



COVID-19 VACCINE  
**EDUCATION** *and*  
EQUITY PROJECT

**PANDEMIC FALLOUT –  
A DANGEROUS DECLINE  
IN VACCINATION FOR  
AMERICA’S CHILDREN**

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# PANDEMIC FALLOUT — A DANGEROUS DECLINE IN VACCINATION FOR AMERICA'S CHILDREN

Federal, state, local, and other health care and vaccination programs have initiated widespread efforts to increase COVID-19 vaccination since these vaccines became available in December 2020. However, limited attention and resources have been deployed to reverse the decline and insufficient recovery in routine childhood vaccination, especially among uninsured and underinsured children covered by the federal [Vaccines for Children \(VFC\) program](#). VFC is the essential federal safety net program that purchases and distributes childhood vaccines to state, local, and territorial health departments.<sup>1</sup> VFC performance is vitally important to children's health for these reasons, among others:

- The Centers for Disease Control and Prevention (CDC) estimates that approximately 50% of US children from birth to age 18 are eligible for VFC<sup>2</sup>,
- Child enrollment in Medicaid increased more than 12% between February 2020 and September 2021 (by 4.3 million) to 40 million children<sup>3,4</sup> meaning a growing number of US children rely on VFC vaccines, and
- Uninsured children as a percentage of all US children increased from 4.9% to 5.6% between 2016 and 2020<sup>5</sup>. Uninsured children have the lowest and most disparate vaccination rates of any group covered for VFC vaccines.<sup>6</sup>

This report provides background on the VFC program, examines the impact of the COVID-19 pandemic on vaccination rates for children covered by VFC, and explains vaccination rate disparities for these children that pre-date the pandemic. Finally, the paper shares perspectives from pediatricians, public health leaders, advocates, and academic researchers on program improvements to address inequities that disproportionately impact children on VFC.





## Vaccines for Children – Removing Cost Barriers to Childhood Immunization

VFC was created through the Omnibus Budget Reconciliation Act (OBRA) of 1993 and began operating in 1994, to some degree in response to the investigation of a 1989-1991 measles outbreak in the United States that revealed more than half the children with measles were unvaccinated.<sup>7</sup> The VFC program purchases vaccines that protect against 16 infectious diseases and are recommended for routine use in US children from birth through age 18 by the CDC and its Advisory Committee on Immunization Practices (ACIP).<sup>8</sup> CDC negotiates a discounted contract price for VFC doses with a manufacturer, after a vaccine is recommended by ACIP and formally included in the program. A CDC-organized network distributes VFC doses to state and certain local and territorial immunization programs, that then route VFC vaccines to VFC enrolled physicians and clinics for administration at no or minimal cost to eligible children.<sup>9</sup>

The VFC program has been widely credited for expanding access to vaccines and improving childhood immunization rates. However, research shows that even prior to the pandemic, children covered by VFC were vaccinated at lower rates than privately insured children<sup>10</sup>, and those disparities have been exacerbated by the pandemic<sup>11</sup>, leaving many children more vulnerable to outbreaks of vaccine-preventable diseases. It is urgent for CDC, state immunization programs, and health care provider communities and advocates to collaborate to address this situation. VFC was created to resolve vaccine cost as a

primary barrier to reducing vaccination disparities, but non-financial challenges to access and use of vaccines have become more widespread. Approaches for VFC to address these modern vaccination challenges are offered later in this report.

## Declines in Routine Childhood Vaccination During the Pandemic

As COVID-19 spread in March and April 2020, stay-at-home orders, social distancing requirements, remote schooling, and economic downturn contributed to driving down healthcare professional visits and challenged the ability to maintain routine vaccination. An American Academy of Pediatrics (AAP)/Georgetown Center for Children and Families (CCF) report showed:

- Office visits for children 3 – 5 years of age dropped 75% nationally from the beginning of March 2020 to the end of that same month<sup>12</sup> – more than the 58% reduction seen across all age groups,
- While visits to healthcare professionals recovered during 2020, there was still a cumulative 27% reduction by the end of 2020<sup>13</sup>.

The AAP/CCF report outlined concern that children and communities are at substantial and growing risk of preventable disease outbreaks as vaccination rates in some communities are below herd immunity levels.

