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Practical approaches to vaccine hesitancy issues in the United States

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The intention to delay or avoid vaccines that are recommended by the Advisory Committee on Immunization Practices can be described as "vaccine hesitancy." While outright refusal of all vaccines is uncommon, hesitancy is seen on a regular basis in most primary care offices, resulting in immunization delay and prolonged susceptibility to preventable disease. The consequences of vaccine hesitancy include the potential for resurgence of vaccine preventable infections. Open, honest, and frank discussions with hesitant patients and their families can assist in their understanding of the importance of vaccines. While many experienced providers are able to do so in an intuitive manner, others may benefit from developing a systemic framework for such discussions. An understanding of the history and rationale for vaccine hesitancy is a first step in regaining lost public confidence in our robust immunization programs.

Keywords: vaccine hesitancy, philosophical exemptions, religious exemptions, vaccine safety, vaccine legislation

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A fairly simple definition of "vaccine hesitancy" is as an active desire to defer or omit any of the vaccines routinely recommended by the Advisory Committee on Immunization Practices (ACIP).[1,2] Such hesitancy is most often voiced by parents or patients directly, however it should be recognized that hesitancy on the part of some medical providers is also well described. Although some vaccine-hesitant parents, and some vaccine hesitant providers will allow and even encourage their children and their patients to be immunized despite their expressed uncertainty, it is important to keep in mind that these situations present a risk for skipping or delaying other vaccines at later dates.[3]

Standard immunization programs are among the safest and most effective interventions that exist in medicine, therefore health care professionals have a public health duty to minimize the impact of vaccine hesitancy. This can be accomplished by maintaining and sharing authoritative, evidence-based information about vaccines ourselves, and by establishing relationships with our patients and their parents that are based on trust.[4]

Parents turn to a variety of sources for information on vaccines, including family, friends, peers, and the media, but their most trusted source is usually their child's health care provider. Information or reassurance from a child's health care provider has been shown to be the most important factor in parents' decision to immunize their children. In a climate where vaccine hesitancy has become commonplace, the authoritative vaccine knowledge of individual medical providers has become more important than ever. Communicating the importance of vaccines, and conveying accurate, comprehensive information related to immunization safety should be a health care priority. When parents decide to delay vaccines during infancy or young childhood, the decision is revisited when their child becomes school age because all states have developed public health laws requiring certain immunization for school entry.

State immunization laws are nothing new. For more than a century, states have exercised the right to pass and enforce vaccination laws, originally for the public at large in early efforts to control and prevent

smallpox outbreaks. During the 1970s, immunization laws were strengthened and strongly enforced in an effort to control measles and other vaccine-preventable diseases among school-age children. As a result, all 50 states had school vaccination requirements by the early 1980s. By the mid-1990s, anti-vaccination activists began taking advantage of the internet to spread their views, leading to increased pressure on states to expand exemptions for once required vaccines. All 50 states allow medical exemptions. This is appropriate and rational as individuals may have a severe allergy to a vaccine component, may have a severe reaction to a vaccine that would customarily require additional doses, or have immune compromising conditions that render live attenuated vaccines a potential safety concern. In addition to medical exemptions, there are two additional exemption categories. Religious exemptions are allowed in 48 states. West Virginia and Mississippi allow for medical exemption only and do not consider faith-based objections to be appropriate for school vaccine exemptions. Philosophical exemptions are allowed in 19 states. The specific laws describing how such philosophical exemptions are handled vary greatly from state to state ranging from parents to simply voice their objections to asking parents to provide written evidence that their philosophical objections had been discussed and reviewed with their health care provider.

The anti-vaccination movement first began in the United States during the 1850s, in response to the proliferation of smallpox vaccination mandates.[5,6] Much of that movement was predicated on widespread concern about the safety of smallpox vaccine, as well as a belief that vaccination laws were "a tyrannical violation of individual liberty."[6] Unfortunately, the anti-vaccination activism helped bring about a significant decline in immunization rates, resulting in the re-emergence of smallpox just a couple of decades later.[5,7]

In 2013, we can measure vaccine hesitancy in the general population by tracking the number of immunization-delayed children entering school where parents have cited specific exemption laws that allow their children to attend class without the vaccines deemed necessary in their state. In recent years, overall mean state-level rates of non-medical exemptions have increased, and the pace of that increase appears to have accelerated, highlighting the growing problem with vaccine hesitancy in our country.[8-10] According the to the National Immunization Survey, overall vaccination rates are lower in states (as a group) with philosophical exemptions than in states where only religious exemptions are permitted. Because children with non-medical exemptions tend to aggregate within schools and communities, vaccination coverage rates may vary widely by county within any given state lending substantial geographical differences in immunization coverage in across an individual state. Not surprisingly, cases of vaccine-preventable diseases, such as pertussis and measles, tend to be concentrated in areas with the highest exemption rates.[11-14] During 2012, for example, the average incidence of reported cases of pertussis nationwide was 13.4 cases per 100 000 persons.[15,16] The documented incidence of pertussis exceeded that average in 63% of states permitting personal belief exemptions but in only 29% of states where such exemptions are not allowed.[15]

