ensued as a result of the Brady Bill, is a computerized system run by the Federal Bureau of Investigation that maintains the eligibility data for purchase of firearms.[24] However, not all gun sales are required to be submitted to the NICS as the law is currently worded. A notorious loophole is that unlicensed secondhand dealers can sell at gun shows without performing background checks. Also, private gun sales/transfers (from one private owner to another) are not regulated by federal restrictions and include up to 40% of sales.[23]

By 2008, after the Virginia Tech shootings, the Brady Act was amended to encourage improved state reporting of those who were disqualified from purchasing firearms (eg, felons, individuals adjudicated mentally ill).[23] Although some states have followed through with this

> A month ago we all were shocked by the senseless and brutal mass murder of 20 children and 6 staff members at Sandy Hook Elementary School in Newton, Connecticut. Since then there has been a lot of soul searching about gun violence in the country as well as the role of mental illness in this context. Two days ago, President Obama outlined his plan to reduce gun violence, including proposals for improving mental healthcare. . . . I want to begin by reviewing some important facts related to mental illness and violence. Research shows that 96% of people with serious mental illnesses never act violently. A vast majority of violent crimes are not committed by people with mental disorders. A far greater danger associated with firearms is suicide deaths. Research also shows that people with mental illnesses who engage in regular treatment are much less likely to commit violent acts than those who need, but are not engaged in, appropriate mental healthcare. And yet, in spite of evidence for effectiveness of mental health treatment, funding for public mental health services has plunged in the last few years . . . . One new initiative outlined by the President would provide training for school staff and help ensure that young people who need help are referred for treatment. . . . The Administration has also proposed funding to support school-based violence prevention efforts, and to train 5,000 additional mental health professionals working with students and young adults. . . . APA is looking forward to participating in the national dialogue on mental health. We are also ready to work with the Administration and the Congress to improve access to quality mental healthcare and public safety. Such an outcome will be the best tribute to the memory of the innocent children and brave school staff who lost their lives a month ago.[12]

FIGURE 1. Transcript of Video Message #4 from the American Psychiatric Association's President, Dilip Jeste, MD.[11]

TABLE 3. Similarities Between the *Tarasoff* Case and the Aurora, Colorado, Shootings

- Both perpetrators were graduate students
- Both apparently sought treatment voluntarily (there is some question with Holmes because some information is not public before his trial)
- Neither had a clear history of violence or mental health problems before college
- In both cases, the treating mental health professional warned campus police
- In both cases, the campus police took action short of hospitalization
- In both cases, violence occurred after the last contact with a mental health professional beyond what most would consider a reliable window for prediction of imminent violence

amendment, many states have not, citing budgetary difficulties and concerns of privacy and inability to safeguard the data.[26] Even if the Brady law is fully implemented and expanded, questions remain regarding whether it would have been able to prevent school shootings like the ones that have occurred. Many times, individuals already own guns by the time they would meet criteria to be added to this list, and the waiting period does not seem to be a deterrent or obstacle because most school-based or mass shootings are planned in advance.[27] Furthermore, shootings such as those at Columbine High School in Littleton, Colorado, and Sandy Hook Elementary School in Newtown, Connecticut, would not have been prevented because the individuals obtained the guns from family and friends.[27]

Although some states, including California, are trying to confiscate guns from people added to the list, the funding for such endeavors is often limited, resulting in large case backlogs.[29] Although more funding has recently been allotted to the California program after the Sandy Hook tragedy, the program that had been in existence for 10 years only had roughly 30 officers for the entire state in 2012, with only 10% completion of targeted confiscations.[29] The question is then raised, even if additional reporting from physicians occurs, would the other needed support mechanisms be funded and staffed to a level that would make a major impact on public safety? This is important for physicians to consider when trying to weigh the risks and benefits of proposed legislation, especially in a state such as California where there is a duty to protect after the *Tarasoff* case. What further steps a physician should take (or possibly be mandated to take) if local law enforcement is unable to follow up should also be considered.

