Figure 1

Figure 1. Age-specific, Unadjusted Influenza-Associated Hospitalization Rates among Children <18 Years, by Season and by Age Category, FluSurv-NET, 2010-2019.

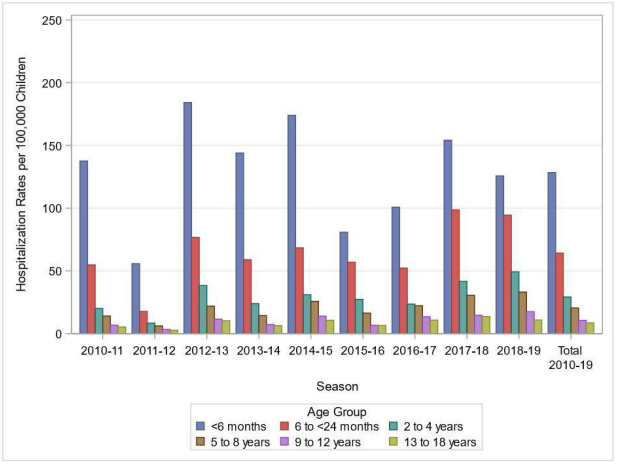

Table 1

Table 1. Characteristics and Outcome of Children <18 Years of Age Hospitalized with Laboratory-Confirmed Influenza by Age Group, FluSurv-NET, 2010-2019

Demographic characteristics and outcome	<6 Months	6 to <24 Months	2 to 4 Years	5 to 8 Years	9 to 12 Years	13 to <18 Years	Total
	n = 2029	n = 3040	n = 2791	n = 2633	n = 1366	n = 1376	n = 13235
	no. (%)	no. (%)	no. (%)	no. (%)	no. (%)	no. (%)	no. (%)
Sex							
Male	1176 (58.0)	1717 (56.5)	1571 (56.3)	1527 (58.0)	774 (56.7)	699 (50.8)	7464 (56.4)
Female	853 (42.0)	1323 (43.5)	1220 (43.7)	1106 (42.0)	592 (43.3)	677 (49.2)	5771 (43.6)
Race							
Non-Hispanic White	654 (32.2)	865 (28.5)	920 (33.0)	995 (37.8)	514 (37.6)	555 (40.3)	4503 (34.0)
Non-Hispanic Black	484 (23.9)	785 (25.8)	792 (28.4)	746 (28.3)	381 (27.9)	383 (27.8)	3571 (27.0)
American Indian or Alaska Native	22 (1.1)	59 (1.9)	42 (1.5)	23 (0.9)	12 (0.9)	11 (0.8)	169 (1.3)
Asian/Pacific islander	107 (5.3)	211 (6.9)	146 (5.2)	120 (4.6)	61 (4.5)	58 (4.2)	703 (5.3)
Multiracial	32 (1.6)	61 (2.0)	38 (1.4)	40 (1.5)	19 (1.4)	10 (0.7)	200 (1.5)
Hispanic	494 (24.3)	748 (24.6)	598 (21.4)	487 (18.5)	255 (18.7)	253 (18.4)	2835 (21.4)
Unknown	236 (11.6)	311 (10.2)	255 (9.1)	222 (8.4)	124 (9.1)	106 (7.7)	1254 (9.5)
Pre-existing medical conditions							
Immunocompromising status							
Yes	10 (0.5)	123 (4.1)	201 (7.2)	293 (11.1)	177 (13.0)	235 (17.1)	1039 (7.9)
No/Unknown	2019 (99.5)	2917 (96.0)	2590 (92.8)	2340 (88.9)	1189 (87.0)	1141 (82.9)	12196 (92.1)
Any chronic condition							
Yes	531 (26.2)	1342 (44.1)	1574 (56.4)	1748 (66.4)	1035 (75.8)	1079 (78.4)	7309 (55.2)
No/Unknown	1498 (73.8)	1698 (55.9)	1217 (43.6)	885 (33.6)	331 (24.2)	297 (21.6)	5926 (44.8)
ICU Admission							
Yes	308 (15.2)	623 (20.5)	550 (19.7)	499 (19.0)	336 (24.6)	360 (26.2)	2676 (20.2)
No	1714 (84.5)	2410 (79.3)	2228 (79.8)	2121 (80.6)	1025 (75.0)	1010 (73.4)	10508 (79.4)
Unknown	7 (0.3)	7 (0.2)	13 (0.5)	13 (0.5)	5 (0.4)	6 (0.4)	51 (0.4)
Death							
Yes	6 (0.3)	14 (0.5)	13 (0.5)	15 (0.6)	13 (1.0)	11 (0.8)	72 (0.5)
No	2020 (99.6)	3021 (99.4)	2772 (99.3)	2607 (99.0)	1350 (98.8)	1364 (99.1)	13134 (99.2)
Unknown	3 (0.2)	5 (0.2)	6 (0.2)	11 (0.4)	3 (0.2)	1 (0.1)	29 (0.2)
Mechanical Ventilation							
Yes	83 (4.1)	154 (5.1)	152 (5.5)	120 (4.6)	89 (6.5)	92 (6.7)	690 (5.2)
No	1935 (95.4)	2872 (94.5)	2623 (94.0)	2494 (94.7)	1270 (93.0)	1279 (93.0)	12473 (94.2)
Unknown	11 (0.5)	14 (0.5)	16 (0.6)	19 (0.7)	7 (0.5)	5 (0.4)	72 (0.5)
Pneumonia							
Yes	133 (6.6)	559 (18.4)	623 (22.3)	481 (18.3)	252 (18.5)	214 (15.6)	2262 (17.1)
No	1896 (93.5)	2481 (81.6)	2168 (77.7)	2152 (81.7)	1114 (81.6)	1162 (84.5)	10973 (82.9)
Unknown	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Table 2

