Conclusion. It is possible to obtain optimal immunization rates for pneumococcal and tetanus vaccines in pediatric heart and liver transplant recipients. Our future interventions include improving vaccinations after catch-up recommendations have been made and sustaining our interventions. Additionally, we look to expand our analysis to include outcomes related to vaccine-preventable diseases after transplantation.

Disclosures. Jacqueline Toia, DNP, RN, APN, QarTek (Board Member) Ravi Jhaveri, MD, AstraZeneca (Consultant) Dynavax (Consultant) Elsevier (Other Financial or Material Support, Editorial Stipend as Co-editor in Chief, Clinical Therapeutics) Seqirus (Consultant)

1178. Sustained Vaccine Effectiveness Against Influenza-Associated Hospitalization in Children: Evidence from the New Vaccine Surveillance Network, 2015-2016 Through 2019-2020
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Session: P-69. Pediatric Vaccines

Background. Adult studies have demonstrated intra-season declines in influenza vaccine effectiveness (VE) with increasing time since vaccination; however, data in children are limited.

Methods. We conducted a prospective, test-negative study of children ages 6 months through 17 years hospitalized with acute respiratory illness at 7 pediatric medical centers each season in the New Vaccine Surveillance Network during the 2015-2016 through 2019-2020 influenza seasons. Cases were children with an influenza-positive molecular test; controls were influenza-negative children. Controls were matched to cases by illness onset date using 3:1 nearest neighbor matching. We estimated VE [100% x (1 – odds ratio)] by comparing the odds of receipt of ≥ 1 dose of influenza vaccine ≥ 14 days before the onset of illness that resulted in hospitalization among influenza-positive children to influenza-negative children. Changes in VE over time between vaccination date and illness onset date during each season were estimated using multivariable logistic regression models.

Results. Of 8,430 hospitalized children (4,781 [57%] male; median age 2.4 years), 4,653 (55%) received ≥ 1 dose of influenza vaccine. On average, 48% and 85% of children were vaccinated by the end of October and December, respectively. Influenza-positive cases (n=1,000; 12%) were less likely to be vaccinated than influenza-negative controls (39% vs. 61%, p< 0.001) and overall VE against hospitalization was 53% (95% CI: 46%, 60%). Pooling data across 5 seasons, the odds of any influenza-associated hospitalization increased 0.96% (95% CI: -0.76%, 2.71%) per week with a corresponding weekly decrease in VE of 0.45% (p=0.275). Odds of hospitalization with time since vaccination increased 0.66% (95% CI: -0.76%, 2.71%) per week in children ≤ 8 years (n=3,084) and 2.16% (95% CI: -1.68%, 6.15%) per week in children 9-17 years (n=771). No significant differences were observed by virus subtype or lineage.

Conclusion. We observed minimal intra-season declines in VE against influenza-associated hospitalization in U.S. children. Vaccination following Advisory Committee on Immunization Practices guidelines and current timing of vaccine receipt is the best strategy for prevention of influenza-associated hospitalization in children.
1179. PCV13 Pediatric Routine Schedule Completion and Adherence Before and During the COVID-19 Pandemic in the US

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Result. A total of 172,916, 70,049, and 34,854 infants were included in C1, C2, and C3. Among infants with >8 months of follow-up from birth (N=132,183 for C1&C3, 16,522 for C3), 3-primary dose completion was statistically significantly higher before COVID than during COVID (crude OR = 1.10, 95% CI: 1.06-1.15). The 3-primary dose adherence was also higher before COVID than during COVID (crude OR = 1.10, 95% CI: 1.05-1.15). Among infants with ≥2, 4, and 6 months of follow-up, adherence of each individual dose was consistently higher before COVID than during COVID (1st dose: OR = 1.03, 95% CI: 1.01-1.04; 2nd dose: OR = 1.04, 95% CI: 1.01 - 1.06; 3rd dose: OR = 1.12, 95% CI: 1.08 – 1.15) (Table 1). Booster dose completion was higher in infants who completed or adhered to 3 primary doses than infants who completed or adhered to only 1 or 2 primary doses (Figure 2, Overall) and booster dose C&A was generally higher before COVID than during COVID (Figure 2, Cohort 1 vs. Cohort 3).

Figure 1: Study population and inclusion criteria

Table 1. Comparison of completion and adherence of primary dosing series per-COVID vs. during-COVID era

| Cohort | 1 (Pre-COVID) | 2 (During-COVID) |
|--------|--------------|-----------------|
| # | Proportion | Completion | N | Proportion | Complete |
| Completed | 18,652 | 79.95% | 23,456 | 77.72% |
| 1st dose | 20,698 | 78.61% | 25,094 | 77.22% |
| OR | 1.03 | 1.01-1.04 |
| NAI testing | Natasha B. Halasa, MD, MPH, Genentech (Individual(s) Involved: Self) | Natasha B. Halasa, MD, MPH, Genentech (Individual(s) Involved: Self) | Natasha B. Halasa, MD, MPH, Genentech (Individual(s) Involved: Self) | Natasha B. Halasa, MD, MPH, Genentech (Individual(s) Involved: Self) | Natasha B. Halasa, MD, MPH, Genentech (Individual(s) Involved: Self) |

Figure 2: Booster dose completion and adherence in relation to primary dosing completion (A) and adherence (B)

Conclusion. These results indicated that PCV13 full completion was statistically lower during COVID, but the magnitude of the difference in infants was not extensive. Infants who completed or adhered to all three primary doses were more likely to complete or adhere to the booster dose. Further research is warranted as structured datasets mature to capture the full time span of COVID-19 mitigation measures.

Disclosures. Liping Huang, MD, MA, MS (Employee) Jennifer I. Nguyen, ScD, MPH, Pfizer Inc (Employee) Johnna Perdrizet, MPH, Pfizer Inc (Employee) Tamuno Alfred, PhD, Pfizer Inc (Employee) Adrian Arguedas, MD, Pfizer (Employee)