

RESEARCH LETTER

The Effect of COVID-19 on Paediatric Emergencies and Admissions in Morocco: Cannot See the Forest for the Trees?

Nour Mekaoui, MD,^{1,2,3} Rachid Razine, MD,^{2,3}
Quique Bassat, MD, PhD,^{4,5,6,7,8}
Badr Sououd Benjelloun, MD,^{1,3} and Lamya Karboubi, MD^{1,3}

¹Paediatric Medical Emergency Department, Rabat Children's Hospital, Rabat, Morocco

²Laboratory Of Biostatistics, Clinical Research And Epidemiology, Faculty of Medicine and Pharmacy, Mohamed V University of Rabat, Rabat, Morocco

³Mohammed V University, Rabat, Morocco

⁴ISGlobal, Hospital Clínic—Universitat de Barcelona, Barcelona, Spain

⁵Centro de Investigação em Saúde de Manhiça (CISM), Maputo, Mozambique

⁶ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain

⁷Pediatric Infectious Diseases Unit, Pediatrics Department, Hospital Sant Joan de Déu (University of Barcelona), Barcelona, Spain

⁸Consorcio de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

Correspondence: Quique Bassat, MD, PhD, Barcelona Institute for Global Health (ISGlobal), Rosselló 132, 08036 Barcelona, Spain.

E-mail: quique.bassat@isglobal.org

The first case of severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) disease (COVID-19) was described in China, in December 2019 [1]. The continuous growth and global spread of COVID-19 cases forced the World Health Organization to declare a global pandemic on 11 March 2020 [2]. In Morocco, the first case was documented on 2 March 2020. Morocco officially declared the state of health emergency 18 days later, establishing a strict curfew from 6 pm to 8 am [3].

While COVID-19 confirmed cases have experienced a gradual increase, visits to the paediatric medical emergency departments at the Rabat Children's Hospital decreased significantly. Where are the sick Moroccan children normally brought to the emergency department?

Our emergency department usually receives a large number of serious cases, including acute complications of diabetes, asthma and epilepsy and other common emergencies, such as poisoning or burns.

We compared the number of paediatric consultations (<16 years) in the emergency department from 16 March to 15 April 2020 with the number of consultations of the same period in the preceding year. The hospital uses a paper-based tracking system (in duplicate) to monitor all consultations to the emergency department. Consistently with the mild disease that SARS-COV-2 seems to typically cause in children [4, 5], very few consultations were due to COVID-19 affecting children ($n = 10$). However, the number of overall consultations decreased by 74% between the

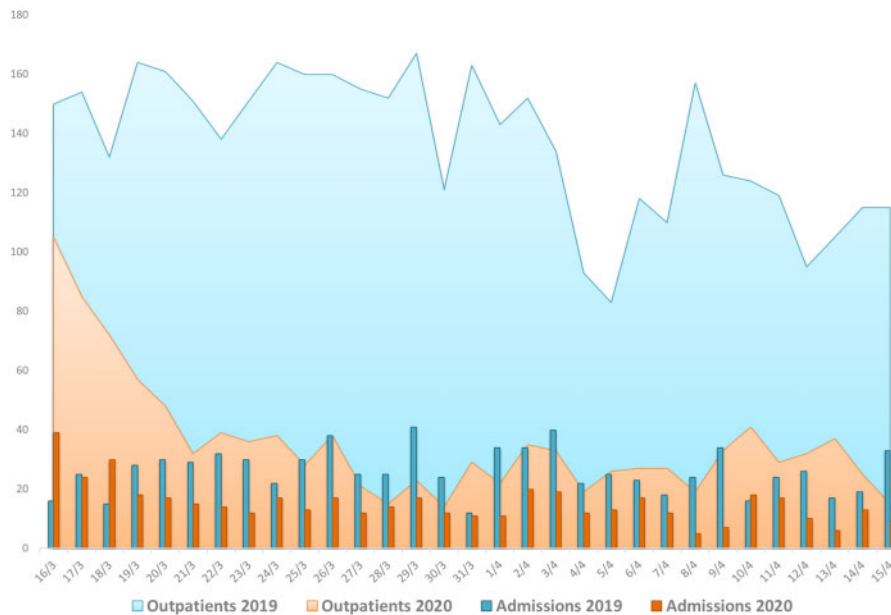


Fig. 1. Variability in outpatient visits and hospital admissions for the period from 16 March to 15 April in the years 2019 and 2020, at Hôpital d'Enfants de Rabat, Morocco.

two periods (4232 vs. 1110; $p < 0.005$). Such decrease could easily reflect the many non-severe consultations that traditionally occur in any emergency department, and it is understandable to see numbers decreasing. However, the number of hospitalizations also declined (811 in 2019 vs. 471 in 2020, 41.9% reduction, $p < 0.005$; see Fig. 1) since containment measures were established on account of COVID-19. SARS-CoV2 was only deemed responsible for 31 of those 471 admissions (6.6%), the diagnosis is based on either a positive PCR test or a high clinical suspicion in the context of a plausible epidemiological history. Of these, 10 cases were directly suspected on arrival, and further 21 cases were confirmed PCR-positive transferred cases from other hospitals throughout the country. Of the 10 COVID-19 cases, 9 suspected on arrival affected children with no pre-existing comorbidities (one was in an HIV+ patient), including a single case of Kawasaki-like disease, whose association with COVID-19 could not be firmly established.

Factors worrying about parents attending hospital included the lack of public transportation and the

fear of contamination by COVID-19. We are concerned about the significant decrease in the number of hospitalizations that represent children in a serious situation. Where did these severely ill patients go? Should we anticipate a new wave of serious non-COVID-19 paediatric admissions in Morocco? Let's hope the trees allow us to see the rest of the forest.

REFERENCES

1. Andersen KG, Rambaut A, Lipkin WI, *et al.* The proximal origin of SARS-CoV-2. *Nat Med* 2020;26:450–2.
2. World Health Organization. WHO Timeline—COVID-19, 2020. <https://www.who.int/news-room/detail/27-04-2020-who-timeline—covid-19> (30 May 2020, date last accessed).
3. Royaume du Maroc. Situation épidémiologique COVID-19, 2020. http://www.covidmaroc.ma/Documents/SITUATION_Epid%C3%A9mie_COVID-19/COVID-19%20Situation%20%C3%A9pid%C3%A9miologique%20au%2003%20avril%202020.pdf (30 May 2020, date last accessed).
4. Liguoro I, Pilotto C, Bonanni M, *et al.* SARS-CoV-2 infection in children and newborns: a systematic review. *Eur J Pediatr* 2020;1–18.
5. Ludvigsson JF. Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatr* 2020;109:1088–95.