Even though mass shootings by mentally ill individuals are relatively rare events (ie, most gun violence occurs in the commission of more standard crimes), some politicians are actually calling for every physician to report patients to the databases—in some cases on the basis of a potential diagnosis, need for long-term medication, or mere belief of potential dangerousness at some unspecified time in the future[30] (Figure 2). Physicians need to be careful as the Brady Bill is expanded that we neither ask for nor receive too much power because of the potential effect it could have on the physician-patient relationship and our role in society in general. If an individual is placed on that list, it effectively removes their Second Amendment rights for future gun purchases. Currently, people are placed on that list after judicial court rulings, either to the standard of beyond a reasonable doubt (eg, convicted of a felony) or a court determination of mental unsoundness (eg, guilty but mentally ill; incompetent to stand trial; in need of guardianship, which require various standards of proof but at a minimum of preponderance of the evidence, more likely than not). Conversely, if physicians were placing people on the list, they would likely use the much lower standard of reasonable suspicion (the same standard used to report child abuse and often described as below a 50% level of certainty), which could violate constitutional law. In addition, if physicians directly reported to the NICS or other state database, there would be no judicial oversight as there is with removal of other rights for the mentally ill, such as termination of parental rights, which could result in a due process challenge against the law because of

790.0651 **Mandatory reporting** of mental health status for firearm safety.—

The Legislature finds that prohibiting persons who have mental illness from having access to firearms is an important state interest and an interest that has been acknowledged and supported by the United States Supreme Court. Numerous high profile tragedies involving gun violence have illustrated that a critical deficiency exists in regard to records of persons who have mental illness in the current system of firearm background checks. . . . Requiring health care providers with direct knowledge of an individual's mental health status and propensity for violence to provide identifying information to law enforcement for inclusion in the automated database of persons prohibited from purchasing a firearm will more fully enable the state to realize its goal of preventing the dangerous mentally ill from accessing guns that may be used to harm innocent persons in this state. . . . As used in this subparagraph, "incapable of exercising sound judgment with respect to the proper use and storage of a firearm" means the diagnosis by a licensed physician that the person suffers from an active psychiatric or psychological disorder or condition that causes or is likely to cause substantial impairment in judgment, mood, perception, impulse control, or intellectual ability, and the person poses a risk of serious harm to himself, herself, or others. If the condition or disorder is in remission but is reasonably likely to redevelop at a future time or requires continuous medical treatment to avoid, such condition or disorder shall be considered an active condition or disorder. Such conditions or disorders may include, but are not limited to, schizophrenia or delusional disorder; bipolar disorder; chronic dementia, whether caused by illness, brain defect, or brain injury; dissociative identity disorder; intermittent explosive disorder; or antisocial personality disorder.[31]

FIGURE 2. Proposed 2013 Florida State Senate Bill Number 1484.[30]

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the removal of the checks and balances that a judge and/or hearing provides.

In addition, physicians need to pay close attention to the wording used in any bills that require background checks on transferors of firearms. Currently, many physicians treating suicidal patients often ask them to remove firearms from their homes. Depending on how legislation is written, our patients may actually need to have a background check performed before and after they transfer their weapons to a friend, family member, or physician for safekeeping. Although many would argue that once a patient is suicidal, they should never have a gun again, this may be a step too far for the suicidal patient to agree to, whereas the notion of a temporary transfer is agreeable and improves immediate safety.[31]

Many in the United States point to the stricter laws in other countries as a model for future US laws. For example, an Australian study examined legislative reform after 2 mass shootings—in 1988 and 1996—and firearm-related deaths, finding that firearm amnesty, buy-backs/confiscation, and strong regulatory reforms were followed by a downward trend in suicide by firearm and firearm deaths overall.[32] However, even in countries with strong firearm restrictions, mass shootings can still occur—like the 2012 Quebec election shooting, the 2011 Norway shooting at a summer camp by Anders Behring Breivik, and the 1996 Scottish Dunblane shooting in which 16 children were killed. School and mass shootings are not just an American problem; 3 school shootings occurred in Canada and 4 school shootings occurred in Europe between 1999 and 2008 (ie, between the times of the Columbine and Virginia Tech events).[27] Even if stronger gun laws are in place in the United States, the chance for future episodes of mass violence in or out of schools unfortunately cannot be eliminated.

INCREASED RATE OF OCCURRENCE IN SCHOOLS?

