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Facilitating Firearm Safety Counseling in Pediatric Primary Care to Decrease Gun Deaths in Children and Teens in Philadelphia

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ABSTRACT

Gun violence is a public health epidemic that affects the lives of children. The United States has the highest firearm deaths in children and adolescents among other high-income countries (University of Michigan, 2019). The Second Amendment ratified in 1791 protects the rights of citizens to keep and bear arms. This policy made by the founding fathers underlie controversial debates in the present day, resulting in different federal, state, and local gun laws. Due to the varying gun policies, firearm homicide rates of children and adolescents are climbing like never before. Firearms suicide is even more frequent than homicide and is widely associated with mental illnesses that frequently arise in adolescence.

In Philadelphia today, there is a high prevalence of gun violence in areas that have a high concentration of low-income neighborhoods. The individuals at risk for firearm injuries are young African American men, and homicide by firearms is their leading cause of death. The American Pediatric Society encourages pediatricians and other primary care physicians to counsel for proper firearm storage to reduce the effects of gun violence in children and adolescents. However, physicians seldom give firearms counseling mainly due to a lack of time, education, and training, which includes the awareness of policies that control the scope of physician firearms counseling that also protects the receiver's second amendment rights.

The objective of this study is to perform a literature review of techniques and recommendations to firearms counseling in pediatric primary care settings with an awareness of policies in Philadelphia. Expectation is that a high rate of patients will be complying to firearms counseling and performing proper gun storage in family homes. The techniques used in these studies will be examined against Philadelphia and Pennsylvania policies in order to make an evidence-based algorithm for pediatricians in the city of Philadelphia.

BACKGROUND

GUN EPIDEMIC AFFECTING CHILDREN

The United States has the highest prevalence of gun shootings than any other high-income countries (Grinshteyn & Hemenway, 2016). News of violence almost always involves the use of a firearm and it is endangering the life of its citizens, including children. From all firearm deaths among children and adolescents in high-income counties, over 90% of the incidents come from the United States (University of Michigan, 2019). There are nearly 1,300 children who die and 5,800 children who get severely injured from firearms every year according to a study that examined 12 years of gun violence involving children from 2002 to 2014. These deaths and injuries are related to suicide, homicide, mass shootings, or unintentional shootings (Fowler et al., 2017). Currently, there is an intense and widespread demand for interventions to mitigate the effects of gun violence that is affecting the safety of children in the United States.

SECOND AMENDMENT RIGHTS AND GUN POLICIES

The second amendment enacted in 1791 states that all citizen of the United States have the right to bear arms. In modern-day, it has caused much debate about gun ownership, gun regulation, gun laws, and gun usage. Gun laws passed in the state level and local level differ due to many controversial and contradictory debates of communities having different beliefs and perceived needs for gun policies and regulation. A U.S. federal law called the preemption law intercedes with conflicting gun laws. The preemption law states that the highest-level law will prevail; signifying that federal laws will be above state laws, and state laws will be above local laws. As it relates to gun regulation, gun laws at the local level cannot pass stricter gun laws than that of the state level or the federal level. The preemption law has the ability to hinder, intercept, or strike down laws passed by city councils that enforce stricter gun control (Pomeranz &

Pertschuk, 2017). The preemption law can be a problem in cities or other urban areas where guns are more often used to shoot individuals instead of animals for the purpose of hunting (University of Michigan, 2019).

FIREARM HOMICIDE

Discussions about gun violence in the United States often intersperse when news of mass shootings occur. News broadcasters give these events substantial coverage in which they have become successful in spreading a nationwide awareness in the prevalence of mass shootings, especially in schools. Since 1970, there has been 1,316 school shootings in the United States and the numbers are continuing to rise (University of Michigan, 2019). What is more disturbing is that they are occurring more frequently since the incident at Sandy Hook Elementary school in 2012. In 2018, there were 97 school shootings at schools from kindergarten to 12th grade in the U.S., which is the highest number incidents than any other year (Center for Homeland Defense and Security, 2020).

