2) the strongest predictors of day 28 GMFR; and 3) more highly correlated (negatively) with GMFR following ccIIV4 than LAIV4. For both IV, the GMFR for cell-grown and egg-grown A/H3N2 antigens did not differ within IV type. Future studies incorporating immunoglobulin and cellular immune responses may delineate differences between these IV types not observable through HI assays.

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100. Safety Analysis of Live-Attenuated Measles, Mumps, Rubella Vaccine Among Hematopoietic Cell Transplant Recipients Vaccinated Within Two Years of Transplant

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Session: O-21. Innovations and Advancements in Vaccines

Background. Measles, mumps and rubella (MMR) vaccine is a live-attenuated vaccine usually contraindicated within the first two years of hematopoietic cell transplant (HCT). During the 2019 measles outbreak at our center, the benefits of administering MMR vaccine within the first two years after HCT were weighed against the potential risks.

Methods. We conducted a retrospective review of patients who received MMR vaccination within two years of an autologous or allogeneic HCT. Patients' demographics, date and type of HCT, underlying hematologic disease, type of immunosuppressive therapy and date of MMR vaccination were extracted from the electronic medical record. Adverse reactions that could be related to the vaccine were collected for up to 42 days post-vaccination and all hospitalizations and deaths following vaccination were reviewed.

Results. A total of 129 patients (75 autologous and 54 allogeneic HCT) were vaccinated between 300-729 days after HCT (median of 718 days). The median age at vaccination was 61 years old, 57% of the patients were male and 43% were on immunosuppressive therapy, 87% of whom were on maintenance therapy for multiple myeloma after auto-HCT. Seven patients (5%) had adverse reactions within 42 days of vaccination: six had respiratory tract infections (three with associated fever) and one had a rash leading to a brief hospitalization. This was a 37-year-old female who had an allogeneic HCT 542 days prior to MMR vaccination. She presented with a centrifugal maculopapular rash that was confirmed to be caused by the vaccine strain rubella virus (Fig 1). She fully recovered without sequalae. There was no other vaccine-associated illness identified in the cohort, after a median follow-up of 676 days.

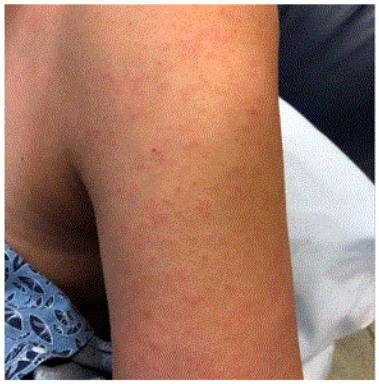

Figure 1: Vaccine-strain rubella associated maculopapular rash appearing 12 days post MMR vaccine given 542 days after allo-HCT.

Conclusion. MMR vaccine appears to be well tolerated in selected HCT recipients when given earlier than 2 years after transplant. No attributable severe outcomes or deaths were described. A mild uncomplicated case of vaccine-associated rubella illness was seen after vaccination. In the setting of a measles outbreak, assessment of potential risks and benefits of MMR vaccination given within two years of HCT remains important.

Disclosures. **Stephen R. Walsh, MDCM**, **Janssen Vaccines** (Scientific Research Study Investigator)**Regeneron** (Scientific Research Study Investigator)**Sanofi Pasteur** (Scientific Research Study Investigator) **Matthew Cheng, MD**, **GEn1E Lifesciences** (Advisor or Review Panel member)**Kanvas Biosciences** (Board Member, Shareholder)**nplex biosciences** (Advisor or Review Panel member) **Sanjat Kanjilal, MD, MPH**, **GlaskoSmithKline** (Advisor or Review Panel member) **Nicolas C. Issa, MD**, **AiCuris** (Scientific Research Study Investigator)**Astellas** (Scientific Research Study Investigator)**GSK** (Scientific Research Study Investigator)**Merck** (Scientific Research Study Investigator)

101. PCV13 Pediatric Vaccination Disparity and Impact Due to COVID-19 Pandemic in the US

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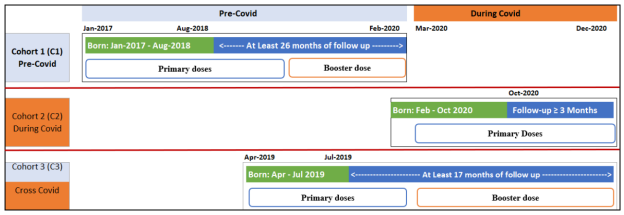
Session: O-21. Innovations and Advancements in Vaccines

Background. Existing disparities in vaccination rates across different social and demographic groups in the US may have been exacerbated during the Coronavirus Disease 2019 (COVID) pandemic, leaving some children at risk for vaccine-preventable diseases. This study examined sociodemographic and risk factors of PCV13 infant primary series vaccination completion, before and during COVID.

