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Commentary

Vaccinating America's children: A job for orthopaedic surgeons & other non-primary care specialists?

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Clinical scenario

An 11-year-old girl is brought to the local orthopaedic sports medicine clinic for evaluation of acute onset left knee pain and swelling. She was playing soccer in the yard with her family when she landed awkwardly on her left knee. The patient experienced a “popping” sensation with knee-buckling and a fall. At the clinic, physical examination is notable for a positive Lachman test and anterior drawer test. One week later, the patient's magnetic resonance imaging (MRI) confirms a complete ACL tear. As the orthopaedic surgeon is discussing the patient's diagnosis and reviewing her medical history, it becomes clear that several vaccinations have been missed [1]. Upon further questioning, the father explains they had avoided their scheduled clinic visits with the pediatrician because of uneasiness around visiting the pediatrician's office during the COVID-19 pandemic.

1. Introduction

The COVID-19 global pandemic has upended health care systems around the globe. As the novel coronavirus spread, many physicians left behind their typical daily routines and transitioned into new roles. Non-emergent orthopaedic surgery was notably impacted, as busy surgical schedules nearly vanished overnight. Many surgeons traded in their scalpels for stethoscopes to assist their internal medicine, pediatric, infectious disease, and emergency room physician colleagues on the pandemic's frontlines. Health care workers of every specialty have been working together to mitigate the immediate issue of the coronavirus pandemic. As we focus on the acute concern, it is important we consider the secondary health repercussions of the global pandemic, especially for our country's children. Specifically, it is crucial to address the growing number of children who are missing routine vaccinations [2].

Since the onset of the COVID-19 global pandemic, the number of visits to ambulatory clinics has declined precipitously - down 60% by early April [2]. Even with a recent increase over the past

few months, ambulatory visits still remain below pre-pandemic levels and the cumulative number of lost visits continues to grow [3]. Children are likely to be negatively impacted by the loss of routine care, especially the documented decrease in childhood vaccination administration [4]. Indeed, vaccinations for many infectious diseases have been estimated to have fallen by 26% during the ongoing pandemic [2]. As we continue to fight the waves of the COVID-19 global pandemic, future outbreaks of measles, pertussis, or other preventable diseases will occur if action isn't taken.

Therefore, as we continue our transition to a “new normal” filled with telemedicine, limited in-person visits, and variable resumption of non-urgent surgery, this paper will consider the ethical principles involved in the role all non-primary care specialists, including orthopaedic surgeons, play in ensuring the health, safety, and well-being of the country's children.

2. Public health considerations

The American Medical Association Code of Medical Ethics Opinions related to physicians' responsibilities designate an obligation to respond during disasters and participate in activities to protect and promote the health of the public [5,6]. One framework requires that physician obligations and involvement in patient care linearly increases as risk to the patient and surrounding community increases [7]. Vaccine rates dipping below community protective levels (“herd immunity”) would be an example where this framework would require greater physician involvement in public health efforts. Therefore, we believe that given the current public health crisis, orthopaedic surgeons have a duty to help ensure the health and well-being not only of patients directly under their care, but also of the general public.

While defining oneself as a public health steward may feel novel to some orthopedic surgeons, it is, in fact, a role well-known to our field even if some may not appreciate it as such. Prior orthopaedic surgery public health campaigns include lawnmower safety guidelines in partnership with American Academy of Pediatrics (AAP) [8], as well as the “Own the Bone” initiative aimed to address the increase in osteoporosis-related fragility fractures [9]. At the individual patient level, orthopaedic surgeons routinely promote public health goals—such as addressing the obesity crisis or

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encouraging smoking cessation—within the context of preoperative optimization. Promoting public health is already an important part of being an orthopaedic surgeon.

Vaccinations are outside the usual scope of orthopaedic surgeons. Yet, amidst the COVID-19 crisis, orthopedic surgeons have expanded their work to including assisting intensivists, positioning ventilated patients in the prone position, and covering emergency department shifts [10]. Given the ongoing global pandemic, we believe orthopaedic surgeons with access to pediatric patients have an obligation to promote public health wherever it is feasible to do so; promoting vaccination is one important aspect of health promotion.

This obligation lies in the same public health ethic that required the cessation of elective surgery—the preservation of scarce resources to maximize the health of a population. At the present moment, a doctor's visit is, in fact, a precious resource, and it must be treated as such. In these times of scarcity, we have a particular responsibility to maximize the utilization of limited resources [11]. Similarly, those with greater access to patients have greater duties. To that end, we would argue that a large pediatric orthopaedic group has a greater obligation than a solo practice pediatric orthopaedic surgeon to promote vaccinations in order to decrease the burden on society and maximize scarce resources (i.e., doctor's visit).