FIREARM SUICIDE AND MENTAL ILLNESS

Suicide is the willful taking of one's life to cause death. It is commonly associated with mental health disorders such as depression, anxiety disorders, bipolar disorders, personality disorders, and substance abuse disorders. Suicide may be an abrupt occurrence of a manifestation of a mental illness or a premeditated action that is the result of a lengthy exacerbation of mental health symptoms. Adolescents are vulnerable to the development of mental illness due to the drastic physical and social changes that happen at about ten to twenty-one years old. The brain continues to mature until approximately the age of 25 and adolescents encounter many physical changes and stressful social situations at puberty (University of Rochester Medical Center,

2020). During this time, they may not have yet reached full brain development and practiced healthy emotional coping mechanisms to appropriately handle stressful situations.

Firearm homicide and mass shootings account for a lower percentage than firearm suicide. According to the Center for Disease Control (2019), about 60% of all gun-related deaths were from suicide and 30% were from homicide. In children and adolescents, suicide is the second leading firearm-related death (Cunningham et al., 2018). Compared to other methods of suicide, firearms use is the most lethal. When firearms are the weapon of choice, the attempter will complete suicide 90% of the time, leaving almost no chance for a second chance at life (Conner et al., 2019). Protection of children and adolescents from obtaining the most lethal weapon is important as this population is vulnerable to risk-taking behaviors stemming from a continuing brain development and a lack of practice to exercise healthy judgments.

Research implemented by Simonetti et al., (2015) revealed that "adolescents with risk factors for suicide were just as likely to report in-home firearm access as those without such risk factors." It suggests that parents do not see the existence of an adolescent with mental illness in the home as a factor to remove firearms from the home. Furthermore, another study found that the storage of guns does not differ from one home to another, even when there is an adolescent with mental illness residing in the home (Simonetti et al., 2017). These findings revealed that parents also do not see the existence of an adolescent with mental illness in the home as a factor to store firearms strictly. The behavior of parental gun owners is concerning since guns that adolescents use to commit suicide are owned by someone else in the home (Johnson et al., 2010).

AFFORDABLE CARE ACT AND PHYSICIAN LIABILITIES

Gun violence is often seen as a political issue as it is heavily discussed by legislators to regulate its access and distribution, and consequently, overshadows the issue from a public

health perspective. Not only are politicians responsible with the issue surrounding gun safety, but healthcare professionals are as well. Healthcare providers are the ones who are at the forefront of treating gun violence victims. With the prevalence of gun violence today, certain steps must be taken in order to decrease its' lethal reoccurrence year by year. The role of the physician is put into question as to whether it is appropriate to discuss firearm ownership and safety.

The Affordable Care Act passed in 2010 addresses the patient's rights and privacy when disclosing gun ownership information to physicians. A section dedicated to protecting the second amendment rights are outlined in the Affordable Care Act (ACA) that limits what physicians can or cannot do. It states that wellness and prevention programs should not require patients to disclose the ownership of firearms in the home and keep any form of records. This law implies that physicians cannot coerce or demand information about firearms and document gun-related information in electronic medical records (EMR), paper charts, and other forms of data collection (Patient Protection and Affordable Care Act, 2010). In addition, ACA prevents the alteration of premiums, deductibles, copays, and other insurance fees according to a patient's gun ownership and usage. However, this law does not indicate that physicians cannot ask or counsel patients about firearm safety.

Studies have shown that physicians have a collective stand for firearm counseling. According to a survey in 2016, there is a high acceptability of primary care physicians to provide firearms safety counseling to patients (Beidas et al., 2019). The American Pediatric Association strongly advocates for regular firearm counseling in pediatric clinical settings. The organization also advocates against policies that restrains the physician's right to free speech as well as their responsibility to ensure the health and safety of their patients. It is within the scope of practice of a physician to be concerned about their patients and support policies that promote public health.