Although there is a history of school-based firearm violence dating back to the 1800s, there has been increasing recent awareness, especially when such acts are committed by people with a mental illness.[27,33] There are likely many factors causing this increased awareness. The first is that individuals with mental illness, especially psychotic illness, are attending college at a higher rate than ever before.[34-36] This is due to better treatments, passage of laws such as the Americans with Disabilities Act (ADA), and decreases in stigma. In addition, the college years are often a time when mental illness presents for the first time. Individuals who have a mental illness or have development of one while attending university may be at greater risk for having decompensation—due to stress (eg, academic and social problems), being away from their family, increased use of substances (eg, alcohol), and having limited supervision or accountability.

There are also concerns of a copycat or *Werther effect* (a term coined by sociologist David Phillips in 1974[37]) in which individuals, usually adolescents and younger adults, act out situations they have seen in media and the news.[27,37-39] For example, 20-year-old Blaec Lammers, who had a history of being civilly committed, was arrested for planning a movie theater shooting spree months after the Aurora movie theater shootings.[40] His planned attack was thought to be directly inspired by James Holmes' actions in Aurora.[40] Why past episodes such as the University of Texas clock tower shootings in 1966 did not spur the same level of copycat behavior may indicate a magnifying influence of our current 24-hour news cycle.[38] However, one needs to be careful about blaming the media. There will always be susceptible individuals, and it is impossible to predict which story will trigger a reaction.[38,39] For example, some have written about how the book *Catcher in the Rye* incites assassination and antisocial behavior, since Lee Harvey Oswald (suspected of shooting and killing President John F. Kennedy), John Hinckley (shot President Ronald Reagan), and David Mark Chapman (shot and killed John Lennon) all owned a copy.[41,42] Granted, this list does seem to suggest a common thread with hindsight, but it must be remembered that over 65 million copies of *Catcher in the Rye* have been sold, and most people who have read it have not engaged in assassinations.

The Werther effect extends beyond just guns and even the United States media markets. Many in North America may not be aware that there has been a rash of deadly knife attacks in China.[43-47] In 2010, 3 separate school knife attacks resulted in 68 primary

school–aged children being stabbed.[44] The government of China went so far as having people register in order to buy butcher knives, executed the individual involved in the first event, and trained school personnel in how to detain a knife-wielding individual with long metal Y-shaped "forks."[43,45] Unfortunately, these knife control measures did not prevent a 2012 school knife attack (on the same day as the Newtown, Connecticut, shootings) in which 22 children were stabbed and school personnel had only brooms to try to stop the attacker.[43] Fortunately, none of the schoolchildren died from this attack, although it is estimated that at least 25 schoolchildren have died in previous attacks.[44,46,47] In absolute numbers, the Werther effect is usually small; however, when it does occur, it can have a substantial impact, as seen by the steps China took to protect its schoolchildren from future knife attacks.

Since it appears that acts such as these can occur with guns or knives and across different cultures, the question then becomes: why schools? Schools may just be targets of opportunity, because almost every community has one and almost everyone has had some experience of being a student. Schools symbolically hold value as symbols of hope, achievement, and betterment while at the same time being the place where many have their first negative encounters with authority or failure academically or socially. Since communities often cherish schools, they also may be the easiest way to make others suffer the pain, hurt, or anxiety that the mass shooter wants to inflict. This was evident with the Washington, DC, sniper case in which the police officer in charge, Chief Charles Moose, made the following statement after a child was shot at a school: "All of our victims have been innocent and defenseless, but now we're stepping over the line,… Shooting a kid—it's getting to be really, really personal now."[48]

WHAT ARE THE POTENTIAL EFFECTS ON OUR PATIENTS, OTHER STUDENTS, AND INSTITUTIONS OF HIGHER LEARNING?

Important concerns for physicians, mental health practitioners, their patients, and institutions of learning include how to ensure that the stigma of these actions does not prevent otherwise "safe" students from receiving treatment and to prevent patients/students from having their civil liberties violated (eg, confidentiality, overly intrusive screening).[49] Institutions of higher learning are potentially liable for suit if a shooting incident occurs, as well as being susceptible to lawsuits under the ADA if termination of a student's status occurs without sufficient justification. The ADA does have specific exceptions for violence and risk toward others, but the threshold to legally prove that someone is a threat may be difficult to determine before an incident or be based on nonspecific and nonthreatening risk factors, such as isolation or social awkwardness.