By May 2020, CDC reported declines in VFC program ordering and administration of both non-influenza vaccines and measles-containing vaccines, particularly for children

older than 24 months<sup>14</sup>. The reduction in ordering began in late January 2020 after the first US COVID-19 case was documented, then accelerated to three million fewer weekly VFC doses being ordered in April after the national public health emergency was declared on March 13.<sup>15</sup> Substantial reductions in administration of measles-containing vaccines were measured at the time of the national emergency. Specifically, there was an immediate 80% drop in administration to children 24 months to 18 years, and a 60% reduction among children <24 months.<sup>16</sup>

The state of Michigan studied the pandemic's impact on vaccination rates by looking at a point in time in May 2020 vaccination data compared to points in time in May 2016–May 2019 data at ages 1, 3, 5, 7, 16, 19 and 24 months. The review found:

- Rate declines occurred across all age groups and all vaccines except hepatitis B (which is typically hospital-administered)<sup>17</sup>,
- Only 50% of Michigan infants aged 5 months were up to date (UTD) for all routine vaccines in May 2020, compared to rates of 66–68% from 2016–2019<sup>18</sup>,
- UTD vaccination status was lower for children enrolled in Medicaid (who receive VFC vaccines) at all ages assessed. The largest difference was at age 7 months, with 35% of children on Medicaid UTD on vaccines, compared to 55% of those not on Medicaid UTD.<sup>19</sup>

A study in Texas found a 47–58% decline in routine immunization for 5-month-old and 16-month-old age groups between 2019 and 2020.<sup>20</sup> Only 35% of 5-month-old children were UTD on recommended vaccinations in 2020, compared to 65% in 2019<sup>21</sup>, while for 16-month-old children the figures were lower, with just 18% UTD in 2020, compared to 43% in 2019.<sup>22</sup>

CDC research published in June 2021 documented that routine administration of vaccines returned to pre-pandemic levels in 10 US jurisdictions from June–September 2020 after the substantial declines from March–May 2020, but that this rebound was insufficient to catch up all children on all missed vaccinations.<sup>23</sup> For example:

- By the end of September 2020, Diphtheria, Tetanus, and acellular Pertussis (DTaP) and Measles, Mumps,

Rubella (MMR) vaccination were both 9% lower among children <24 months than in 2018 and 2019<sup>24</sup>, and

- Human papillomavirus (HPV) and Tetanus, Diphtheria, and acellular Pertussis (TDaP) vaccination decreased between 12% and 30% depending on the population during the same time period<sup>25</sup>.

Lastly, Avalere Health reviewed the volume of adolescent and adult vaccine claims submissions that compared pre-pandemic administration to 2020. Managed Medicaid vaccine claims for adolescents were 41% lower from January to August 2020 than for those same months in 2019.

## The Pandemic Has Exacerbated Long-Standing Vaccine Disparities

In October 2021, the CDC reported on national vaccination coverage by age 24 months for children born in 2017 and 2018. They found generally stable trends in vaccination rates from 2015 through 2018, while documenting<sup>27</sup> disparities by insurance coverage, race, ethnicity, and type of vaccine:

- Children with private insurance were more likely to be vaccinated than children with all other types of coverage, with the largest differences of 9 to 38 percentage points between privately insured and uninsured children<sup>28</sup>,
- Children with Medicaid were 12 percentage points (66% compared to 78%) less likely to have completed the 7-dose series,<sup>29</sup> which includes ≥4 doses of DTaP, ≥3 doses of poliovirus vaccine, ≥1 dose of measles-containing vaccine, the full series of Hib (≥3 or ≥4 doses, depending on product type), ≥3 doses of HepB, ≥1 dose of VAR, and ≥4 doses of PCV, than privately insured children<sup>30</sup>,
- Uninsured children had a 49% completion rate for the series<sup>31</sup>, and
- Black children (65% completion) and Hispanic children (66%), who are more likely to be covered by VFC, and children of multiple races (69%) were less likely to have completed the 7-vaccine series than White (75%) or Asian (74%) children<sup>32</sup>.



Flu vaccination rates were lower and rate differences by race, ethnicity, and insurance status were larger – 75% of Asian children, 66% of Whites, 57% of multiple race children, 57% of Hispanic children, and 46% of Black children had completed recommended doses. By insurance status, 74% of privately insured children vs. 36% of uninsured children had been fully vaccinated against flu.

