**Introduction**

- Telethon Kids Institute (TKI) is a medical research institute located in Perth, Western Australia.
- The research conducted at TKI contributes to limited research on environmental determinants of respiratory viruses.
- Similar baseline hMPV rates worldwide indicate that applicable on an international scale.

**Objective of the Study**

Observe the influence of SARS-CoV-2 related non-pharmaceutical interventions on hMPV in different age groups and clinical phenotypes.

**Methods**

- Analyze data of emergency department presentations at Perth Children’s Hospital from 2017-2021.
- Subgroup analysis was performed by age and by clinical phenotype.
- After researching hMPV, I sorted and analyzed data, built figures, and wrote this paper on hMPV.

**Results**

- Following the implementation of NPIs, WA observed an absent hMPV season in 2020 and an early peak in 2021.
- hMPV incidence increased by 3-fold in 2021 compared to 2017-2019.
- These changes led to an increase in OALRI cases and median age of hMPV infected individuals.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>≥1 yr to &lt; 5 yrs</th>
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<tbody>
<tr>
<td>Period</td>
<td>Baseline</td>
</tr>
<tr>
<td>hMPV Tested, N (%)</td>
<td>357 (23%)</td>
</tr>
<tr>
<td>hMPV Detected, N (%) Admitted</td>
<td>33 (26%)</td>
</tr>
<tr>
<td>Metropolitan Incidence (per 100,000)</td>
<td>28 (19-41)</td>
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</tbody>
</table>

- Overall rate of hMPV testing increased from 34.7% to 66.2% throughout the study.
- hMPV detections increased by 2-fold for bronchiolitis and 3-fold for OALRI and wheeze compared to baseline.
- Percentage positivity for bronchiolitis and OALRI increased by more than two-fold.
- hMPV testing increased for all age groups but most significantly for 1-4 years.

- The impact of NPIs was determined by comparing data from the baseline (2017-2019) to 2021.
- hMPV detections increased for infants aged <12 months, although hMPV tested remained similar.
- Increase in detections were observed amongst all age groups with the most significant change in the 1-4 years category.

**Discussion**

- The drop in hMPV cases is due to a drop in population immunity and an expanded group of hMPV-naïve infants.
- More infants presented with OALRI and wheeze because their first infections occurred past ≥12 months old.

**Questions**

There are many unknowns about hMPV seasonality in future years, as changes in travel patterns, hygiene practices, local NPIs, and other viruses may influence hMPV seasons.

**Conclusion**

- The burden of hMPV may be greater than previously assessed.
- Human migration, population immunity, and environmental conditions are all factors that affect hMPV transmission.

**Acknowledgements**

I would like to thank Telethon Kids Institute and Dr. David Foley for their support in this summer internship. I also acknowledge the Center for Health and Wellbeing and the Global Health program for their support in this experience.