

# RESPIRATORY VIRAL DETECTION IN PEDIATRIC OUTPATIENTS USING NASOPHARYNGEAL FLOCKED SWABS

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## INTRODUCTION

The gold standard specimen for viral respiratory testing described in the literature is a nasopharyngeal aspirate. This procedure is complicated for outpatients in the emergency room. A new collection device, a nasopharyngeal swab, introduced by Copan in 2005, has shown to be a good alternative to the aspirate.

## OBJECTIVE

- To determine the frequency of detection of the classic respiratory viruses using the nasopharyngeal flocked swabs for sample collection in an outpatient pediatric population with acute respiratory infection (ARI).
- To evaluate epidemiologic characteristics of the population.

## MATERIALS AND METHODS

87 children under 5 years of age with ARI attending the emergency room at CEMIC University Hospital, Buenos Aires, Argentina, from June to November (winter and spring) 2008, were selected for this study.

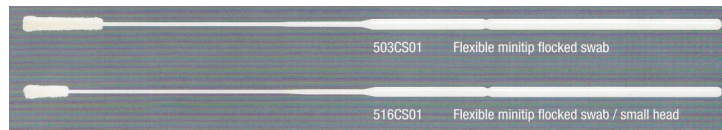
The nasopharyngeal secretion was collected by pediatricians with a flexible nasopharyngeal flocked swab (Copan, Diagnostics, Cat # 516CS01 for neonates and # 503CS01 for children) in viral transport media. The samples were processed on the same day, according to standard protocols. Indirect immunofluorescence with monoclonal antibodies (Chemicon/ Millipore) were used to detect respiratory syncycial virus (RSV), adenovirus (AdV), influenza (Flu A) and (Flu B) and parainfluenza (PIV). Slides were read with a Nikon microscope by the same professional and evaluated for cell quality.

## RESULTS

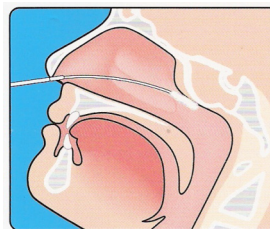
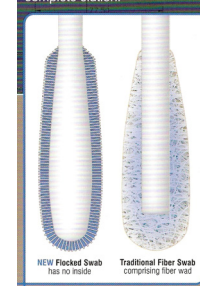
- Out of 87 patients, 55 (63%) were under 2 years of age; 73 (84%) had upper ARI, mostly rhinitis, pharyngitis and laryngitis.
- All children were well nourished and belong to medium/high socioeconomic level.
- 85 % had the vaccines up to date. However, only 26% had received the Influenza vaccine.
- None of the samples had to be rejected due to insufficient cells.
- All classic respiratory viruses were detected.

**Respiratory viruses detected by immunofluorescence in pediatric outpatients during winter spring 2008, Buenos Aires, Argentina.**

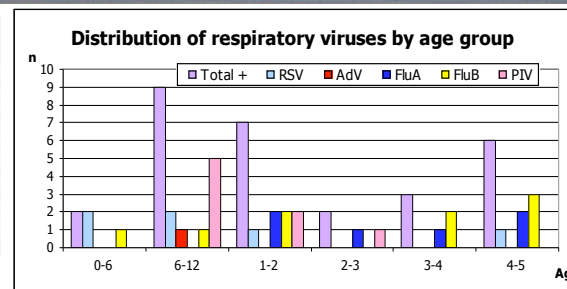
Population	Negative	Positive	RSV	AdV	Flu A	Flu B	PIV
n=87	58 (66%)	29 (34%)	6 (7%)	1 (1%)	6 (7%)	9 (10%)	8 (9%)



**Copan flocked SWABS** have no internal mattress core to disperse and entrap the precious sample like traditional fiber wound swabs. In stark contrast the entire sample stays close to the surface for fast and complete elution.



Sample Collection



## CONCLUSIONS

✓ The low RSV detection could be due to the fact that most children (84%) had upper ARI. Children with lower ARI were hospitalized, the aspirate was the standard sample collection procedure and therefore were not included in this study.

✓ High rates of Flu A, Flu B and PIV were observed in our patients.

The advantages of the flocked swabs are:

- ✓ The high quality sample which facilitates the reading of the fluorescence;
- ✓ Clinical healthcare workers preferred the flocked swabs to the nasopharyngeal aspirate because sample collection was simpler, it took less time and equipment.
- ✓ Laboratory workers preferred the swabs because sample processing and reading was easier.
- ✓ The flexible flocked swabs were better accepted by the patients in comparison to the aspirates.
- ✓ In a future study we will compare the efficacy of nasopharyngeal swabs vs aspirates in hospitalized patients.