This problem was highlighted in a recent university case in which a student with no known history of mental illness, no known disruptive behaviors on campus, and no known academic problems committed suicide after his alleged plan for a mass shooting was interrupted by his roommate walking in on him minutes before he planned to act.[50] The person had smuggled 2 firearms and 4 bombs into his room without his roommates' knowledge despite the university having a policy of no firearms allowed in the dormitories. A resident advisor who knew the individual made the statement that

> [the student] was a good person; I know that in my heart.… He was a bit socially awkward, but I would never have guessed something like this, and he never gave me any indication or reached out to me for help.[50]

The only potential warning signs that could have been identifiable before the suicide/mass shooting plan were that the student had not paid for the semester (suggesting possible financial problems) and that he was described by some as a loner with a possible temper issue.[50,51] However, neither of these are necessarily rare in college-aged males. In a review of school shootings, Petri[27] noted that roughly half the events studied had some potential action that warned about upcoming violence; however, this also means that for the other half, the individual seemed no different than usual or looked like an average if not normal student.

A University spokesman later made a statement regarding the financial situation of the student who had planned the mass shooting there:

> We want to give students every opportunity to get their education. Some students have a hard time making payments on time, so we have been compassionate about that in the past and certainly in this case. [But] what took place is going to make us evaluate if that's the right policy.[52]

This highlights a concern that these events will result in schools and universities changing policies designed to give people the opportunity to complete school to potentially rigid policies with less flexibility, which could disproportionately affect students with mental illness.

Unfortunately, after an event like this is discovered, there is often a hindsight bias or "20-20 hindsight." Even physicians are susceptible to hindsight in our assessments of risk and must proceed with caution.[53] The scepter of mental illness may be raised because of tautologous logic such as "someone who was not mentally ill would not do something like this." Although there is sometimes truth to this belief, caution is needed that mental illness not become the excuse for all violent crimes or shootings. Both authors of this article are forensic psychiatrists who have evaluated many people who have committed murder and other horrific crimes but were not mentally ill per se (eg, acts occurred due to intoxication, revenge, to send a message, or while engaging in "normal" criminal behavior such as a robbery). However, if every act of violence, especially involving a current or former student, is labeled as an act of mental illness, it may become difficult for nonviolent conscientious students with mental illness to obtain an education. As implied in the quote from the University spokesman, schools will start to become "less compassionate" toward students with difficulties and/or mental illness. Ironically, obtaining an education may actually be the best factor to help ensure economic stability, access to care, and insight into need to continue with treatment—which is best for the individual and the community.[30]

ARE INDIVIDUALS WITH MENTAL ILLNESS MORE DANGEROUS THAN THOSE WITHOUT MENTAL ILLNESS?

Mental illness, in and of itself, is often cited as a risk factor for gun violence, by both gun control advocates and gun rights advocates. Although physicians are aware of the statistics that having a gun in the home leads to a higher risk of suicide, we may not realize what such statistics could imply about our patient population (Table 4). Physicians are forced to consider the question of whether our patients with mental illness are truly more likely to commit acts of violence. To date, the medical literature is split on this notion in general and even, to some degree, on the question of gun access and suicide (eg, whether a truly causal relationship exists or just observational data, with the National Academy of Sciences reporting that methodological limitations prevent credible demonstration that the association is causal[21]).[58-60] In addition, we need to be careful how we use the term *mental illness* since definitions vary from state to state when it comes to legal implications.[26,61] The condition that may most commonly come to mind when the public refers to mental illness and guns is schizophrenia, but as evident from a study by Casiano et al,[58] the mental illnesses actually most likely to result in increased threatening behavior with a gun are bipolar disorder type 1 (adjusted odds ratio, 8.46; 95% CI, 4.01-17.88) and drug dependence (adjusted odds ratio, 5.59; 95% CI, 3.53-8.85), both potentially fluctuating, unpredictable states.

