

An Insight into the Distribution of COVID-19 and Respiratory Syncytial Virus (RSV) in Paediatric Patients at Great North Children's Hospital, Newcastle, United Kingdom from September 2020 to February 2023

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Abstract

The COVID-19 pandemic was a widely disruptive illness and affected children of all ages and background. The implementation of national lockdowns in the UK reduced the spread of COVID-19 but may have also affected exposure of most respiratory illness, including RSV.

In a single centre retrospective study, we analysed anonymised data from paediatric patients attending the Great North Children's Hospital in Newcastle. A total of 42,532 COVID-19 and 12,592 RSV polymerase chain reaction (PCR) tests were performed between September 2020 and February 2021.

The implementation of national restrictions showed a reduction in both COVID-19 and RSV infections. Upon easing of restrictions, RSV infections showed a much more dramatic rise than COVID-19. Upon easing of restrictions, RSV infections showed a much more dramatic rise than COVID-19 and the peak time of infection was seen in August 2021, much later than the normal winter peak seen. A higher median age of RSV infection (1-2 years) than previous years was shown. COVID infections demonstrated an expected rise following easing of national restrictions in July 2021. However, infection rates were much slower to reduce, possibly due to a smaller reservoir of natural immunity and showed further expected peaks in the winter months of 2021. Furthermore, COVID-19 infections continued to gradually decrease from January 2022.

Overall, this data set shows the variability shown in the timing of RSV infections as a subsequent result of COVID-19 infections and national lockdown restrictions. It also highlights the changes in age groups effected by RSV and COVID-19 and the possible interaction these viral interactions may have had in children at this time.

