The Role of the Pediatrician: How Can We Prevent Gun Deaths in Children?

Kristin Schwarz, M3, Boston University School of Medicine; Christian Pulcini, M3, Tufts University School of Medicine

The tragedy that took place at Sandy Hook Elementary School in Newtown, Connecticut was shocking and profoundly saddening to us all. This nightmare-turned-reality awoke the nation and galvanized a much-needed discussion on firearms, mental health services, and child-safety. The disturbing truth is that gun-related deaths among children and adolescents are by no means infrequent in our country.

Gun-related injuries are the second most common cause of death in children and adolescents ages 1-18 (the first is motor vehicle accidents). According to recent CDC census data, in one year alone, there were 1,553 gun-related homicides in this age group, 493 gun-related suicides, and 121 gun-related accidental deaths. Sadly, 68% of all homicides and 40% of all suicides among these young people involved guns.¹

At hospitals and clinics across the country, we care for children who have lost siblings in shootings, teens with gunshot wounds in the trauma bays, and young families who live in neighborhoods where it is not safe to play outside. Every year, more children and adolescents are killed by guns than by cancer, infections, or heart disease, and therefore gun violence is, without question, a paramount issue for pediatricians.¹

(continued)
Firearm Policy Update:
The issue of pediatricians’ role in preventing gun deaths was brought into the spotlight in 2011, when Florida passed legislation that forbid physicians from asking families about guns in the home. A permanent injunction against the law was issued; however, Governor Rick Scott subsequently appealed the ruling.

In October 2012, just two months before the shooting in Newtown, the American Academy of Pediatrics (AAP) issued a Policy Statement on Firearm-Related Injuries Affecting the Pediatric Population. The policy statement recommends that pediatricians incorporate questions about the availability of firearms in their assessments of home safety during clinical interviews. It also recommends that pediatricians urge parents who own guns to use safe storage methods in order to prevent children from accessing them.

The AAP’s policy statement calls on pediatricians to act as leaders in advocacy efforts in order to “continue to advocate for the strongest possible legislative and regulatory approaches to prevent firearm injuries and deaths.”

After the tragedy in Newtown, pediatrician-leaders participated in the development of The President’s Plan to Protect Our Children and Our Communities by Reducing Gun Violence, which focuses on “making schools safer, increasing access to mental health services, closing background check loopholes, banning military-style assault weapons and high-capacity magazines and taking other common-sense steps to reduce gun violence.”

In 1996, research on gun-related injuries was effectively stifled when the National Rifle Association successfully lobbied to incorporate a statement into public law stipulating “that none of the funds made available for injury prevention and control at the (CDC) may be used to advocate or promote gun control.”

In January 2013, President Obama took a major step in revitalizing research on firearms safety when he signed a Presidential Memorandum directing the CDC to research the causes and prevention of gun violence.

The AAP has taken on a robust federal advocacy approach to keep children safe from gun violence, with an emphasis on improving mental health access, enacting gun safety policies, encouraging federal gun safety research and reducing children’s exposure to violence.

Interview with Dr. Sean Palfrey:
In “Preventing Gun Deaths in Children,” a perspective article published by The New England Journal of Medicine in December 2012, Dr. Sean Palfrey, a practicing pediatrician and professor of Pediatrics and Public Health at Boston University / Boston Medical Center and his wife, Dr. Judith S. Palfrey, a pediatrician at Boston Children’s Hospital and past president of the AAP, asked the essential question: “How can we prevent gun injuries?”

This question has become a priority for pediatricians and child advocates across the country. We had the opportunity to sit down with Dr. Sean Palfrey to discuss the article “Preventing Gun Deaths in Children” and what medical students and future pediatricians can (continued)
do to advocate for children and families in terms of gun violence and firearm safety.

What inspired you and your wife to write this piece in the NEJM?

S.P.: We were shocked by what happened at Sandy Hook. As pediatricians caring for an inner city population, it reminded us of a patient of Judy’s, a 12 year old boy who had been killed on the way to the grocery store with his mother after being caught in the crossfire of a gun battle. These kinds of experiences give pediatricians a voice in legislative advocacy. Because we are on the ground, we can say, ‘this is what we see day to day. We see this and live with it, and we are shocked and saddened.’

