

AMERICAN MEDICAL ASSOCIATION RESIDENT AND FELLOW SECTION

Report: E
(I-20)

Introduced by: RFS Governing Council
Prepared by: RFS Committee on Public Health
Subject: Traumatic Brain Injury and Access to Firearms
Referred to: Reference Committee

INTRODUCTION

The topic of this report originated from Resolution 1 (A-19): Improving Medical Clearance Policies for Traumatic Brain Injury Patients which was referred to the AMA-RFS Governing Council for further investigation regarding the access of individuals with traumatic brain injury to firearms in light of increased risk to self and others.¹

The Reference Committee recognized the intent of the resolution, however, noted limitations of the resolved clauses based on testimony heard at the 2019 AMA-RFS Annual Meeting:

Resolution 1 called upon the AMA-RFS to advocate for amending current federal and state laws to include symptomatic traumatic brain injury (TBI) patients as prohibited from obtaining or retaining a license to carry a firearm until they are medically cleared. Further, the resolution asked the creation of policy, advocacy for, and support of state legislation that expands medical clearance requirements and firearm purchasing restrictions to all individuals that have medical conditions likely to cause substantial impairment or that have been declared incompetent. Finally, it asks that the RFS advocate for physician-led reporting committees and legislation focused on physician reporting of all patients with prohibitive conditions to appropriate state oversight agencies, with a focus on individuals who had sustained TBI.

The Reference Committee noted extensive mixed testimony: a clear concern is present regarding the accessibility and availability of firearms to those who are likely to harm themselves or others. However, testimony highlighted the challenges with determining competency and the problems associated with a potential reporting mechanism. Significantly, competency is determined by the courts while capacity, when determined by a physician, is done at a specific point in time for a particular action or decision. The Reference Committee noted additional concerns of unintended consequences including discriminating against vulnerable populations by creating a registry of people with mental illness secondary to a TBI. Further, concerns were present about patient privacy, reportable vs non-reportable TBIs, and the parties involved in the reporting process. Finally, concerns were noted about the damage possibly sustained to patient-physician relationship with the reporting process. Thus, the Reference Committee recommended that Resolution 1 not be adopted.

Following the report of the Reference Committee, this resolution was referred to the AMA-RFS Governing Council for study and assigned to the AMA-RFS Committee on Public Health by the Governing Council.

DISCUSSION

Traumatic brain injury (TBI) is a prevalent issue in society with approximately 1.7 million incidents annually, a third of which contribute to injury-related deaths in the U.S.² Although extensive research is conducted in the field to better assess interventions in limiting consecutive brain damage after the initial head trauma, the actual mechanisms of neural recovery are poorly understood.³ An increased focus is placed on therapies to treat individuals who have sustained brain injury and to improve their long-term recovery as many of these individuals suffer from significant cognitive, behavioral, and communicative disabilities which interfere with their daily activities and lives.³ Furthermore, approximately 20% of patients develop long-term medical complications such as epilepsy, Alzheimer's disease, Parkinson's syndrome, and depression in addition to their initial medical treatments after sustaining injury which costs the nation's healthcare more than \$56 billion each year.³⁻⁵

Traumatic Brain Injury

Traumatic brain injury (TBI) is the impairment of normal brain function either temporarily or permanently when a sudden traumatic force physically damages the brain tissue.^{3,6} TBI is considered an acquired brain injury, an event occurring after birth, which could be localized to one area of the brain or diffuse throughout the organ to involve more than one injured region and occurs when the head forcefully collides with an object.³ The neurological insult that occurs disrupts the normal function of the brain in terms of physical integrity and metabolic activity and can lead to other physiological disruptions over extended periods of time; however, TBI is not hereditary, and non-progressive.^{7,8}