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). C1 and C3 (C1&3) were combined and compared with C2 for primary dosing completion before and during COVID according to infant/caregiver characteristics. Full completion (FC) was defined as receipt of 3 doses of PCV13 within 8 months of birth. M ultivariable logistic regression was used to compare FC vs. partial completion or no vaccine. Descriptive analyses were used to compare FC before and during COVID within subgroups.

Figure 1: Study population and inclusion criteria



Results. A total of 132,183 and 16,522 infants with at least 8 months of follow up time were enrolled in C1&3 and C2, respectively. FC was significantly higher before COVID-19 (adjusted odds ratio = 1.12, 95% CI: 1.07-1.17). Adjusting for COVID, FC was significantly lower in infants who were Black, with co-morbidities or risk factors, living in households with >1 children or no children, household annual income < $99k, residing in a neighborhood with median education of high school or below, and whose primary caregiver was aged <25 years (Table 1). Comparing FC before and during COVID, the % decline relative to pre-COVID was > 2% among infants who were White, residing in the Mountain, New England or Pacific regions, in a household with 2 children, >$100k annual income, employer-based insurance or HMO, and median neighborhood education of bachelor degree plus (Table 2).

Table 1. Multivariable binomial logistic regression results for PCV13 full primary dosing completion vs. not full completion (partial or no vaccine), N=144,799*

	Full completion vs. partial completion and no vaccine		
	Odds Ratio	**95% CI - Low**	**95% CI - High**
Pre-COVID vs. During COVID	1.12	1.07	1.17
Primary Caregiver Age Group (Ref: age ≤24)			
Primary caregiver age 25-34	1.44	1.34	1.54
Primary caregiver age ≥35	1.36	1.27	1.46
Race/Ethnicity (Ref: White)			
Asian	1.06	1.01	1.11
Black	0.81	0.77	0.85
Hispanic	*0.97*†	*0.93*	*1.01*
Missing	*0.97*†	*0.88*	*1.06*
Geographical Region (Ref: South Atlantic)			
East North Central	1.24	1.18	1.3
East South Central	1.16	1.07	1.25
Middle Atlantic	0.7	0.66	0.74
Mountain	0.88	0.84	0.92
New England	0.11	0.1	0.12
Pacific	0.72	0.69	0.76
West North Central	1.42	1.35	1.49
West South Central	0.99	0.95	1.04
Multiple	0.24	0.08	0.66
Number of children in household (Ref: One)			
0††	0.8	0.68	0.95
2	0.84	0.81	0.87
3 or more	0.53	0.51	0.55
Missing/unknown	0.71	0.51	0.98
Neighborhood educational levels, median (Ref: High school or less)			
< Bachelor degree	1.22	1.17	1.28
Bachelor degree and plus	1.6	1.53	1.68
Missing/unknown	1.38	1.02	1.89
Household annual income (Ref: ≥100k)			
< 40k	0.72	0.68	0.75
40-74k	0.83	0.79	0.86
75k-99k	0.89	0.86	0.93
Missing	0.77	0.74	0.81
Comorbidity and risk factors (Ref: absence of these clinical risk factors)			
Sickle cell disease, absence of spleen, HIV or cancer	0.71	0.57	0.88
Diabetes, nephrotic syndrome, chronic heart, lung or kidney disease or	0.7	0.63	0.77
Birth defects or pre-term or low birth weight	0.81	0.78	0.84

*Final model after backward elimination
†Not statistically significant
††Based on an adult (age ≥18) ever enrolled in the same insurance plan covering the infant. Values of '0' are possible when the adult enrollee has multiple enrollment periods, with one or more enrollments not on the same plan as the infant.