

## Statistical Note: Ambulance Quality Indicators (AQI)

The number of ambulance 999 calls per day in February 2021 was the lowest since June 2020. For all six standards in the NHS Constitution<sup>1</sup>, response times in February 2021 were the lowest since July 2020.

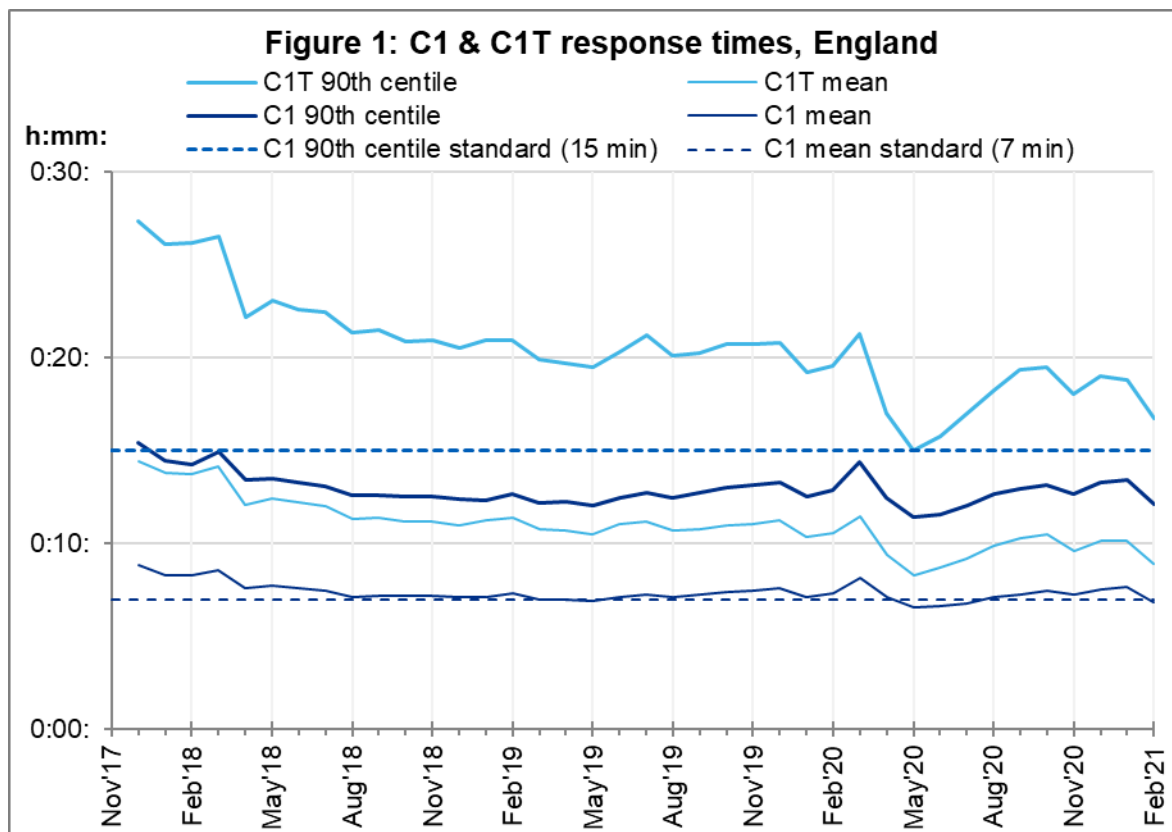
For incidents in October 2020 where ambulance services attempted resuscitation following cardiac arrest, the proportions with return of spontaneous circulation (ROSC) at hospital, and survival to discharge from hospital, were both low. However, where ROSC was achieved on scene, the proportion given the appropriate care bundle was the highest ever.