Brain injury can be classified into three categories based on the severity of damage to the cerebrum: mild, moderate, or severe as measured and calibrated by the Glasgow Coma Scale (GCS), length of coma or loss of consciousness (LOC), and/or duration of post-traumatic amnesia (PTA).^{3,9} Using these measures to determine the intensity of injury soon after the traumatic event allows for better medical management and appropriate allocation of facilities and resources for patient care.⁹ The GCS assigns severity of injury based on a scoring scale in three categories: eye opening, verbal response, and motor response which are summed to a single number between 3 and 15, revealing most severe injury to least severe injury, respectively.¹⁰ LOC indicates the amount of time post-injury when an individual is unresponsive to environmental stimuli including sound and/or touch.⁹ The duration of LOC indicates the injury severity whereby the longer an individual is unconscious, the greater the brain injury.⁹ Additionally, PTA aids in determining injury based on the length of time it takes for the patient to form clear memories and comprehension.¹¹ Similar to LOC, the longer it takes for the patient to recall events or form clear thoughts the injury is more severe.¹¹ Although each method is useful and utilized to categorize TBI, they are not conclusive of injury severity individually. The methods are used comprehensively and in accordance with other resources to finalize the status of a patient.

Mild TBI (mTBI), also referred to as a concussion, occurs when the brain bumps against the skull and the neural network of the brain is disrupted to cause lightheadedness,

dizziness, blurred vision, confusion, headaches, fatigue, minor behavioral changes, and trouble with memory, concentration, or attention.^{2,3} During mTBI, the injured person would remain conscious or lose consciousness for less than 30 minutes with a GCS of 13-15.^{2,3,9-11}

Moderate and severe TBI share some of the same signs and symptoms as mTBI when the brain impacts against the skull with greater intensity causing skull fractures and/or deformations, contusions and cerebral hemorrhages, and lesion formations as well as persistent headaches, nausea or vomiting, seizures, dilation of pupils, difficulty in communicating, weakened motor abilities and coordination, numbness in the extremities, increase confusion, and agitation.³ LOC of over 30 minutes and a GCS score of 12 or less indicate moderate or severe TBI.^{2,3,9-11} In many cases, moderate and severe TBI require immediate medical attention as the brain injury could be life-threatening and often leads to permanent physiological disabilities, seen in 25% of moderate TBI and 20% of severe TBI, and death, as estimated to occur in 10% of moderate cases and 33% of severe cases.²

TBI can be caused by a number of mechanisms including falls, motor vehicle accidents (MVA) or traffic incidents, being struck by or against an object, assaults, violence or abuse, and other events.² Many fall victims who sustain TBI are in the geriatric population over the age of 75 and make up approximately 35% of TBI cases.^{2,3} Transportation accidents involving automobiles, motorcycles, bicycles, and pedestrians are prevalent in individuals below the age of 75 and make up over 17% of TBI events in the U.S. while accounting for a higher percentage of TBI cases globally.^{2,12,13} Individuals struck by or against an object make up approximately 16.5% of TBI cases while 10% of injuries are due assault, violence, or abuse most prominently seen in women and youth.^{2,3} The remaining 21.5% of injuries are caused by unknown mechanism of injury.²

Given the various methods of injury, TBI can occur in any person irrespective of age, gender, or other demographics. A general analysis of those who sustain brain trauma based on age indicate that children 0-4 years old, adolescents 15-19 years old, and adults over the age of 65 are more likely to experience traumatic brain injury.² In addition, TBI rates are greater in males than in females in all age groups.² Moreover, the socioeconomic status of societies can be a factor in TBI incidents as increased numbers of injuries due to MVAs are reported in low- and middle-income countries.^{12,13}

Cognitive Impairment

Cognitive impairment refers to impairment of a person's ability to remember information, learn new things, concentrate, or make decisions as it pertains to activities of daily living. These impairments may range from mild to severe. Mild forms are associated with changes in cognitive function with the retained ability to complete daily tasks while severe forms inhibit an individual's ability to live independently as physical and mental functions decline immensely (US Department of Health and Human Services, 2011).¹⁴

Although much of the discussion regarding cerebral impairments relates to the aging population, literature has noted cognitive, behavioral, and communicative disabilities in those who have sustained traumatic brain injury. Impairments are associated with a wide array of altered functions, including substance use disorders, inclinations for violent actions, and new-onset medical and psychological conditions.^{15,16} For the majority of individuals who have TBI these changes will be transient; however, a minority of these individuals are found to have persistent impairments.^{17,18}

Given the scope of TBI and the subsequent mental and physical outcomes of the individuals involved, it is imperative for medical providers to be well informed and equipped to care for these patients. It is important to provide better provisions in the realm of prevention for the safety and wellbeing of those affected by TBI.

