

## Changes in A & E attendances by young people at Bradford Royal Infirmary in April 2020 compared to April 2019

Date of analysis: June 2020

This report summarises the impact of the COVID-19 response on attendances at Bradford Royal Infirmary (BRI) A&E department by children (aged <16) and young people (16-24) and suggests some of the implications for services.

Figure 1 shows the number of attendances by month between 1<sup>st</sup> January 2019 and 30<sup>th</sup> April 2020. In April 2020 there a reduction in A&E attendances of 68% in patients aged <25 compared to April 2019: 73% in children aged under 16 and 61% and young people aged 16-24 (Table 1). Thirty-three patients attending were diagnosed with suspected COVID-19 and are excluded from these analyses.

Figure 1: Number of A&E attendances at BRI between 1<sup>st</sup> January 2019 and 30<sup>th</sup> April 2020

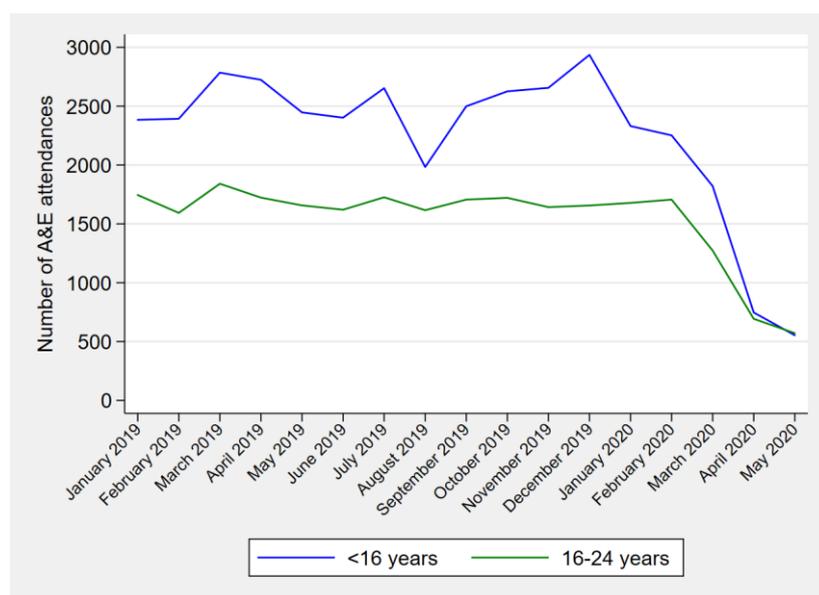


Table 1: Total number of A&E attendances in April 2019 and 2020

Age	2019	2020	% change
<16	2,724	740	-72.8
16-24	1,723	667	-61.3
Total	4,447	1,407	-68.4

## Diagnosis and reasons for attendance

Table 2 summarises the reasons for attending A&E in April 2019 and 2020 (using diagnostic codes assigned in A&E),<sup>1</sup> and shows the percent change between the two years.

There were large percentage reductions in all categories, though several have small numbers and so percentage reductions are not reliable. In categories with higher numbers, the most notable reductions were (a) in patients who received no diagnosis or left before being seen or treated (because patients were seen more quickly) and (b) in respiratory conditions and general symptoms, signs and abnormal clinical or laboratory findings in patients <16. The reduction was smaller for patients attending with mental/behavioural disorders possibly reflecting the increasing incidence and severity of these conditions (though numbers are relatively small). The number of patients attending with injuries in April 2020 decreased by around 60%, but they accounted for a higher proportion in children aged <16, where an increase from 37% in 2019 to 52% in 2020 was observed. Except for the diagnoses described above, the proportion of patients in each category tended to be lower in children but remained relatively stable in those aged 16 – 24.

