

Results. The overall reduction of IPD cases by serotypes included in PCV13 was 88% for children and 67% in adults with a constant increase of IPD cases by serotype 8 in adults since 2015. In children, serotypes 24F (12%), 8 (10%) and 3 (9%) were the most frequent in 2019 whereas in adults, serotypes 3 and 8 accounted for 37% of IPD cases. IPD cases in adults by additional serotypes covered by the 23-valent polysaccharide vaccine (PPV23) have risen constantly within the years, increasing from 19% in 2009 to 52% in 2019. IPD cases by Non-vaccine types in adults (not covered by PCV13 or PPV23) show a moderate increase from 14% in 2009 to 24% in 2019.

Conclusion. Emerging serotypes are observed in Spain with the rise of serotype 24F in children and 8 in adults as a worrisome event.

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1516. Outbreak of SARS-CoV-2 among Migrant Farm Workers in North Florida

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Session: P-68. Respiratory Infections - Viral

Background. Migrant farmworkers have been identified as a vulnerable population for Severe Acute Respiratory Syndrome Novel Coronavirus-2 infection (SARS-CoV-2). The objectives of this study were to detect the SARS-CoV-2 infection (COV19) status among 262 migrant farmworkers in North Florida.

Methods. This is a retrospective analysis of the information gathered from migrant workers referred by the Florida Dept. of Health for evaluation. Due to the urgency of returning to Mexico, subjects with which COV19 was detected were reevaluated for detailed medical history. Therefore, subjects that tested negative were later released following CDC guidelines. COV19 status was determined using an RNA qualitative nucleic acid amplification test (NAAT) from nasopharyngeal swabs collected over a three-day period. Variables collected include demography, symptoms, temperature, comorbidities, medication use, and vaccine status. Statistical significance for categorical variables was assessed using χ^2 test or Fisher's exact test where appropriate. Remaining variables were assessed using basic descriptive analysis.

Results. From the 262 subjects tested, 6 missed the follow up visit and data was unavailable. All were Mexican males, age 18-67 years, with positivity rate of 35.1%. Among the 92 (+) subjects, the average age was 34.1 years and 34.5 among the 164 (-) subjects, (p< 0.77). The symptoms and temperatures are in Table 1. Three of the 92 COV19 (+) subjects were hospitalized, non-ICU and made an uneventful recovery. 59.8% of COV19 (+) subjects were asymptomatic. Among the 92 (+) subjects, 20.7% reported using acetaminophen within the last 60 days. The most common reported comorbidity was being a former smoker or current smoker, at 12.0% and 4.3% respectively.

Table 1: Characteristics of migrant workers with and without SARS-CoV-2 infection			
	Migrant Workers (n=92) SARS-CoV-2 (+)	Migrant Workers (n=164) SARS-CoV-2 (-)	P value
Age, years	<0.77
Mean (SD)	34.1 (9.04)	34.5 (10.44)	..
Range	19-57	18-67	..
Symptoms Reported	37 (40.2%)	19 (11.9%)	<0.01
Subjective Fever	20 (21.7%)	6 (3.6%)	<0.01
Headache	14 (15.2%)	3 (1.8%)	<0.01
Cough	13 (14.1%)	8 (4.9%)	<0.01
Rhinorrhoea	13 (14.1%)	3 (1.8%)	<0.01
Myalgia	12 (13.0%)	2 (1.2%)	<0.01
Chills	9 (9.8%)	0	<0.01
Diarrhea	6 (6.5%)	0	<0.01
Pleurodynia	5 (5.4%)	1 (0.6%)	<0.03
Sore Throat	5 (5.4%)	0	<0.01
Dyspnea	4 (4.3%)	1 (0.6%)	<0.06
Sneezing	2 (2.2%)	0	<0.13
Vomiting	1 (1.1%)	0	<0.36
Temperature Recorded	81 (88.0%)	146 (89.0%)	..
95.0-95.9	1 (1.2%)	1 (0.7%)	<0.59
96.0-96.9	4 (4.9%)	16 (10.9%)	<0.13
97.0-97.9	24 (29.6%)	50 (34.2%)	<0.48
98.0-98.9	24 (29.6%)	50 (34.2%)	<0.48
99.0-99.9	28 (34.6%)	28 (19.2%)	<0.01
100.0-100.9	0	1 (0.7%)	<0.65
Hospitalizations	3 (3.3%)	0	<0.05
Recovered	3 (100%)	0	..
Comorbidities Reported	19 (20.6%)	N/A	..
Former Smoker	11 (12.0%)	N/A	..
Current Smoker	4 (4.3%)	N/A	..
Chronic Lung Disease	2 (2.2%)	N/A	..
Cardiovascular Disease	1 (1.1%)	N/A	..
Seasonal Allergies	1 (1.1%)	N/A	..
Medication Use Reported	22 (23.9%)	N/A	..
Acetaminophen	19 (20.7%)	N/A	..
Naproxen	1 (1.1%)	N/A	..
Multivitamin	2 (2.2%)	N/A	..
Vaccination Status	84 (91.3%)	N/A	..
Unvaccinated	11 (13.1%)	N/A	..
Mono-Vaccinated	48 (57.1%)	N/A	..
Dual-Vaccinated	25 (29.8%)	N/A	..