Current Background Checks

The Second Amendment of the United States Constitution protects an individual's right to possess a firearm, but like other rights this is not unlimited.¹⁹ The federal government and individual states have the ability to limit this right. These restrictions include the possession of firearms in schools and government buildings, by felons, those "adjudicated as mentally defective", and those "committed to a mental institution", and the government retains the ability to impose conditions and qualifications on the commercial sale of firearms.²⁰ "Adjudicated as mentally defective" is defined as an individual who: is a danger to himself or others, lacks the mental capacity to contract or manage his own affairs, is found to meet the definition of insanity in a criminal court, or is found incompetent to stand trial or found not guilty by reason of lack of mental responsibility. "Committed to a mental institution" is defined as commitment to a mental institution involuntarily for mental defectiveness or illness or committed for drug use.

Background checks for the purchase of a firearm are highly contested in politics. Since the passage of the Brady Bill in 1993, there has been a requirement for federally licensed firearm dealers to complete background checks.²¹ The FBI maintains the National Instant Criminal Background Check System (NICS) which is a database that provides records of federal crimes used in the background checks. However, at the state-level convictions, mental health records, and all other submissions are voluntarily shared by individual states. Background check laws vary based on state, type of firearm being purchased, and the location of sale.²² One example of state differences entails the waiting period for the completion of background checks which can range from no waiting period to as long as 30 days.²³

Relating to reporting by health care professionals, in 2016 the department of health and human services modified the Health Insurance Portability and Accountability Act of 1996 (HIPAA) to permit disclosure of federal "mental health prohibitors," which would prevent a patient from shipping, transporting, possessing, or receiving a firearm.²⁴ Again, stark differences between states have developed with regards to what is considered reportable, the timeliness of reporting, and rigor with which the state reports. Notably, no state or federal law limits the sale of firearms for medical reasons.

Other complexities to firearm background checks also exist. For instance, if a firearm sale is to occur privately, as in without a federally licensed firearms dealer, no requirement of a background check is needed in many states.²⁵ For example, checks are waived in many states when firearms sales occur between private individuals during gun shows. The varying state laws pertaining to gun sales and background checks create many gray areas. These issues complicate the ability to track individuals who may pose a danger to themselves and others when in possession of a weapon such as a firearm.

Current AMA Policy

Appropriate policy can be the cornerstone to making lasting change on issues. This has been proven with public health concerns such as seatbelts, cigarettes, and helmet use.

Attempts at legislation on gun control in the United States is not a modern concept. The first national legislation was passed in 1934 with the intent to stop gang violence by taxing the manufacture, sale, and transport of certain firearms.²⁶ The AMA has long supported legislation geared toward stemming the tide of gun violence beginning in 1968 with the Gun Violence Control Act after the assassination of multiple well-known public figures including US Senator Robert F Kennedy, Martin Luther King Jr., and President John F. Kennedy.²⁶

More recently, the AMA and more than 50 other societies signed a letter in 2013 to reiterate the need for comprehensive access to mental health services as well as curbing access to firearms that are designed to heighten the ability to injure the maximum amount of people including high-capacity magazines, semi-automatic firearms, and assault weapons.²⁷ That same year, the AMA supported a bill known as the “Assault Weapons Ban of 2013.” Following that, the AMA has released letters supporting changes to HIPAA reporting which would allow doctors to submit information to the national background check database to prevent individuals with severe mental illness from being able to purchase a weapon.^{28,29}

There are some very important policies that the AMA has supported that relate to gun violence and injury prevention. In H-145-997, the AMA acknowledges that firearms are a public health problem, encourages research into innovative manufacturing techniques, advocates for additional funding toward developing new safer weapon designs, and promotes education programs for firearm safety and prevention. The AMA has since developed several other corollary policies surrounding firearm violence prevention and intervention. Some of these policies asked for the establishment of preventative measures which would target the sale and manufacture of guns, specifically to decrease the availability. AMA policies calling for a waiting period preceding any firearm purchase include H-145.991, H-145.992, and H-145.996. Policies calling for the imposition of background checks for handgun purchases include H-145.991, H-145.996, H-145.970, and H-145.972.