### 1. Systems Indicators

#### 1.1 Response times

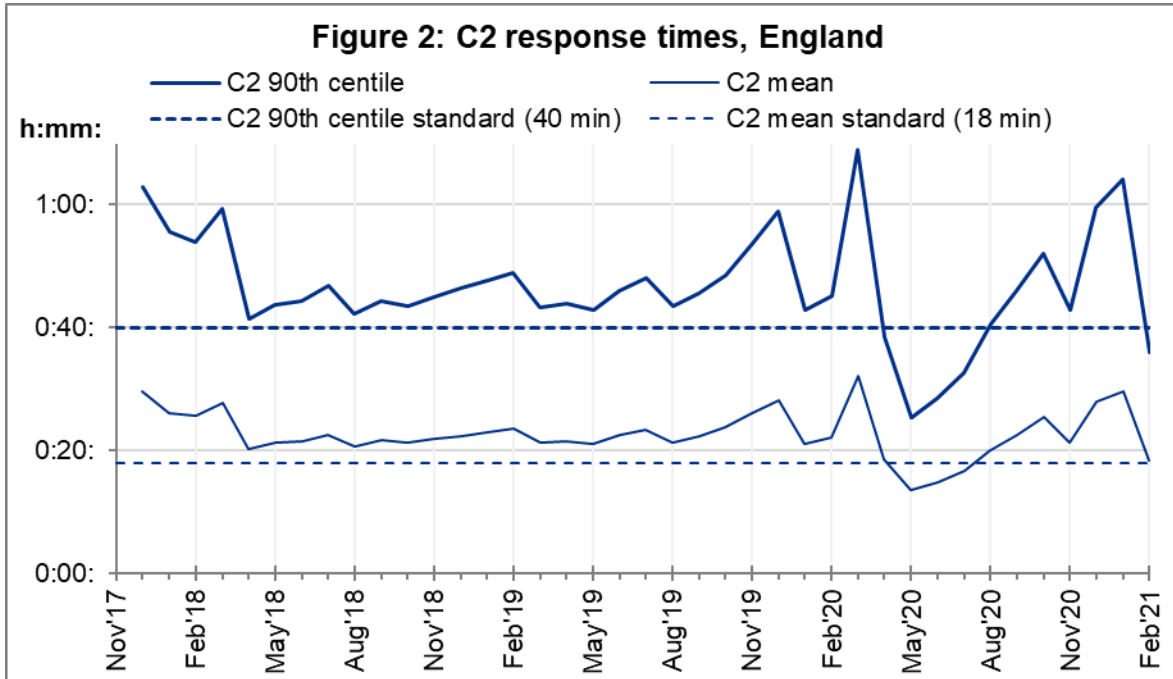
In February 2021, the mean average C1 response time for England was 6 minutes 51 seconds, and the C1 90th centile response time was 12:06, so both the 7-minute and 15-minute standards were met.

For C1T (response times for arrival of transporting vehicle, for C1 patients transported), the mean was 8:53, and the 90th centiles averaged 16:46.



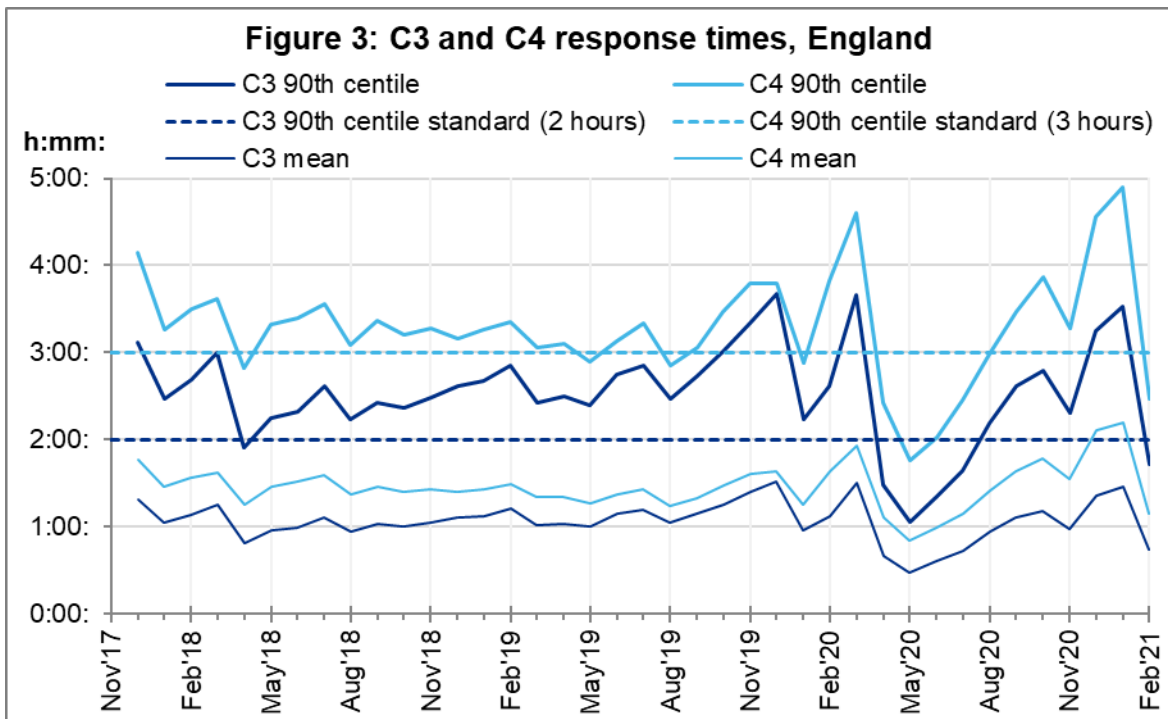
<sup>1</sup> Standards for Ambulance Services: [www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england](http://www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england)

