



## Utilization of Emergency Services by Children with Asthma in Qatar

Dima Arafah<sup>1,2,\*</sup>, Jane Smith<sup>1</sup>, John Campbell<sup>1</sup>, Khalid Al-Ansari<sup>3</sup>, Colin Powell<sup>3,4</sup>

### ABSTRACT

**Background:** Asthma is a leading chronic disease in children worldwide, which if left untreated or poorly controlled, can lead to altered lung function and poor quality of life.<sup>1</sup> Early detection and improved control of asthma are recommended to decrease utilization of emergency services and hospitalizations. Respiratory diseases are the most common conditions seen in Pediatric Emergency Centers (PECs) in Qatar.<sup>2</sup> The five PECs are an essential point of healthcare access for severely sick children, however, many people utilize them for potentially preventable reasons.<sup>3</sup>

**Methods:** This was a quantitative retrospective observational study of children with asthma utilizing the five PECs during 2019. More than 18 variables were extracted from routine healthcare records, and data were analyzed via descriptive statistics using STATA to understand the characteristics of the population.

**Results:** There were 41,343 visits to PECs due to asthma in 2019 from 18,382 children of more than 100 different nationalities. Around 60% were boys aged 2 to 13 years, with the peak of utilization in October and November (Figure 1) and during the day between 2:00 PM to 10:00 PM. The majority were seen in less than 30 mins (93%) and stayed in the PEC for 2 hours or less (84%) (Figure 2). Most did not have fever and 88% received Salbutamol. Around 900 children were admitted (1.6%) and almost 20 children attended once a month or more.

**Conclusion:** From the severity of the cases, length of stay, prescriptions, and health care providers' notes, it was clear that many PEC Emergency Department (ED) visits due to asthma were preventable. Hence; appropriate preventative medical care, education, and follow-ups are recommended to reduce hospital admissions and re-attendance. Understanding the characteristics and pattern of visits amongst this population will guide future qualitative research to explore reasons for attendance in more depth and identify potential opportunities for interventions to reduce ED attendances.

**Keywords:** Asthma, Emergency Services, Utilization, Reactive airway, Qatar

<sup>1</sup>Primary Care Research Group – College of Medicine and Health, University of Exeter, Exeter, United Kingdom

<sup>2</sup>Public Health Department – College of Health Sciences, Qatar University, Doha, Qatar

<sup>3</sup>Emergency Department, Sidra Medicine, Doha, Qatar

<sup>4</sup>Division of Population Medicine, School of Medicine, Cardiff University, Cardiff, UK

\*Email: darafah@qu.edu.qa

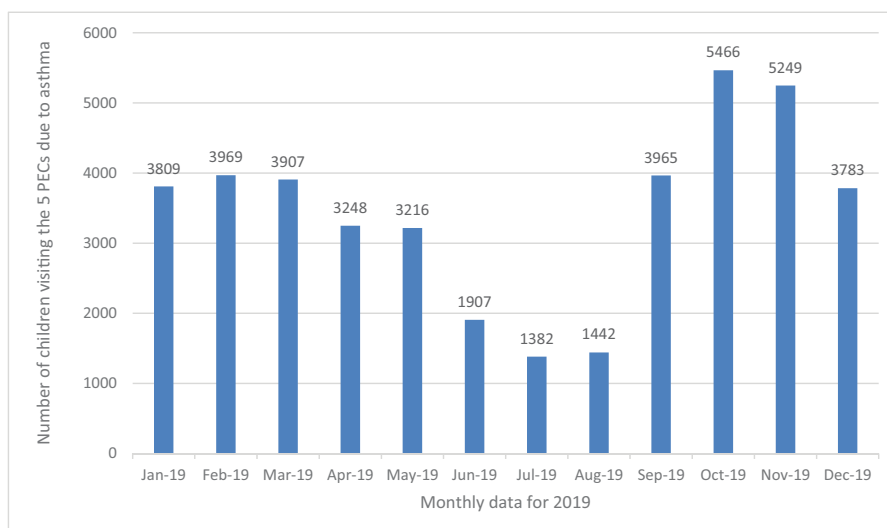
<http://dx.doi.org/10.5339/jemtac.2022.qhc.26>

Submitted: 27 July 2021

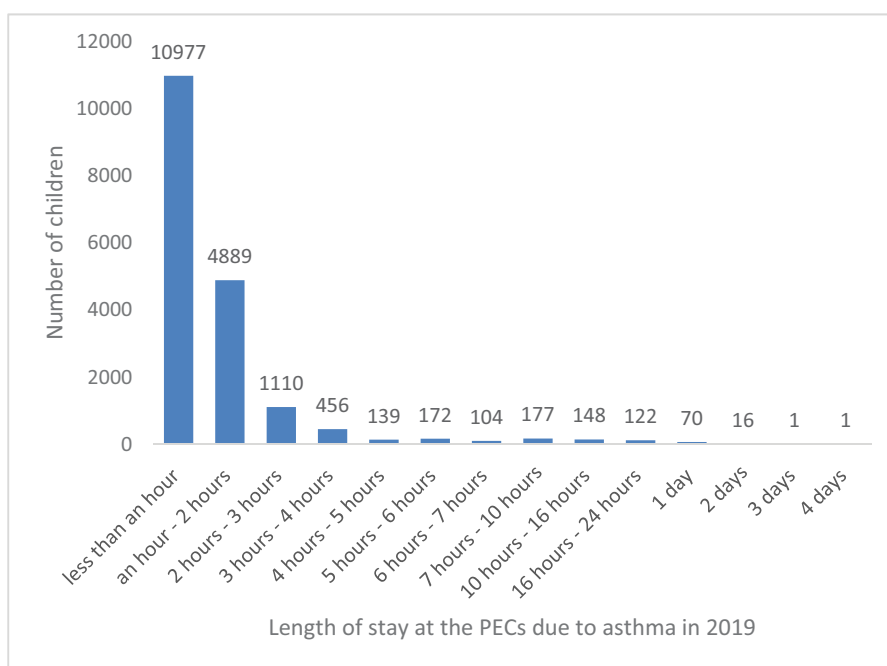
Accepted: 15 September 2021

Publication date: 15 January 2022

© 2022 Arafah, Smith, Campbell, Al-Ansari, Powell, licensee HBKU Press. This is an open access article distributed under the terms of the Creative Commons Attribution license CC BY-4.0, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.



**Figure 1.** Utilization pattern of 5 Pediatric Emergency Centres (PECs) by children in Qatar with asthma in 2019



**Figure 2.** Length of stay in Pediatric Emergency Centres (PECs) in 2019 due to asthma in children aged 2-14 years old.

**Ethical approval/IRB statement:** This study has been approved by the Hamad Medical Corporation Institutional Review Board (MRC-02-19-513) and Sidra Medicine (1552483-1).

#### REFERENCES

- [1] Xing Y, Gu X, Wei Z, Zhang W, Crowder SJ, Duan H. Development and validation of the family management scale for children with asthma (FMSCA). *Journal of Asthma*. 2019 Apr; 57(4):441–51.
- [2] Veettil ST, Alnuaimi ASA. Epidemiology and utilization of primary health care services in Qatar by asthmatic children 5–12? years old: secondary data analysis 2016–2017. *Asthma Research and Practice*. 2019 Aug 20; 5(1):3.
- [3] Hamad Medical Corporation. Commonly Encountered Cases. [online] Available at: <https://www.hamad.qa/EN/Hospitals-and-services/PECS/Commonly%20encountered%20cases/Pages/default.aspx> [Accessed 9 Aug. 2019].