

The VACCINES Act: Deciphering Vaccine Hesitancy in the Time of COVID-19

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Since the COVID-19 pandemic first hit Wuhan, China, in December 2019, scientists have been racing to develop and test novel vaccines to protect against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The speed of scientific discovery related to COVID-19 is unprecedented. With several vaccine candidates already being tested in clinical trials, we pose the question: what will the vaccine hesitant do in the face of this pandemic?

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Vaccine hesitancy has vexed the practice of immunization ever since cowpox was used as a vaccine for smallpox by Edward Jenner in 1796 [1]. Skepticism about vaccines is a timeworn concept with shifting ideologies that reflect historical events and individual belief systems reflective of different societal periods. Although the term “antivax” is ascribed to contemporary vaccine skeptics, “hesitant” is often a better descriptor for the majority of parents who contemplate or request delaying vaccines for their children or deviating from the recommended immunization schedule. The term hesitant avoids polarization into “pro” versus “anti” vaccination factions. Hesitancy implies, however, that minds can be swayed toward acceptance, and as pediatricians armed with the latest data, we are frustrated that these facts and figures do not always convince parents in our exam rooms and those we encounter on social media that vaccination is right for their children. How and why does this hesitancy shift from physician-guided acceptance of vaccines to their refusal?

Vaccine hesitancy is a complex issue. One important consideration is that vaccine hesitancy has evolved in response to the complicated but ultimately successful history of vaccine science. Vaccines are a victim of their own success, turning once devastating diseases into distant memories. Hesitant parents, as a result, have shifted their focus to the perceived risks of

vaccination as fewer people witness the consequences of forgoing vaccines in developed countries. However, some vaccine-preventable diseases are now making a comeback, which is putting our nation's children at risk.

Outbreaks of vaccine-preventable diseases are occurring at an alarming rate across the country, especially in geographic pockets with poor immunization rates [2]. In 2019 alone there were 1282 confirmed cases of measles in the United States, the greatest number reported in this country since 1992 [3]. These outbreaks led to the possibility that the United States would lose measles elimination status, initially awarded almost 20 years ago. Despite remarkable advances in vaccine science, vaccine hesitancy has now become a recognized public health threat with potentially disastrous complications. Anti-immunization sentiment is at an all-time high, and the medical community has recognized the need to address it as a public health emergency, with research, action, and advocacy.

The nature of hesitancy directly confronts our fundamental belief system as pediatric scientists, which is based on disease prevention and anticipatory guidance. Vaccine hesitancy is one of the most challenging controversies we have faced in our history. This problem is personal to all of us. Pediatricians and vaccinologists have been disbelieved and attacked. Vaccine hesitancy has the potential to harm physician-patient relationships. It is difficult to comprehend that some of the greatest triumphs of medical science are being eroded by misinformation and distrust. To address vaccine hesitancy, we need to reframe our approach and focus on understanding the root causes of this complicated problem.

On the surface, the idea of hesitancy is perplexing given the overwhelming scientific evidence for the safety and efficacy of vaccines. Vaccine hesitancy is not a superficial issue with a universal solution, however. Rather, it is a multifaceted, deeply complex construct that may be rooted in the moral composition that guides our daily decision making. Research has shown that

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several distinct values are associated with vaccine hesitancy—particularly purity, liberty, and anti-authority [4]. Combined with the historical amnesia of the consequences of vaccine-preventable diseases, vaccine hesitancy becomes easier to understand as a belief system grounded in certain moral values. By considering these values, rather than relying solely on vaccine safety and efficacy data, some researchers believe we may be able to more effectively address vaccine hesitancy.

Although each family is unique, there are likely common drivers for vaccine hesitancy, and these, we submit, are being inadequately addressed. Hesitant families frequently express concern about vaccine safety, but even this issue has multiple layers, including fears regarding potential links to autism (now thoroughly refuted [5]), learning difficulties, and chronic illnesses, as well as a perceived lack of safety testing prior to approval for use [6]. A famous quote from Bernard Shaw applies here: “The greatest problem in communication is the illusion that it has been accomplished.” Properly identifying and completely responding to fears regarding vaccines within the confines of a 15-minute wellness visit is next to impossible. Furthermore, how we discuss and communicate about vaccines, as much as the evidence-based facts provided, may be very important. We need a systematic assessment of factors affecting vaccine uptake on a continuing basis to develop the most effective and efficient communication strategies. As a medical community, we must investigate the determinants of vaccine hesitancy and the continuously evolving challenges that it entails in order to tailor evidence-based strategies to overcome the problem with sustainable interventions.

In a step forward in the fight against vaccine misinformation, Facebook announced on 4 September 2019 that user searches for vaccine-related content will be directed to either the US Centers for Disease Control and Prevention (CDC) or the World Health Organization (WHO) websites for accurate information regarding vaccines. In his statement of support [7], the WHO Director-General Dr Tedros Ghebreyesus asserted that “These online efforts must be matched by tangible steps by governments and the health sector to promote trust in vaccination and respond to the needs and concerns of parents.” In order to adequately respond to these needs and concerns, which differ depending on the cultural, societal, and personal beliefs of a particular region, the WHO recommends that each country take steps to develop an understanding of vaccine hesitancy at a local level on an ongoing basis [8]. Unfortunately, such a surveillance program in the United States (and in many other countries, for that matter) does not exist. As such, much of the information we have about vaccine hesitancy is retrospective and anecdotal.