For C2 in February 2021, the mean average response time was 18:19 for England, and the 90th centiles averaged 36:04 across England (Figure 2), so the 18-minute standard was not met by 19 seconds, but the 40-minute standard was met.



For C3 in February, the mean average response time was 44:55. The C3 90th centile times averaged 1:43:22, less than half of the January 2021 time, so the two-hour standard was met (Figure 3).

For C4 in February, the mean average response time was 1:08:48. The C4 90th centile times averaged 2:28:21, so the three-hour standard was met (Figure 3).



## 1.2 Other Systems Indicators

In February 2021, the mean and centile call answer times across England were the same as, or shorter than, all those from the previous six months. The 95th centiles averaged 8 seconds in February 2021.

In February 2021, per day, there were (Figure 4):

- 20.7 thousand calls to 999 answered, 17.5% less than in January 2021;
- 23.9 thousand incidents that received a response (whether on the telephone or on the scene) from an ambulance service, 5.3% less than in January;
- 12.6 thousand incidents where a patient was transported to an Emergency Department (ED), 0.2% more than in January.

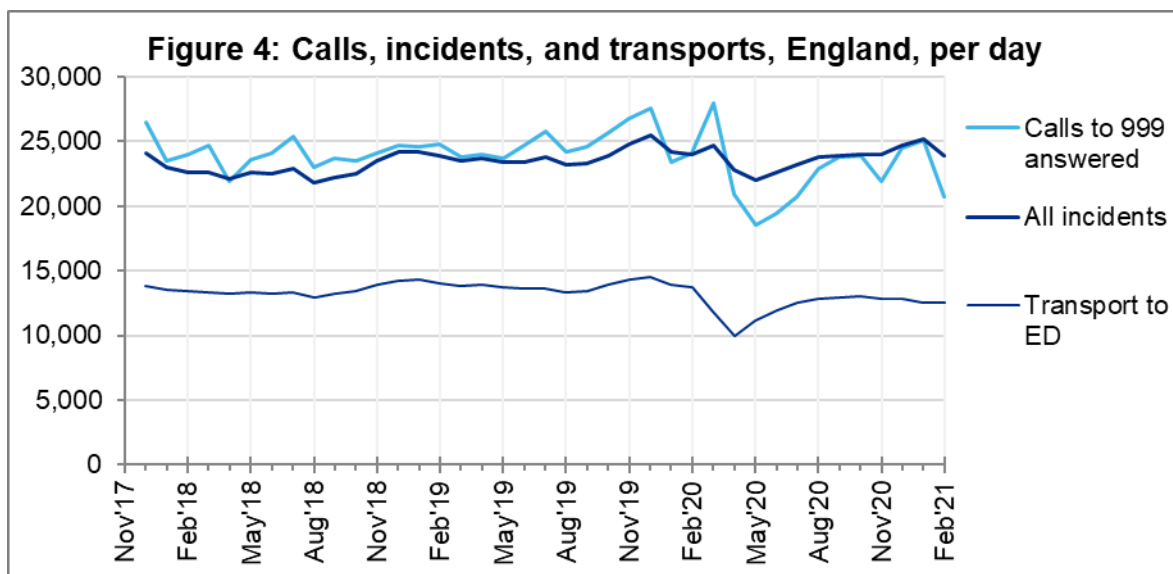
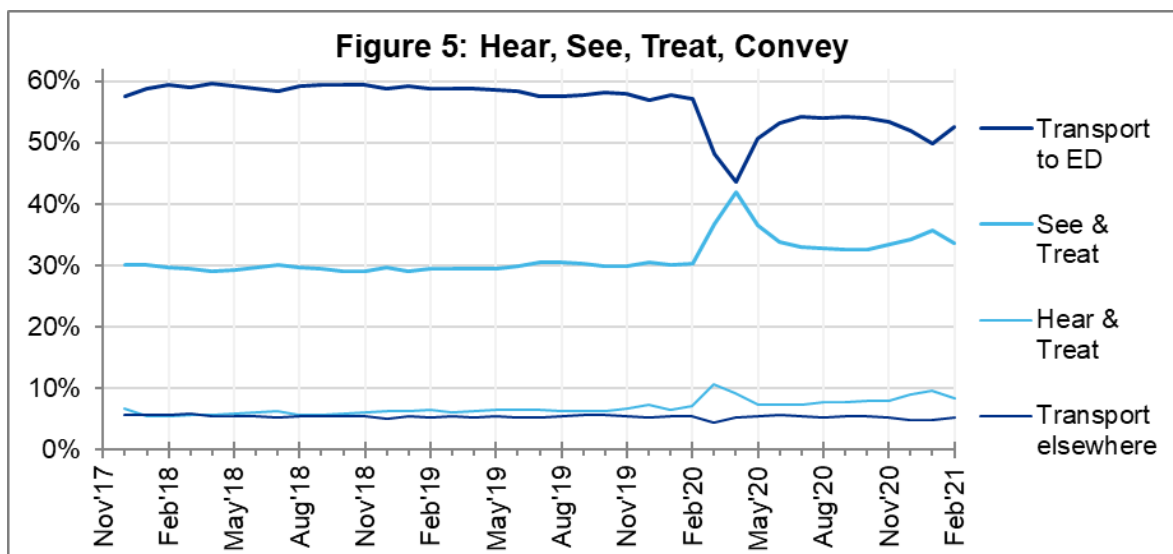