PHYSICIAN GAG LAW

Occurrences of distrust when physicians asked about gun ownership and safety backfired in 2010 in Florida. This resulted in the enactment of Florida's Firearm Owner's Privacy Act, also known as the Physician Gag Law, stemming from the cases when physicians mishandled educating patients about firearm safety. This law banned physicians from asking and acquiring information from patients about guns ownership, however, the U.S. Court of Appeals struck it down in 2017 (Lee & Curfman, 2017). This is an offense to the First Amendment of the physician's right to free speech, and also a barrier to the physician's duty to assess and report for patient safety. If a physician assessed a patient to be of high risk to himself or others, asking about firearms is one step to intervening in potential risks of injury to self or others. Deaths by firearms are fast and effective, and second chances at life almost never occur when guns are the weapon of choice. What is even more tragic is that "80% [who completed suicide had] contact with primary care clinicians within one year of their death," which meant that physicians missed many opportunities to save lives (Stene-Larsen & Reneflot, 2019).

LACK OF PHYSICIAN COUNSELING

In a survey in 2019, 96% of 81 pediatric residents believe that it is the responsibility of the physician to counsel on firearm safety, however, 63% of them never provide counseling. This is mainly due to a lack of time and education (Hoops & Crifasi, 2019). Although, research has shown that parents of children and adolescents are receptive to engaging in discussions about gun safety. It was found that "sixty-six percent thought pediatricians should ask about the presence of household firearms" and that "seventy-five percent of parents thought [pediatricians] should advise about safe storage of firearms" (Garbutt et al., 2016).

GUN VIOLENCE IN PHILADELPHIA

There is a high prevalence of gun injuries and deaths in Pennsylvania that called for Governor Tom Wolf to enact an executive order against gun violence in 2019 (Commonwealth of Pennsylvania, 2019). In addition, police officials have recently constructed an intervention to mitigate its consequences, arising in a citywide strategy called Operation Pinpont in 2019 (City of Philadelphia, 2019). The strategy entails "pinpointing" specific locations in each police district that has a high risk of crime, including gun-related crimes. The objective is to regularly patrol the high-risk locations in these areas, in order to achieve a quicker response to places where illegal behavior mostly takes place. In relation to gun violence, locations of shootings and homicides mostly occur in neighborhoods that have the lowest income and the highest concentration of poverty. In addition to a class disparity, there is also a racial and age disparity when it comes to firearm homicide in Philadelphia. The population who are more at risk are African American males who are around the ages of 16-24 years old, mostly stemming from community arguments and drugs (City of Philadelphia, 2019). In fact, firearm homicide is the leading cause of death for young non-Hispanic black males in Philadelphia. Compared to the national statistic, the rates of homicide far exceed the rates of suicide in Philadelphia (Farley, 2017).

OBJECTIVE OF STUDY

The objective of this study is three-fold. First is to review local and state gun policies of Philadelphia and Pennsylvania that could affect the scope of practice of pediatric primary care physicians to firearm safety counseling. Second is to gather information about the attitudes of the patients and barriers of communication that could hinder the effectiveness of gun counseling. Finally, the last objective is to collect successful approaches and recommendations for pediatricians to facilitate firearm discussion in a sensitive manner that will most likely make gun

owners comply. A literature review will be conducted to compile an evidenced-based algorithm on how to approach firearm counseling in a culturally competent fashion. The ultimate goal of this study is to increase the practice of safe firearm storage in households in Philadelphia.

