Impact of COVID-19 lockdown on A&E performances in an NHS Foundation Trust

Sushrut Oomman 1, Elizabeth Todd2

INTRODUCTION
County Durham and Darlington Foundation Trust (CDDFT) is a National Health Service (NHS) Trust and is one of the largest integrated care providers in England. It serves a population of around 650 000 people.1 The two major acute hospitals in this Trust are the University Hospital of North Durham (UHND) and Darlington Memorial Hospital (DMH). Both of those hospitals have type 1 Accident and Emergency (A&E) departments,2 3 which means that they are a consultant lead 24-hour service with full resuscitation facilities and designated accommodation for the reception of accident and emergency patients.

During the COVID-19 pandemic, strategies were put in place to deal with spread of the virus. In the UK, there was an attempt to flatten the curve so that the NHS would be able to deal with sicker patients and provide all the support needed. To enable this, lockdown was introduced with social distancing, stay at home message and advice to wash hands regularly in order to break the cycle of spread of the virus.

The NHS also restructured all the hospitals in order to prepare for the crisis. All the wards in UHND and DMH were sectioned into red and blue zones to aid with the patient flow. The A&E in both UHND and DMH too was split into red and blue areas. All patients were triaged according to their symptoms; red area was for patients with respiratory or COVID-19 symptoms, and blue area was for patients with non-respiratory symptoms. Doctors were redeployed from the community placements and other non-essential rotations to A&E and other essential wards. All the elective and non-emergency operations were halted during the lockdown. Outpatient departments were also closed during the lockdown period.

A&E performance in the UK is measured via the ‘golden 4-hour standard’ and the ‘clinical quality indicators’. The 4-hour standard aims to assess, treat, admit or discharge patients within 4 hours and have been in place in the UK since early 2000s.3 4 Clinical quality indicators have been in place since 2010 and include the ‘total time spent by patients in the A&E department before moving to a ward, transferring to another hospital or clinical unit, or being discharged’, the ‘time to initial assessment of the patient’, the ‘time to treatment of the patient’, the ‘rate of the number of people who left without being seen and assessed’ and the ‘unplanned patient reattendance rate’.5

AIM
I looked at A&E performances both before and during lockdown implementation.6 CDDFT has been collecting data from A&E in both UHND and DMH on clinical quality indicators since 2011 and has also been monitoring the 4-hour performance on a monthly basis.

The CDDFT data was compared to the NHS performance summary which was compiled by NHS England.7

STANDARDS
The 4-hour A&E waiting time target is a pledge set out in the Handbook to the NHS Constitution. The operational standard is that at least 95% of patients attending A&E should be admitted, transferred or discharged within 4 hours.3

Another standard used is the document produced by the Royal College of Emergency Medicine—‘Emergency department clinical quality indicators: a CEM guide to implementation’ (March 2011).5

METHODOLOGY
A review was carried out on CDDFT database on A&E statistics and clinical quality indicators. This will help us compare CDDFT data to the NHS performance summary.

CDDFT database
Table 1 shows the overall CDDFT performance in all the clinical quality indicators and how the trend has shifted from the prelockdown period to the lockdown period.6

The total A&E attendance in both UHND and DMH combined in February 2020 was 10 878. This decreased to 6779 in April 2020.6 This suggests that A&E attendance had decreased during this period possibly due to lockdown being one of the factors at play. In April 2019, the total attendance was 11 718, so in April 2020 the attendance had dropped by 42% in comparison to April 2019.

The 95th percentile for the total time spent by all patients in A&E was 10 hours and 44 min in February 2020, and this dropped to 4 hours and 46 min in April 2020. In April 2019, it was 8 hours and 22 min. Correlating with the decreased patient number in April 2020, the data suggests that this may be influenced by the effect of lockdown on A&E attendance leading to better patient flow and patients getting served in a timely manner. Also, other factors might be at play like the availability of hospital ward beds causing no exit blocks contributing to better patient flow.
The median value for reasons for this could be multifactorial as stated above. This may be because the patients probably felt that they should stay away from hospitals and keep it available for COVID-19 patients. On the other hand, A&E attendances before the lockdown period were steadily rising from 2010 when it was above 1.5 million until December 2019 to more than 2 million.

Statistics from NHS England show that in April 2020, 9.6% of patients attending A&E spent more than 4 hours from arrival to admission, transfer or discharge.7 This worst level on record was in December 2019 at around 30%.