Figure 5 shows that in February 2021, 52.6% of incidents featured transport to ED, more than in January 2021 (49.8%), but less than the February proportions in the three previous years, which ranged from 57.1% to 59.4%. In February 2021, other incidents comprised 8.3% resolved on the telephone (Hear & Treat), 33.7% closed at the scene (See & Treat), and 5.3% featuring transport to destinations other than ED.



## 2. Ambulance Clinical Outcomes (AmbCO)

### 2.1 Cardiac arrest

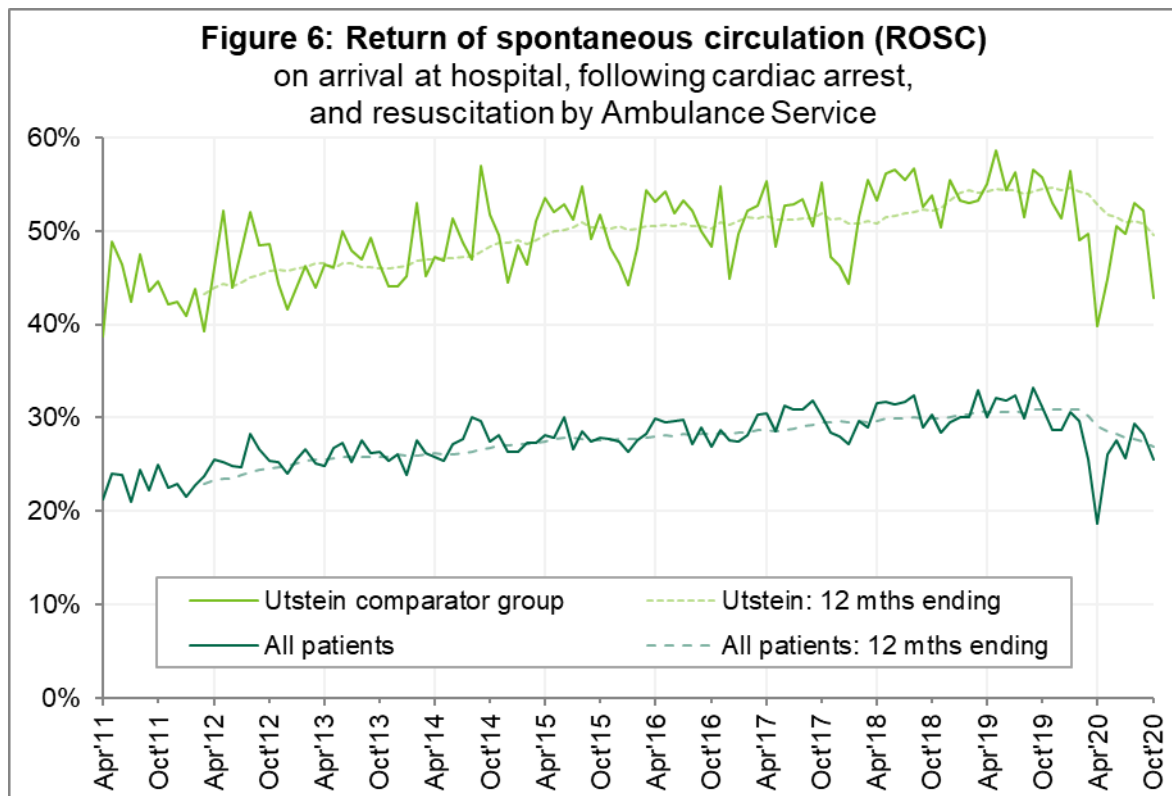
Patients in cardiac arrest will typically have no pulse and will not be breathing. We show, of patients for whom resuscitation was commenced or continued by ambulance staff out of hospital, how many had return of spontaneous circulation (ROSC), with a pulse, on arrival at hospital (Figure 6), and how many survived to be discharged from hospital (Figure 7).

For all patients, in October 2020, at England level, ROSC was 25.5% (Figure 6), significantly<sup>2</sup> less than the average for year ending September 2020 (27.4%).

The Utstein comparator group<sup>3</sup> comprises patients with an out-of-hospital cardiac arrest of presumed cardiac origin, where the arrest was bystander witnessed, and the initial rhythm was Ventricular Fibrillation or Ventricular Tachycardia. This group therefore have a better chance of survival.

For the Utstein group, ROSC was 43% in October 2020, also significantly less than the average for the year ending September 2020, 51%.

For all patients, and for Utstein patients too, ROSC in October 2020 was the lowest for over six years, with the exception of April 2020.

