

IN THIS ISSUE: CHILDHOOD IMMUNIZATIONS

Childhood Immunizations in the COVID-19 Era

Introduction

Vaccinations are one of the greatest public health successes, as they have been instrumental in preventing countless deaths worldwide over many decades. Benefits of vaccinations are not only life preserving, but also one of the most cost-effective public health interventions.<sup>1</sup> These interventions are significant in the adult population and can be of greater significance in children. Childhood immunizations are among the best strategies available to protect against preventable diseases that pose enormous threat to public health.

Many children have returned to in-person learning and children who are not protected by vaccinations will be more vulnerable to infectious diseases.<sup>2</sup> It is important to catch children up on immunizations and maintain routine schedules during public health emergencies to prevent outbreaks of vaccine-preventable diseases.

Epidemiology

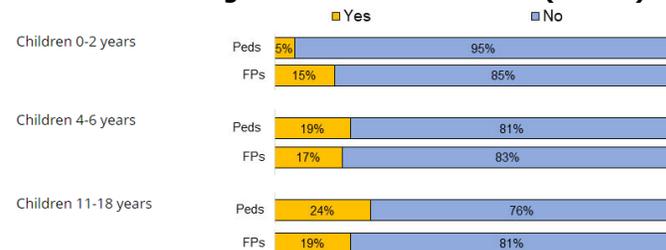
In response to the COVID-19 pandemic, a national emergency was declared in the United States on March 13, 2020.<sup>3</sup>

After the declaration, an analysis of provider vaccine ordering data from a federally funded program - Vaccines for Children (VFC) - found a significant decrease in routine pediatric vaccine ordering in March and April of 2020.<sup>2</sup> The substantial reduction in VFC pediatric vaccine ordering was consistent with changes seen in vaccine administration among children in the Vaccine Safety Datalink (VSD) population receiving care, suggesting a gap in vaccinations.<sup>2</sup> Furthermore, outpatient pediatric visits fell dramatically in March and April of 2020, and as a result, childhood vaccination uptake also fell in the same time period.<sup>4</sup>

Additional studies also confirmed consistent declines in vaccine administration because of the pandemic, highlighting the gap and need for catch up vaccinations.

A nationally representative survey in collaboration with the CDC was conducted from October to December 2020 among pediatricians (Peds) and family physician (FPs) sentinel networks.<sup>5</sup> Results indicated that 2% of Peds and 20% of FPs were not routinely vaccinating that children aged 4-6 years prior to the pandemic. Among those who did vaccinate that age group prior to the pandemic (Peds n=264, FPs n=229), 19% of Peds and 17% of FPs reported they had stopped vaccinating children in that age group at any time between March 2020 and survey completion [Figure 1].<sup>5</sup>

Figure 1: U.S. Primary Care Physician-Reported Suspension of Routine Non-Influenza Pediatric Vaccination During the COVID-19 Pandemic (n=516) \*



Peds=pediatricians, FPs=family physicians  
\*Among physicians who reported delivering vaccines prior to the pandemic and physicians who reported not delivering vaccines prior to the pandemic. Yes/No denotes vaccinating/not vaccinating. Source: <https://www.cdc.gov/vaccines/hcp/pediatric-practices-during-COVID-19.html>

Data indicate those jurisdictions with high performing immunization information systems saw as COVID-19 prevention directives were lifted, the number of vaccine doses administered during June–September 2020 approached pre-pandemic baseline levels.<sup>6</sup> Although administered doses increased during June–September 2020, this increase was not sufficient to achieve catch-up coverage.<sup>6</sup>

Data for Washoe County indicate 75.8% of children 19-35 months old received the recommended doses of vaccine in 2019, while only 72.2% did in 2020.<sup>7</sup> This illustrates that local vaccination decline was also apparent.

Gaps in vaccinations can create opportunities for vaccine preventable diseases to reemerge. As more children attend in-person learning and international

air travel returns to pre-pandemic levels educating about the potential consequences of under vaccination is crucial.

The largest measles outbreak in the United States since 1992, took place in New York City during 2018-2019.<sup>8</sup> This outbreak originated from one imported case of measles in an unvaccinated child with international travel history, resulting in 649 confirmed cases, and over 20,000 named contacts including infants, pregnant women, and immunocompromised persons. Over 550 staff responded to the public health emergency, at a cost of \$8.4 million dollars.<sup>8</sup> The outbreak emphasizes the consequences of a vaccine preventable disease in modern times.

