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| **Asthma and susceptibility to COVID-19 in Australian children**  |
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| **Introduction/Aim:** Earlier coronavirus-19 (COVID-19) pandemic reports did not implicate increased disease burden in asthmatics while subsequent findings have been inconsistent. To date, the impact of COVID-19 on childhood asthma remains undetermined and is further complicated with ongoing emergence of new variants. This study aimed to investigate association between asthma and COVID-19 for children in New South Wales (NSW), Australia and compare its differences across four major outbreaks from alpha, delta and omicron variants/subvariants.**Methods:** This is a retrospective cross-sectional study of all children aged ≤ 17 years old who sought care for COVID-19 at Sydney Children’s Hospitals Network (SCHN) between 1 January 2020 and 31 May 2022.**Results:** Of the18,932 children with polymerase chain reaction (PCR) confirmed COVID-19 who attended SCHN, 60% received their care during delta wave, and 5.41% (n=913) had prior diagnosis of asthma. Among children with COVID-19, the odds of having asthma were lower during alpha (aOR=0.43; 95% CI, 0.19-0.83) and delta wave (aOR=0.84; 95% CI, 0.73-0.96), but were higher during omicron wave (aOR=1.56; 95% CI, 1.23-1.95). Length of hospital stay (LOS) for asthmatic children were increased by 0.55 days and 1.17 days during delta and the second omicron wave, respectively. Intensive care and mechanical ventilation requirements were not significantly different between asthmatic and non-asthmatic children. Eleven deaths were reported but none had asthma.**Conclusion:** Although children with asthma were more susceptible to omicron infections than alpha or delta, they were not at greater risk of COVID-19 severity with any of the SARS-CoV-2 variants/subvariants.**Grant Support:** Nil |