Those trying to destigmatize the perception of mental illness will point to studies such as the MacArthur Foundation study that find no significant increased risk of violence between mentally ill individuals taking medication and those without illness.[62] Yet at the same time,

TABLE 4. Data on Mental Illness, Firearms, and Violent Acts

- 37% of the US population own guns
- For veterans, the gun ownership rate is 42%
- Homicide is more common in areas where homes have firearms
- 52% of US suicides are completed with firearms
- 67% of all US homicides are completed with firearms
- 3%-5% of serious violent acts are directly attributed to mental illness
- Most of these violent acts do not involve firearms
- Most patients with mental illness have nothing to do with firearm deaths
- A survey of Virginia colleges after the Virginia Tech shootings in 2007 found that 4-year colleges occasionally utilized various protective interventions in response to mental health crises, although the number affected was usually small
- The Second Amendment gives citizens the right to bear arms, although the Supreme Court has ruled that limits can be placed on those adjudicated mentally ill

Data from references 22, 24, 31, and 54-57.

widely used and well-referenced risk assessment instruments (such as the Historical, Clinical, and Risk Management [HCR-20] scale) consider a history of mental illness as a risk factor.[63,64] What further complicates the debate is that both may be correct. On the population level, individuals with mental illness may not be considerably more likely to commit a violent crime than those without mental illness, but on the individual level, once an individual has been identified (eg, committed a crime, made a threat, disruptive behavior), symptoms of mental illness can be an important factor.

The MacArthur study of mental illness and violence risk, a well-designed prospective longitudinal study, sought to overcome the methodological problems of other violence risk studies and thus included a range of potential risk factors (eg, demographic characteristics, personality factors, violence history, mental disorder and symptoms, and social support) and careful definitions of violence, (eg, including self-report as well as collateral information about violence), studied a large segment of the population, and was conducted at 3 American sites.[62] Patients were initially interviewed while psychiatrically hospitalized and had a diagnosis of affective or thought disorder, substance abuse, or personality disorder. They were also interviewed 10 and 20 weeks later. Psychopathy, prior violence, socioeconomic disadvantage, substance abuse, and anger were associated with violence, as were persistent thoughts of violence. A diagnosis of major mental disorder was correlated with a *lower* violence risk. Delusions and hallucinations were not associated with violence; however, a paranoid attitude or command hallucinations of violence increased the likelihood of violence. It must be remembered that this study, arguably the most comprehensive of its kind, only included violence occurring within 20 weeks after hospital discharge.

Much uncertainty remains regarding our ability to predict violence. For example, misunderstandings are rife on the topic of violent fantasies. Little research has addressed this issue. Some assert that violent fantasies are warning signs of risk.[65] However, others theorize that the most gentle among us may harbor violent fantasies, which may be a safe way of dealing with angry emotions as illustrated in the title of Dr Robert Simon's book, *Bad Men Do What Good Men Dream*.[38,39,66] To date, there is no community study adequately addressing whether violent fantasies truly predict future dangerousness.[65] In one study, 73% of male undergraduates and 66% of female undergraduates reported having at least one homicidal fantasy in their lifetime, suggesting that violent fantasies may be quite common but rarely acted on.[67]

Many of those who have perpetrated mass gun violence—such as Jared Lee Loughner and James Eagan Holmes—displayed symptoms of a mental illness that affected their ability to participate in formal education for months to years before actually engaging in their acts of violence. In addition, acts such as these have a low base rate and therefore have the potential for high false-positives in terms of risk assessment, especially long term.[1]

Only limited research has explored links between policies on gun ownership, violence, and mental illness. Price et al[54] found that mental health resources within a state have little association with firearm death rates; however, education expenditures were more related. Recently, Sen and Panjamapirom[68] found that states with background checks for gun purchases that include mental illness and fugitive status have lower rates of firearm suicide deaths than states checking only for criminal history, but checking for mental illness did not independently affect homicide rates. Although criminals often have a history of violence and mental illness (it is generally estimated that half of the prison population meets diagnostic criteria for at least one mental illness using a broad defination of "mental illness"), those with mental illness who have not committed a crime are often nonviolent.[62] Despite this fact and a dearth of research, the general public supports that access to firearms should be limited among those with mental illness, whether they have a criminal background or not, as a way to lower homicide rates.[57]

DO PHYSICIANS ASK ABOUT GUNS? THE ELEPHANT IN THE ROOM?