**DISCUSSION AND CONCLUSION**

The observed results suggest that the reduced patient number may have been influenced by the fear of catching COVID-19 in the hospital environment. People may have been reluctant to attend hospital. The CDDFT performance against standards was very good during the lockdown. However, this is a temporary phase and is likely not a true reflection of performance as lower patient attendance and staff redeployment may have contributed to better patient flow and patients being served in a timely manner.

On reviewing the data, it seems that CDDFT is following a similar trend as other Trusts in NHS England. This effect can be reviewed again during the post-lockdown period.

**A&E attendances in NHS England**

Across NHS, a similar picture was seen. A&E attendances for the first time have fallen below 1 million in the month of April 2020.7 This may be because the patients probably felt that they should stay away from hospitals and keep it available for COVID-19 patients. On the other hand, A&E attendances before the lockdown were steadily rising from 2010 when it was above 1.5 million until December 2019 to more than 2 million.

**Contributors**

SO: planned, organised, analysed data and completed the write-up.
ET: supervised the project and helped with data analysis and write-up.

**Acknowledgements**

John Shutt—Information Department, County Durham and Darlington Foundation Trust—provided the CDDFT A&E data and helped with data presentation formatting. Angela Grundy, Service Support Manager—County Durham and Darlington Foundation Trust—provided patient data and liaised with the Information Department for the CDDFT A&E data.

**Table 1 Clinical quality indicator performance for CDDFT**

| A&E clinical quality indicators | February 2020 | March 2020 | April 2020 | May 2020 |
|--------------------------------|---------------|------------|------------|----------|
| County Durham & Darlington NHS Foundation Trust—ED activity | Total attendances | 10 878 | 9336 | 6779 | 9037 |
| HQU09: A&E clinical quality—unplanned reattendance rate | | | | |
| Admitted patients | Median | 06:09 | 04:39 | 03:21 | 03:23 |
| 95th percentile (standard=04:00) | 14:30 | 11:42 | 05:44 | 05:28 |
| Single longest time recorded | 23:17 | 19:55 | 12:28 | 11:42 |
| HQU10: A&E clinical quality—total time in the A&E department | Non-admitted patients | Median | 03:09 | 02:51 | 02:12 | 02:10 |
| 95th percentile (standard=04:00) | 08:07 | 06:51 | 03:59 | 03:58 |
| Single longest time recorded | 19:55 | 22:19 | 13:26 | 12:59 |
| All patients | Median | 03:40 | 03:18 | 02:34 | 02:32 |
| 95th percentile (standard=04:00) | 10:44 | 08:32 | 04:46 | 03:59 |
| Single longest time recorded | 23:17 | 22:19 | 13:26 | 12:59 |
| HQU11: A&E clinical quality—left without being seen rate | | | | |
| Median | 00:08 | 00:06 | 00:04 | 00:04 |
| 95th percentile (standard=00:15) | 01:14 | 00:51 | 00:23 | 00:25 |
| Single longest time recorded | 04:26 | 03:24 | 01:34 | 01:50 |
| HQU12: A&E clinical quality—time to initial assessment, patients arriving by emergency ambulance | | | | |
| Median (standard =01:00) | 01:46 | 01:17 | 00:30 | 00:37 |
| Single longest time recorded | 05:20 | 04:23 | 01:49 | 02:08 |
| HQU13: A&E clinical quality—time to treatment | | | | |
| Median | 09:46 | 06:57 | 05:50 | 08:43 |
Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

This article is made freely available for use in accordance with BMJ’s website terms and conditions for the duration of the COVID-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

REFERENCES
1 Available https://www.cddft.nhs.uk/about-the-trust.aspx
2 Available https://www.kingsfund.org.uk/projects/urgent-emergency-care/urgent-and-emergency-care-mythbusters
3 Available https://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2020/05/Statistical-commentary-April-2020-jf8hj.pdf
4 Available https://www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england
5 Royal College of Emergency Medicine. Emergency department clinical quality indicators: to implementation. March 2011.
6 CDDFT Database. Information department. County Durham and Darlington Foundation Trust.
7 Available https://www.nuffieldtrust.org.uk/news-item/combined-performance-summary-march-april-2020
8 Available https://www.england.nhs.uk/statistics/statistical-work-areas/ae-waiting-times-and-activity/ae-attendances-and-emergency-admissions-2019-20/