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.

Disclosures. **Mary Patricia Nowalk, PhD**, **Merck & Co., Inc.** (Grant/Research Support) **Richard K. Zimmerman, MA;MD;MPH;MS**, **Sanofi Pasteur** (Research Grant or Support) **Judith M. Martin, MD**, **Merck Sharp and Dohme** (Consultant)

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.

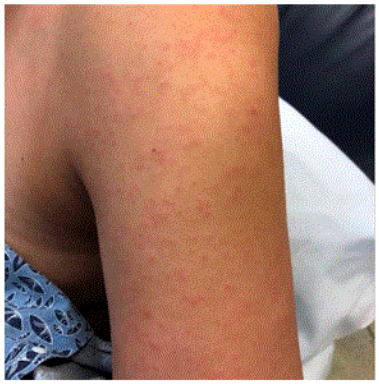

Figure 1: Vaccine-strain rubella associated maculopapular rash appearing 12 days post MMR vaccine given 542 days after allo-HCT.

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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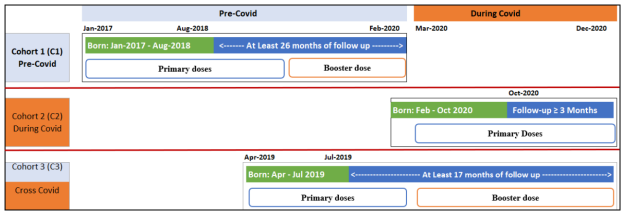
Session: O-21. Innovations and Advancements in Vaccines

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.

Table 2. Primary dosing full completion rate pre-COVID vs. during COVID by social, demographic, and clinical risk factors

	Cohorts 1 & 3 (Pre-COVID)			Cohort 2 (During COVID)			Relative change
	N	# with full completion	% full completion	N	# with full completion	% full completion	(C1&3-C2)/C1&3
Primary caregiver age group							
≤24	4,205	3,065	72.90%	398	286	71.90%	-1.40%
25-34	81,864	65,252	79.70%	9,678	7,548	78.00%	-2.20%
≥35	43,355	33,816	78.00%	5,973	4,571	76.50%	-1.90%
Gender							
Male	67,794	53,416	78.80%	8,562	6,603	77.10%	-2.10%
Female	64,379	50,877	79.00%	7,957	6,154	77.30%	-2.10%
Race							
Asian	11,928	9,585	80.40%	1,171	940	80.30%	-0.10%
Black	8,426	6,280	74.50%	1,065	797	74.80%	0.40%
Hispanic	14,717	11,219	76.20%	1,665	1,256	75.40%	-1.00%
White	86,973	69,448	79.90%	9,725	7,563	77.80%	-2.60%
Multiple	10	9	90.00%	2	1	50.00%	-44.40%
Missing/unknown	10,129	7,761	76.60%	2,894	2,201	76.10%	-0.70%
Census Division							
East North Central	20,503	16,997	82.90%	2,557	2,105	82.30%	-0.70%
East South Central	4,430	3,583	80.90%	586	473	80.70%	-0.20%
Middle Atlantic	10,162	7,738	76.10%	1,238	934	75.40%	-0.90%
Mountain	15,227	11,833	77.70%	1,861	1,395	75.00%	-3.50%
New England	3,502	1,243	35.50%	452	79	17.50%	-50.80%
Pacific	13,977	10,678	76.40%	1,683	1,224	72.70%	-4.80%
South Atlantic	26,456	21,284	80.50%	3,390	2,680	79.10%	-1.70%
West North Central	18,036	15,281	84.70%	2,445	2,062	84.30%	-0.50%
West South Central	19,221	15,263	79.40%	2,261	1,778	78.60%	-1.00%
Insurance type							
Employee-based: EPO	13,834	10,775	77.90%	1,866	1,405	75.30%	-3.30%
PPO: PPO, POS	104,366	82,198	78.80%	12,831	9,923	77.30%	-1.80%
HMO: HMO, IND, OTH	13,983	11,329	81.00%	1,825	1,430	78.40%	-3.30%
Number of children in household							
0	973	777	79.90%	18	16	88.90%	11.30%
1	36,762	30,190	82.10%	5,576	4,505	80.80%	-1.60%
2	53,793	43,394	80.70%	5,150	3,992	77.50%	-3.90%
3 or more	33,003	24,108	73.00%	3,152	2,261	71.70%	-1.80%
Missing/Unknown	7,652	5,833	76.20%	2,626	1,984	75.60%	-0.90%
Neighborhood educational level, median							
High school or less	14,928	10,905	73.10%	1,741	1,255	72.10%	-1.30%
Less than Bachelor Degree	66,181	51,871	78.40%	7,405	5,698	76.90%	-1.80%
Bachelor Degree Plus	43,146	35,499	82.30%	4,714	3,792	80.40%	-2.20%
Missing/Unknown	7,928	6,027	76.00%	2,662	2,013	75.60%	-0.50%
Household annual income							
<40k	9,750	7,184	73.70%	1,222	899	73.60%	-0.20%
40 to 74k	23,024	17,734	77.00%	2,786	2,151	77.20%	0.20%
75 to 99k	16,391	12,946	79.00%	1,902	1,506	79.20%	0.20%
≥100k	59,435	48,366	81.40%	6,147	4,829	78.60%	-3.50%
Missing/Unknown	23,583	18,072	76.60%	4,465	3,373	75.50%	-1.40%
With Sickle cell disease, absence of spleen, HIV or cancer							
Yes	364	256	70.30%	59	37	62.70%	-10.80%
With Diabetes type 1 or 2, nephrotic syndrome, chronic heart, lung or kidney disease or cerebrospinal fluid (CSF) leaks							
Yes	1,999	1,416	70.80%	88	53	60.20%	-15.00%
With Birth defects or pre-term or low birth weight							
Yes	18,904	14,172	75.00%	2,371	1,787	75.40%	0.50%

Conclusion. Health inequities in PCV13 primary series completion existed prior to COVID-19 and have remained during the pandemic. Our results, however, suggest that during the pandemic, groups traditionally considered to have better healthcare access (Whites, higher income, more education) had more impact on vaccine uptake. Further research is needed to confirm these trends as COVID mitigation measures subside.

