

# Molecular detection of fifteen respiratory viruses in hospitalized children

## first year results of four-year prospective study from Croatia

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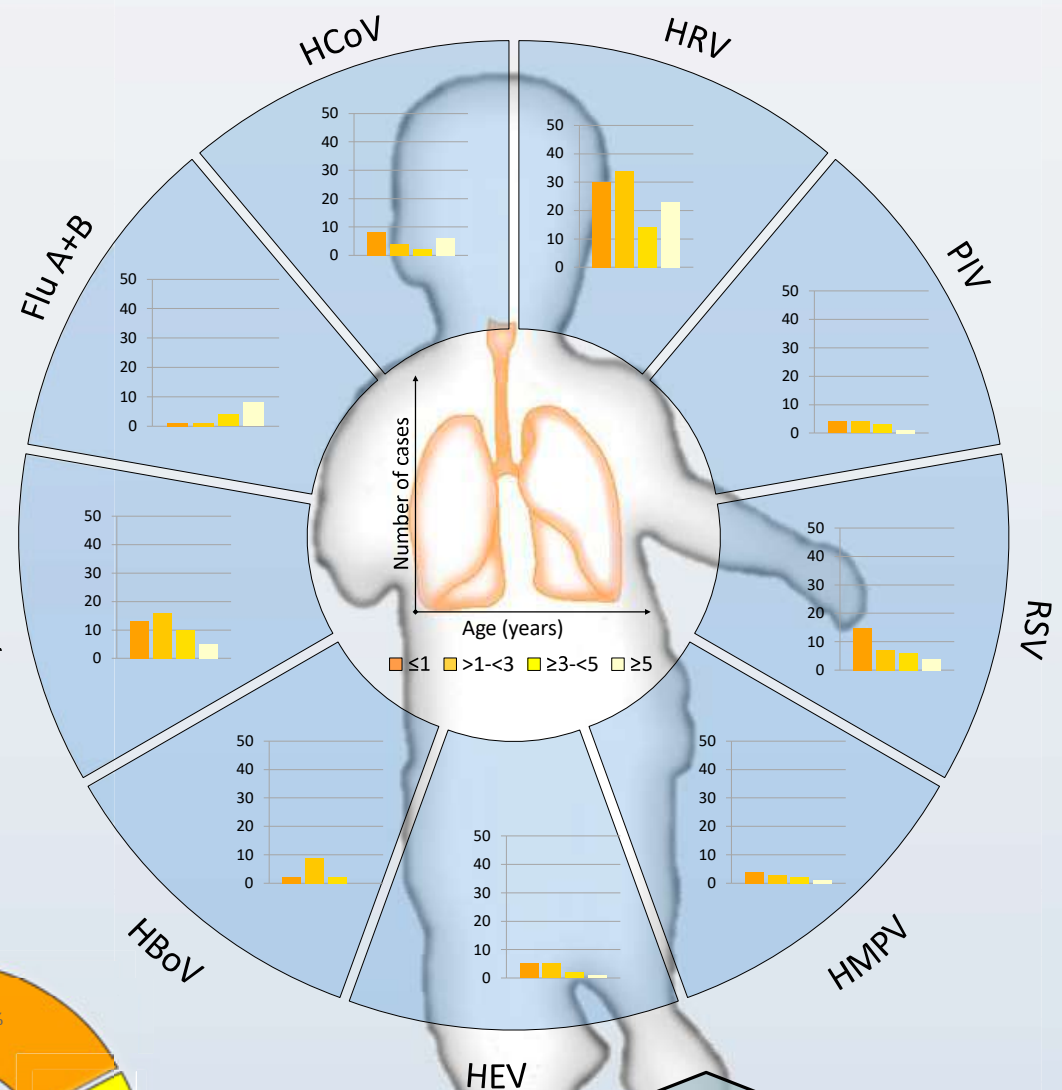
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### Background

To determine the viral incidence, and clinical significance of viral detection in hospitalized children with respiratory tract infection (RTI), four-year prospective study was started in March 2017.

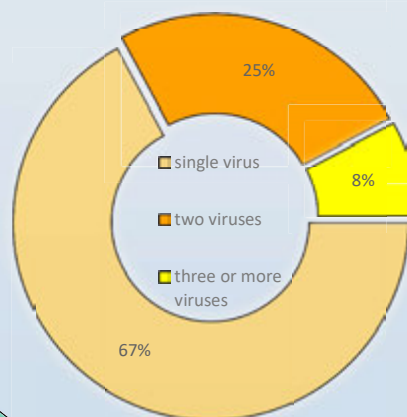
### Material and Methods

During one-year period, a total of 239 children aged from one week to 18 years admitted to the Children's hospital Zagreb with RTI of suspected viral aetiology were included. Nasopharyngeal swabs were collected and tested for the 15 most common respiratory viruses. Multiplex PCR and cDNA synthesis in one-step reaction, followed by detection of PCR amplicons using microchip electrophoresis was performed.



