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.

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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 US 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.
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1179. PCV13 Pediatric Routine Schedule Completion and Adherence Before and During the COVID-19 Pandemic in the US
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Session: P-69. Pediatric Vaccines

Background. Coronavirus Disease 2019 (COVID) mitigation measures may have unintended consequences, such as reduced or delayed access to routine immunizations. This study examined (1) PCV13 routine vaccination completion and adherence (C&A) among US infants before and during the COVID pandemic and (2) the relationship between primary dose C&A and booster dose C&A.

Methods. Retrospective data from the Optum’s de-identified Clinformatics Data Mart Database were used to create 3 cohorts: C1, Pre-COVID; C2, During COVID; C3, Cross-COVID (Figure 1). The completion was defined as number of PCV13 doses received within 8 months of birth, and the adherence was defined as number of doses received at ACIP recommended time (2, 4, 6 months, +/- 5 days). Univariable logistic regression was used to compare the odds of primary dose C&A in cohorts C1 and C3 vs C2 and descriptive analyses were used to explore primary dose C&A in relation to booster dose C&A.

Results. 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 (crude 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).

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.

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1180. Comparing Changes in Pneumococcal Meningitis Incidence to all Invasive Pneumococcal Disease Following Introduction of PCV10 and PCV13: The PSERENADE Project
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Session: P-69. Pediatric Vaccines

Background. The introduction of higher valency pneumococcal conjugate vaccines (PCV10 and PCV13) has reduced invasive pneumococcal disease (IPD) incidence. It is unknown whether the degree of reduction differs for pneumococcal meningitis, a small subset of pneumococcal disease but a major cause of severe childhood morbidity and mortality globally. We compared the impact of PCV10/13 on pneumococcal meningitis and all IPD by estimating the changes in incidence following the introduction of PCV10/13 among children <5 years of age.

Methods. Data on confirmed positive cases for pneumococcus in cerebrospinal fluid (CSF) were obtained directly from surveillance sites. PCV10/13 impact on all-cause pneumococcal meningitis and all IPD were estimated using site-specific incidence rate ratios (IRRs) at each post-PCV10/13 year relative to the pre-PCV period, using Bayesian multi-level, mixed effects Poisson regression. All-site weighted average