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

102. A Retrospective Case Series of West Nile Neuroinvasive Disease in Two Tertiary Health Centers in Miami

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Session: O-22. Neurologic Infections

Background. According to the Centers for Disease Control and Prevention, Florida was the third leading state in reported West Nile Neuroinvasive Disease (WNND) infections in 2020. WNND accounts for less than 1% of all West Nile virus (WNV) infections but carries a 10% mortality rate. The clinical characteristics of WNND have not been well described in Florida, an area with high mosquito activity. We hereby describe the clinical characteristics of WNND at two large hospitals in Miami.

Methods. A 10-year retrospective study was performed at the University of Miami Hospital and Mount Sinai Medical Center to identify adult patients with confirmed WNV infection and neuroinvasion. Patient demographics, symptoms, neurological exam findings, laboratory diagnostics, intensive care unit (ICU), and hospital length of stay (LOS), and outcomes were described.

Results. Eleven patients (73% male, mean age 64.4 ± 16.3 years) were identified between January 2010 to December 2020. The most prevalent comorbidities were HTN (64%) and DM (27%). The most common positive findings on the review of symptoms were fever (100%), confusion (81.8%), and headache (63.6%). The mean hospital LOS was 15.5 ±11.3 days, while the mean ICU LOS was 7.2 ± 11.9 days. The majority of patients (75%) spent more than 2 weeks in the ICU. Subject age was correlated with hospital LOS with a Pearson correlation of 0.624 (p=0.04). The survival rate was 91%. At the time of discharge, 80% of patients continued to have neurological symptoms.

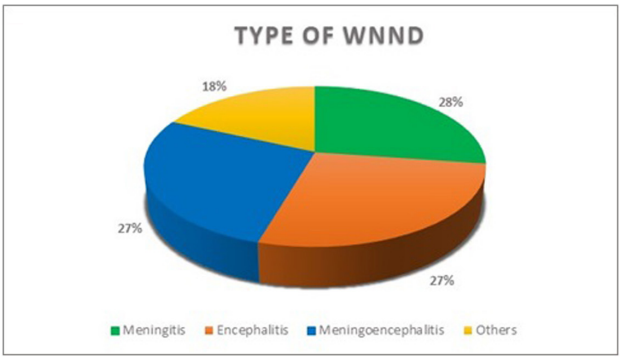

Figure 1: The percentage of subjects with different types of WNND. The section titled others, includes atypical presentations such as amnesia, focal neurological deficits (ataxia, hemiparesis), and myelopathy.

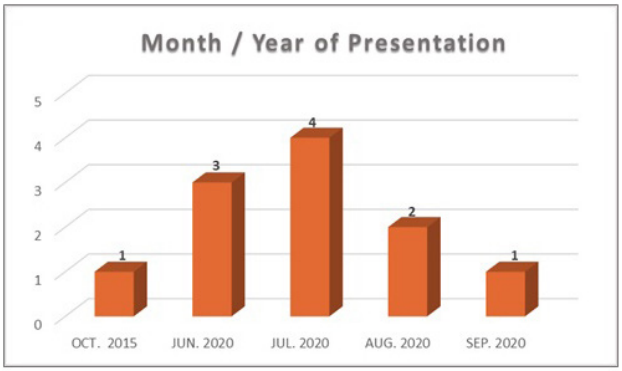

Figure 2: Month and year of presentation at the time of hospital admission.

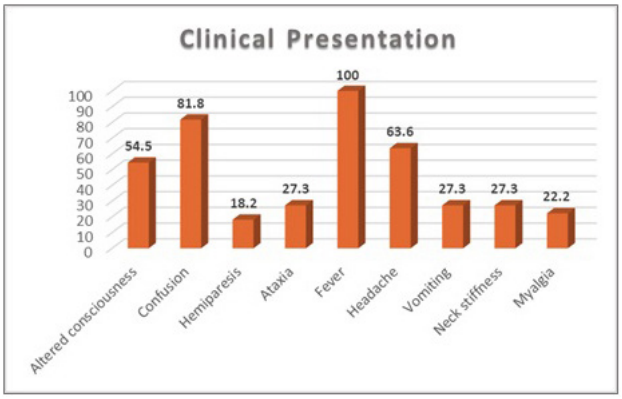

Figure 3: Clinical presentation (%).

Conclusion. This is the largest case series of WNND in Florida. Most cases occurred during summer 2020, which corresponds to the peak of the COVID-19 pandemic. Despite pandemic restrictions, we may have seen an increase in WNV cases due to higher-than-normal temperatures promoting mosquito abundance, increased outdoor activities due to the COVID-19 pandemic, and/or the redistribution of public health resources towards the pandemic rather than mosquito control. Residual neurological symptoms and impaired functional outcomes are common. Within the limitation of our small sample size, subject age appeared to correlate with hospital LOS. This correlation should be further explored in a larger case series. A high index of suspicion for WNND is suggested for patients presenting with fever and neurologic symptoms in Florida.

Disclosures. **Cynthia Rivera, MD**, **Gilead Sciences** (Advisor or Review Panel member)**Viiv Healthcare** (Advisor or Review Panel member)