

# THE IMPACT OF COVID-19 ON EARLY CHILDHOOD VACCINATION RATES AT FAIR HAVEN COMMUNITY HEALTH CARE

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## INTRODUCTION

Life changed dramatically for Connecticut residents in March 2020. In less than a week, the state saw its first COVID-19 death, schools and businesses shuttered, and testing sites were hastily erected in the shadow of a national emergency. However, even as infections soared across all 50 states, the CDC continued to stress the importance of routine childhood vaccinations, especially for children age ≤24 months.

Prioritizing these vaccinations during a global pandemic indicates the essential role they play in controlling preventable disease, not only for children but for the public as a whole. When enough children fall behind, diseases have an opportunity to reemerge, causing outbreaks—and potential deaths—in our communities once again.

## PROJECT GOAL

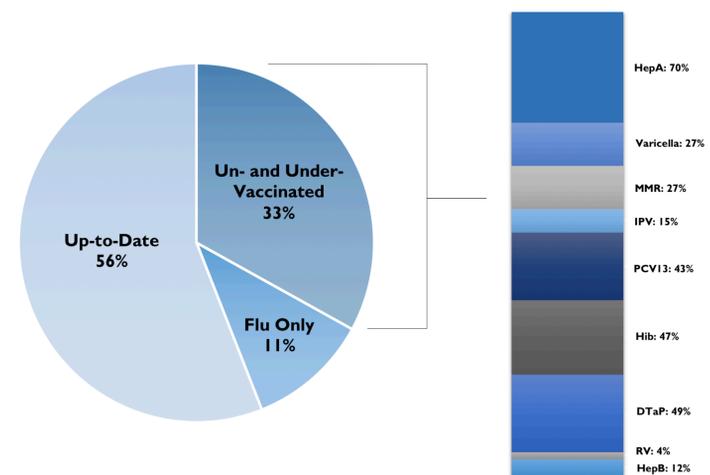
The focus of this project was to determine the rate of un- and under-vaccinated pediatric patients at Fair Haven Community Health Care (FHCHC) in the 12 months before (March 1, 2019-February 29, 2020) and after (March 1, 2020-February 28, 2021) the initial COVID-19 lockdown, as well as in the 12 months following widespread vaccine availability (March 1, 2021-February 28, 2022).

While FHCHC's immunization rates are typically >90%, leadership believed those numbers fell during the pandemic, although to what extent was unknown. Therefore, the primary goal was to identify those patients and bring them into compliance as quickly as possible. Secondarily, demographic data was collected to determine any trends that may exist among un- and under-vaccinated patients.

## METHODS

- Using FHCHC's Epic EHR, a list was generated of children who were age 2-24 months from March 1, 2020-February 28, 2021.
- Children only seen for dental visits or COVID-19 testing were excluded, as well as children whose primary care providers fell outside of FHCHC.
- The remaining patients were then cross-checked against the vaccine recall list generated by CT Wiz, the state's official immunization information system, to ensure the final patient list was as complete as possible.
- Using CDC guidelines (Table 1), the current vaccination status of each patient was confirmed during July and August 2021.
- The following demographic data was also collected for each patient: gender, ethnicity, race, interpreter requirements, preferred language, religion, and parental health literacy.
- Once all current un- and under-vaccinated patients were identified, efforts began to bring those patients into compliance via outreach by their PCP.
- Data is currently being reviewed for the March 1, 2021-February 28, 2022, time period.

Figure 1: Percentage of Un- and Under-Vaccinated Patients



From March 1, 2020-February 28, 2021, FHCHC's patient roster included 589 children age 2-24 months. Of those, approximately 67% were either up-to-date on all vaccinations or only due for their annual flu vaccine at the time of data collection. Of the 33% of patients who were in noncompliance, Hepatitis A (70%), DTaP (49%), *Haemophilus influenzae* Type B (47%), and PCV13 (43%) were the most commonly overdue vaccines. It should be noted that the Varicella and MMR vaccines were also outstanding for a significant percentage of patients (27%). For vaccines that require a multiple-dose series, percentages reflect the number of patients that were behind on any dose in the series.

Figure 2: Caregiver Literacy Level



The U.S. Department of Health and Human Services (HHS) defines health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information needed to make appropriate health decisions."<sup>1</sup> Previous studies have shown that children with low-literacy caregivers have reduced access to primary care, and are more likely to have unmet healthcare needs.<sup>2</sup> At FHCHC, children's caregivers were asked to self-assess how often they required assistance regarding their health literacy; the data in this chart reflects the information provided by the caregivers of un- and under-vaccinated children. A significant percentage (28%) indicated that they always require assistance to understand basic health information.

## CONCLUSIONS

- 589 children were confirmed to be patients of FHCHC from March 1, 2020-February 28, 2021.
- 67 patients (11%) were identified as missing their annual influenza vaccine only.
- 195 patients (33%) were found to be overdue for one or more recommended childhood vaccines, excluding flu. Of these:
  - 189 patients were distributed among 16 physicians and mid-level providers.
  - 6 patients had no primary care provider identified in their chart.
  - 116 patients (59%) sought care via telehealth, with an average of 2.3 telehealth visits per patient.
  - 69 patient caregivers (35%) preferred a language other than English.
  - 63 patient caregivers (32%) required an interpreter.
- FHCHC's percentage of un- and under-vaccinated patients is typically <10%, so 33% represents a significant drop in routine childhood vaccination rates during the first year of COVID-19. However, similar decreases have been reported across the United States, so this finding is not unexpected.
- Each PCP was provided with a list of their un- and under-vaccinated patients; efforts are currently underway to bring those patients into vaccine compliance.
- Additional data is being reviewed for the March 1, 2021-February 28, 2022, time period to ascertain how childhood vaccination rates have been affected by the continuing pandemic and widespread COVID-19 vaccine availability.

### References

- U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. National action plan to improve health literacy. Washington (DC): Author; 2010.
- Sanders LM, Lewis J, Brosco JP. Low caregiver health literacy: risk factor for child access to a medical home. Presented at: Pediatric Academic Societies annual meeting; May 15, 2005; Washington, DC.

Table 1: CDC Recommended Child Immunization Schedule, 2021

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	12 mos	15 mos	18 mos	19-23 mos
HepB	1 <sup>st</sup> dose	2 <sup>nd</sup> dose		3 <sup>rd</sup> dose					
RV (2 or 3 dose series)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose				
DTaP			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose		4 <sup>th</sup> dose		
Hib (3 or 4 dose series)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose*	3 <sup>rd</sup> or 4 <sup>th</sup> dose*			
PCV13			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	4 <sup>th</sup> dose			
IPV			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose				
Influenza					Annual vaccination 1 or 2 doses <sup>§</sup>				
MMR						1 <sup>st</sup> dose			
Varicella						1 <sup>st</sup> dose			
HepA						2-dose series <sup>#</sup>			

\* 3-dose series at 2, 4, and 12-15 months. 4-dose series at 2, 4, 6, and 12-15 months.

§ Two doses given at least four weeks apart are recommended for children age 6 months through 8 years of age who are getting an influenza vaccine for the first time and for some other children in this age group.

# Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 months after the first dose. All children and adolescents over 24 months of age who have not been vaccinated should also receive 2 doses of HepA vaccine.