Promoting Vaccine Confidence

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KEYWORDS

• Vaccine hesitancy • Vaccine safety • Risk communication

KEY POINTS

- Although vaccines are one of the most successful public interventions of all time, some parents remain concerned about vaccine safety.
- Vaccine hesitancy includes a broad spectrum of parental attitudes, beliefs, and behaviors that includes vaccine refusal and intentional vaccine delay.
- Providing parents with reliable evidence-based information about vaccines is an important component of vaccine risk communication.
- Taking a presumptive approach is an effective strategy when discussing vaccines with parents.
- Additional studies identifying the most effective communication strategies for effective vaccine risk communication are needed.

INTRODUCTION

Measles is one of the most contagious infectious diseases known to man. In the prevaccine era in the United States, it was a rite of childhood with millions of cases and several hundred deaths each year. The introduction of the measles, mumps, and rubella (MMR) vaccine, a safe and effective vaccine that confers protection to 97% of recipients after 2 doses, drastically changed the epidemiology of measles, which was declared eliminated from the United States in 2000.

Yet, 2014 saw a significant increase in measles cases in the United States, with 668 cases reported to the Centers for Disease Control and Prevention (CDC), the most in 2 decades. This trend continued during the first 5 months of 2015; as of May 29, 173 individuals from 21 states were reported to have been infected.[1] Of these, 117 (70%) were linked to a single outbreak at a California amusement park.

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Similar to previous outbreaks, most cases occurred in unvaccinated individuals. Some were unvaccinated for medical reasons, either because of age or immune suppression, but many remained unvaccinated because of personal choice. The Disneyland outbreak resulted in significant media coverage and reinvigorated discussions about vaccines in the United States. Countless television, newspaper, and magazine articles called attention to parents who chose to defer or refuse vaccines for their children and squarely blamed them for the outbreak.

Why are parents concerned about vaccines? This article reviews some of the underlying themes and specific examples of vaccine hesitancy in the United States. Strategies for effective vaccine risk communication are also reviewed.

WHAT IS VACCINE HESITANCY ANYWAY?

Vaccine hesitancy is a heterogeneous term that encompasses the entire spectrum of parental vaccine concerns. One definition proposed by a working group from the World Health Organization (WHO) is as follows:

> *Vaccine hesitancy refers to delay in the acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and content specific, varying across time, place and vaccines. It is influenced by factors such as complacency, convenience and confidence.*[2]

This working definition captures the key elements of vaccine hesitancy. Perhaps the most important point is that parental vaccine hesitancy is a moving target. It incorporates the concerns of parents who refuse all recommended childhood vaccines as well as those who delay but ultimately accept vaccination. It can refer to a single vaccine or all vaccines, and specific vaccine safety concerns vary from family to family. As a result, any efforts to counter vaccine hesitancy need to be individualized.

The WHO working group attributes vaccine hesitancy to the interaction between complacency, convenience, and confidence in their framework. Complacency refers to the perception that the risks of vaccines outweigh their benefits. Convenience refers to the availability of vaccines, and confidence refers to trust in vaccines themselves, the health care system as a whole, and the policy makers who determine the immunization schedule. Although this framework is new, these concepts are not. This article reviews these concepts and offers talking points that may be used with vaccine-hesitant parents.

HOW COMMON IS VACCINE HESITANCY?

With such a heterogeneous definition, vaccine hesitancy can be difficult to measure. Data from the 2013 National Immunization Survey (NIS) demonstrate that most children in the United States received all recommended vaccines.[3] NIS data do not include reasons for vaccine nonreceipt, so they cannot distinguish intentional parental behavior from missed opportunities or poor access to care. However, it is generally accepted that receipt of no vaccines at all indicates intentional vaccine refusal.[4] Fortunately, less than less than 1% of US children fall into this category. Although there are International Classification of Diseases (ICD)-9 codes for parental vaccine refusal, they are not universally used. Review of immunization records from 157,454 undervaccinated children in the Vaccine Safety Datalink identified almost 1400 unique patterns of immunization.[5] Only 6172 (3.9%) of these records had a specific ICD-9 code consistent with vaccine refusal, suggesting it is not a sensitive metric.

A more reliable measure of vaccine hesitancy may be the prevalence of exemptions to school entry vaccine mandates, which require intentional parental action. It is well