What is the most important role for pediatricians in regards to child safety and guns?

S.P.: Don’t fear to ask. People are often grateful that they are asked because they understand that we care about the child’s life. Find the right words to ask about risk factors, such as drugs, alcohol, and abuse in the home. At a legislative level, to protect our legal right to ask.

In your experience as a clinician, what are the best ways/questions to approach the gun/safety issues with families?

S.P.: It is very effective to incorporate these questions into anticipatory guidance about the child’s development. For example, for the parent of a child turning two, you can counsel them by saying: ‘Your child’s almost two years old, and soon they’re going to be curious, active, and getting into everything in the house. Are there locks on the cabinets in the home? Are the family’s medication bottles kept in a safe, locked place? Are there things like guns in the home? If so, are they kept loaded, or is the ammunition stored separately? Guns should be routinely included in conversations about home safety.

In light of these tragedies, do you think that it is pediatricians’ duty now to take this issue up outside the medical setting?

S.P.: Our posture is to ask, talk, listen, counsel, and advise. Advising can include attending town meetings, sitting on town councils, or meeting with parents on school committees. There are some with a narrow view of what it means to be a physician, limiting the role of the physician to just those seven minutes with a patient. Others, oftentimes in rural and inner city populations, take into account all the aspects that factor into health and expand the definition of ‘physician’.

What do you think is the best way for medical students interested in pediatrics to advance this issue both inside and outside the medical setting?

S.P.: Legislators are actually waiting to hear from their constituents- they want to hear from the people who vote in their districts and who have opinions on current issues. Scheduling visits, making phone calls, and writing letters are all effective ways to have your voice heard. One phone call to talk about one issue can make a big difference

In regards to the specific measures outlined in your NEJM piece, are there any that you think best lend themselves to physician advocacy in conversations with families and/or in the legislature?

The response is three-fold:

S.P.:  
a) Defending the right to ask about guns in the home and the right to collect data on these issues. The collection of this kind of data comes very naturally out of our role and the conversations we have with families. We want answers to be tallied and studies to be done about the best policies and procedures to prevent gun violence.

b) Counseling families about limiting screen time and limiting the amount of violence viewed by children. In movies and video games children learn to shoot enemies and animals. The games seem so harmless, but outcomes can be lethal if fear and anger become stimulants and shooting becomes reflexive.

c) Advocating for funding for effective mental health support for troubled children and adolescents as well as participating in school meetings and helping to support children that seem aggressive, depressed, or isolated.

As a practicing primary care pediatrician in an academic setting, what are your thoughts on pediatric residents training on guns/safety?

S.P.: There is certainly a place for it. The question is where to put it in the curriculum. Should it be taught (continued)
to students and/or residents? And should it be required or elective? The most important aspect of this training would be practice with wording. The way our electronic medical record is set up now, the question of ‘guns in the home?’ comes up as part of a checklist on safety, which may or may not be an effective method of asking when pressed for time. However, real, live, practiced questions, incorporated into a conversation about ways to safeguard the home can allow physicians discuss these topics in a low-key and non-judgmental way.

Students and residents should be encouraged by school and residency programs to take on advocacy initiatives, to connect students to those in the field so that they can follow through with these initiatives, and maybe even make it their life’s work.

We would like to sincerely thank Dr. Palfrey for the interview and encourage all medical students and future pediatricians to become involved through your school and/or local AAP chapter if you are interested in pursuing issues around gun violence and firearm safety.

A career in caring for children and families comes with immeasurable joys and complex challenges. A pediatrician’s close relationships with families allows them a unique perspective on the wonders of youth and, sometimes, the horrors of heartbreak. It is a physician’s responsibility to use this perspective in order to counsel families and to advocate for change on a broader scale, all for the benefit of children.

References:
**Tar Wars: Bringing the Tobacco Fight to the Youth**

Ann Liu, M2, Wake Forest School of Medicine

The fight against tobacco and its health risks is not a new one, and yet, previously declining smoking rates among adults and youth have stalled. Smoking continues to take a heavy toll on the youth: according to a 2012 Surgeon General report, each day over 3,800 youth under age 18 smoke their first cigarette. The CDC estimates that 5 million youth alive today will die prematurely from smoking-related illnesses. In addition, nearly 90% of adult smokers tried their first cigarette before age 18.¹

With statistics like these, the smoking prevention fight has shifted its focus towards the youth, and many anti-tobacco campaigns have popped up across the country. One such program is the American Academy of Family Physicians’ Tar Wars. At the Wake Forest School of Medicine in Winston-Salem, NC, our Family Medicine Interest Group (FMIG) and Pediatrics Interest Group (PIG) are working together to bring Tar Wars to the youth at local YMCAs.