Conclusion. The COVID-19 pandemic has highlighted migrant workers as a vulnerable population with astronomical COV19 rates, compared to others in FL

(14/100,000). They are impoverished, uneducated, undocumented, uninsured and employed to perform arduous physical labor and it is essential to provide basic healthcare to prevent the spread of COV19.

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1517. Outcomes of Influenza Infection among Vaccinated and Un-Vaccinated Patients presenting to a Suburban hospital in Perth, Western Australia (WA), 2019 Southern Hemisphere Influenza Season

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Session: P-68. Respiratory Infections - Viral

Background. Influenza season started in April, earlier than any previous season. WA immunization registry showed a higher than average vaccine uptake. By October 22,770 cases and 80 influenza related deaths were recorded (in 2018: 3,679 cases and 13 deaths). We aimed to characterize clinical presentation and outcomes of laboratory confirmed Influenza, comparing vaccinated with unvaccinated controls. Hypothesis: vaccination would result in less severe disease and better outcomes. Primary objective: length of stay (LOS); Secondary objective: prevalence of severe respiratory illness, ICU admission and death.

Methods. Retrospective study, April to October 2019. Eligible patients had a telephone-based questionnaire for clinical and immunization data verification. Excluded: < 18 years; deceased; dementia; nursing home and unable to consent. Continuous and categorical data of cases (vaccinated) and controls (unvaccinated) were compared using Mann-Whitney U test (non parametric), student t-test (parametric). Correlation and multilinear regression analyses were undertaken to determine the effects of vaccination status and identified confounders on the primary outcome. Based on previous average LOS (5 days, SD 1.5) the sample required to detect a difference of 1 day with 80% power was 70 patients. This study was approved by the SJGHC HREC.

Results. Of 163 eligible, 83 completed the questionnaire. 8 were excluded. 75 underwent analysis (50 vaccinated and 25 unvaccinated). Median age was 75 (23-83) and 63 (33-70) respectively (p< 0.01). 76% vs 48% reported >1 comorbidity (p = 0.02). 10% vs 0% were admitted to ICU (p = 0.16). Higher vaccination uptake was seen in older patients and those with comorbid conditions. There was a strong correlation (Spearman r = 0.54 (0.34 to 0.68, p< 0.001) between age and length of stay, but none was found between comorbidity or vaccination and length of stay. Neither age (p > 0.05), comorbidity status (yes/no; p=0.99), vaccination status (p=0.61) nor any combination of these variables were significantly associated with a dichotomised outcome of acute hospital stay > 3 days.

Conclusion. Vaccination with the 2019 influenza vaccine had no significant effect on hospital length of stay, mortality or critical care requirement in patients admitted to hospital with influenza.

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1518. Real-World Comparative Effectiveness of Baloxavir Marboxil versus Oseltamivir on Influenza-Related Complication and Resource Utilization

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Session: P-68. Respiratory Infections - Viral

Background. In the 2018-19 season, there were an estimated 490,500 hospitalizations and 24,000 deaths from influenza in the US. Understanding how antiviral use affects rates and severity of complications is crucial to inform clinical practice. The objective of this study was to compare the frequency and costs of complications in influenza patients treated with baloxavir compared with oseltamivir-treated patients. This is one of the first analyses to examine comparative effectiveness of baloxavir in a real-world setting.

Methods. This retrospective cohort study used IBM MarketScan US administrative claims data from the 2018-19 influenza season. Patients were required to have an outpatient visit for influenza followed by a prescription for baloxavir or oseltamivir within 2 days. Baloxavir- and oseltamivir-treated patients were propensity score matched based on key baseline clinical and demographic characteristics. All-cause, all respiratory-related, and select respiratory-related (infection, asthma, and COPD) HRU in the 15 and 30 days following prescription fill were assessed using chi-square and Fisher's exact tests for categorical measures and Wilcoxon signed-rank tests for counts and costs.