Measles outbreaks are another example. Measles is no longer endemic in the US. However, outbreaks due to unvaccinated travelers who bring in the disease from abroad were reported to increase significantly during 2011.[17] The majority of measles cases reported during 2011 were import-associated[17] but tended to occur in states allowing philosophical exemptions including Washington, California, Utah, Arizona, Texas, Minnesota, and Pennsylvania.[15,18]

It may seem intuitive that as outbreaks of vaccine preventable diseases occur, public confidence in vaccines would be renewed and immunization hesitancy reduced, but recent experience has shown this is not always the case. So what factors contribute to vaccine hesitancy, even in the face of an outbreak of a vaccine preventable infection?

Stated concerns voiced by vaccine hesitant parents include the number of immunizations (or number of injections) that are included in the universal childhood immunization schedule, the number of vaccines that are now mandated for school and day care entry, and various safety concerns. The underlying worry for some parents is that their children are receiving too many vaccines; others resent government mandates in general and feel that the "choice" to immunize their children should be their personal decision. Another rationale expressed by some parents is their belief that vaccine-preventable diseases no longer pose a risk. Vaccine-hesitant parents or patients may seek out a health care provider who is less likely to insist on following the ACIP recommended immunization schedule. In addition, an increasing number of parents and patients are actively searching for information about vaccines in the lay press and on the internet. While there are certainly authoritative electronic resources available to learn about the safety and efficacy of vaccines, individuals in the lay public may not be able to discern an evidence-based resource from one contrived of embellishment, propaganda, and junk science.

Finally, we cannot ignore the fact that anti-vaccination activists are constantly questioning the integrity of scientists, public health officials, and other individuals involved in formulating immunization policies. This backdrop of skepticism makes it challenging for health care providers to establish trusting relationships with vaccine-hesitant parents/patients.

It may be tempting to view all vaccine hesitant parents or patients as difficult, misinformed individuals, but not all vaccine skeptics are the same. It's important to recognize the spectrum of concerns voiced by such patients, particularly because the specific concern, or reason, for vaccine refusal or delay can help guide your discussion at the visit, and during subsequent visits. Keep in mind that while concern about vaccine safety is a predictor of vaccine delay or refusal, not every parent who voices such concern will be dead-set against immunization. In a study conducted by Gust and colleagues, 28% of parents expressed doubts about vaccination. Of those parents, 9% reported having consented to vaccination in spite of their uncertainty after a thoughtful discussion with their health care provider.[19]

Vaccine-hesitant parents have been grouped into several major groups.[20,21] In most cases, a conversation with the

uninformed but educable parents and the misinformed but correctable parents is likely to be productive and need not be lengthy. Such parents will appreciate the opportunity to have their questions answered and to engage in a dialog. Taking the time to listen to those parents' concerns and dispel any misconceptions increases the likelihood that they proceed to immunize their children.

In contrast, the well-read and "internet prepared" parents and the strongly vaccine-hesitant parents can be challenging and time consuming to interact with. Parents with these approaches will likely require more than a single conversation to alleviate their concerns and get them to trust recommendations to vaccinate. Health care providers will find it most difficult to deal with the strong-willed parents who are absolutely committed against vaccines. Such parents may refuse to discuss the reasons for their position, or offer rationale that is not based on science or medicine. They may even be hoping to sway the health care provider to their line of thinking. In general, this minority of parents are not going to be swayed by any discussion points offered. In some office practices, this group of patients are asked to seek care elsewhere, as the basic philosophical difference in opinion related to vaccines is simply too extreme to lend trust in any general sense.

Approaches that can facilitate effective communication related to vaccine topics have recently been described. The so-called "ASK" approach outlines the steps required for effective communication with any type of vaccine-hesitant parent/patient.[22] Many health care providers who are in the early stages of their careers find the approach particularly helpful when it comes to educating parents/patients and advocating for immunization. For well-seasoned health care providers, especially those with extensive experience discussing vaccine concerns, the ASK approach will seem intuitive. Acknowledging the parent's or patient's concerns, Steering the conversation, and Knowing the facts well so that questions can be answered authoritatively and confidently will have all become second nature.

