



PARENTS PACK

MONTHLY UPDATES ABOUT
VACCINES ACROSS THE LIFESPAN

FEATURE ARTICLE – DEADLY DECISIONS?

February 2024

In early December 2023, a sick child waited to be seen in the emergency room of a Philadelphia hospital. The child had recently traveled out of the country. When the child was examined, they were diagnosed with measles.

Measles is a highly contagious viral infection. In Philadelphia, immunization rates are high — about 93 of 100 children 6 years and older have received two doses of the MMR vaccine, which protects against measles, mumps and rubella. But, measles is so contagious that it can spread to others who occupy the same physical space up to two hours after the infected person has left. And, it can take about two weeks for someone who was exposed to the virus to develop the telltale rash that starts on the head or face before spreading to the torso and then the arms and legs. Fever, cough, runny nose and pink eye can develop a few days before the rash appears.

Indeed, measles spread from the infected child in Philadelphia to others. Three additional people were subsequently diagnosed with measles. None of these three people were immune to measles before being exposed.

In public health terms, these three people are considered “secondary cases.” If you think about a series of concentric, or nested circles, the first child would be in the center circle, and these three people would be in the next largest circle to signify that they were exposed by the child who had traveled. If more than one traveler had been diagnosed, they would all be in the center circle and anyone exposed to measles because of those first cases would be in the second circle, regardless of which originally infected person they were exposed to. Because measles is spread by tiny, aerosolized droplets that can hang in the air for up to two hours, people don’t have to have direct contact with someone with measles to catch the disease.

People with measles can spread the virus during the four days before and the four days after the start of the rash. In this case, the secondary cases followed exposure to the infected child at the hospital, but they could have just as easily occurred anywhere else the child was in the days leading up to their diagnosis, such as a plane, grocery store, school or other places. Once diagnosed, infected people may be asked to quarantine for four days after the start of the rash to limit the spread of the virus.

Unfortunately, one of the people in the secondary case group in Philadelphia did not follow instructions related to quarantine, going to a day care in the city during the quarantine period. This led to more exposures and four additional cases of measles. These tertiary cases also occurred in previously non-immune individuals.

Individuals not considered immune to measles are those born after 1957 who do not have laboratory confirmation of current or previous measles infection or written documentation of the recommended number of doses of measles-containing vaccine. The number of doses of vaccine necessary to be considered immune is one or two, depending on age and other factors like occupation and activities (e.g., international travel). One dose of measles-containing vaccine is about 93% effective at preventing measles, and two doses are about 97% effective, meaning 97 of 100 people will be protected after two doses. Said another way, the measles vaccine is highly effective.

If an individual who is not considered immune is exposed to measles during an outbreak, they will be recommended to get vaccinated, receive immunoglobulin treatment or both, depending on their risk factors and the timing relative to the exposure. Often, these individuals can return to normal activities after being vaccinated or treated even though they continue to be monitored for symptoms of a measles infection. Some exceptions, such as working in a healthcare setting, may preclude immediate return; however, public health officials will offer appropriate guidance depending on the situation.

In the Philadelphia case, it has been reported that at least one non-immune parent of an infected child refused vaccination and protective treatment. We may never know whether that decision led to the parent becoming ill and exposing others, but we do know that measles spread beyond Philadelphia’s borders as a result of this outbreak. As of this publication date (Feb. 1, 2024), 10 cases have been identified; two of these were not in the city, and the situation continues to be monitored. The outbreak will only be considered over after 42 days with no new cases.

As adults, we don’t like to be told what to do, and since the COVID-19 pandemic, many people have taken to pushing back against public health advice. During the pandemic, people refused to comply with contact tracing efforts and deterrents to the spread of infectious diseases, such as masking and quarantine. Unfortunately, these decisions by individuals or families in one house affect every other person or family they come into contact with if they spread an infectious pathogen. In the self-centric society in which we are currently living, some people may respond to this with, “So what?” However, that choice, to care more about oneself and one’s freedoms than about each other, can kill someone — something that may not be considered during the decision-making process. Is the likelihood low? In most cases, yes. Is the chance real? Most definitely. Current events in Europe are a perfect example of this issue. More than 30,000 cases of measles have occurred recently, whereas fewer than 100 cases occurred just a few years ago.