Table 2. Odds Ratios for ICU Admission, Mechanical Ventilation, and Pneumonia among Children Hospitalized with Laboratory-Confirmed Influenza, FluSurv-NET, 2010-2019.

	ICU Admission[a]		Mechanical Ventilation[b]		Pneumonia[c]	
	Univariable Analysis		Univariable Analysis		Univariable Analysis	
	OR	95% CI	OR	95% CI	OR	95% CI
Age, years						
≥0 months to <6 months	reference		reference		reference	
≥6 months to <2 years	**1.4**	**1.2 - 1.7**	1.3	1.0 - 1.6	**3.2**	**2.6 - 3.9**
2 - 4 years	**1.4**	**1.2 - 1.6**	**1.4**	**1.0 - 1.8**	**4.1**	**3.4 – 5.0**
5 - 8 years	**1.3**	**1.1 - 1.5**	1.1	0.8 - 1.5	**3.2**	**2.6 - 3.9**
9 – 12 years	**1.8**	**1.5 – 2.2**	**1.6**	**1.2 - 2.2**	**3.2**	**2.6 - 4.0**
13 - <18 years	**2.0**	**1.7 – 2.4**	**1.7**	**1.2 - 2.3**	**2.6**	**2.1 - 3.3**

[a]For the univariable analysis, n = 13184 and 2676 cases with ICU admission.

[b]For the univariable analysis, n = 13163 and 690 cases with mechanical ventilation.

[c]For the univariable analysis, n = 13235 and 2262 cases with pneumonia.

Conclusion: Although influenza-related hospitalization rates decreased with increasing age, severe outcomes were more common among hospitalized older children. Room for improvement exists in influenza vaccination coverage and antiviral use. While 20% of children were admitted to ICU, death was uncommon.

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1713. Factors Associated with Viral Rebound post Blip in Patients from a Community HIV Clinic

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Session: P-75. Virology: Studies of the Epidemiology of Viral Infections

Background. Blips are detectable increases in the HIV viral load (VL) that occur after therapy has effectively suppressed the virus to an undetectable level. There is no clear etiology for the development of blips. The association between blips and viral failure remains unclear.