The "CASE" framework, is similar to the "ASK" approach and will likewise seem intuitive to health care providers who have already gained experience in talking with parents about their vaccine concerns. In the CASE framework, it is advised that we Corroborate by acknowledging the stated concerns and set a tone for a respectful discussion, perhaps starting with an area on which both parties agree. Next, be sure the parent knows About you and how you came to be an authority on vaccine related issues. Next, if appropriate, have a discussion on what Science has to say related to the issues at hand. During discussion with a parents or patients who express an interest in the science surrounding vaccines, make every effort to answer his or her questions accurately and authoritatively. Finally, Explain and advise the patient that your medical opinion is to follow the recommended ACIP vaccine schedule. If you don't know the answer to what seems like a basic question about a particular vaccine, take a moment to do some research. Most patients will appreciate the extra effort, and your credibility will be bolstered. If the family has done their own research, some of their findings may require your attention. This is especially important when the findings brought to your attention come from non-reputable sources

Patience is a prerequisite for handling vaccine hesitancy, particularly in a busy office setting. Be prepared to listen. Don't assume that the questions and concerns brought by a family are the same as the concerns voice by another family earlier that day or week. Ask questions and see if you can pinpoint the origin of this particular patient's vaccine hesitancy; then tailor your advice accordingly. If the parent expresses doubts about the safety of immunizations, determine whether he or she knows someone who has experienced a vaccine-related adverse event. Having a plan on how to move forward with families that outright refuse vaccines, backed up by a practice-wide philosophy, is important as well. It helps if everyone in the office, providers and support staff alike, is reinforcing pro-vaccination messages during the patient encounter. Posting the practice philosophy in the waiting area and examination rooms can be a useful way of showing families that timely immunization is a cornerstone of your practice's efforts to keep children healthy. You can also set a good example by making sure that every office employee has been immunized in accordance with the ACIP recommendations, particularly during influenza season!

If, despite your best efforts, a parent refuses to consent for vaccination, be sure to document your discussion and to let them know that you will be revisiting the subject of immunization at each subsequent visit. Provide the relevant Vaccine Information Statements so that the family has the option of reviewing them privately. Consider having the parent/patient sign and date a Refusal to Vaccinate form (available at http://bit.ly/11K7cNR), as this may help convey your message that timely immunization is a priority of your practice.

Some families voice hesitancy or outright refusal to vaccinate their children based on faith concerns. While such requests should be respected, religious exemption for vaccines otherwise required by law for school entry is not always necessarily an act of faith. Some vaccine-hesitant parents—especially those living in states that do not allow PBEs—will request religious exemptions for non-religious reasons.[23-25] For example, many religious exemptions have been granted to members of the Amish faith, even though Amish religious doctrine does not specifically prohibit immunization. Common non-religious reasons for vaccine hesitancy among the Amish include concerns about vaccine safety and an infant's ability to tolerate vaccines, the idea that vaccination is simply not a priority, and a feeling that travel to places where vaccinations are offered is just too difficult.

Some parents/patients may object to vaccination on the grounds that production of some vaccines makes use of fetal cells, and they have strong beliefs against abortion. When talking with those parents/patients, it is important to dispel the myth that newly aborted fetuses are being used to generate vaccines. Acknowledge that cell lines derived from two fetuses aborted during the 1960s were used to develop certain vaccines. The Vatican has expressed hope that pressure on governments and health systems will eventually help bring about the development

of alternative vaccines that are ethically acceptable to the Catholic Church. Until such time, the Vatican considers the use of all currently available vaccines morally justified because they "avoid a serious risk and providing for the good of children and all who come in contact with them".[26,27]

One of the unique characteristics of vaccines is that they are biologic products derived from and manufactured with complexity beyond that required for most medications. The manufacturing of several vaccines make use of products initially derived from animals, such as bovine serum, bovine derived viruses, or pork gelatin. The specific source of these products may be of concern to some members of the Jewish or Muslim religious groups, however neither Islamic nor Jewish law prohibits the use of those vaccines. Among numerous Islamic leaders, the consensus is that receipt of vaccines containing pork gelatin is acceptable because the process of transformation changes the prohibited item (ie, pork gelatin) into something permissible.[28] In Judaism, dietary laws prohibiting consumption of pork do not apply to the use of injectable products. Moreover, Judaic principles dictate that persons take all necessary steps to prevent disease and maintain health.[29]

Although the Taliban had previously issued fatwas opposing vaccination in Pakistan and Afghanistan,[30] fatwas do not hold the weight of law. Note also that in May 2013, the Taliban issued a statement supporting efforts to vaccinate children against polio, provided that such efforts do not employ foreign employees and are "harmonized with the regional conditions, Islamic values and local cultural traditions."[31] This statement is particularly important for efforts in polio eradication since two of the three countries in the world that have never successfully eliminated polio, even temporarily are Afghanistan and Pakistan.

Immunization programs represent one of the most effective and important ongoing public health measures. Despite impressive safety profiles and dramatic reductions in diseases that were once common, vaccines are not universally accepted. The causes of vaccine hesitancy need to be better studied and better understood. To do so, providers of immunizations need to be authoritative of vaccine facts, and need to stay current of new and evolving vaccine issues so that these issues can be discussed with parents who have questions about how to approach immunizing their children.

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