

A new CDC study published in the journal *Clinical Infectious Diseases* (CID) shows that flu vaccination protected children against serious flu illness even when they were infected with a flu virus that was antigenically different from the vaccine virus. This reinforces the benefit of flu vaccination, even when circulating flu viruses have drifted and are different from the virus used in vaccine production.

“This study highlights that flu can cause serious illness in children, but flu vaccines can be lifesaving. This is very good news,” said CDC Director Rochelle P. Walensky, MD, MPH. “It’s especially important that children get a flu vaccine in addition to their recommended COVID-19 vaccines this season.

A hallmark of flu viruses is that they are constantly changing through a process called antigenic drift, especially H3N2 viruses, which are often associated with more severe flu seasons. How well flu vaccines work is determined in part by the similarity between the viruses chosen for vaccine production and viruses circulating in populations. While the composition of flu vaccines is reviewed annually and updated to match evolving viruses, even then, changes in the virus can outpace vaccine production.

The CDC study reports that flu vaccination reduced the risk of severe flu in children by 78% against similar flu A viruses and 47% against flu A viruses that had drifted from the vaccine virus. Further, the vaccine was 76% effective at preventing life-threatening influenza, which included invasive mechanical ventilation, CPR, and other severe complications including death. This study adds to evidence showing that some people who are vaccinated still get sick, but the vaccination can decrease illness severity.

According to CDC flu surveillance systems, flu season has started in many parts of the country with continued flu activity expected over the coming weeks. Most flu detected so far has been H3N2 flu found in children and young adults. These circulating H3N2 flu viruses are genetically closely related to the H3N2 vaccine virus but have some differences that may result in reduced protection against those viruses from the vaccine. As this study highlights, however, vaccination can still have important benefits even when this happens. It is also important to

note that usually many flu viruses spread over any one season and flu vaccines protect against four different viruses.

Flu illness can be dangerous for children. Each year, millions of children get sick with seasonal flu, thousands of children are hospitalized, and some children die from flu. Two flu deaths in children have been reported to CDC already this season. Flu can be especially dangerous for children younger than 5 years old because they are at higher risk of getting very sick from flu because of their age.

With flu activity just getting started, that means there's still time to benefit from flu vaccination this season. It takes about two weeks after vaccination for antibodies to develop in the body and provide protection against influenza virus infection. The U.S. Advisory Committee on Immunization Practices (ACIP) has recommended annual vaccination for all persons aged 6 months or older since 2010. Despite this recommendation, during the 2020–2021 flu season U.S. flu vaccination coverage remained between 50.8%–68% for children younger than 18 years old.

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