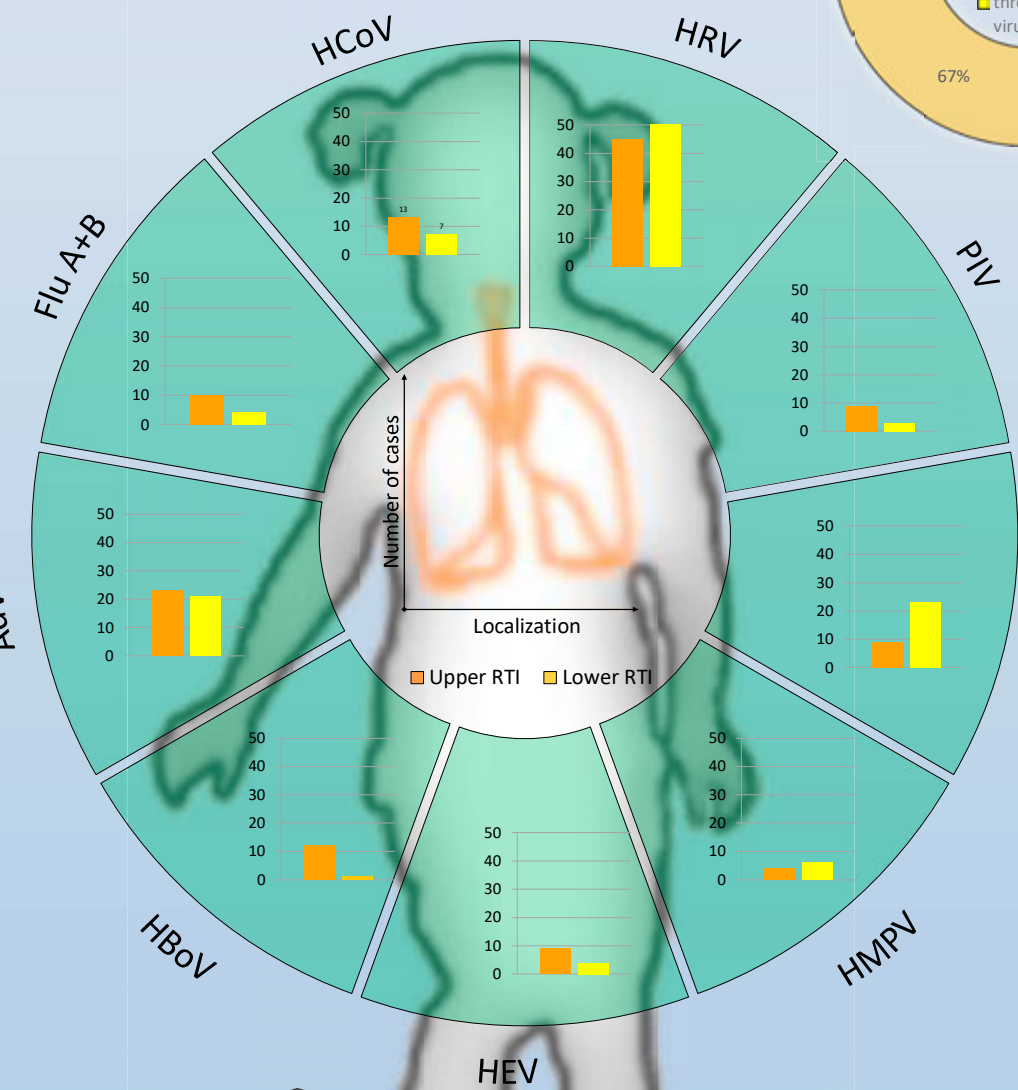
Specific virus prevalence according to the age of patients

Rate of single virus infection and multiple virus infection/codetection



### Results

Viral aetiology was proved in 75.3 % of the patients. The median age of children with detected respiratory virus was 3.5 years, and male to female ratio 1.6:1. The highest positive detection rate was recorded in the 3 to 5 years old group of children. Ninety-six patients showed symptoms of upper RTI, and 84 had symptoms/signs of lower RTI. The most commonly detected virus was rhinovirus - HRV (56.1%), followed by adenovirus – AdV (24.4%), respiratory syncytial virus A and B - RSV (17.7%), coronaviruses 229/NL63 and OC43 - HCoV (11.1%), influenza viruses A and B – Flu (7.7%), human bocavirus – HBoV, and human enteroviruses-HEV with equal frequencies (7.2%), parainfluenza viruses types 1 to 4 - PIV (6.6%), and metapneumovirus - HMPV (5.5%).



Specific virus prevalence according to the localization of respiratory tract infection

### Conclusion

Observed incidence of some respiratory viruses was related to the age of the patient, the localization of the infection and the season.

