

## BRIEF REPORT

# Paediatric emergency department visits fell by more than 70% during the COVID-19 lockdown in Northern Italy

In February 2020, the COVID-19 pandemic flared up across Italy and the first cluster appeared in Southern Lombardy, which is still the most affected area.<sup>1</sup> Schools, sports facilities and parks were closed on 1 March, followed by a strict lockdown on 10 March after a significant increase in infections and deaths. The next day the World Health Organization declared COVID-19 a pandemic. Many studies have now been published concerning the epidemiological and clinical characteristics of COVID-19 patients, but data on children are still relatively scarce.

Official hospital statistics for five hospitals across Italy from 1 to 27 March showed that paediatric emergency department (PED) visits were down 73% and 88% down on the same periods in 2019 and 2018.<sup>2</sup> The authors said primary care paediatricians had also reported drastic reductions in office consultations.

In Italy, local medical authorities issued guidance on access to primary care offices and PEDs, including telephone triage before visits and separate routes for suspicious cases and routine medical problems. However, widespread fear about contracting the virus,

**TABLE 1** Diagnoses on admission to the PED of the top 20 conditions during the 2020 COVID-19 lockdown and during the same period in 2019

Diagnosis	2019	%	Diagnosis	2020	%
Abdominal pain	220	9.5	Trauma	124	19.2
Vomiting	201	8.7	Acute nasopharyngitis	42	6.5
Acute nasopharyngitis	171	7.4	Abdominal pain	41	6.3
Acute pharyngitis	107	4.6	Pyrexia	36	5.5
Enteritis	105	4.5	Bronchitis	32	4.9
Acute otitis media	100	4.3	Pneumonia	23	3.5
Exanthema	93	4	Acute abdomen	20	3.1
Otalgia	88	3.8	Vomiting	20	3.1
Bronchitis	88	3.8	Acute pharyngitis	19	2.9
Acute cough	79	3.4	Acute diarrhoea	15	2.3
Trauma	77	3.3	Joint pain	14	2.2
Pyrexia	73	3.1	Seizure disorder	13	2
Respiratory viral infection	58	2.5	Asthma	11	1.7
Acute diarrhoea	50	2.2	Thoracic pain	11	1.7
Acute urticaria	49	2.1	Exanthema	11	1.7
Acute tonsillitis	48	2.1	Constipation	11	1.7
Croup	45	1.9	Acute cough	11	1.7
Pneumonia	44	1.9	Foreign body inhalation	10	1.5
Cutaneous angioedema	41	1.8	Cancer	10	1.5
Dermatitis	39	1.7	Enteritis	10	1.5
<b>Total</b>	<b>2310</b>			<b>646</b>	
<b>males</b>	<b>1264</b>	<b>54.7</b>		<b>340</b>	<b>52.6</b>
<b>females</b>	<b>1046</b>	<b>45.3</b>		<b>306</b>	<b>47.4</b>

fuelled by media reports of the global crisis, probably discouraged parents from visiting healthcare facilities.

During the study period, children spent their time almost exclusively at home and we expected to see reduced PED visits because of trauma. Published data had also that children were less affected by COVID-19 than adults and this was confirmed by local figures that showed that only 32 children had positive nasopharyngeal tests in our area and only one adolescent required intensive care.

We retrospectively analysed patient records for the PED of San Matteo Hospital, University of Pavia, Southern Lombardy, during the lockdown period of 10 March to 3 May and compared the findings with the same period in 2019.

In 2019, there were 2310 PED visits, but this fell by 72% to 646 during lockdown (Table 1 and Table S1). The only category that increased was trauma: cases increased by 61% from 77 in 2019 to 124 during lockdown and from 3.3% to 19.2% as a percentage of cases. Significant decreases included acute otitis media, from 100 to four cases, nasopharyngitis from 278 to 42 and abdominal pain from 220 to 41. Chickenpox and scarlet fever fell from 23 and 16 cases to zero.

The overall reduction was almost identical to the study of five other Italian hospitals (73% versus 72%).<sup>2</sup> If this reduction was the same in primary care, this could represent an alarming scenario for children's health during the pandemic. For example, acute otitis media could evolve to meningoenzephalitis and fever, vomiting or an acute abdomen could quickly evolve into life-threatening situations that require prompt evaluation. We previously reported one case that underlines the importance of prompt visits to the PED. An adolescent with fever and watery diarrhoea was brought to the PED when his condition had significantly worsened and he required intensive care for multi-organ syndrome.<sup>3</sup>

PEDs provide prompt diagnoses and multidisciplinary assessment, with the most appropriate therapy and management. In contrast, parental diagnoses and management can be very dangerous. The prolonged lockdown was also associated with a relevant increase in domestic traumas. A study is ongoing to evaluate the complication rates, hospitalisations, intensive care unit admissions and procedures related to reduced PED visits.

Parents and medical professionals need correct information about the risks of lockdown and health consequences. In particular, parents need to be aware of the symptoms that pose a risk to their child and need prompt medical attention to avoid dangerous consequences. Telehealth could also play a key role in medical triage.

This study had some limitations, as it focused on one PED and lacked longitudinal observations. However, the data on reduced visits matched another Italian study.<sup>2</sup> These outcomes suggest that action need to be taken to control the healthcare consequences of the pandemic and that more research is needed. Telemedicine is

already being used for some specialist examinations, and extending its use to emergency care could provide timely consultations with no infection risk. Parents could also be reassured of the infection control procedures in place if their child needs to attend the PED.

In conclusion, this study highlighted the danger of delayed PED visits during the pandemic and noted a worrying increase in domestic accidents during lockdown that needs further investigation.

## CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.