TRIVIA CORNER

Who is considered to be immune to measles, mumps and rubella, and are therefore not required to get the MMR vaccine?

- A. Adults born before 1985
- B. Adults born before 1957
- C. Adults born between 1958 and 1965
- D. Adults born between 1970 and 198

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Infectious diseases are different than other public health issues, like smoking or exercising. If one chooses to smoke or opts not to exercise, they only affect their own health, but if they choose not to comply with public health measures related to infectious diseases, they take away the choice and personal freedom of others.

In the example playing out in Philadelphia, we do not know why each of the infected individuals remained susceptible to measles. They could have been too young to be vaccinated or they could have had a medical condition that did not allow them to be vaccinated. But if any remained susceptible by choice, such as the non-immune parent, they placed greater value on themselves (or their child) than on anyone else they come into contact with. This was demonstrated clearly when the infected individual from the group of secondary cases went to day care against public health advice, effectively making a choice for everyone at that day care. Let's hope that decision does not turn deadly for some other family in the community.

For links to resources in the Feature Article, please visit bit.ly/Feb2024FA.

DR. HANDY'S CORNER: WHY DOES THE ROTAVIRUS VACCINE HAVE TO BE GIVEN BY A CERTAIN AGE?

The rotavirus vaccine is unique among vaccines because if it is not started before 4 months of age and completed by 8 months of age, the infant will not be able to get it. Find out why in this new "Healthy at Home with Dr. Handy" video, bit.ly/rotavirusvax.



NEWS & NOTES

Deadline approaching for essay contest submissions

The 2024 Maurice R. Hilleman Essay Contest is still accepting submissions from students in grades 6 to 12 in the U.S. and Canada, but the deadline is quickly approaching! **The last day for submissions is Feb. 15, 2024.** Please encourage any students you know to consider submitting an entry. This year's writing prompt is, "Dr. Hilleman made his impact on the world through the development of vaccines. What scientific issue would you take on if given the chance and why?"

Find out more, including contest rules and prizes, on the Hilleman Film website, hillemanfilm.com/contest.

Dr. Offit publishes a new book

If you have read any of Dr. Offit's previous books, you are familiar with his skill when it comes to presenting complex ideas in an approachable and logical way, often with an injection of humor. *Tell Me When It's Over: An Insider's Guide to Deciphering COVID Myths and Navigating Our Post-pandemic World* is no exception. The new book, published by National Geographic Books, will be released on Feb. 13, 2024. With the benefit of our collective hindsight, Dr. Offit reviews some of the lessons learned during the COVID-19 pandemic while also describing what to expect moving forward not only when it comes to the virus that causes COVID-19, but also when it comes to future pandemics. Even if you are "tired of COVID," this book is a quick read that is worth your time, particularly for its dismantling of popular myths and misconceptions about COVID-19 — some of which continue to be heralded as true by large groups of people.

Find out more or pre-order your copy today.

The VEC partners with SciCheck.org

The Vaccine Education Center (VEC) is excited to announce a new partnership with SciCheck.org, a part of FactCheck.org that focuses on "false and misleading scientific claims that are made by partisans to influence public policy." If you see a science-related claim that you are wondering about, check with SciCheck.org. Each month, we will be sharing a recent article from SciCheck.org on this new page on our Vaccine Update website.

Info about clinical trials

If you have ever wondered about how clinical trials are completed and regulated, check out the Vaccine Makers Project's recent article, "Spotlight on: Clinical Trials — Testing Medical Advances." The article, written for the VEC's newsletter for educators, describes historical aspects of clinical trials, informed consent, how clinical trials are designed, and more. A list of related resources is also included.

For links to resources, please visit bit.ly/Feb2024NN.

TRIVIA ANSWER

The correct answer is B. Adults born before 1957 are not required to get the MMR vaccine because these diseases were so common that virtually everyone was exposed to the viruses and generated immunity naturally.

Go to vaccine.chop.edu/trivia to play Just the Vax, the Vaccine Education Center's trivia game, where you can find this question and others like it.

