154. Circulation of Rhinovirus/Enterovirus Respiratory Infections in Children During 2020-21 in the United States

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Background. Sharp declines in influenza and respiratory syncytial virus (RSV) circulation across the U.S. have been described during the pandemic in temporal association with community mitigation for control of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We aimed to determine relative frequencies of rhinovirus/enterovirus (RV/EV) and other respiratory viruses in children presenting to emergency departments or hospitalized with acute respiratory illness (ARI) prior to and during the COVID-19 pandemic.

Methods. We conducted a multi-center active prospective ARI surveillance study in children as part of the New Vaccine Surveillance Network (NVSN) from December 2016 through January 2021. Molecular testing for RV/EV, RSV, influenza, and other respiratory viruses [i.e., human metapneumovirus, parainfluenza virus (Types 1-4), and adenovirus] were performed on specimens collected from children enrolled children. Cumulative percent positivity of each virus type during March 2020–January 2021 was compared from March-January in the prior seasons (2017-2018, 2018-2019, 2019-2020) using Pearson's chi-squared. Data are provisional.

Results. Among 69,403 eligible children, 37,676 (54%) were enrolled and tested for respiratory viruses. The number of both eligible and enrolled children declined in early 2020 (Figure 1), but 4,691 children (52% of eligible) were enrolled and tested during March 2020-January 2021. From March 2020-January 2021, the overall percentage of enrolled children with respiratory testing who had detectable RV/EV was similar compared to the same time period in 2017-2018 and 2019-2020 (Figure 1, Table 1). In contrast, the percent positivity of RSV, influenza, and other respiratory viruses combined declined compared to prior years, (p< 0.001, Figure 1, Table 1).

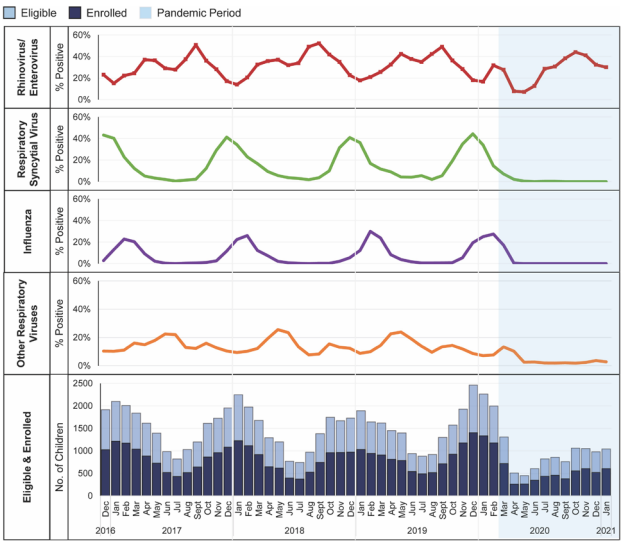

Figure 1. Percentage of Viral Detection Among Enrolled Children Who Received Respiratory Testing, New Vaccine Surveillance Network (NVSN), United States, December 2016 – January 2021

Percent (n/N) children positive for:	2017-2018 % (N)	2018-2019 % (N)	2019-2020 % (N)	2020-2021 % (N)‡
Rhinovirus/enterovirus*	29.0 (2,562/8,828)	34.4 (2,782/8,084)†	30.4 (2,885/9,485)	29.6 (1,341/4,532)
Respiratory syncytial virus*	16.7 (1,473/8,830)†	18.2 (1,468/8,086)†	20.5 (1,949/9,488)†	1.2 (58/4,688)
Influenza*	8.4 (742/8,830)†	4.7 (377/8,086)†	10.5 (999/9,487)†	2.6 (122/4,625)
Other respiratory viruses*	15.3 (1,262/8,830)†	14.0 (1,128/8,087)†	14.0 (1,327/9,488)†	6.1 (284/4,691)

‡ Referent group for pairwise comparisons
† *P*<0.001
*among enrolled children who received respiratory testing
Other respiratory viruses include human metapneumovirus, parainfluenza virus (Types 1-4), and adenovirus

Table 1. Percent of Respiratory Viruses Circulating in March 2020– January 2021, compared to March-January in Prior Years, New Vaccine Surveillance Network (NVSN), United States, March 2017 – January 2021

Conclusion. During 2020, RV/EV continued to circulate among children receiving care for ARI despite abrupt declines in other respiratory viruses within this population. These findings warrant further studies to understand virologic, behavioral, biological, and/or environmental factors associated with this continued RV/EV circulation.

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155. *In Vitro* Evaluation of Delafloxacin Activity Against Contemporary US Isolates from Community-Acquired Pneumonia and Community-Acquired Lower Respiratory Tract Infections: Results from the SENTRY Antimicrobial Surveillance Program (2014-2020)

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Background. Delafloxacin (DLX) is a broad-spectrum fluoroquinolone antibacterial approved in the US for the treatment of community-acquired bacterial pneumonia (CABP). DLX is indicated to treat CABP caused by *Streptococcus pneumoniae* (SPN), *Haemophilus influenzae* (HI), *Haemophilus parainfluenzae* (HP), methicillin-susceptible *Staphylococcus aureus* (MSSA), *Escherichia coli* (EC), *Klebsiella pneumoniae* (KPN), *Pseudomonas aeruginosa* (PSA), *Chlamydia pneumoniae*, *Mycoplasma pneumoniae* and *L. pneumophila*. In this study, the *in vitro* susceptibilities of DLX and comparator quinolones were determined for clinical isolates from CAP and CA-lower respiratory tract infections (LRTIs).

Methods. CAP and CA-LRTI isolates were consecutively collected at 67 US medical centers participating in the SENTRY Surveillance Program during 2014-2020. Sites submitted 1 isolate per patient per infection episode. Isolate identification was determined at each site and confirmed using standard biochemical or molecular methods at JMI Laboratories. Susceptibility testing was performed according to CLSI broth microdilution methodology. CLSI (2021) interpretive criteria were applied, FDA criteria were used for DLX.

Results. The susceptibility results for DLX, levofloxacin (LEV), moxifloxacin (MOX), and ciprofloxacin (CIP) for the indicated species are shown in the table. As MOX does not have CLSI breakpoints for EC, KPN, or PSA, CIP was tested for those species instead. DLX had the highest percent susceptibility against MSSA (91.8%). SPN and HI were >97% susceptible, and HP was >91% for all 3 drugs. KPN susceptibility ranged from 86.4% for LEV to 76.9% for DLX. Susceptibilities for EC and PSA were similar for the 3 drugs, EC varied from 59.8% for LEV to 57.0% for DLX, and PSA varied from 71.6% for CIP to 64.0% to LEV.

Conclusion. DLX had good activity against recent CAP and CA-LRTI isolates from US hospitals. DLX had the highest susceptibility of the quinolones tested against MSSA. Quinolone-resistant SPN and HI were uncommon. These *in vitro* results suggest that DLX may be a useful therapeutic option for CABP caused by Gram-positive, Gram-negative and fastidious pathogens.