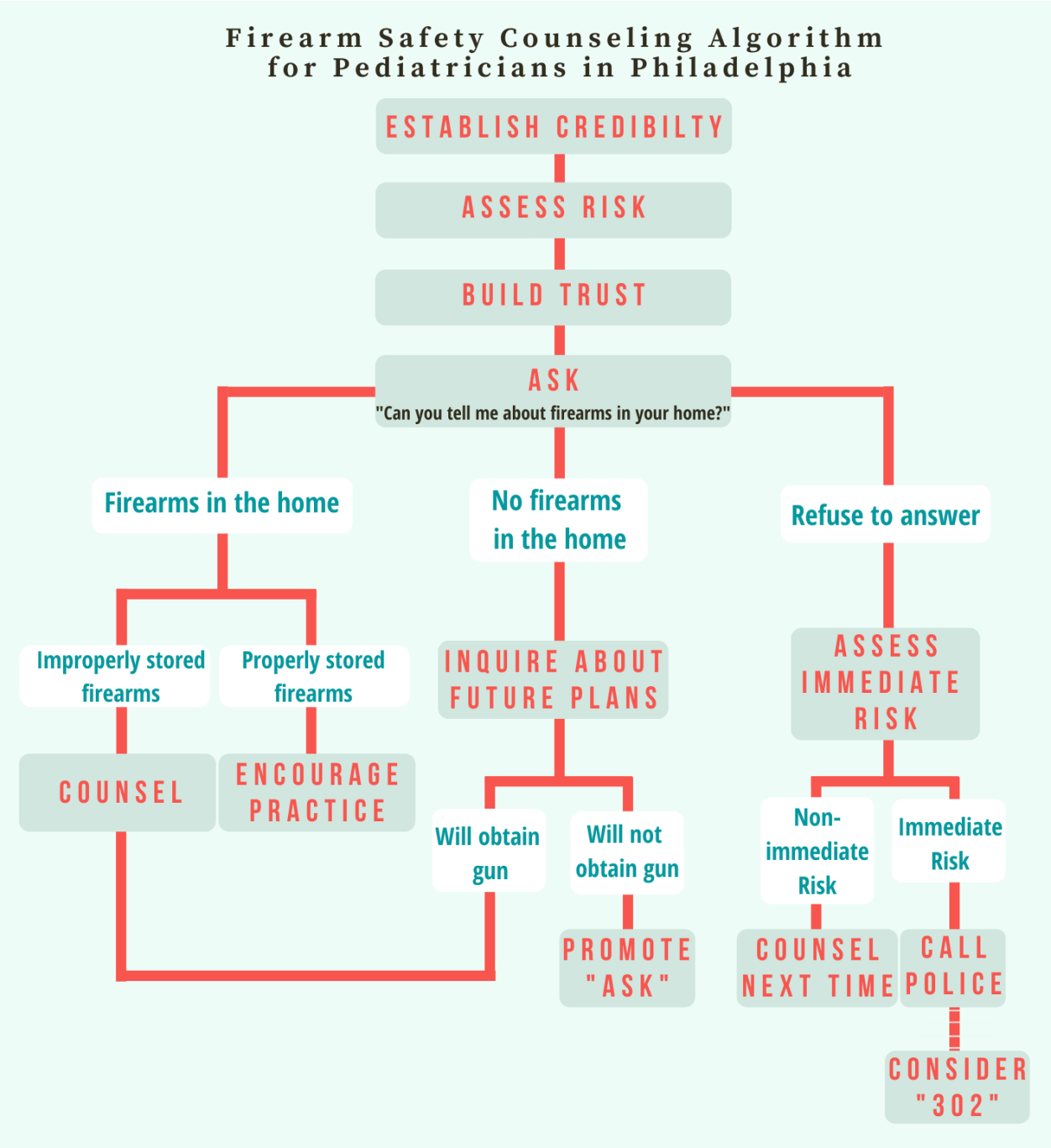
RESEARCH METHODS AND STRATEGIES

A literature review was conducted to find studies that relate to the strategies and the efficacy of firearm counseling to parents or families. Academic online databases were used such as PubMed, Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Wiley Online Library, Google Scholar, and EBSCO Information Services. The researcher also visited websites of firearm safety organizations for expert recommendations on firearm counseling, appropriate firearms storage, and various storage options. Lastly, the researcher investigated governmental and firearm non-profit organization websites were used to assess the prevalence of the gun epidemic affecting children, the policies that affect physician firearm counseling, and the status of child firearm safety in Philadelphia.

RESULTS AND DISCUSSION

The progression of the results and discussion section will follow the outline of the algorithm created obtained with the information from the literature review.