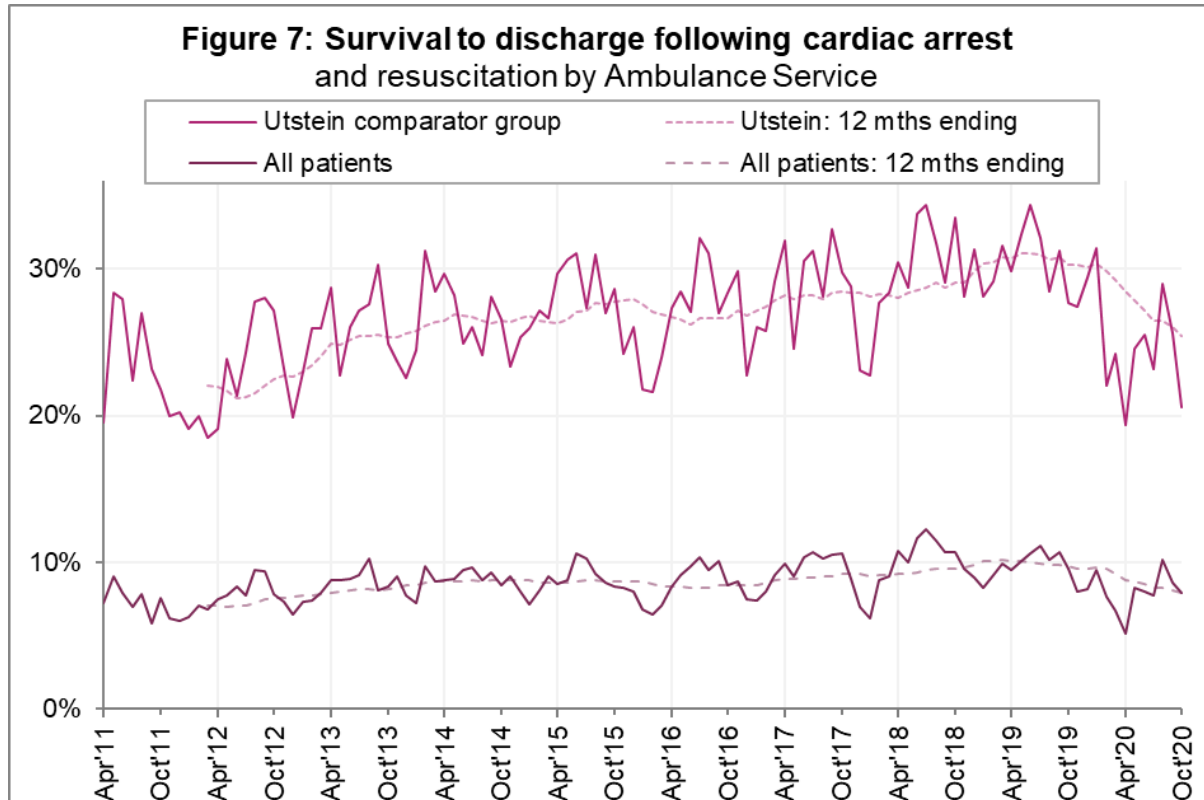


<sup>2</sup> Significance tests in this document use Student's t-test with 95% significance.

<sup>3</sup> This definition was proposed at Utstein Abbey in Norway by an international group of cardiologists and other health professionals in 1990. <http://circ.ahajournals.org/content/110/21/3385>

Survival to discharge from hospital following cardiac arrest in October 2020 was 7.9% for all patients, similar to the average for the year ending September 2020 (8.1%).