3. Approaches

Every touch point provides an opportunity for orthopaedic surgeons to help increase vaccination rates, which, in turn, may help stave off the spread of infectious diseases during and beyond this public health crisis. In fact, there are published vaccination standards for health care professionals from the National Vaccine Advisory Committee (NVAC) and endorsed by the American Academy of Pediatrics (AAP) that “represent the most desirable immunization practices, which health care professionals should strive to achieve.” [12] Using these standards as guidance, we propose three possible approaches for orthopaedic surgeons to help improve pediatric vaccination rates back to baseline.

1. Option 1: Discussion (Minimalist Approach)

Medical practice includes routine screening for health maintenance and prevention. For example, pediatricians assess development early and often, internists screen routinely for smoking and alcohol use status, and orthopaedic surgeons monitor for osteoporosis to address fragility fractures. Engaging patients in these preventative health areas is already part of high quality, patient-centered care based on communication, respect, appropriate transfer of knowledge, and concern for the patient's long-term welfare. Therefore, given the ongoing public health crisis, orthopaedic surgeons should—at a minimum—discuss vaccination status during telehealth or in-person clinic visits with pediatric patients and their caretakers. Ideally, specialists could also provide informational pamphlets or handouts. This approach requires minimal additional time and effort on behalf of the physician; it can be easily incorporated into current practice to help increase pediatric vaccination rates.

2. Options 2: Discussion + Referral (Moderate Approach)

A step beyond the above approach would be for orthopaedic surgeons to place an order for missing vaccinations and/or a referral to a pediatrician or office that provides vaccinations. While this approach moves beyond simply raising the topic of vaccinations, the time commitment remains low, as placing orders and referrals

are routine in office visits already. By placing an order, the patient may be more likely to follow through on the treatment. Further, we also believe this approach would benefit from orthopaedic surgeons actively reaching out to their pediatrician colleagues to help establish a more formal, yet simple vaccination referral pattern ahead of time. Ideally, the electronic medical record (EMR) could be leveraged based on a routine vaccination schedule to auto-suggest the appropriate vaccinations and provide referral reminders. The steps recommended in Option 1 would still be followed, with an emphasis on patient education. This approach may be optimal for orthopaedic surgeons, as they would have an opportunity to make a measurable difference - more than we believe is possible in Option 1 - without the need for a great deal more time or resources.

3. Option 3: Discussion + Vaccination (Maximalist Approach)

The most robust or maximalist approach would be for orthopaedic surgeons to provide routine vaccinations in their offices. At the present time, we would consider this an altruistic option rather than an ethical obligation, though that could change if there were ongoing outbreaks of preventable childhood infections, such as measles. We think that if substantial outbreaks begin to occur, surgeons may be obligated to provide vaccinations. While patients are likely seeking care unrelated to vaccinations when they engage with an orthopaedic surgeon, discussing and offering vaccinations are a patient-centered approach likely to lead to increased vaccination rates. Indeed, prior research demonstrated that offering the influenza vaccine in a pediatric hand clinic significantly increased the rate of vaccination [13].

Orthopedic surgeons would need additional resources and significant effort to successfully deliver vaccinations within their practice, and we do not yet believe the potential benefits of providing vaccines outweighs the costs. Yet, we would argue that this approach would serve dividends when a pediatric COVID-19 vaccine becomes available, and indeed, we may all be recruited to assist in such a vaccination effort.

4. Conclusions

We are in a once in a lifetime public health crisis that requires all non-primary care specialists, including orthopaedic surgeons, to rethink their professional obligations beyond the concerns of the patient in front of them to include the general public. Surgeons are physicians first; we are healers that patients turn to for guidance and insight in their most trying times. At a minimum, orthopaedic surgeons have a moral obligation to raise the topic of vaccinations with every child and parent we encounter in a medical setting. In the case of a global pandemic, we must be champions of public health. This is especially true because the decrease in childhood vaccination administration now may impact herd immunity for previously controlled debilitating diseases for months and years into the future [2]. We must all reconsider our obligations to the public good, and every physician who encounters a pediatric patient must work to increase childhood vaccination rates back to baseline.

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All authors were involved in the development of this manuscript and gave final approval before submission.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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