Figure 1) Firearm Safety Counseling Algorithm for Pediatricians in Philadelphia



1) ESTABLISH CREDIBILITY THROUGH EDUCATION OF POLICIES

From a survey in 2018, patients stated they would believe physicians less during a discussion about safer gun storage than other professional sources such as law enforcement, hunting or outdoor organizations, and the military (Crifasi et al., 2018). Parents may have more knowledge about gun policies in their area than physicians, especially if those parents are gun owners. Therefore, physicians may lose credibility if they are not aware of local policies. The first step in the algorithm on how to initiate gun counseling to parents at wellness visits is to be informed about gun policies Philadelphia. Gun policies differ at the city and state level. The researcher determined four policies that Philadelphian‘s physicians should know that would enrich the competency of physicians to gun counseling. These laws will affect steps of the algorithm; therefore, it is important that physicians are familiar with them. They are as follows: physician gag laws, background checks, child access prevention laws, and 302 Involuntary Commitment.

Physician Gag Laws – Physician gag laws do not exist in the state of Pennsylvania, and physicians are able to ask about gun ownership with respect and confidentiality (McCourt & Vernick, 2018).

Background Check Laws – In the state of Pennsylvania, the legal age to purchase and possess a firearm is 18 years old. Pennsylvania attempts to prevent access of firearms to prohibited people, including minors, through requiring licensed private firearm dealers to perform a background check at any point of transfer of the firearm. However, this only applies to handguns and does not apply to any other guns such as rifles and shotguns (Pennsylvania General Assembly, 2011). This means that minors can easily obtain a gun bypassing a background check if they are sold by private market sellers such as sellers at gun shows. Furthermore, this law does not address the

gifting of firearms to minors from any individual who can purchase these firearms such as parents, relatives, guardians, or friends, ultimately giving minors a chance to harm themselves or others if they are not properly trained.

Child Access Prevention Laws – Many states have variations of laws that prohibit children from accessing a gun at a certain age. Pennsylvania has no form of a child access prevention law. These impose that adults cannot be criminally liable for giving a child a firearm, failing to lock firearms, or negligibly storing firearms that children can easily access even when it results in the child's death. This is especially alarming considering that some states have existing laws that penalize people who intentionally provide firearms to minors with considered exceptions for the purpose of hunting or other recreational activities. There is no variation of a child access prevention law even with well-educated exceptions at all in Pennsylvania (Griffords Law Center, 2018).

302 Involuntary Commitment - This legal process involves hospitalizing a person against their will if they pose a threat to themselves or others. It can be initiated by a person with reasonable concern through a petition that will then let authorities commit the high-risk individual under involuntary medical evaluation for up to five days. When the respondent is committed, they will have no opportunity for due process. They will not be able to stand before a judge, present evidence in court, or cross-examine witnesses to defend themselves. Finally, they lose their second amendment rights for life. However, an existing Pennsylvania House Bill, HB1075, presents a different option for high-risk individuals called an Extreme Risk Protection Order (ERPO). ERPO's already exist in many states across the United States but Pennsylvania is not one of them. The bill allows for temporary confiscation of firearms only for a certain amount of time and lets respondents retain their rights for due process. Although a physician is not able to

make a petition with this bill, the physician is able to testify in court (Stephens, 2019). Future Philadelphia physicians are encouraged to monitor this possible change in the near future as it can affect their scope of practice.

2) ASSESS RISK

The second step is to assess the risk of children for any form of gun violence. These children can be victims of gun violence but at the same time, they could be perpetrators of homicide at mass school shootings. They can also be the one accessing the gun to attempt suicide. The physician should note the following six basic risk factors in the family household: (1) homicidal ideation, (2) suicidal ideation, (3) alcohol misuse, (4) drug misuse, (5) history of violence, and (6) people with dementia or other cognitive impairments. Physicians should also note the individuals who identify with a certain demographic group at an increased risk unique to the area where they are practicing (Pallin et al., 2019). With that said, the seventh risk factor is their residence at locations with a high concentration for gun violence. In Philadelphia, physicians should note the family and neighborhood environment of their pediatric patients as some areas are of higher risk for gun violence than others. These high-risk neighborhoods are concentrated in Central and Southwest Philadelphia with residents more likely to come from low-income families (City of Philadelphia, 2019).