Survival to discharge for the Utstein group in October 2020 was 21%, significantly lower than the average for the year ending September 2020 (26%). As with the ROSC proportions above, this October 2020 proportion was the lowest for more than six years, apart from in April 2020.



For patients with ROSC in October 2020, 77% received the appropriate care bundle after ROSC on scene, significantly more than for the year ending September 2020 (73%), and the highest proportion in this time series, which started in April 2018.

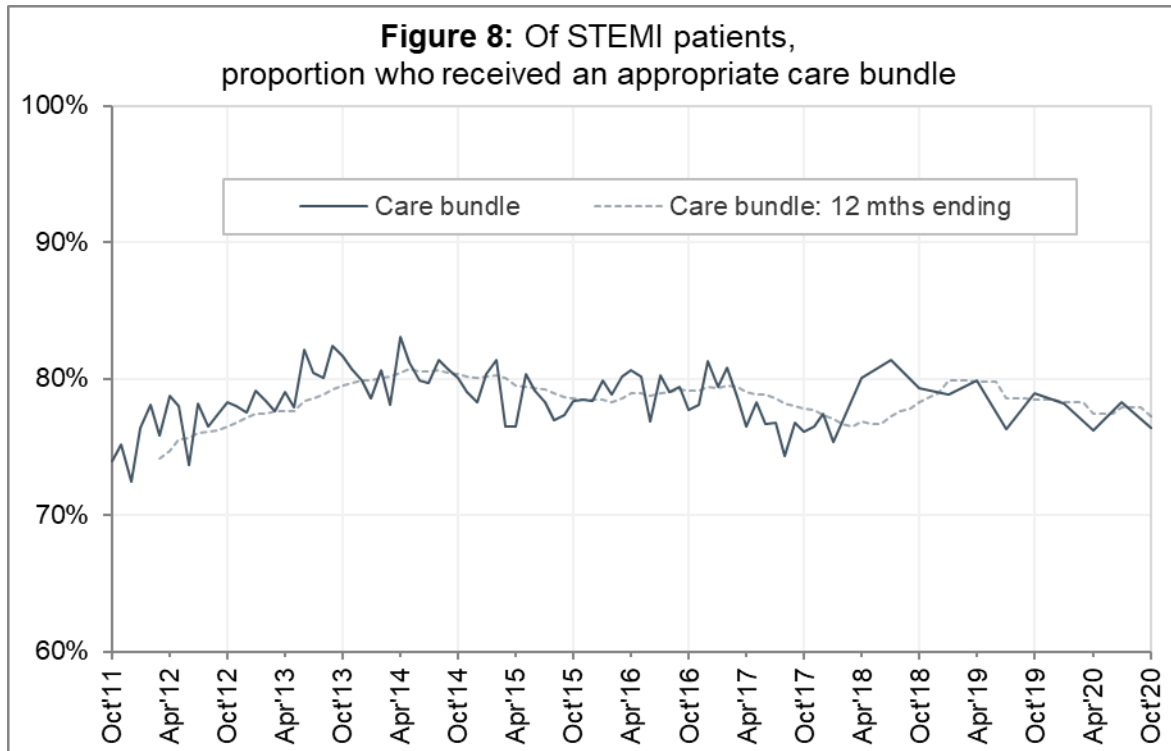
## 2.2 ST-segment elevation myocardial infarction (STEMI)