With Winston-Salem as the founding city of the RJ Reynolds Tobacco company, FMIG president, Nick Johnson felt Tar Wars would be well-suited for the community. Johnson notes, “The relationship between tobacco and the local community is quite unique. Tobacco is entrenched in the city’s history and culture. Tobacco money essentially paid for the construction of the medical school back in the 1940s.”

The format of Tar Wars is simple: volunteers work with 4th and 5th graders through an anti-tobacco curriculum consisting of 10 activities. These include:

- Trivia on tobacco statistics
- Discussions on secondhand smoke, reasons people start smoking, marketing and advertising
- Calculating the financial impact of smoking
- Identifying the health impacts of smoking
- Simulating decreased lung function by breathing through a straw

At the end of the session, students are then encouraged to create a poster or video to submit for entry into a national poster contest.

For PIG member Elissa Jantzen, having just learned about tobacco in her population epidemiology class, the opportunity to volunteer with Tar Wars came at the perfect time. “It was great to get out in (continued)
the community and use some of our knowledge as medical students to impact kids and to help them cultivate healthy decision making skills from a young age,” Jantzen said of her experience.

“I was surprised to see that the kids were already quite knowledgeable of the harmful effects of tobacco though they were only in the fourth and fifth grade,” Jantzen said. “The majority of the kids had immediate family members who smoked and they could tell us how poorly it was affecting their (relatives’) lives.”

Johnson expressed similar thoughts, “Children in this age group have such strong personalities! … What surprised me the most was how much they have already begun to think about issues such as cancer, heart disease, and tobacco advertising in the media.”

With several successful sessions under our belt and a positive response from medical student volunteers, our FMIG and PIG are excited to continue Tar Wars in future years. As Johnson and Jantzen both summed it up, “Hopefully programs like Tars Wars will have a lasting impact” so that “if we can effectively prevent the problem before it starts … we can save lives.”

Here are Johnson’s tips on how your student group can get Tar Wars started in your community:

- The program is available online at www.tarwars.org. It typically takes an hour to go through all ten activities.
- Students, parents, teachers, and physicians are all qualified to present the Tar Wars curriculum.
- The expense is minimal; all you need are plastic straws, sticky notes, and a white board!
- Opportunities exist to partner with local schools, community centers, and after-school programs. Our FMIG partnered with local YMCA after-school programs. The YMCA loves to promote health awareness and was thrilled when we approached them with this idea! They graciously provided us with supplies and a room to give the presentation.

For more information on the Tar Wars program and how you can get involved, visit www.tarwars.org.

Photo: PIG volunteer Elissa Jantzen quizzes the children on tobacco and smoking trivia

Reducing the Consumption of Sugary Beverages in Children
Marie Carillo, M2, Boston University School of Medicine

Did you know that in the past 30 years, the prevalence of childhood obesity in the United States has almost tripled? As a result, more and more children are faced with serious medical consequences of obesity. Obese children have a higher risk of developing high blood pressure, high cholesterol and type 2 diabetes. There are many variables that contribute to the rising rate of obesity in children, but one major factor is the consumption of sugary drinks, including soda, juices, and sports drinks, which add a significant number of calories and sugar to their diet. This past summer, I worked on a campaign led by Dr. Daniel Parry, a pediatric resident in the Boston Combined Residency Program, aimed at reducing the consumption of sugary beverages in children.

We began this project by designing “No Sugary Bev Rx” prescription cards that can be used by pediatricians at office visits to initiate conversations with children and parents on the negative consequences of consuming sugary drinks. Children can take these prescription cards home with them as a reminder of what was discussed, so that the next time they reach for a soda, hopefully they will think twice.

