



IMPACT OF CAREGIVER HEALTH ON PEDIATRIC HEALTHCARE-ASSOCIATED VIRAL RESPIRATORY INFECTIONS (HAVRIS): A RETROSPECTIVE STUDY.

Maude PAQUETTE MD; Allyson SHEPHARD RN, MScN, CIC; Patricia BEDARD RN, BSc, CIC; Nisha THAMPI MD, MSc, FRCPC
Division of Allergy, Immunology and Infectious Diseases , Children’s Hospital of Eastern Ontario, Ottawa, Canada.



INTRODUCTION

- The burden of healthcare-associated viral respiratory infections (HAVRIs) in children is significant, with **increased healthcare costs** and **risk of poor outcomes**.
- Little is known about **the impact of sick contacts during hospitalization** on the incidence of HAVRIs.

OBJECTIVE

- **To determine the proportion of pediatric HAVRIs following contact with an ill caregiver or visitor.**

METHODS

- **Retrospective chart review**
- Setting: **pediatric tertiary care center** with both multiple and single-bed rooms.
- Inclusion criteria: Cases of HAVRIs that occurred **between December 2017 and July 2019** in patients aged **less than 18 years old**.
- HAVRI definition: **laboratory confirmed respiratory viral illness occurring after 72 hours of admission**.

RESULTS

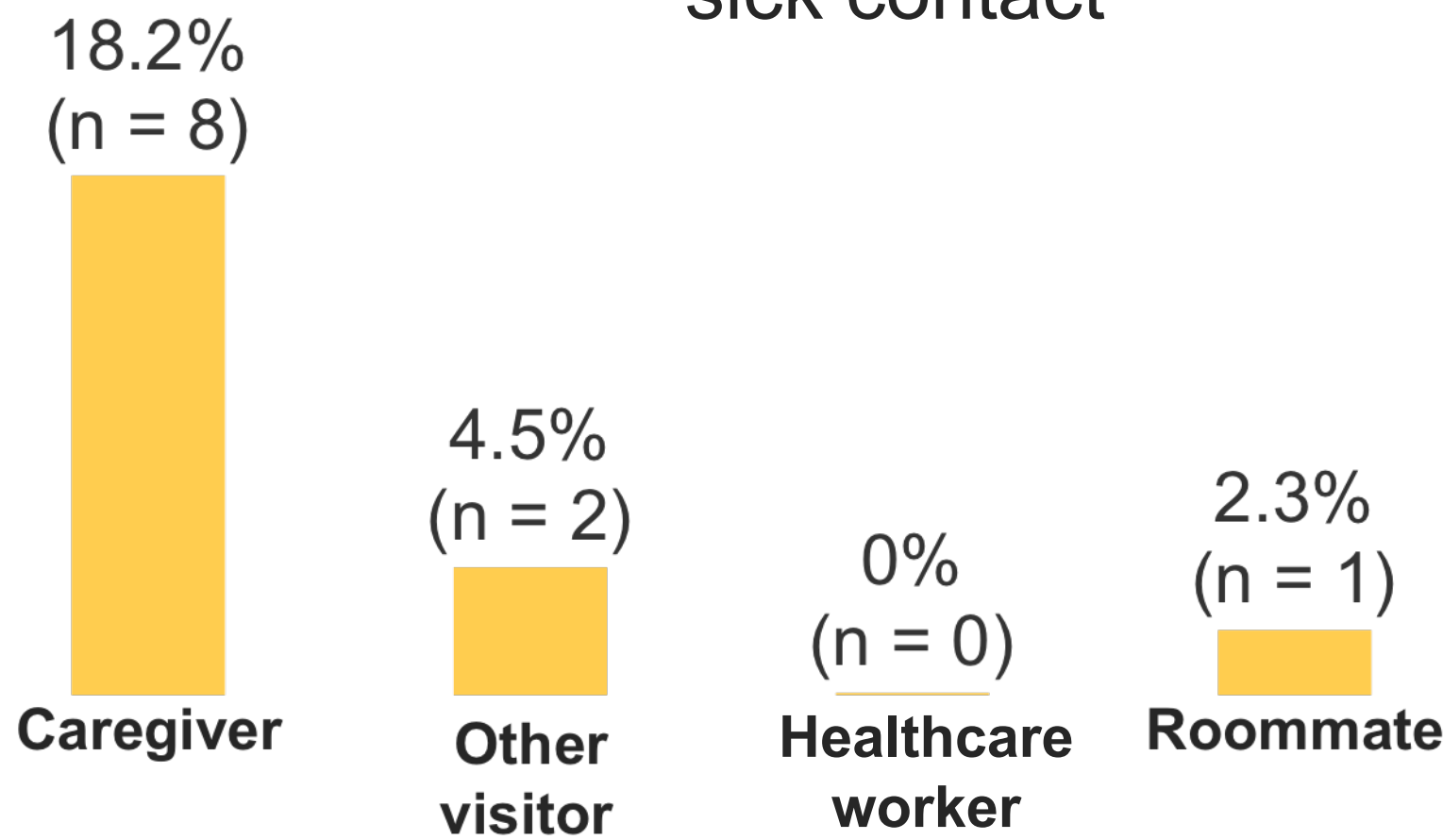
- **Forty-four HAVRIs** were included in the analysis.
- Viruses most frequently isolated: **rhinovirus** (45.5%) and **RSV** (20.5%).

Table 1. Patients’ Characteristics

Characteristic	n(%) n=44
Gender	
Female	22 (50)
Age (median = 1 year old)	
Less than 24 months old	32 (72.7)
Ex-preterm	7 (15.9)
Comorbidities	
At least one comorbidity*	42 (95.5)
Followed by CHEO complex care program	21 (47.7)

*Including cardiac (n=10), **gastrointestinal (n=22)**, hemato-oncology (n=4), **neurologic (n=17)**, rheumatologic (n=1), renal (n=1), **respiratory (n=21)**, primary (n=2) or secondary immunodeficiency (n=8), other (n=14)

Figure 1. Proportion of cases with documented sick contact



In the 72h prior to HAVRI onset:

- 18 patients (40.9%) were in a **single-bed room**.
- 6 patients (13.6%) were already under **droplet/contact precautions**.

Table 2. Associated Complications

Complications	n(%) n=44
Respiratory support	
New or increased O2 requirements	12 (27.3)
New respiratory support	3 (9.1)
Other treatments	
Oseltamivir	6 (13.6)
Proven or suspected associated bacterial infection requiring antibiotics for more than 48h	9 (20.5)
Burden on healthcare	
Transferred to PICU	4 (9.8)*
Delay in discharge	7 (15.9)
More than 7 days under isolation precautions	30 (68.1)

*Excluding patients already in PICU (2) or NICU (1)

- **There were no associated deaths**

DISCUSSION

- A certain proportion of HAVRIs were associated **with document sick contacts with a caregiver or visitor** reinforcing the relevance of a strict visitor-screening policy.
- A large proportion of HAVRIs were in patients with **complex medical conditions and in young children**.
- Of note, more than one third of HAVRI cases occurred **in patients already in a single-bed room**, sometimes even under droplet/contact precautions.
- **Families should be educated on the importance of appropriate hand hygiene when caring for their child.**

Our study suggests that having a contact with a sick caregiver or visitor is a potential risk factor for acquiring a HAVRI.