Methods. This retrospective chart review aimed to clinically characterize patients who developed blips in a community HIV clinic in north Philadelphia between 2014-2018. A blip was defined as a single detectable VL < 500 copies/mL which appears between two undetectable VL measurements. Multivariate analysis was performed to examine the relationship of certain variables and viral rebound (VR) in patients with blips. Viral rebound was defined as post blip VL > 200 copies/mL that was not followed by an undetectable viral load.

Results. Of a total of 666 patients, 225 (33.7%) had at least 1 blip. 59% were male and 41% were female. The majority were African American (84.4%). Sixty seven percent were heterosexuals and 25.7% were MSM. Analyzing CD4 counts at the moment of blip, 68% had >500 cells/mm3. The average value of the blips was 85 copies/mL with 48.8% of the patients having a blip between 20-50 copies/mL. Most of the patients were on INSTIs (49.5%) followed by NNRTIs (35.6%). Of the 225 patients, 148 had at least 1 year of follow up post-blip. Those who were followed for less than 1-year post-blip were not included in the statistical analysis to find potential factors associated with VR. Thirty-two (21.6%) patients developed rebound. The multivariate analysis showed that being male and having a higher blip value were factors associated to increased likelihood of VR. Factors associated to decreased likelihood of rebound were the use of NNRTIs at blip and an HIV transmission factor that was not heterosexual sex (MSM and IDU). All of these associations were noted to be statistically significant.

Conclusion. The variables that were found to be associated to viral rebound could help guide clinicians during the surveillance of patient's with blips. Further research in larger cohorts would help clarify the role of these variables in patients who develop treatment failure.

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1714. Influenza C Virus in U.S. Children with Acute Respiratory Infection 2016-2019

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Session: P-75. Virology: Studies of the Epidemiology of Viral Infections

Background. Influenza C virus (ICV) is associated with acute respiratory infection (ARI); however, the burden of ICV is not well-described. We sought to determine the burden and characteristics of ICV in a prospective, population-based cohort.

Methods. The study was conducted within the New Vaccine Surveillance Network (NVSN), a CDC-led, seven-site network that performs population-based surveillance for ARI in children < 5 years. Nasal/throat swabs were collected from emergency department (ED) or inpatient children with ARI, or healthy controls in clinic, between 12/05/2016-10/31/2019 and tested by real-time RT-PCR for ICV and other respiratory viruses. Preliminary data were extracted and demographic/clinical features of ICV+ cases analyzed. We sequenced the hemagglutinin-esterase (HE) gene from ICV+ Pittsburgh samples.

Results. Among 19,321 children with ARI or healthy controls enrolled and tested for ICV from 2016-2019, 115/17,668 (0.7%) ARI cases and 8/1653 (0.5%) healthy controls tested positive for ICV. The median age of ICV+ ARI subjects was 19 months (IQR 10,46) and 81(70%) were ≤36 months. 42.6% (49) were white, 33.9% (39) black, and 16.5% (19) Hispanic, with the remainder Asian or unknown; 56.5% (62) attended daycare. Among ICV+ ARI cases, 67.8% (78) had fever, 94.8% (109) cough, and 60.8% (70) wheezing. 45.2% (52) ICV+ cases occurred in 2016-17, 6.5% (8) in 2017-2018, and 47.8% (55) in 2018-19 (**Table**). 40% (46) of ICV+ cases were seen in the ED, while the remainder were inpatients. Median length of stay was 2d (IQR,1-3) with 15 admitted to ICU. 67.8% (78/115) ARI cases had 1 or 2 co-detected pathogens, with rhinovirus (26), respiratory syncytial virus (26), and adenovirus (14) most frequently co-detected. ARI symptoms including fever, myalgias, chills, and wheezing did not differ significantly between coinfected subjects and those who were only ICV+. HE sequences were in the two currently circulating Kanagawa and Sao Paulo lineages.