### **Societal Barriers Are a Persistent Challenge**

Recent polling by a health foundation of parents of children ages 5-11 for their perspectives on COVID vaccination found households with incomes under \$50,000 expressed more concerns than higher-income people, including having to travel or take time off work to access the vaccine, facing out of pocket costs, and not being able to receive the vaccine from a trusted source.<sup>35</sup> The analysis found more than one-third of US children ages 5-11 covered by Medicaid, with Hispanic and Black children making up 38% and 21% of this population, respectively.<sup>36</sup> Strategies that work to increase children's COVID-19 vaccine uptake could be used to bolster use of other recommended children's vaccinations.

Teen (ages 13-17) vaccination data published in 2021 showed lower vaccination rates outside metropolitan statistical areas (MSAs), which remained true for children living above the poverty level in these non-MSA areas for HPV, Tdap, and MenACWY vaccination<sup>37</sup>. While HPV >1 dose (75%) and UTD rates (59%) increased over time, they are still lower than rates for most other routinely recommended childhood vaccines.<sup>38</sup> For this age group one challenge appears to be increasing vaccination confidence and access for recommended vaccines beyond cities and their suburbs as well as raising HPV vaccination rates across adolescent populations.

### **Low Immunization Rates Put Children – and Communities – at Risk for Disease**

In 2019, the US recorded 1,282 cases of measles, the most in any year since 1992, jeopardizing the country's status as having eliminated measles in the year 2000.<sup>39</sup> Further, 89% of measles patients were unvaccinated or vaccine status was unknown, and 10% of patients were hospitalized.<sup>40</sup> CDC, states, doctors, and advocates expressed concerns about additional measles outbreaks since this disease requires high vaccination rates (90-95%) to maintain herd immunity.<sup>41</sup> Recent CDC estimates of kindergartners' vaccination status found three states with MMR coverage rates below 90%<sup>42</sup>, possibly putting children in those states at higher risk for measles.

An editorial on flu vaccination stated most childhood deaths from influenza (189 reported in 2019) were among unvaccinated children.<sup>43</sup> With the lower influenza vaccination rates for children on Medicaid and uninsured children described earlier<sup>44</sup>, these children are more likely to suffer the consequences of serious influenza.

Black, Hispanic, and American Indian or Alaska Native women face higher rates of cervical cancer cases and deaths than white women,<sup>45</sup> which HPV vaccination can prevent, yet just more than half of US teens 13-17 (54%) were UTD on HPV vaccination in 2019.<sup>46</sup> While rates have increased over time for teens of all races, uninsured teens (37%) remained much less likely to be HPV UTD<sup>47</sup>, putting them at higher risk of cervical cancer than teens with any other insurance.



# IDEAS TO IMPROVE VACCINE ACCESS AND ADMINISTRATION IN VFC

While there is not universal agreement on a single set of priorities, stakeholders have suggested a variety of potential changes, including:

## 01

### Improving Program Access

Medicaid.gov reports that about 7 million US children were enrolled in Children's Health Insurance Programs in November 2021, yet not all children in CHIP are eligible for VFC vaccines. Many states operate either combination programs where some portion of the CHIP program is separate from Medicaid or a separate CHIP program altogether—in either instance, children in the separate CHIP program or component are not eligible for VFC vaccines. Expanding VFC eligibility to enrollees in all CHIP programs would simplify program rules and enhance access.

A different VFC program rule mandates that underinsured children, whose vaccine coverage is inadequate, may only receive VFC vaccines at a Federally Qualified Health Center (FQHC), rural health clinic (RHC), or other state-designated site, not in their own doctor's office or medical home. Having to arrange separate visits for vaccination to an unfamiliar provider is likely to reduce access and vaccination. Many argue that allowing underinsured children to receive VFC vaccines in their medical home would address this barrier.

In addition, it is important to ensure that state and local immunization programs have adequate funding and staff focused on promoting routine immunization and addressing jurisdiction-specific access and uptake barriers.

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## 02

### Simplifying Inventory Management and Reimbursement for Providers

Enrolling as a VFC provider entails incurring practice costs and often inefficient separate storage and management of VFC vaccines apart from privately purchased vaccines. These administrative costs may prevent providers from joining VFC and waste professional time on administrative activity that could be redirected to improve vaccination access and practices. Enabling VFC practices to borrow between VFC and private inventory, or to adopt a replacement model, may increase provider participation and reduce missed vaccination opportunities for children on VFC.