Surprisingly, another topic that has not been well studied is whether physicians ask their patients about firearm access. For a period of time, there was actually a presumptive ban on federally funded gun violence research. In 1996, Congress enacted a law banning Centers for Disease Control and Prevention funding for any research to "advocate or promote

gun control."[60,69] This topic has been further complicated by proposed gun rights legislation prohibiting physicians from asking patients about firearms that was put forth in many states to address perceived antigun "discrimination" and "harassment" carried out by physicians.[69] Such legislation was even enacted into law in Florida.[69] Although there are some exemptions for emergency department physicians and mental health professionals, it has had a chilling effect in the state. The Florida law is currently being challenged in the courts, and it is unclear what the ultimate outcome will be.

A recent Veterans Administration study found that this population of psychiatric patients (who have a higher suicide risk, as well as increased access and knowledge about firearms) perceived that access to firearms was only discussed in suicide/homicide risk assessments—and then only if the patients themselves expressed that their thoughts involved guns.[31] However, these patients expressed that they believed physicians and mental health professionals should routinely discuss firearms.[31]

In addition to physicians not commonly asking about guns or educating patients about guns, many do not know enough about guns and gun safety to be able to do so in an educated manner.[70,71] Studies have found as few as 10% of mental health personnel know enough about guns to be able to understand what a patient owns, the potential risks associated with any particular type of firearm, or even how to counsel patients and families about gun safety.[70-74] In a survey study of psychiatrists by Price et al,[71] it was found that 45% had not "seriously thought" about discussing firearm safety with their patients, in part because 22% reported no personal knowledge of firearms, 54% reported not receiving information about firearm safety at any time (eg, in residency training), and only roughly a quarter had received information from professional journals or meetings (eg, had participated in continuing medical education courses on the topic). However, psychiatrists who had received information on firearm safety were 13 times more likely to counsel patients about firearms. Although the authors know of physicians who say that the only gun safety they need to know for any situation is "do not own a gun" or "no one should own one," this view in the long run will be counterproductive to physician-patient communication. This approach shuts down communication and the opportunity for patient education before a real discussion can even begin.

CONCLUSION

In the not too distant past of the 1980s, the APA submitted an amicus brief in the case of *Barefoot v Estelle* that resulted in the United States Supreme Court stating, "Neither petitioner nor the APA suggests that psychiatrists are always wrong with respect to future dangerousness, only most of the time."[19] Physicians also needs to remember that:

> Violence is a complex, multicausal phenomenon, and [physicians] are not experts on all of its aspects. Our focus is on the individual factors that contribute to violence, especially among people with mental illnesses. The work of other disciplines, including sociology and criminology, has taught us that many other variables predict violence—often more strongly than the factors that [physicians] consider.[1]

If physicians choose to put themselves in the position of being a potential solution to the problem of gun violence during the current national debate, we should make sure that we have the tools, system resources (eg, adequate police funding and training, greater treatment resources such as hospital beds), and legal justification (eg, clear indication of how not to violate civil rights and liberties and clear and nonconflicting laws) to back up the promise.[3-10] Otherwise, we just increase our own risk for liability. Particularly, physicians need to work with state legislators (see Table 2) to ensure that laws are crafted to not violate patient confidentiality, are written in a way that is applicable to the principles of medicine, do not turn physicians into "policemen" or agents of the state, and do not place physicians in the position of having to choose between our patients and the general public (as some could argue happened with the proposed Florida bill described in Figure 2).

In addition, physicians can take steps to improve both our patients' health and public safety by engaging in conversations with our

patients about firearms and furthering our own knowledge on the topic (eg, attending continuing medical education courses on the topic, reading articles on the topic). We may not always be able to affect what our patients do or what laws are passed, but we can make a conscious effort to learn about the topic. Even if an individual's personal belief is that "no one should own a gun," they may consider taking a gun safety class themselves. This allows them to have firsthand knowledge, to have a better understanding of the potential dangers, and potentially to better communicate with their patients, beyond just mortality statistics and what *not* to do.

Abbreviations and Acronyms: **ADA** = Americans with Disabilities Act; **APA** = American Psychiatric Association; **NICS** = National Instant Criminal Background Check

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Correspondence: Address to Ryan C. W. Hall, MD, 2500 W Lake Mary Blvd, Ste 219, Lake Mary, FL 32746 (Dr.rcwhall@live.com).

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