



## Radiology referrals from the emergency department during the United Kingdom lockdown of 2020

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Dear Editors,

The coronavirus disease 2019 (COVID-19) global pandemic has revolutionised paediatric health care systems and transformed health-seeking behaviours, even provoking health care avoidance [1, 2]. Restrictions on travel and activities through national and regional lockdowns have led to a significant decrease in emergency department attendances in both paediatric and adult populations. Subsequently, delays in presentation for serious illness have been widely reported in both the medical literature [3] and the news media [4, 5]. Less is known of the impact of COVID-19 and associated population-control measures on paediatric populations, but, increasingly, evidence worldwide suggests it has been stark [6–8].

We work in a tertiary children’s hospital (in Belfast, Northern Ireland) with a dedicated paediatric emergency department. Following the announcement of the first United Kingdom (UK)-wide lockdown, the number of children presenting to our Emergency Department fell immediately; the conventional radiograph reporting lists were noticeably smaller. We initiated a small retrospective cohort study to look at all children referred from our Emergency Department to the Radiology Department between 24 March 2020 and 23 April 2020, comparing referrals from the same calendar month in 2019. We have since extended our study to include this month in 2021, to assess changing attitudes towards health care in the middle of the fourth local lockdown. We focussed on children presenting with a history of trauma in whom extremity radiographs were requested.

In the 2019 month, 596 children had trauma radiographs, with this number falling to 246 in the same month in 2020, a reduction of 58.7%. In the 2021 study period, numbers exceeded pre-COVID figures, with 604 children requiring imaging for extremity injury. Conversely, the number of children with fractures on their radiographs increased from 37.3% in 2019 to 53.4% in 2020, falling back to 34.9% in 2021. All fractures diagnosed in 2019 were acute, but three children presented with healing injuries in 2020 and one in 2021; all four were older children and there was no suspicion of inflicted injury in any of the groups studied. We further looked at “re-attenders” to the Emergency Department—those returning with the same complaint. In 2020, only a single child returned to the department. Pre-pandemic there were 15 children across the month, and in 2021, this figure increased to 27.

In 2019, 172/582 (30%) children were injured in ways that would become inaccessible to children during lockdown: at schools or in public play areas, at the homes of friends or relatives and whilst participating in team sports. All children in the 2020 group had “COVID-compliant” injury mechanisms. With some easing of restrictions during the 2021 month, 177/605 (29%) injuries would not have been possible during the 2020 lockdown based on mechanism.

In summary, our data imply that during the first lockdown, children with more minor injuries were being cared for at home rather than attending the Emergency Department, but also that attendance numbers fell because of the reduction in available play and sports activities. As time has progressed, attendances involving peripheral trauma imaging have rebounded, exceeding pre-COVID-19 levels, with the percentage of abnormal radiographs (positive for fracture) decreasing to those seen pre-pandemic. Reasons for these trends are likely varied and might be related to increased freedoms following relaxation of restrictions, e.g., attending school and team sports activities, fatigue (and reduced fear) surrounding remaining COVID-19 restrictions, or a perceived reduction in access to local primary care.

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## Declarations

**Conflicts of interest** None

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