



# PREVALENCE OF RESPIRATORY VIRUSES DURING INFLUENZA SEASON

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## Abstract

Respiratory viruses can cause morbidity and mortality in young and old populations. Laboratories and physicians become acutely aware of this during “respiratory season” with their focus on the detection of influenza and Respiratory Syncytial Virus (RSV). These viruses also have profound infection control and public health implications. With this in mind, our objective was to determine the prevalence of respiratory viruses in specimens submitted from patients presenting to University of Maryland Medical Center with respiratory viral symptoms from October 2008 to May 2009. We used a retrospective cohort of 529 patients who had physician ordered influenza RT-PCR assays. Using the multiplex xTAG RVP (Luminex) on these samples, we were able to detect influenza A and B, respiratory syncytial virus A and B, parainfluenza virus 1,2, and 3, adenovirus, human metapneumovirus, and rhinovirus/enterovirus from bronchoalveolar lavages and nasopharyngeal specimens. We detected 9 influenza A, 25 influenza B, 21 RSV A, 18 RSV B, 2 parainfluenza 2, 7 adenoviruses, 20 human metapneumovirus, and 73 rhinovirus/enterovirus. In this study 94% of patients did not have influenza A or B as a cause of their respiratory symptoms but a high percentage (14%) had rhinovirus/enterovirus. Identification of the specific respiratory virus causing the symptoms rather than just ruling out influenza virus/RSV could be helpful to the patient and infection control efforts. Future studies will analyze the impact on detecting numerous respiratory viruses on patients and infection control.

## Objective

Determine the prevalence of respiratory viruses in specimens submitted from patients presenting to University of Maryland Medical Center with respiratory viral symptoms from October 1, 2008 until May 31, 2009.

### Total Respiratory Viruses Isolated

Respiratory Virus	< 18 years old	≥18 years old	Total
Influenza A	6	2	8
Influenza B	17	8	25
RSV A	18	0	18
RSV B	8	7	15
Adenovirus	5	0	5
Parainfluenza 2	1	0	1
Rhinovirus/Enterovirus	49	15	64
Human Metapneumovirus	11	4	15
Dual Infections	12	1	13
RSV A/ Adenovirus	1	0	1
RSV A/ Rhinovirus/Enterovirus	1	1	2
RSV B/ Parainfluenza 2	1	0	1
RSV B/ Rhinovirus/Enterovirus	2	0	2
Influenza A/ Human Metapneumovirus	1	0	1
Rhinovirus/Enterovirus/Adenovirus	1	0	1
Rhinovirus/Enterovirus/ Human Metapneumovirus	4	0	4
Negative	168	197	363
<b>Total</b>	<b>296</b>	<b>233</b>	<b>529</b>

## Methods

- All respiratory specimens received by the University of Maryland Medical Center from October 1, 2008 to May 31, 2009 for Influenza A and B and RSV detection by ProFlu+ (Prodesse Gen-Probe, Waukesha, WI)
- Leftover nucleic acid from each specimen underwent respiratory detection of influenza A, influenza B, RSV A, RSV B, parainfluenza 1-3, rhinovirus/enterovirus, and adenovirus detection using the xTAG RVP (Luminex; Austin, TX).

## Results

- 17% of pediatric patients had rhinovirus/enterovirus detected when physicians ordered influenza and RSV testing.
- 4% of pediatric patients had more than one respiratory virus isolated during their respiratory illness.

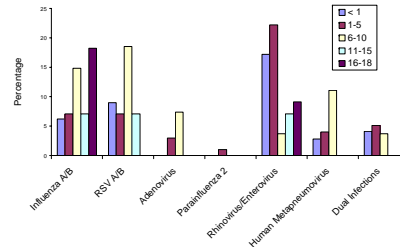
## Conclusions

- 19% of patients had respiratory viruses other than influenza A and B and RSV when physicians ordered testing for these pathogens.
- Knowing that the patient symptoms are caused by other respiratory viruses (i.e. rhinovirus/enterovirus) vs influenza virus or RSV puts the physician and parents at ease and can lead to directed interventions for these infections.

## Background

- Respiratory viruses cause morbidity and contribute to mortality in certain at risk individuals.
- During the respiratory season in the United States (October to May), clinicians focus on influenza and RSV, however other respiratory viruses are capable of causing similar symptoms.
- Therefore, providing clinicians with the specific cause of respiratory symptoms may have a significant impact on cost effective patient care.

### Percentage of Pediatric Respiratory Viruses Detected by Age Group



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