In addition, there is a distinct racial and age disparity to gun violence. African Americans between the ages of 16 to 24 years old are more likely to be involved with gun violence either as a victim or a perpetrator. Their risk increases if they are disconnected from school and work that could manifest in different forms such as a lack of a high school diploma or unemployment (City of Philadelphia, 2019). While these risk factors are important, physicians should be sensitive and cautious about using racial demographic alone as a screening factor as a reason to engage in gun

counseling. This practice may raise ethical concerns that could hurt the patient-physician relationship. The researcher advices physicians to use this particular risk factor as an adjunct to the risk factors outlined above.

A shorter approach known as the "5 L's" can also be used to immediately assess risk factors. The 5 L's stand for Locked (Is the gun locked?); Loaded (Is the gun loaded?); Little children (Are little children present?); feeling Low (Is the operator feeling low?); and Learned owner (Is the operator learned or have cognitive dysfunctions?) (Lum et al., 2016). This short version may not be as comprehensive as the first risk assessment test but with time constraints being one of the reasons pediatricians are not engaging in gun counseling, using this shorter version can counteract this issue during visits (Hoops & Crifasi, 2019). Then, they may assess further using the first comprehensive risk assessment. Overall, families with multiple risk factors should be regarded as individuals with dire need of firearm safety education.

3) BUILD TRUST

The third step to proper gun counseling is to strengthen the relationship between the physician and the parent by expressing concern for their children. The physician can do this by opening up the conversation that relates it to the risk factors observed. In this way, the physician appears transparent and caring to the parents. The physician can also prepare for firearm counseling by initiating a conversation in the context of asking about other safety interventions for children such as the use of bicycle helmets or car seat requirements. This way, the parent would be more likely to view the conversation as a focus on safety and public health, leaving little opportunities for political debates (Wolk et. al, 2017). In addition, the physician should also state that this type of conversation is confidential and that it will not be recorded on their medical

records as stated by the ACA requirements. This gives the patient a psychologically safe space and will be more likely to comply.

4) ASK

The fourth step is to ask the parent about their gun ownership. Physicians should be mindful to how they frame the question given that the topic of firearms is a heavily sensitive and controversial topic that could provoke certain individuals. The physician should use open-ended questions instead of leading questions. An example of an open question would be: "Can you tell me about firearms in your home?" as opposed to a leading question which could be exemplified as: "There isn't a firearm in your home, is there?" The leading question creates an obligation for the parent to answer the physician's question that they think would be the correct response. Furthermore, it conveys judgment to the gun ownership decisions of the family. Leading questions are less likely to elicit truthful disclosures to the physician, missing an opportunity for firearm counseling (Callon et al., 2016).

Furthermore, the physician should approach the fourth step of this algorithm with an understanding of people's decision to own a firearm. Out of 3,949 people in a National Firearms Survey, about two-thirds of the people in the United States owned firearms for protection against people among other reasons such as hunting, collecting, sports use, protection against animals, and other reasons (Azrael et al., 2015). The physician should comprehend that this statistic means that most Americans who own firearms feel safer with it in the home. It is important to recognize that this feeling may be powerful. With that, the physician should reflect about their own opinions and should not impose their beliefs on their patients that could possibly trigger a volatile response. The physician should not only understand the parent's decision to gun ownership but also to respect it (Pallin et al., 2019).

5a) COUNSEL AND ENCOURAGE PRACTICE

Project ChildSafe recommend guns to be stored in a safe with a locking device and separate from ammunition (Project Childsafe, 2018). If the parent states that there is a firearm in the home and the physician assesses that the firearms are stored improperly, the physician can engage in counseling. If they are stored properly, the physician can encourage to continue the safe practice. It is important to note who the gun owner is to be able to effectively change storage practices in the home. If the person is currently at the wellness visit, the physician can educate the gun owner how to properly store their firearms at that moment. The physician should not ignore that the child may be competent enough for the parents to allow the handling of a gun, which are allowed by local and state policies in Philadelphia and Pennsylvania. In this case, the child with the parents should all be counseled together. The physician can review safe storage device options with the gun owner that would be feasible and that would best suit their living arrangements. Project ChildSafe has many resources on their website about gun storage options that includes cable locks, gun cases, lock boxes, electronic box locks, biometric gun safes, as well as vehicle storage items and accessories (Project Childsafe, 2018). It would be more effective if the physician reviews the educational materials with them in the office that they could then look over at another time (Runyan et al., 2018). Furthermore, the provision of written materials will be perceived as the physician taking a more objective approach to firearm counseling. This would enforce a non-judgmental environment that would then strengthen the patient-physician relationship (Betz & Wintemute, 2015). Afterwards, the physician can offer a gun lock if he or she has access to one. The provision of a gun lock is proven to be more effective in changing firearm safety storage behaviors in the home than other provision of materials such as economic incentives or written materials (Rowhani-Rahbar et al., 2016). In