## Recommendations

General recommendations on immunizations are made by the Advisory Committee on Immunization Practices (ACIP) and are revised every 3 to 5 years as necessary.<sup>6</sup> The most current recommendations are located here:

<https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html>

Although there may be concerns about multiple vaccinations being administered at once, as recommended for catch-up vaccine administration, these concerns are not supported by scientific data.<sup>9</sup> The American Academy of Pediatrics recommend children with mild illness like otitis media, mild cold or cough receive their vaccines as mild illness does not affect how well the body responds to a vaccine.<sup>10</sup> Additionally, children taking antibiotics for mild illness should not delay vaccines. On the contrary, serious illness may affect the vaccines a child receives. Those with immunocompromising conditions or chronic health conditions like cancer, and those who are known to have had a severe allergic reaction to a previous dose may not be able to receive certain vaccines.<sup>10</sup>

### **The CDC recommends the following considerations for healthcare professionals to address routine vaccinations and reduce missed opportunities:**

- Identify children who have missed their well-child visit and schedule in-person appointments, starting with newborns.

- Implement strategies to promote schedule adherence and catch-up vaccinations. The use of standing orders may further improve efficiency.
- Vaccination status of all patients should be reviewed at every visit to reduce missed opportunities for vaccination, including COVID-19 vaccinations.

Details on considerations listed above and interim guidance for routine and influenza vaccine services during the pandemic can be accessed here:

<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

The 2021 recommended vaccine schedule for birth to 18 years of age can be found here:

<https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html>

The 2021 recommended vaccine schedule for persons 19 years or older can be found here:

<https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html>

## Vaccine Coadministration

Coadministration of the COVID-19 vaccine with other vaccinations is possible. They may be administered without regard to timing of other vaccines.<sup>11</sup> For those  $\geq 11$  years, the deltoid muscle can be used for more than one intramuscular injection administered at different sites in the muscle. For children (5–10 years), if more than two vaccines are injected in a single limb, an area of greater muscle mass is preferred.<sup>11</sup> The CDC lists best practices for multiple injections:

- Prepare each injectable vaccine using a separate syringe.
- Label each syringe with the name and the dosage (amount) of the vaccine, lot number, the initials of the preparer, and the exact beyond-use time, if applicable.
- Separate injection sites by 1 inch or more, if possible.
- Administer the COVID-19 vaccine and vaccines that may be more likely to cause a local reaction in different limbs, if possible.

More information on best practices can be found here: <https://www.cdc.gov/vaccines/hcp/admin/administer-vaccines.html>

As of December 22, 2021, the only COVID-19 vaccine approved for the 5-11 age group is Pfizer [Figure 2].<sup>12</sup>

Although children are at lower risk of becoming severely ill compared to adults, COVID-19 can make children very sick and, in some situations, the complications can lead to death. Moreover, children who get infected with the virus that causes COVID-19 can also develop serious complications like multisystem inflammatory syndrome (MIS-C) - a condition where different body parts become inflamed, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs.<sup>11</sup> The CDC offers resources for providers on how to recognize MIS-C <https://www.cdc.gov/mis/mis-c/hcp/provider-resources/symptoms.pdf>.

**Figure 2: CDC COVID-19 Pediatric Vaccine Recommendations by Age Group and Vaccine Type**

Authorized For	Pfizer-BioNTech	Moderna	J&J / Janssen
4 years and under	No	No	No
5-11 years old	Yes	No	No
12-17 years old	Yes	No	No
18 years and older	Yes	Yes	Yes

Source: CDC <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/children-teens.html>

The CDC has a series of COVID-19 vaccination training programs and reference materials, from vaccine storage and handling to communicating with patients and parents about the vaccines. These can be found here: <https://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-Clinical-Training-and-Resources-for-HCPs.pdf>

## Reporting

The list of reportable communicable diseases and reporting forms can be found at:

<http://tinyurl.com/WashoeDiseaseReporting>

**Report communicable diseases to the Washoe County Health District. To report a communicable disease, please call 775-328-2447 or fax your report to the WCHD at 775-328-3764.**

## Acknowledgement

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