Most observers believe VFC providers are underpaid for professional administration services related to vaccination. When VFC providers meet with parents about vaccination they explain each component of a vaccine – for example, counseling occurs on each of measles, mumps, and rubella disease. Yet CMS interprets the VFC statute to only allow for administration charges for the first component of a vaccine and does not reimburse for additional counseling, discussion, and advice that takes place. This underpayment of administration fees is likely to limit the number of children on VFC a practice will accept, and may deter participation in the program more generally.

# IDEAS TO IMPROVE VACCINE ACCESS AND ADMINISTRATION IN VFC

## 03

### Using Innovative Payment Models

A recent report noted the Centers for Medicare and Medicaid Services (CMS) developed more flexible Medicaid vaccination policies during the pandemic. For example, states can currently request federal matching funds for monetary incentives to increase vaccine uptake,<sup>48</sup> and Medicaid managed care organizations (MCOs) are allowed to receive financial incentives from states to increase member vaccination.<sup>49</sup> States and MCOs are experimenting with provider incentives, such as increasing vaccine administration payments to support parent/caregiver counseling and address hesitancy, financially rewarding providers that achieve vaccination rate goals or giving gift cards to incentivize vaccination.<sup>50</sup> Innovative payment models that demonstrate results should be allowed to continue beyond the pandemic.

## 04

### Investing in Patient and Provider Education

Many vaccination stakeholders (AAP, CDC, states, advocates) point out that broad and culturally competent messages supporting the safety and effectiveness of childhood vaccines are a mandatory step toward addressing inequities in vaccination rates and their consequences.<sup>51</sup>

In addition to messaging campaigns and provider and consumer or patient financial incentives, other recommended activities support access to childhood vaccination, and if done through Medicaid, federal matching funds may be available for the following<sup>52</sup>. Increased investment in public health immunization programs, specifically the federally funded Section 317 program, is also necessary:

- Developing and disseminating materials and training providers,
- Collecting and tracking data to improve outreach to parents/caregivers,
- Partnering with trusted groups, like community health workers and centers, and schools to educate and vaccinate<sup>53</sup>, and
- Providing appointment scheduling and transportation assistance.

Information about the VFC program should be readily available and accessible. Government websites related to vaccines should include links to the program, along with specific information and data when possible. There is also a need to expand reminder/recall programs, including assistance and funding for VFC providers who do not already have reminder/recall systems in place.



# IDEAS TO IMPROVE VACCINE ACCESS AND ADMINISTRATION IN VFC

## 05

### Improving Availability and Reporting of VFC Vaccination Data

Many stakeholders believe that excessive delays in data reporting hamper public health action with respect to VFC. They advocate that CDC and vaccination stakeholders should collaborate to envision a more efficient and actionable data strategy to monitor status with CDC recommendations, as the current reliance on the National Immunization Survey (NIS) for federal vaccine coverage data creates an approximate 18-month lag in availability. For example, the October 15, 2021, publication of NIS vaccination status results for US 24-month-old children included data only from surveys occurring before the pandemic began in March 2020. When researchers use electronic health system or CDC Vaccine Safety DataLink (VSD) data as proxy measures for vaccination status they are less likely to measure the impact on children covered by VFC such as uninsured children or those on Medicaid.

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## 06

### Expanding Pharmacists Participation in VFC

COVID-19 efforts proved pharmacists' ability to serve as a convenient, community-based vaccination access location in many US communities, yet a 2020 study (by Immunize Colorado) found only 34 states allowed pharmacist participation in VFC. Other barriers such as state practice requirements that limit pharmacist vaccination by age, confusing state VFC enrollment processes, and potential financial challenges, further limit pharmacist participation even in states that allow it. While an August 2020 amendment, pursuant to the PREP Act, issued by the Department of Health and Human Services (HHS) enables pharmacists in all states to vaccinate children 3 and above, pharmacists could enroll in VFC, particularly with a focus on vaccinating older children / adolescents, as younger children should continue to be vaccinated in their medical home.

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Federal, state, and local health authorities, providers, and others invested in our children's health and their future must act now to raise awareness of missed vaccinations and to fix longstanding rate disparities that impact already vulnerable children on Medicaid and who are uninsured. CVEEP partner organizations are eager to support vaccine system improvements.



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