*Table 2: A&E attendances in April 2019 and 2020 for specific diagnoses by age group. Column percentages are presented for 2019 and 2020. % change reflects the difference between 2019 and 2020.*

Diagnosis/Reason for attending	<16 years			16-24 years		
	April 2019	April 2020	% change	April 2019	April 2020	% change
No diagnosis/NAD/Left before being seen or treatment	257 (9.4)	72 (9.7)	-72.0	224 (13.0)	50 (7.5)	-77.7
Infectious and parasitic diseases	254 (9.3)	46 (6.2)	-81.9	79 (4.6)	29 (4.4)	-63.3
Mental and behavioural disorders	13 (0.5)	8 (1.1)	-38.5	49 (2.8)	30 (4.5)	-38.8
Diseases of the nervous system	40 (1.5)	13 (1.8)	-67.5	54 (3.1)	16 (2.4)	-70.4
Diseases of the eye and adnexa	70 (2.6)	6 (0.8)	-91.4	31 (1.8)	13 (2.0)	-58.1
Diseases of the respiratory tract	482 (17.7)	44 (6.0)	-90.9	77 (4.5)	22 (3.3)	-71.4
Diseases of the digestive system	58 (2.1)	12 (1.6)	-79.3	62 (3.6)	35 (5.3)	-43.5
Diseases of the skin and subcutaneous tissue	62 (2.3)	11 (1.5)	-82.3	44 (2.6)	13 (2.0)	-70.5
Diseases of the musculoskeletal system and connective tissue	46 (1.7)	11 (1.5)	-76.1	69 (4.0)	17 (2.6)	-75.4
Diseases of the genitourinary system	58 (2.1)	12 (1.6)	-79.3	78 (4.5)	28 (4.2)	-64.1
Symptoms, signs, and abnormal findings nec	213 (7.8)	36 (4.9)	-83.1	154 (8.9)	58 (8.7)	-62.3
Injuries	1001 (36.8)	381 (51.5)	-61.9	605 (35.1)	258 (38.7)	-57.4
Other	170 (6.2)	88 (11.9)	-48.2	197 (11.4)	98 (14.7)	-50.3

NAD=nothing abnormal detected. NEC=not elsewhere classified

<sup>1</sup> A&E data include up to 12 diagnoses, and where a patient has more than one diagnosis code, some may relate to existing health conditions. All patients were categorised using the first code only.

## Triage

The categorisation of the acuity of patients attending A&E is shown in Table 3. Three categories were generated from the five assigned at triage as follows:

- High = 1 (in need of immediate treatment for preservation of life) or 2 (Seriously ill or injured patients whose lives are not in immediate danger)
- Medium = 3 (Patients with serious problems, but apparently stable condition)
- Low = 4 (standard A&E cases without immediate danger or distress) or 5 (patients whose conditions are not true accidents or emergencies)

Most patients aged <16 were triaged as low in both years, and in those aged 16-24 in 2020. There was an exceptionally large percent decrease in patients triaged as high and medium, particularly in children. In 2020, 132 patients were not recorded as triaged. A higher proportion of those not recorded as triaged were admitted compared to those who were triaged: 76.5% v 17.5%. It appears the missing triage data may result from changes to workflows in the department.

*Table 3: Triage category of A&E attendees by age group. Column percentages are presented for 2019 and 2020; % change reflects the difference between 2019 and 2020.*

Acuity	<16 years			16-24 years		
	2019	2020	% change	2019	2020	% change
High	138 (5.1)	16 (2.4)	-88.4	85 (4.9)	34 (5.7)	-60.0
Medium	948 (34.8)	164 (24.2)	-82.7	816 (47.4)	209 (35.0)	-74.4
Low	1638 (60.1)	497 (73.4)	-69.7	822 (47.7)	355 (59.4)	-56.8

## Investigations

There was a 50% reduction in the number of investigations carried out in 2020 compared to 2019 (table 5). There was a 70% decrease in the number of attendances that received no investigations, and a large drop in the number of radiology investigations conducted, which is likely to reflect the decrease in patients attending with injuries. There was a huge increase in the number of blood tests in young people, due to increased testing for COVID-19.