The absence of federal investment in understanding vaccine hesitancy was clear during the 2019 measles outbreaks. As cases increased nationally, CDC officials tracked cases and exposures across state lines. However, insight into the vulnerability

of exposed communities was varied and depended solely on the quality and attention state governments paid to evaluating measles, mumps, rubella (MMR) immunization rates in those communities. New York State, for example, quickly realized reluctance to immunize was centered in specific Orthodox Jewish communities in Brooklyn and Rockland counties and was rooted in concerns about potential pork products in vaccines. With local governments, the state created public awareness campaigns led by rabbis urging vaccination. Other areas, absent this granular understanding, could simply react to burgeoning cases and missed opportunities that may have prevented the spread of cases to 31 states.

In recognition of these missed opportunities and in response to declining immunization rates and increasing national skepticism on the safety of vaccines, Congress has introduced bipartisan legislation to expand research into vaccine hesitancy. Spearheaded by Congresswoman and pediatrician Dr Kim Schrier, the Vaccine Awareness Campaign to Champion Immunization Nationally and Enhance Safety (VACCINES) Act (H.R. 2862) would provide federal funding for vaccine hesitancy surveillance and authorization of a public awareness campaign to increase public confidence in vaccines [9]. The bipartisan bill introduced in May 2019 will amend the Public Health Service Act of 1944 to support a rigorous scientific approach to learn more about the factors that drive vaccine hesitancy and will fund national surveillance of hesitant regions. Although commendable, it should be noted that the requested resources in the current version of the VACCINES Act are inadequate to fund serious communications campaigns, given that some of the areas with the highest hesitancy also have the most expensive media markets. The bill does include a vital provision to support awareness campaigns tailored to specific communities that could prove to be an essential tool in the fight to protect children from vaccine-preventable diseases. Signing this bill into law will provide a framework to better understand and respond to vaccine hesitancy in the United States.

Current research suggests that the drivers of vaccine hesitancy depend heavily on personal experiences and belief systems [4, 8]. Having an adequately federally funded surveillance program will permit analysis of contextual influences that promote and perpetuate reluctance at the local level. High-risk populations can be identified and specifically targeted based on their societal and cultural belief systems. Awareness campaigns can be tailored to specific locales to address identified concerns regarding vaccines. Studying all these factors will expand our armamentarium in preventing the rise of vaccine-preventable diseases. The VACCINES Act is currently in the first stage of the legislative process. It has been assigned to the House Energy and Commerce Committee where the chairs will determine if the bill will pass to the House Floor [9]. The odds of any bill becoming law at this stage are collectively low (around 3% since

2015) and even worse without strong public support [10]. It is thus of paramount importance for the scientific community to come together in support of this legislation.

Vaccine hesitancy remains a persistent global threat and is a concept we are only beginning to understand. We have been lagging in our response, in part because the epidemic of vaccine hesitancy has personally challenged our motivations and values as doctors, scientists, advocates, and often, family members and friends. Although we wonder if the COVID-19 pandemic will begin to change minds regarding the overwhelming value of immunization, we fear that as time elapses and memories fade, a SARS-CoV-2 vaccine may join the ranks of MMR in eliciting hesitancy from some groups. The bipartisan VACCINES Act is an important step in supporting evidence-based research into vaccine hesitancy. It is a call for the scientific community to shift our focus toward understanding the underlying causes of this epidemic. As this bill goes through the legislative process, we strongly urge the scientific and medical communities to contact their representatives to voice support for a fully resourced VACCINES Act. We believe that all children and their families deserve it.

Note

Potential conflicts of interest. The authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

References

1. Marshall GS. Vaccine hesitancy, history, and human nature: the 2018 Stanley A. Plotkin lecture. *J Pediatr Infect Dis Soc* **2019**;8:1–8.
2. Phadke VK, Bednarczyk RA, Salmon DA, Omer SB. Association between vaccine refusal and vaccine-preventable diseases in the United States: a review of measles and pertussis. *JAMA* **2016**; 315:1149–58.
3. Patel M, Lee AD, Redd SB, et al. Increase in measles cases: United States, January 1–April 26, 2019. *MMWR Morb Mortal Wkly Rep* **2019**; 68:402–4.
4. Amin AB, Bednarczyk RA, Ray CE, et al. Association of moral values with vaccine hesitancy. *Nat Hum Behav* **2017**; 1:873–80.
5. Hviid A, Hansen JV, Frisch M, Melbye M. Measles, mumps, rubella vaccination and autism. *Ann Intern Med* **2019**; 171:388.
6. Horne Z, Powell D, Hummel JE, Holyoak KJ. Countering antivaccination attitudes. *Proc Natl Acad Sci U S A* **2015**; 112:10321–4.
7. Available at: <https://www.who.int/news-room/detail/04-09-2019-vaccine-misinformation-statement-by-who-director-general-on-facebook-and-instagram>.
8. World Health Organization. Immunization, vaccines and biologicals: improving vaccine demand and addressing hesitancy. Geneva, Switzerland: World Health Organization; **2019**.
9. VACCINES Act of 2019, H.R. 2862 – 116th Congress. **2019**. Available at: <https://www.congress.gov/bill/116th-congress/house-bill/2862>.
10. Statistics and Historical Comparison. Govtrack website. Available at: <https://www.govtrack.us/congress/bills/statistics>. Accessed 29 August 2019.