STEMI is a type of heart attack, determined by an electrocardiogram (ECG) test. Early access to reperfusion, where blocked arteries are opened to re-establish blood flow, and other assessment and care interventions, are associated with reductions in STEMI mortality and morbidity.

For STEMI patients, ambulance services measure the time from ambulance call to insertion of a catheter for primary percutaneous coronary intervention (PPCI): inflation of a balloon inside a blood vessel to restore blood flow to the heart.

In England in October 2020, for time from call to catheter insertion, the mean average was 2 hours 21 minutes, and the 90th centiles averaged 3 hours 15 minutes. Both were the longest since they were first collected for November 2017.

Figure 8 shows that of patients with an acute STEMI in England in October 2020, the proportion that received an appropriate care bundle was 76%, similar to the average for the year ending September 2020 (78%).



### 3. Further information on AQI

#### 3.1 The AQI landing page and Quality Statement

[www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators](http://www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators), or <http://bit.ly/NHSAQI>, is the AQI landing page, and it holds:

- a Quality Statement for these statistics, which includes information on relevance, accuracy, timeliness, coherence, and user engagement;
- the specification guidance documents for those who supply the data;
- timetables for data collection and publication;
- time series spreadsheets and csv files from April 2011 up to the latest month;
- links to individual web pages for each financial year;
- contact details for the responsible statistician (also in section 3.4 below).

Publication dates are also at

[www.gov.uk/government/statistics/announcements?keywords=ambulance](http://www.gov.uk/government/statistics/announcements?keywords=ambulance).

The web pages for each financial year hold:

- separate spreadsheets of each month's data;
- this Statistical Note, and equivalent versions from previous months;
- the list of people with pre-release access to the data.

### 3.2 AQI Scope

The AQI include calls made by dialling either the usual UK-wide number 999 or its international equivalent 112. As described in the specification guidance mentioned in section 3.1, incidents resulting from a call to NHS 111 are included in all Systems Indicators the except call data items, A1 to A6 and A114.

### 3.3 Related statistics

Ambulance handover delays of over 30 minutes at each Emergency Department are published by NHSEI during winter 2012-13, 2013-14, 2014-15, 2017-18, 2018-19, and 2019-20, at [www.england.nhs.uk/statistics/statistical-work-areas/winter-daily-sitreps](http://www.england.nhs.uk/statistics/statistical-work-areas/winter-daily-sitreps).

The Quality Statement described in section 3.1 includes information on:

- the “Ambulance Services” publications by NHS Digital <https://digital.nhs.uk/data-and-information/publications/statistical/ambulance-services>, with data from before 2000, to 2014-15;
- a dashboard with an alternative layout for AQI data up to April 2016;
- the comparability of data for other countries of the UK:

Wales: <https://statswales.gov.wales/Catalogue/Health-and-Social-Care/NHS-Performance/Ambulance-Services>

Scotland: See Quality Improvement Indicators (QII) documents at [www.scottishambulance.com/TheService/BoardPapers.aspx](http://www.scottishambulance.com/TheService/BoardPapers.aspx)

Northern Ireland: [www.health-ni.gov.uk/articles/emergency-care-and-ambulance-statistics](http://www.health-ni.gov.uk/articles/emergency-care-and-ambulance-statistics)

### 3.4 Contact information

Media: NHSEI Media team, [nhsengland.media@nhs.net](mailto:nhsengland.media@nhs.net), 0113 825 0958.

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### 3.5 National Statistics

The UK Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods; and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.