The waiting period outlined in H-145.991 would mandate a period of time that allows for the background check and positive identification check for anyone who wishes a handgun from a registered gun dealer nationally. H-145.992 calls for at least one week of a waiting period before purchasing *any* firearm. H-145.996 is the most comprehensive and “encourages legislation that enforces a waiting period and background check for all firearm purchasers; and urges legislation to prohibit the manufacture, sale, or import of lethal and nonlethal guns made of plastic, ceramics, or other non-metallic materials that cannot be detected by airport and weapon detection devices”. It also calls for the support of “red-flag laws” in the context of individuals who have been arrested or convicted of domestic violence or stalking, or who have shown to be capable of other signs of potential violence. These laws allow the police or relatives/friends who have concerns about the possession of firearms by a specific individual to petition the court to have their guns confiscated for a specific amount of time. This also would restrict this individual from being able to purchase weapons during this time period.

Background checks are covered in a number of overlapping policies that are discussed in the previous paragraph including H-145.970 and H-145.972 with the latter being more specific to firearms and high-risk individuals. This policy overlaps with H-145.996 and calls for “laws allowing family members, intimate partners, household members and law enforcement to petition a court for removal of a firearm when there is a high or imminent

risk for violence". This builds upon the idea that if there are concerns that the person should not be allowed to own a firearm and there is concern for immediate danger, there should be a legal process for the removal of the firearm by the State. The policy includes individuals who have been convicted of misdemeanor domestic violence crimes and restraining orders. Dating partners are added as a new subset of individuals who can legally be considered a protected group. The policy also supports domestic violence restraining orders/gun violence restraining orders to be included in the National Instant Criminal Background Check reporting system. In addition to requiring reporting, the AMA policy H-145.970 supports the automation of the reporting system and federal financial assistance to allow states the appropriate funding to provide adequate and effective reporting of relevant information.

Furthermore, there is one policy that addresses mandated penalties for individuals who used an illegally possessed firearm to commit crimes. H-145.999 calls for "stricter enforcement of present federal and state gun legislation and the imposition of mandated penalties by the judiciary for crimes committed with the use of a firearm, including the illegal possession of a firearm".

Finally, there is strong AMA policy supporting the ability of physicians to appropriately counsel patients on firearm safety. H145-976 supports physicians developing state-specific guidance for counseling patients on firearm injury risk reduction and the dissemination of educational materials related to firearm safety. This policy opposes any law that restricts frank discussions between physician care teams and patients or limits the ability to discuss firearm safety.

With regards to mental health, there are a number of specific policies that address mental health including screening, education, access to mental health services, and reporting. Policies H-345.975, H-345.981, D-345.994 discuss mental health services at the state level including inpatient and outpatient mental hospitals, community mental health centers, and addiction treatment centers, as well as other state support for psychiatric services. These policies included support for state responsibility to develop programs that rapidly identify and refer individuals with significant mental illness for treatment, increased funding for Mobile Crisis Units, and enforcement of the Mental Health Parity Act. The latter act prevents health insurance companies from restricting coverage and providing less favorable benefits to those with a mental health or substance use disorder compared to those with other medical/surgical conditions.³⁰ Furthermore, H-145.975 addresses support for "initiatives to enhance access to mental and cognitive health care, with greater focus on the diagnosis and management of mental illness and concurrent substance use disorders, and work with state and specialty medical societies and other interested stakeholders to identify and develop standardized approaches to mental health assessment for potential violent behavior." This policy when coupled with the existing firearm specific policies ostensibly covers individuals with a TBI who might be more at risk for violence.

There are two AMA policies that relate to concussion and tangentially to traumatic brain injury. However, the only conclusive concussion related policy that the AMA has created is H-470.954, titled: "Reduction of Sports-Related Injury and Concussion." The policy supports initiating guidelines for recognition and management of concussions in sports medicine as well as developing appropriate education for the diagnosis, prevention, and management of concussions. It also details support for research into the short- and long-term, "cognitive, emotional, behavioral, neurobiological, and neuropathological

consequences of concussions and repetitive head impacts over life span,” and for the development of “objective biomarkers to improve the identification, management, and prognosis of athletes suffering from concussion to reduce the dependence on self-reporting and inform evidence-based, age-specific guidelines for these patients.” However, the only mention of traumatic brain injury in the policy is at the beginning when it indicates that one of the goals of this policy is to support agencies in their efforts to “promote awareness that even mild cases of traumatic brain injury may have serious and prolonged consequences”. This policy does not delineate high-risk individuals from lower-to average-risk and only addresses individuals who have suffered concussions related to sports.