addition to counseling for firearms storage, physicians should also encourage parents to ask other homeowners about the existence of guns in their home before letting their child visit. This practice is called "ASK," which is widely promoted by the ASK Campaign, a subset of the Brady's End Family Fire Campaign. It also collaborates with and is well-supported by the American Academy of Pediatrics (ASK Campaign, 2015).

5b) INQUIRE ABOUT FUTURE PLANS

If the patient indicates that they do not own a firearm at home, the physician can ask if they are planning to obtain one in the near future. If the parent says "yes", then the physician should go to step 5a and offer to counsel safe storage practices. If the parent says "no", then the physician should promote the ASK practice and encourage parents to ask other parents, relatives, or other caretakers about guns in their residence before sending their child to a certain location. As a conclusion, the physician should state that firearm counseling and educational materials are available at their office should they find the need for them.

5c) ASSESS IMMEDIATE RISK

If the parent refuses to answer, the physician can assess immediate risk by "respectfully emphasiz[ing] why the discussion of firearm access is relevant, [discussing] the goals of risk assessment and reduction, refram[ing] the question, and [asking] patients why they prefer not to answer" (Pallin et al., 2019). However, asking "why" questions can make parents feel they need to defend their decisions, therefore, reformatting the question may be more impactful. Using the "what" method where "why" questions are reformatted to "what" questions would prevent how parents may misperceive the question. For example, instead of asking: "why are you refusing to answer?" the physician can rephrase it as: "what are your reasons for refusing to answer?"

(Lauster & Srivastava, 2014). This method would be more likely to elicit an honest answer and without harming the patient-physician relationship.

If the assessed risk of the child does not appear to need an acute response, the physician can end the conversation and attempt to counsel at the next wellness visit, making sure to state that parents are welcome to bring up the conversation when they feel the need (Parent, 2016). Physicians also need to be aware that parents may be resistant to firearm counseling because the practice of safe storage is more than the law requires as opposed to car seats or bicycle helmet laws (Wolk et al., 2017). In Philadelphia, there is no Child Access Prevention Laws that would command a firearm safety behavior change in adults. If the physician believes that the child is at immediate risk of gun violence, the physician can call the local police department. A few examples of these circumstances would be if the adolescent states intentions of using the firearm to harm themselves or others, or if there is a strong evidence of domestic abuse. Depending on the circumstances, the physician should consider the Pennsylvanian law, 302 Involuntary Commitment, as a last resort. This pathway may have adverse repercussions to the patient-physician relationship and the physician should inquire detailed information before deciding to do so. The ability of the law to take a person's right for due process and second amendment rights for life should be heavily considered. It is up to the discretion of the physician how immediate a response should be to ensure the safety of the children and possibly of other family members (Pallin et al., 2019).

RECOMMENDATIONS FOR FUTURE STUDIES

First, research recommends the implementation of this algorithm in pediatric primary care offices in Philadelphia and assess the effectiveness of its guidelines. Studies should analyze the attitudes, competency levels, and comfortability levels of physicians who use this algorithm.

Patients should also be examined to assess their opinions of physicians using the algorithm as well as their responses to the counseling given their status of gun ownership and gun right beliefs. Lastly, the researcher recommends an overall increase on gun research that is heavily lobbied against by the National Rifle Organization, especially with criteria that focuses on child firearm safety and counseling. This will ensure that more evidence is available to improve the outline of this algorithm and enhance the communicative skills of pediatric primary care physicians to protect children from firearm deaths in Philadelphia.

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