

## Decrease in Infection-Related Hospital Admissions During COVID-19: Why Are Parents Avoiding the Doctor?

### To The Editors:

Pediatric Emergency Department (ED) attendances have fallen markedly in countries worst-affected by the COVID-19 pandemic, but the reasons have not been fully elucidated.<sup>1,2</sup> Anecdotes exist of late presentations with serious non-COVID-19 illness, but the problem has not been closely studied. We aimed to measure and characterize the pandemic's impact on other infection-related admissions (non-COVID-19) at an Australian tertiary pediatric hospital during the most restrictive period of interventions (April 1–May 31, 2020) to prevent spread of COVID-19.

Inpatient admission data were extracted from the electronic medical record for children up to 18 years old attending The Royal Children's Hospital Melbourne during April 1–May 31, 2019 and 2020. The number of children admitted with any infection and those referred to the infectious diseases (ID) team were assessed. In 2020, available parents/caregivers of children who had ID consults were invited and verbally consented to complete a 3-question survey to assess the impact of COVID-19 on healthcare attendance: (1) Would you usually have visited your GP for this illness but did not? (2) Did you present later to hospital because of concern about COVID-19? (3) Were you advised against attending hospital by any healthcare professional? The study had institutional ethics approval (QA/65243/RCHM-2020).

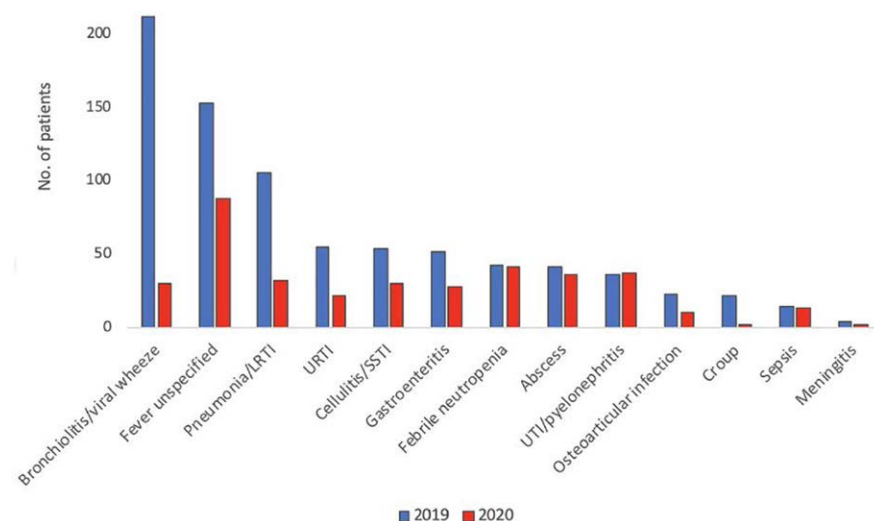
From April 1–May 31, 2020, there was a dramatic reduction in hospital

admissions compared with the same period in 2019 from 2005 patients to 1264. There was a proportional decrease in infection-related admissions from 41% (818) to 30% (375) [relative risk (RR): 0.73, 95% confidence interval (CI): 0.66–0.80,  $P < 0.001$ ], with infection-related admissions 54% lower and noninfectious conditions 25% lower. The largest decreases in 2020 compared with 2019 were 91% for croup (2 vs. 22; RR: 0.14, 95% CI: 0.03–0.61,  $P = 0.004$ ), 86% for bronchiolitis (30 vs. 212, RR: 0.22, 95% CI: 0.15–0.33,  $P < 0.001$ ) and 76% for pneumonia (32 vs. 106, RR: 0.48, 95% CI: 0.32–0.71,  $P < 0.001$ ). Other non-COVID-19 viral infections also decreased, and bacterial osteoarticular infections and cellulitis reduced by 57% and 44%, respectively (Fig. 1). Febrile neutropenia and sepsis admissions did not change. There were 28% (221 vs. 304) fewer ID consults in April/May 2020 compared with 2019.

All 41 families who were approached participated. Responses showed that 37% (15/41) parents delayed seeking any medical attention as they avoided visiting their family doctor. Additionally, 10% (4/41) delayed attending hospital because of COVID-19 fears. Those 4 children had *Escherichia coli* knee septic arthritis and bacteremia (7-d delay), *Staphylococcus aureus* sacroiliac septic arthritis, myositis, and bacteremia (14 d), *S. aureus* calcaneal osteomyelitis with sequestrum and bacteremia (6 d), and culture-negative ventriculoperitoneal shunt infection (3 wks). About 10% (4/41) were advised against attending hospital by another healthcare professional.

Infection-related admissions during COVID-19 restrictions halved compared with the previous year. Reduced admissions with respiratory infections were likely because of physical distancing (including school closures) and public health messaging including hand hygiene.<sup>3</sup> Lower numbers of skin and osteoarticular infections may have been because of reduced trauma associated with fewer outdoor activities. Nonetheless, we found severe infections, which may have been less advanced if pandemic-related fears had not impacted on usual patterns and pathways of seeking healthcare. From available information to date, the risk in children of untreated serious infection far outweighs that of developing severe COVID-19.<sup>4,5</sup>

Globally, provision of primary care has been severely affected by staff shortages and redeployment to hospitals, but this has not yet occurred to the same extent in Australia. Early primary care can prevent severe disease and prevent hospital admissions. The data presented here suggest that the “stay at home” message could be improved by the addition of “unless you are unwell.” Emphasis on the impact of COVID-19 on healthcare workers may have led to the perception by primary care staff and the public and that hospitals were unsafe. Qualitative studies are needed to better understand parental attitudes to children's healthcare during the pandemic and how we might intervene to alleviate anxiety and prevent late presentations in future. After the pandemic subsides, continued public health messaging to maintain hand hygiene may reduce transmission of respiratory infections.



**FIGURE 1.** Infection-related inpatient admissions during COVID-19 restrictions in 2020 compared with 2019. LRTI, lower respiratory tract infection; SSTI, skin and soft tissue infection; URTI, upper respiratory tract infection; UTI, urinary tract infection.

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