By the end of the summer, we finalized the prescription cards and printed 5,000 copies to be distributed to pediatricians across Massachusetts. I accompanied Dr. Parry to his office visits where he used these prescription cards. I saw first hand how effective the cards were in providing a segue to discuss not only sugary beverages, but also to educate the patient about other aspects of nutrition and physical activity.

As the summer progressed, we signed a letter to the Secretary of the US Department of Health and Human Services asking the Surgeon General to prepare a report on the health impacts of sugary drinks. The letter received the support of the Chair of the Department of Pediatrics at Boston Medical Center. In addition, we wrote an official statement of support to the NYC Health Department regarding Mayor Bloomberg’s limit on the size of sugar-sweetened beverages sold in NYC.

Another approach we took was to use social media to increase awareness about the campaign against sugar-sweetened beverages. To accomplish this, I regularly posted articles on our Facebook page about legislation and current media regarding sugary beverages. The goal was to gain support of other medical students and spark their interest in the topic by visiting the page and receiving updates. In addition, I established a partnership with the Center for Science in the Public Interest, and their campaign: Life’s Sweeter with Fewer Sugary Drinks. This allowed us to learn about new opportunities to collaborate in the future.

Currently, under Massachusetts state law, sugary beverages and candy are included on the list of sales-tax exempt “food products.” Massachusetts House Bill 1697 would remove the current sales-tax exemption on soft drinks, as well as candy and confectionary. This would both increase the cost of soda and raise revenue that could be allocated to obesity prevention programs for children and other health literacy efforts. This summer, Dr. Parry and I met with the Chief of Staff at (continued)
The Massachusetts State House for the Joint Committee on Children and Families in order to develop a plan for raising support of this bill. A great step in the right direction was made in January of this year, when Massachusetts Governor Deval Patrick announced his proposed budget, which included the repeal of the tax exemption on soda and candy. We hope that with these steps and continuing advocacy efforts, the bill will be passed by state legislators in a vote this spring.

Working with this campaign has taught me a great deal about the critical role a physician plays in the lives of children, especially in terms of diet and nutrition. I met families with young children that regularly consume a significant amount of calories from sugary drinks, but were not aware of the negative impact that these extra calories can have on their child’s health. Parents’ choices of foods in the home have a tremendous impact on their children’s health, and it is imperative that pediatricians help to guide parents in making smart nutrition choices for the benefit of the child. This campaign has taught me how social determinants have a huge impact on the health of patients and that as future physicians, we have a responsibility to address these determinants. I now have a better understanding of how advocacy can be done on many different levels - whether it is advocating for one patient, advocating for a state law to be passed, or advocating on the national level.

Hugs and High-fives

Puja Umaretiya, M2, Mayo Medical School

The hot winds of Chennai strike our faces, as we wait to board the public bus that will take us to our first day of teaching. It is a stark reminder of just how different this trip will be. Along with twenty other college students, I will be spending my summer in Chennai, an area of India with a high incidence of HIV/AIDS, to volunteer with the International Alliance for the Prevention of AIDS. Though I spent many childhood summers in India, traveling between the villages that my parents grew up in, I have never taken the public bus. I have never visited southern India, a part of the country with such distinct languages and culture that it may as well be a separate country from the northern India that I am used to. The language barrier becomes quickly apparent, as the ticket collector barks at us in angry Tamil, accompanied by a flurry of hand motions that we do not understand. As we stare confused, a female passenger reaches across the aisle and points to a sign above our heads. Although the language is indecipherable, the drawing indicates that we are sitting on the side of the bus meant for males.

As we move across the aisle, I cannot help but wonder how a culture in which men and women cannot sit on the same side of the bus will react to education about HIV/AIDS prevention. Growing up, my own, seemingly progressive Indian parents, were reluctant to broach the topic of safe sex with my sister and I. Premarital sex remains a taboo in all parts of India; sexually transmitted disease is, for the most part, not acknowledged.

During our two months in Chennai, we witness the ignorance enveloping HIV/AIDS in India firsthand. On the weekdays, we teach high school students and other at-risk groups about HIV/AIDS prevention and safe sex practices, hoping to empower Chennai’s youth with the knowledge to combat the myths that propagate the stigma associated with the disease.