Results. We included 5,080 baloxavir-treated patients and 10,160 matched oseltamivir-treated patients in the analysis. Statistically significantly lower HRU was associated with baloxavir compared with oseltamivir therapy (15-day: respiratory-related ED visits, select respiratory-related ED visits and outpatient visits; 30-day: all-cause hospitalization, respiratory-related ED visits, select respiratory-related ED visits and outpatient visits (Table 1). Similarly, associated costs were generally lower in the baloxavir-treated group. Baloxavir-treated patients had lower mean per-patient all-cause 15-day costs (ED visits: \$30 [95% CI: \$21-\$39] vs \$42 [95% CI: \$32-\$51]; hospitalizations: \$31 [95% CI: \$6-\$55] vs \$74 [95% CI: \$43-\$104]) and 30-day costs (ED visits: \$46 [95% CI: \$35-\$57] vs \$67 [95% CI: \$55-\$79]; hospitalizations: \$47 [95% CI: \$15-\$80] vs \$119 [95% CI: \$78-\$161]).

Table 1. Proportion of patients with at least one event

	Baloxavir (n=5,080)					Oseltamivir (n=10,160)				
	15-day Follow-Up		p-value			30-day Follow-Up		p-value		
	N	%	N	%	p-value	N	%	N	%	p-value
All-cause HRU										
ED Visits	72	1.4%	174	1.7%	0.17	111	2.2%	264	2.6%	0.12
Hospitalizations	11	0.2%	35	0.3%	0.17	15	0.3%	55	0.5%	<0.01
OP visits	1411	28%	2925	29%	0.19	2168	43%	4299	42%	0.67
RX fills	1641	32%	3197	31%	0.30	2447	48%	4742	47%	0.08
All Resp HRU										
ED Visits	26	0.5%	105	1.0%	<0.01	29	0.6%	124	1.2%	<0.01
Hospitalizations	7	0.1%	22	0.2%	0.29	9	0.2%	25	0.2%	0.40
OP visits	561	11%	1160	11%	0.49	808	16%	1569	15%	0.46
Select Resp HRU										
ED Visits	13	0.3%	69	0.7%	<0.01	13	0.3%	70	0.7%	<0.01
Hospitalizations	4	0.1%	20	0.2%	0.13	5	0.1%	21	0.2%	0.15
OP visits	176	3.5%	454	4.5%	<0.01	194	3.8%	508	5.0%	<0.01

ED, Emergency Department; HRU; Healthcare resource utilization; OP, Outpatient; RX, Prescription

Conclusion: These findings suggest that treatment of influenza with baloxavir may improve outcomes and lower HRU costs compared with oseltamivir treatment.

Disclosures. Eddie Neuberger, PharmD, Genentech, Inc. (Employee) Chris Wallick, PharmD, MS, Genentech, Inc. (Employee) Devika Chawla, PhD MSPH, Genentech, Inc. (Employee) Rita de Cassia Castro, MD, Genentech, Inc. (Employee)

1519. Reduction of healthcare-associated viral infections during COVID-19 pandemic

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Session: P-68. Respiratory Infections - Viral

Background. Healthcare-associated viral infections (HAVI) are a common cause of preventable harm, particularly in pediatric patients. We utilized routine hospital-wide surveillance data for HAVIs at a quaternary care pediatric hospital in order to assess the impact of enhanced public health measures on rates of HAVI at our institution during the COVID-19 pandemic.

Methods. Patient cases of HAVI were detected through routine house-wide microbiologic surveillance. Compliance with our institutional prevention bundle, which includes hand hygiene, appropriate use of isolation precautions and personal protective equipment (PPE), maintaining a clean and clutter free environment, employee illness policy, and restrictions on sick visitors, was measured through use of Kamishibai-card rounding.