Given these policies that are already well-established, the need for further policies that specifically target individuals with traumatic brain injury with regard to firearm possession and usage is difficult to support. As was described earlier in this document, TBI is a wide-ranging diagnosis that encompasses a variety of phenotypes. The intention of the new policy ostensibly is to Individuals deemed to be high-risk regardless of the etiology would be covered under the existing policies without a need to directly target them in another policy. Screening for high-risk individuals with TBI would be more effective in this setting as those individuals could be at higher risk for violence and would benefit from a policy restricting access to firearms. Adjusting the policy related to concussion and traumatic brain injury to make sure to intentionally define TBI and high-risk individuals would be a much more effective strategy to develop safe policy surrounding gun control.

Mandatory Reporting Structures in Existence

While the patient-physician relationship and confidentiality is most sacred, there are legal statutes that exist which override this bond. The Centers for Disease Control & Prevention (CDC) publishes a list of Nationally Notifiable Diseases, which includes ~100 infectious, non-infectious, and outbreak notifiable conditions, updated every year.³¹ The Nationally Notifiable Disease List is compiled by state health departments and the CDC, and includes both nationally notifiable diseases, as well as diseases mandated by each state’s legislation for mandatory reporting. States typically have a more comprehensive and thorough list of reporting, such as the requirements for New Jersey which include among others, Creutzfeldt-Jakob Disease, Yersiniosis, work-related asthma, and work-related dermatitis.³²

Another example of a situation that requires breaking physician-patient confidentiality is if the patient is deemed to be a danger to themselves or others. The Health Insurance Portability and Accountability Act (HIPAA) allows for disclosure specifically when it “is necessary to prevent or lessen a serious and imminent threat to the health or safety of a person or the public; and ... is to a person or persons reasonably able to prevent or lessen the threat, including the target of the threat”.³³ Most states have laws similar to California’s Tarasoff statute which requires behavioral health professionals to disclose serious threats made towards an identifiable victim, although four states have no duty to protect or warn, namely Nevada, North Dakota, Maine, and North Carolina.³⁴

At least 17 states have approved “red flag laws”, which authorize courts to issue a protective order which allows police to temporarily confiscate firearms from a person where there is concern that they are a danger to themselves or others. The requests can be made by family, friends, and healthcare professionals, if they believe a person to be at risk for conducting violence.³⁵

Screening for TBI

The AMA has policy supporting screening by physicians for a number of public health and health concerns, not limited to: intimate partner and family violence (D-515.980, H-515.981), potential violent behavior within mental health assessments (H-145.975), alcohol and drug use (H-30.942, H-95.922), pediatric mental health screening (H-345.977), social and economic risk factors (H-160.896), maternal depression (D-420.991), and adverse childhood events (H-515.952). While the AMA has policy regarding sports-related injuries and concussions, which includes TBI, there is not any policy that involves the importance of screening for active symptoms or history of TBI in settings such as primary care, pediatrics, psychiatry, neurology, schools, homeless shelters, within the criminal justice system, and athletic communities.

Failing to identify TBI may have severe consequences. Screening tools like the Ohio State University TBI-ID Method (OSU-TBI-ID), Brain Injury Screening Questionnaire (BISQ), HELPS Brain Injury Screening Tool, and Brain Check Survey may aid in the identification of those at risk for more severe consequences, and allow for supportive measures such as vocational rehabilitation or cognitive rehabilitation.^{36, 37}

RECOMMENDATIONS

Based on the report prepared by the AMA-The RFS Council on Public Health, your AMA-RFS Governing Council recommends the following:

- 1) That our AMA reaffirm policy H-145.972 “Firearms and High-Risk Individuals.”
- 2) That our AMA amend policy H-145.975 by addition to read as follows:

Our AMA supports initiatives to enhance access to mental and cognitive health care, with greater focus on the diagnosis and management of traumatic brain injury, mental illness and concurrent substance use disorders, and work with state and specialty medical societies and other interested stakeholders to identify and develop standardized approaches to traumatic brain injury and mental health assessment for potential violent behavior.

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