We spend our weekends at a HIV/AIDS orphanage on the outskirts of the city. An indistinct three-bedroom house with grey brick walls, it is here that we realize just how deeply stigma against HIV pervades this society. Each room is small and windowless, filled with sleeping mats on hard cement for eleven boys in one room and nine girls in the other. The children range from ages three to sixteen and most (continued)
have been left by family members who fear catching the disease. Others have had to watch their only living relatives die from AIDS. They have all have been banned from attending school. The community fears that HIV will be spread through the air, or from simple skin contact, such as sharing desks. The house is indistinct for a purpose – the orphanage has been forced to move from several other locations. Windows have been broken, and the children have been terrorized. Myths about HIV are present even here; many of the children believe that they deserve not only the disease, but also to be ostracized from society because past sins have caused their blood to go “bad.”

At first, the children are wary of us. They eye us with caution, silently questioning our motives. Past visits from strangers have left them distrustful. Luckily, games like tag and catch need neither explanation nor a common language. These games have a language all of their own. So we play games, and learn to communicate with each other, not in English or Tamil, but through high-fives and hugs. Though hardened by circumstances, each Saturday, we witness the children transform. They become like children anywhere else in the world, giggling at practical jokes and hamming in front of the cameras. 

The importance of the human touch is one of the oldest aphorisms in medicine, but it is during my summer in Chennai, that I finally realized its value. The strength and resilience displayed by the children at the orphanage continues to inspire me; however, the resigned acceptance of their fate as society’s outcasts continues to haunt me. To feel unworthy of human touch, as these children did, should not be anyone’s fate – regardless of illness or circumstance.

Since that summer, I have returned to India on trips with a more medicinal purpose. I have checked blood pressures, heartbeats, and breath sounds, and I have handed out medicine to help cure ailments. Yet on these trips, I find myself yearning to feel as useful as I did those Saturdays in Chennai, playing with the children at the orphanage. Though I could not cure their disease or change their lot in life, I could give them something nobody else was willing to - something as simple as a hug or high-five. I could pass on the human touch and remind them, that each and every one of us deserves at least that.

Map Reference: Centers for Disease Control Information for Travelers to India . Mar 2013. wwwnc.cdc.gov/travel/destinations/india.htm
So You Finished Your First Year of Medical School…
What Are You Going to Do This Summer?
Christine Thang, M2, David Geffen School of Medicine at UCLA

The first year of medical school can be challenging and daunting, and the feeling of accomplishment is absolutely amazing at the end of the year! For many medical students across the nation, the question arises, What am I going to do this summer? Whereas second year medical students will be studying for their USMLE Step 1 exams before the start of third year clerkships, many first year medical students have approximately six to eight weeks of “summer vacation.”

There are numerous career-related opportunities for medical students over the summer. One of the most important things is to start early and plan ahead. This article outlines some of the avenues medical students can pursue during the summer between their first and second years.

Research
Many medical students use the summer between their first and second years to complement their medical school experience with a research project. Most schools have an organized summer research program where medical students work with a faculty member on a research project. There are often stipends available through these programs to support students over the summer when financial aid might be scarce. Students can work in basic, translational, clinical or health services research. By working through the school, medical students can become more familiar with their faculty research mentors and continue their project into second year and beyond. The first step is to find out what is available through the office of students affairs and then seeking out a research mentor or advisor. Oftentimes, student interest groups may host an informational session or send out a listing of research opportunities available through the school.

Other students may opt to apply for summer programs outside of their medical institutions. There are numerous national research programs specifically for medical students. The AAMC’s Careers in Medicine website offers a listing of research opportunities currently available across the nation; otherwise, a simple Google search can do.

Travel Abroad
Traveling is another adventurous option. Medical students may take the summer as an opportunity to go abroad. Venturing away from their medical schools, students can choose to pursue a summer research project, work for a charity group, have fun, or do all at the same time! Students who decide to go abroad and volunteer should begin by looking into working with a well-known international service group at their respective medical schools. Overseas, medical students will have the opportunity to practice their clinical skills at local medical institutions while helping the underserved. Their work abroad may also be part of a research project. (continued)
Community Service

Medical students can also choose to volunteer and do service work between their first and second years. The summer frees up time outside of the classroom for medical students to either continue volunteer work from their first year or begin a new project that they can continue into their second year and beyond. Community service grants and fellowships are available to medical students either locally or nationally to help start or complete a service project. Community service over the summer will certainly provide the opportunity for medical students to strengthen their cultural competency and develop their skills in patient-centered care while serving an underserved community.