Results. During the most acute period of the COVID-19 pandemic, intensification of the majority of elements of the HAVI bundle occurred by nature of our institutional response, including use of PPE monitors in certain locations, increased use of eye protection, universal masking for staff and caregivers, re-education for employees on not coming to work sick, and further restrictions to visitation. The monthly HAVI rate in the acute phase of the COVID-19 pandemic was lower in March (0.76), April (0.27) and May (0.0) 2020 compared to the same time period last year (0.8, 0.8, 0.56). Bundle compliance during those months in 2020 was 83%, 89%, and 100%, respectively. In May, zero HAVIs were identified. (Figure 1)

Healthcare-associated viral infections rate and bundle compliance after COVID-19 prevention measures



Conclusion. The intensification of routine infection prevention practices aimed at minimizing the transmission of COVID-19 may also reduce rates of HAVI. During our COVID response, we identified a decrease in our institutional HAVI rate compared to the same time last year, reaching lower special cause in May with a rate of 0. We will have ongoing measurement of the HAVI rate throughout the pandemic to determine if this reduction can be sustained and understand which intensified bundle elements need to be maintained in non-pandemic hospital operations.

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1520. Respiratory Syncytial Virus Hospitalizations (RSVH) and All-Cause Bronchiolitis Hospitalizations (BH) Among Children Aged ≤ 24 Months at the Start of RSV Season With Bronchopulmonary Dysplasia/Chronic Lung Disease of Prematurity (BPD/CLDP) Before and After the 2014 American Academy of Pediatrics (AAP) Policy

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Session: P-68. Respiratory Infections - Viral

Background. The AAP, in 2014, stopped endorsing palivizumab for use in children with BPD/CLDP born at < 32 weeks' gestational age (wGA) between the ages of 12 to 24 months not requiring medical support during the 6 months before the start of RSV season and all children with BPD/CLDP born at > 32 wGA. We sought to understand the impact of the guidance change on RSVH and BH in children no longer advised for RSV immunoprophylaxis with palivizumab.

Methods. Children with BPD/CLDP aged ≤ 24 months at the RSV season start and hospitalized for RSV or bronchiolitis during the 2010-2017 RSV seasons (November-March) were studied. RSVH, BH, and BPD/CLDP were defined by International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and ICD-10-CM codes. ICD-9 codes for wGA combine 31 and 32 wGA into one code. Therefore, for BPD/CLDP, we classified group 1 as children aged 12 to 24 months who were born at < 31 wGA and group 2 as those born at ≥ 31 wGA. The Children's Hospital Association's Pediatric Health Information System (PHIS) data set was used to describe frequency and characteristics of RSVH and BH and disease severity (including intensive care unit [ICU] admission and mechanical ventilation [MV]) before and after the 2014 AAP policy. Statistical analyses were done using z-tests; SAS version 9.4.

Results. Among children with BPD/CLDP, RSVH rates were 1.7% (1035/59,217) before 2014 and 2.1% (973/45,470) after 2014 (P< 0.0001). RSVH rose after the policy change vs before among children with BPD/CLDP in both group 1 (0.40% vs 0.26%; P< 0.0001) and group 2 (0.22% vs 0.14%; P=0.002). Similarly, BH also increased for both group 1 (P< 0.0001) and group 2 (P=0.002) after the guidance change vs before. Although ICU admissions increased significantly for children with BPD/CLDP in both group 1 (P< 0.0001) and group 2 (P=0.0004), use of MV (P=0.002) increased after 2014 for children with BPD/CLDP in group 1 only. Similar results were observed for BH.

Conclusion. This analysis highlights the increase in RSVH, BH, and associated severity among BPD/CLDP subgroups within the PHIS health system after 2014. Further study of long-term complications associated with RSVH in these children is warranted.

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1521. Risk factors associated with complications of influenza A or B infection, southern Puerto Rico, 2016-2019

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Session: P-68. Respiratory Infections - Viral

Background. Influenza is one of the most common viral respiratory diseases in the United States with 9-45 million cases per year. In Puerto Rico, more than 18,000 cases of influenza were reported during the 2019/20 season. The Sentinel Enhanced Dengue Surveillance System (SEDSS) conducts acute febrile illness surveillance for inpatient and outpatients at a southern Puerto Rico tertiary care hospital.

Methods. We performed a retrospective analysis of disease severity among laboratory-confirmed influenza cases enrolled in SEDSS. Cases with complications such as pneumonia or bronchitis evidenced by chest x-ray or clinical diagnosis were classified as severe.

Results. Between January 2016 and December 2019, there were 2,835 laboratory-confirmed influenza cases. More than half (1,662, 59%) were aged 0-20 years, 51% (n=1,447) were female, and 4% (n=124) required hospital admission. Among all influenza cases, influenza A virus was most common (n = 1,963, 69%) followed by influenza B virus (n = 872, 31%). Odds of having influenza A were higher among adults (OR=1.62; 95% CI:1.38-1.92). Chronic disease history among influenza cases