Table 5: Number of investigations conducted in April 2019 and 2020 by age group. % change reflects the difference between 2019 and 2020. Many patients had multiple investigations, which is reflected in the column total count.

Investigation	<16 years			16-24 years		
	2019	2020	% change	2019	2020	% change
Radiology*	802 (23.4)	238 (18.6)	-70.3	727 (24.8)	300 (15.7)	-58.7
ECG	35 (1.0)	7 (0.6)	-80.0	282 (9.6)	126 (6.6)	-55.3
Blood tests**	183 (5.3)	193 (15.0)	+5.5	393 (13.4)	892 (46.7)	+127.0
Other***	441 (12.9)	302 (23.5)	-31.5	528 (1.0)	306 (16.0)	-42.0
None	1,971 (57.4)	543 (42.3)	-72.5	1,000 (34.1)	285 (14.9)	-71.5
Total	3,432 (100)	1,283 (100)	-62.6	2,930 (100)	1,909 (100)	-34.8

\*X-ray, CT, MRI, ultrasound; genito-urinary contract examination/tomography, \*\*Haematology, cross-match, biochemistry, clotting studies, cardiac enzymes, blood culture, serology, blood gas, toxicology; \*\*\*Urinalysis, bacteriology, histology, immunology, pregnancy test, dental investigation, orthoptic tests and other.

## Disposal

The majority of those attending A&E were discharged with no follow-up: 65% in 2019 and 75% in 2020, with the reduction in children being far greater than in young people (Table 6). The proportion of under 16s admitted increased from 15% in 2019 to 27% in 2020 but remained similar in both years for 16-24-year olds. As anticipated, there was a large reduction in those who left before being seen or treated. There was also a huge reduction in absolute numbers in those transferred (referred) to another hospital clinic or provider. This is partly a result of changes in the types of attendance (e.g. reduction in injuries requiring fracture clinic), changes in approach with more 'see and treat' activity in A&E, a greater willingness to tolerate uncertainty (and not refer), or a lack of availability of other services and so (and more worryingly) increasing unmet need.

Table 6: Method of disposal from A&E April 2019 and 2020 by age group; % change reflects the difference between 2019 and 2020.

Disposal from A&E	<16 years			16-24 years		
	2019	2020	% change	2019	2020	% change
Admitted	404 (14.8)	199 (26.9)	-50.7	308 (17.9)	125 (18.7)	-59.4
Discharge, no follow-up	1902 (69.8)	539 (72.8)	-71.7	983 (57.1)	519 (77.8)	-47.2
Transfer to other healthcare provider*	316 (11.6)	0	-100.0	240 (13.9)	3 (0.5)	-98.8
Left before treatment/refused treatment	102 (3.7)	2 (0.3)	-98.0	192 (11.1)	20 (3.0)	-89.6

\*Predominantly internal referrals within the hospital e.g. fracture clinic, oncology

## Implications

- Reductions in attendances for respiratory conditions, particularly in children, are concerning as patients who experienced symptoms (and not assessed and treated) may be at raised risk of a further event and poor outcomes. Conversely, these reductions may reflect factors such as social distancing reducing transmission of respiratory viruses, and lower incidence of exacerbations due to cleaner air. We should monitor to see if this is reflected in an increase in GP from these causes. Efforts to maintain lower levels of pollution are an important part of recovery.
- The smaller reduction in attendances seen for mental and behavioural disorders likely reflects the overall increase in prevalence and severity of these conditions in the population, reported in several studies of the impact of the pandemic and social isolation on mental health. We need to monitor presentations in A&E and referrals to mental health services and increase efforts to encourage people to seek timely help for their mental health.
- Some reduction in A&E visits reflects 'unnecessary' attendance. We should experiment with ways of preventing rates returning to previous levels early in the recovery period.
- The reduction in the proportion of patients referred to other services may indicate unmet need and requires further investigation. If it results from more 'see and treat' activity in A&E (reducing the numbers needing admission or referral), the Trust should explore how this can be sustained when A&E numbers increase.