Shadowing

Other students may choose to spend their summers shadowing or working in a physician’s practice. There are numerous summer internships and fellowships available for medical students to familiarize themselves with specific specialties of interest. For students working with research advisors or mentors, they can also incorporate shadowing and clinical exposure into their research projects. Working closely with one or more physicians over the summer enables medical students to immerse themselves in the field and, hopefully, develop a new skill, make a new contact, or even gain a new perspective on one facet of medicine.

Before summer begins...

Medical students should identify their goals for the summer and begin planning today! Often times, application deadlines for various programs, projects, and funding are due months before summer begins. First year medical students can begin by researching and identifying opportunities of interest. Medical students should begin early and take advantage of their office of student affairs in making their summer plans. There are also many outside resources that a simple search on Google can find. For instance, through such organizations as the American Academy of Pediatrics, the American Pediatric Society, and the Society for Pediatric Research, medical students can apply and seek funding for numerous summer programs. Upperclassmen are another valuable resource, as they can offer advice from their experiences from summers past.

Most importantly, regardless of whatever plans are made, remember to enjoy the summer!

The Future is Now: Fetal Cardiac Interventions
Shamini Parameswaran, M3, Texas Tech University Health Sciences Center School of Medicine

With the booming technology and newest innovations of this age, medicine is on the frontier in its ability to correct congenital defects in utero. By bringing together teams consisting of pediatric interventional cardiologists, fetal medicine physicians and fetal heart surgeons, incredible new possibilities are being created. By diagnosing and treating fetuses with congenital heart arrhythmias and structural abnormalities prenatally, these babies may be born healthier than ever was possible before. Advancements in both pharmacologic and surgical fetal cardiac interventions have opened the door to improved outcomes for fetuses affected by (continued)
arrhythmias and even structural defects in utero.

A key example of advancement in congenital heart disease treatment is seen in prenatal interventions for hypoplastic left heart syndrome (HLHS). The Society of Thoracic Surgeons Congenital Heart Surgery Nomenclature and Database Project defines HLHS as “a spectrum of cardiac malformations with normally related great arteries...characterized by underdevelopment of the left heart with significant hypoplasia of the left ventricle including atresia, stenosis or hypoplasia of the aortic or mitral valve, or both valves, and hypoplasia of the ascending aorta and arch.”

For years, the standard of care for babies born with HLHS has included four postnatal stages of surgery for palliative repair. The underlying mechanism for the development of HLHS is not fully understood, however, one widely recognized theory is that anatomic defects of structures in the left heart, most notably aortic stenosis, lead to abnormal blood flow and malformation of the left heart. With improving prenatal diagnostic capabilities for fetal cardiac anatomical characteristics that predispose fetuses to HLHS, fetal intervention by aortic valvuloplasty has become a prenatal intervention for the prevention of HLHS. The safety and efficacy of this procedure continues to improve as centers gain expertise in this fetal transcatheter intervention.

Several techniques have been employed to treat cardiac arrhythmias in the fetus. Some centers have placed pacemakers into fetuses in order to treat congenital heart block. In addition, studies have found that, in the third trimester, bradycardia associated with autoimmune fetal AV block can be prevented from progressing to second and third degree block by maternal dexamethasone therapy. These methods highlight just a few procedures that are currently used in the world of pediatric cardiology and fetal medicine. The field of pediatric cardiology is dynamic and endlessly fascinating, and interested medical students should consult faculty at their institutions in order to learn more about the field.

Thinking about pediatric cardiology? The route encompasses 3 years of pediatric residency or a 4 year med-peds residency followed by a 3 year fellowship in pediatric cardiology. Pediatric cardiothoracic surgery training traditionally requires 5 years of general surgery residency and then a 1-2 year fellowship in cardiothoracic surgery followed by a 1-2 year fellowship in pediatric cardiothoracic surgery. Finally, if one is interested in fetal surgery, one would do 5 years in general surgery residency and then complete a 2 year fellowship in pediatric surgery. More information can also be found at the Association of American Medical Colleges’ Careers in Medicine website.

References: