

## Statistical Note: Ambulance Quality Indicators (AQI)

In August 2021, the number of calls answered by the Ambulance Services of England was not as many as in July 2021, but it was more than in any other month.

Similarly, for Categories C1-C4, all average and 90th centile response times were lower in August 2021 than in July 2021, but were higher than in all other months since 2017-18, and none of the standards in the NHS Constitution<sup>1</sup> were met.

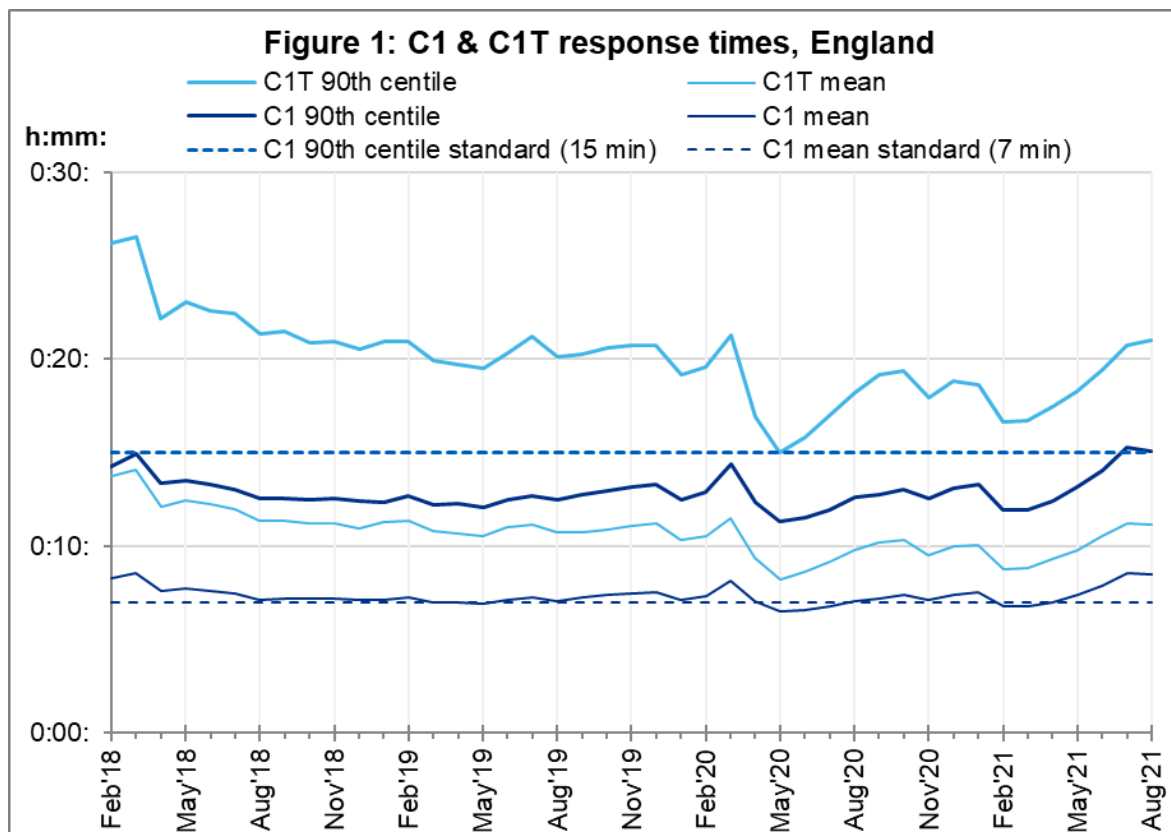
Today we publish revisions to Ambulance Clinical Outcomes data from January 2020 to March 2021. Survival to discharge from hospital after cardiac arrest in 2020 remains lower than in 2019, but not as low as originally published.

### 1. Ambulance Systems Indicators

#### 1.1 Response times

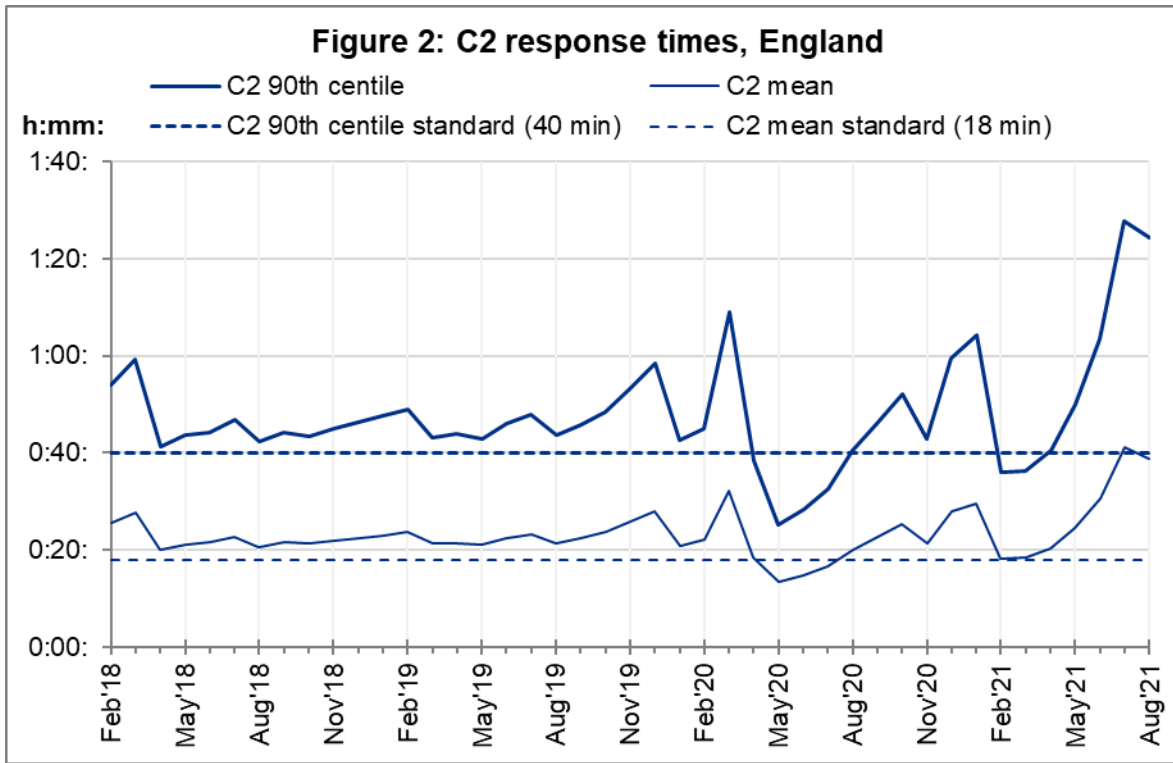
In August 2021, the England mean average response time for Category C1, the most urgent incidents, was 8 minutes 28 seconds, and the C1 90th centile was 15:06, so neither the 7-minute mean nor the 15-minute 90th centile standards were met.

For C1T (response times for arrival of transporting vehicle, for C1 patients transported), the mean was 11:10, and the 90th centile was 21:02. (Figure 1)

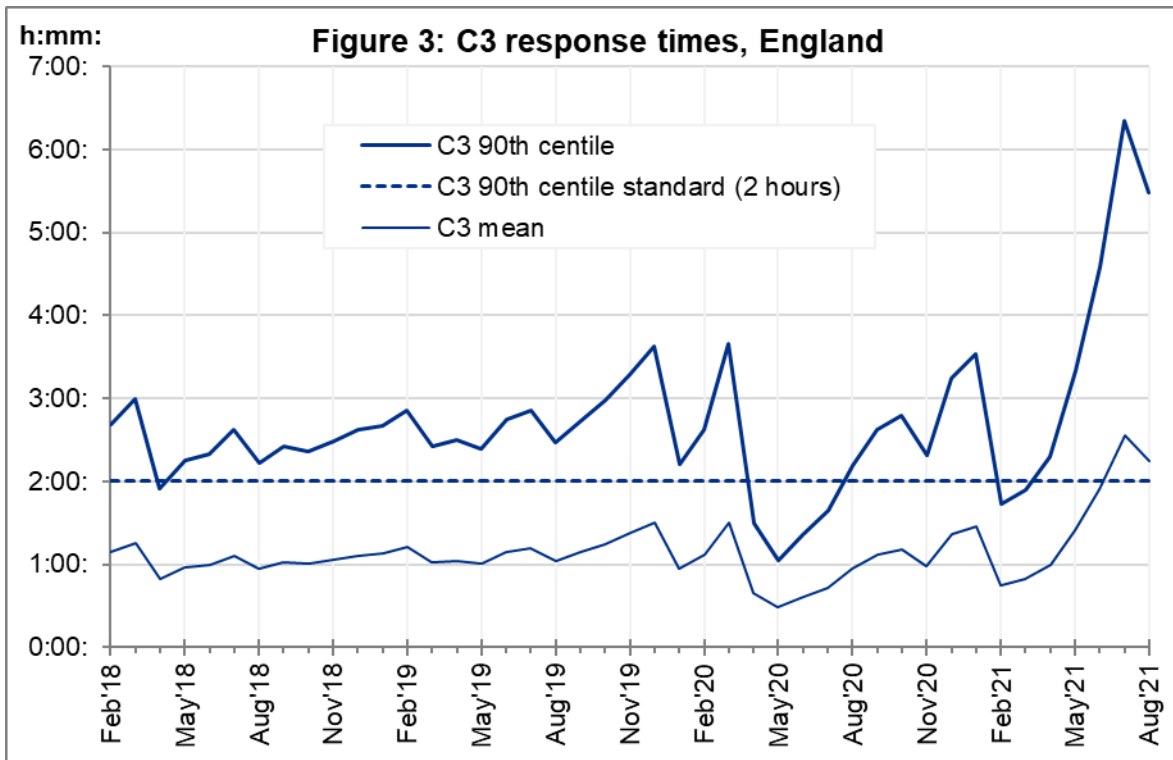


<sup>1</sup> Standards in the NHS Constitution Handbook: [www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england](http://www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england)

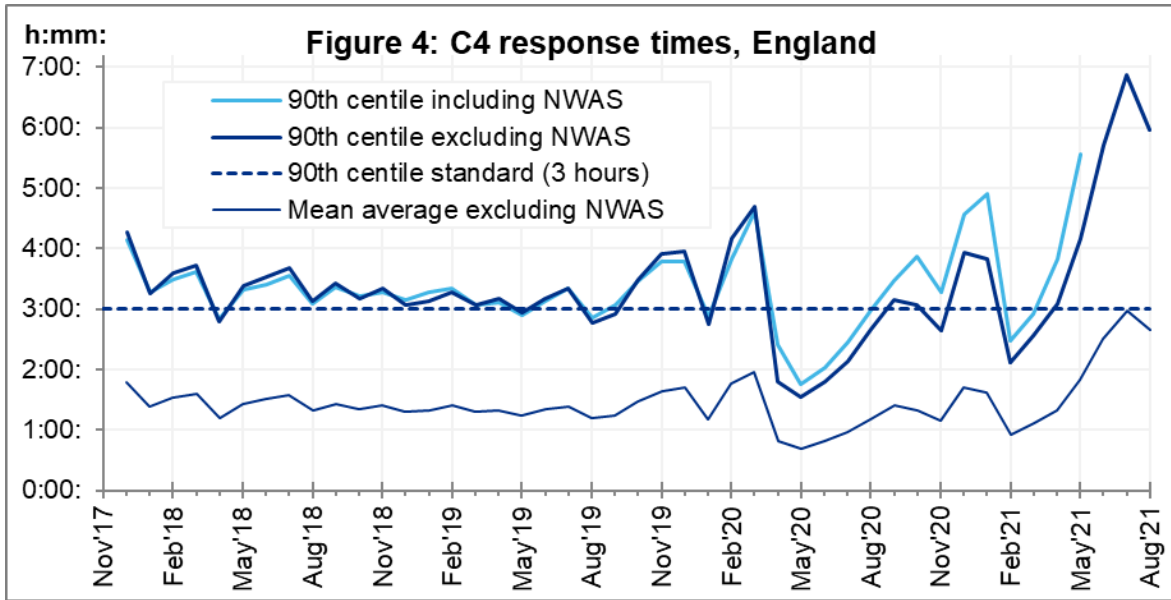
For C2 in England (Figure 2), the average response time in August 2021 was 38:39, and the 90th centile was 1:24:18, so the 18- and 40-minute standards were not met.



For C3 (Figure 3), the mean average response time was 2:14:24. The 90th centile was 5:28:34, so the two-hour standard was not met.



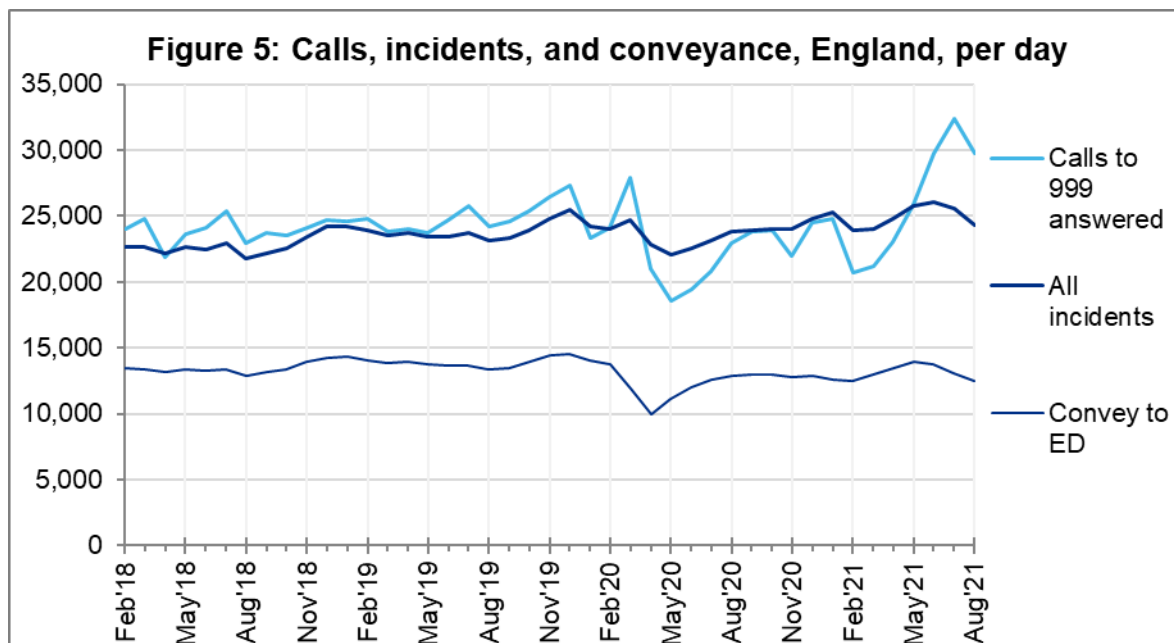
C4 information for North West Ambulance Service (NWS) is unavailable after May 2021. The dark lines in Figure 4, for England excluding NWS, show the C4 mean (2:39:44) and C4 90th centile (5:57:27) in August 2021 were less than in July 2021, but more than in all previous months. The pale line shows February and March were the only months of 2021 where the C4 standard of 3 hours was met for all England.



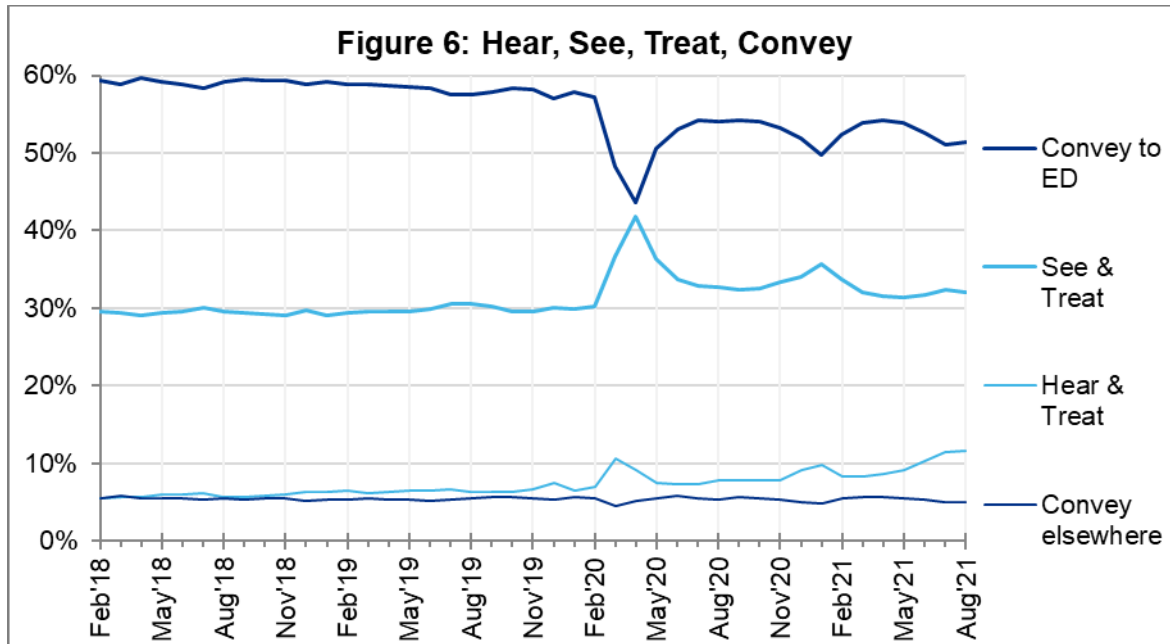
## 1.2 Other Systems Indicators and revisions

In August 2021, per day, there were (Figure 5):

- 29.7 thousand calls to 999 answered, 8% less than in July 2021;
- 24.3 thousand incidents that received a response (whether on the telephone or on the scene) from an ambulance service, 5% less than in July;
- 12.5 thousand incidents where a patient was conveyed to an Emergency Department (ED), 4% less than in July.



In August 2021, 11.6% of incidents were resolved on the telephone (Hear & Treat); the most since the measure was redefined in 2017. Conveyance to ED was 51.4%, conveyance to non-ED remained at 5.0%, and incidents resolved at the scene (See & Treat) were 32.0%. All these remained within 0.5 percentage points of July 2021.



## 2. Ambulance Clinical Outcomes (AmbCO)

Today we publish revisions to AmbCO, which cover January 2020 to March 2021 for cardiac arrest, and March 2020 to March 2021 for other topics.

Stroke bundle data are only revised by London (LAS), North East (NEAS), South East Coast (SECamb), and West Midlands (WMAS) Ambulance Services, with ST-elevation myocardial infarction (STEMI) bundle data only revised by LAS, SECamb, and WMAS, and sepsis bundle data only revised by LAS and SECamb.

In contrast, cardiac arrest data have been revised by all trusts except East Midlands and Isle of Wight.

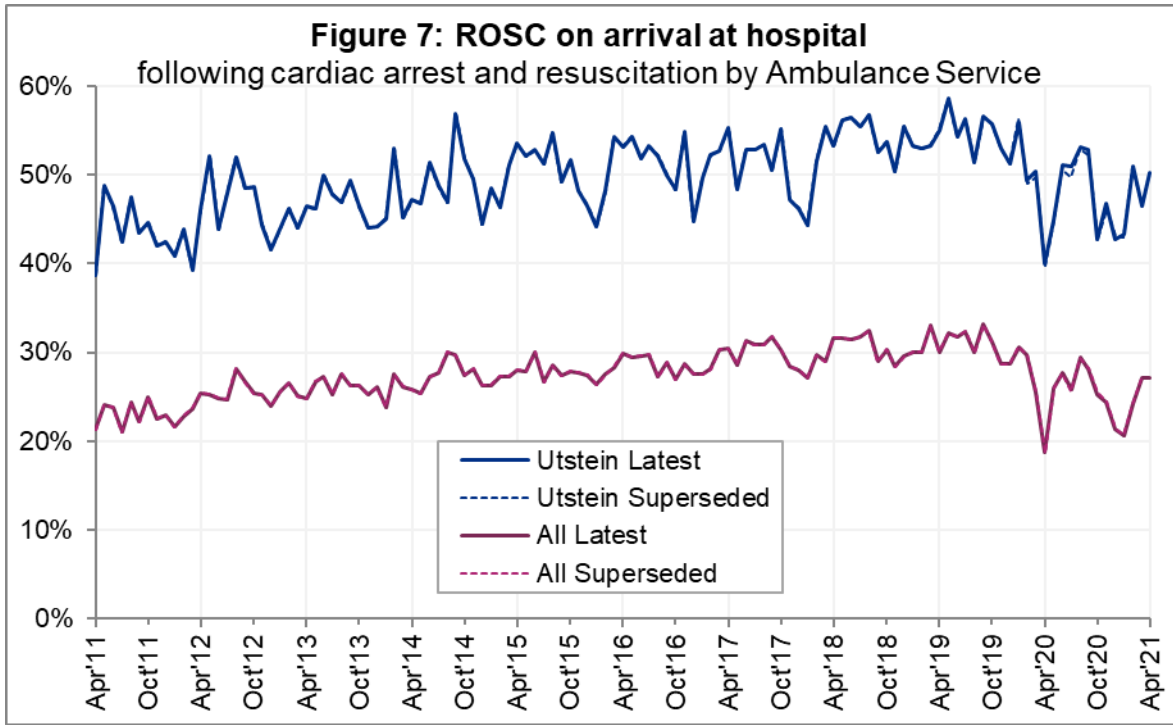
### 2.1 Return of spontaneous circulation (ROSC) after cardiac arrest (Figure 7)

For the 2,406 patients in April 2021 with cardiac arrest and resuscitation by an ambulance service in England, ROSC was achieved for 654 (27%) of incidents, not significantly<sup>2</sup> different to the average proportion for 2020-21 (25%).

The Utstein comparator group comprises patients with an out-of-hospital cardiac arrest of presumed cardiac origin, where the initial rhythm was Ventricular Fibrillation or Ventricular Tachycardia, and the arrest was bystander witnessed. This group therefore have a better chance of survival. In April 2021, of the 378 such patients, ROSC was achieved for 190 (50%), also not significantly different to 2020-21 (47%).

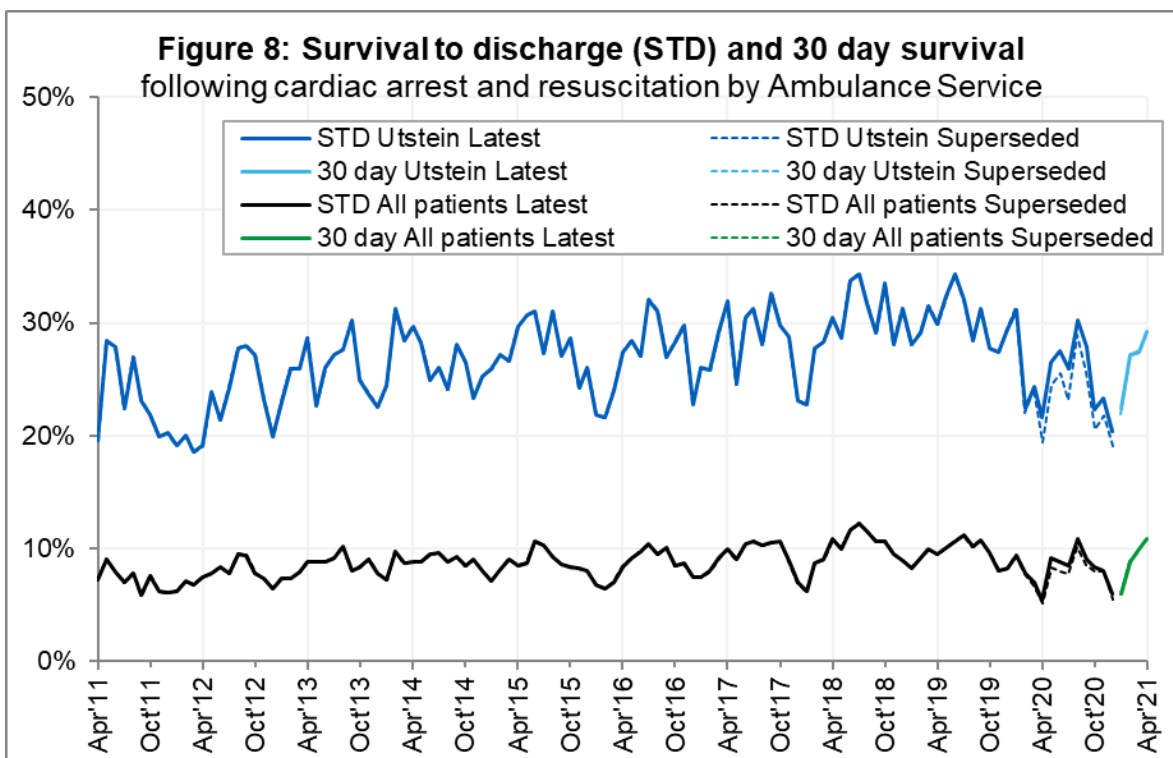
<sup>2</sup> Significance tests in this document use Student's t-test with 95% significance.

Revisions for ROSC are small, with 32,176 cardiac arrest incidents now reported for 2020-21 rather than 31,953. The largest revision to the England ROSC proportions is for the Utstein group in July 2020, from 49.7% to 51.0%.



## 2.2 Survival following cardiac arrest (Figure 8)

In April 2021, survival at 30 days after cardiac arrest was 10.8% for all patients, and 29.2% for the Utstein group.



Revisions to survival at 30 days are small. Revisions are larger for the measure we discontinued after December 2020, survival to discharge from hospital. At England level, for the Utstein group, all survival proportions from April to December 2020 are larger by between 1.3 and 2.8 percentage points than we originally published, with the largest revision from 23.1% to 25.9% for July 2020.

As announced in our 10 June 2021 Statistical Note, some Ambulance Services are still producing, for internal reporting, data after December 2021 for the old measure of survival to discharge. We agreed with trusts to put any such data we receive for January to March 2021 into this Statistical Note, to help data users to compare the two measures, but it is entirely optional if trusts want to report the old measure.

		Ambulance Service resuscitation						Discharged from hospital alive					
		All			Utstein			All			Utstein		
Code	2021	Jan	Feb	Mar	Jan	Feb	Mar	Jan	Feb	Mar	Jan	Feb	Mar
RYC	East of England	413	287	277	34	41	39	18	25	28	7	11	16
R1F	Isle of Wight	10	7	9	0	0	2	0	1	0	0	0	0
RX7	North West	305	248	244	43	33	35	19	21	18	8	8	9
RYD	South East Coast	295	211	193	35	34	34	15	19	18	9	12	6
RYF	South Western	293	197	268	47	32	44	29	26	28	10	11	14
RX8	Yorkshire	325	286	297	42	32	45	26	26	28	10	10	10

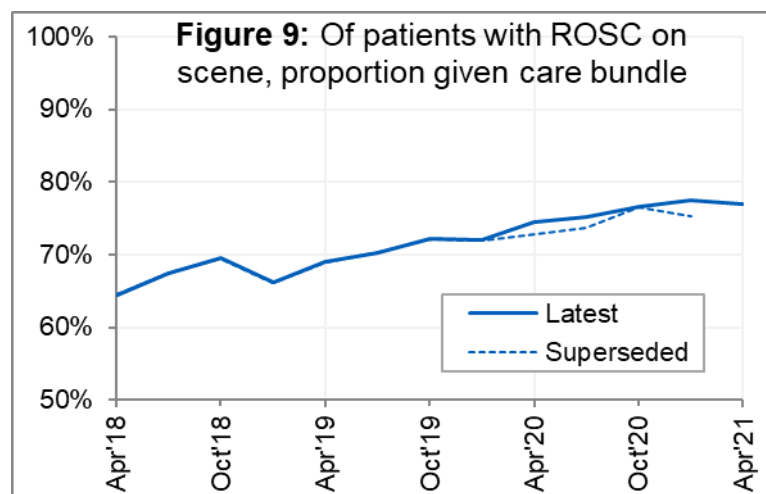
Conversely, we are also publishing today data (only for all patients, not for the Utstein group) for October 2019 that we collected for the new measure of survival at 30 days, for which we have already published the old measure.

Code	October 2019	Resuscitation	Survival at 30 days
RYC	East of England	302	28
R1F	Isle of Wight	11	1
RRU	London	346	36
RX6	North East	188	19
RX7	North West	215	20
RYE	South Central	162	16
RYD	South East Coast	226	26

### 2.3 Cardiac arrest care bundle (Figure 9)

For patients with ROSC on scene, 77.0% received the appropriate care bundle in April 2021, not significantly different to the 2020-21 average of 76.0%.

Revisions to the England ROSC care bundle proportions were all positive, and the largest was for January 2021, from 75.3% to 77.4%.

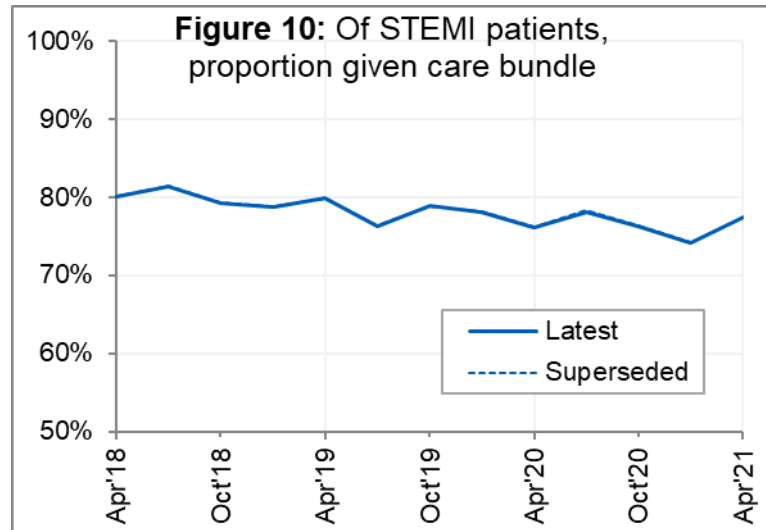


## 2.4 ST-segment elevation myocardial infarction (STEMI)

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.

Of patients with an acute STEMI in England in April 2021, the proportion that received an appropriate care bundle was 77.4%, not significantly different to the 2020-21 average (76.1%). (Figure 10)

Revisions to the England STEMI care bundle proportions were all negative, and small, with the largest for July 2020, from 78.3% to 78.1%.

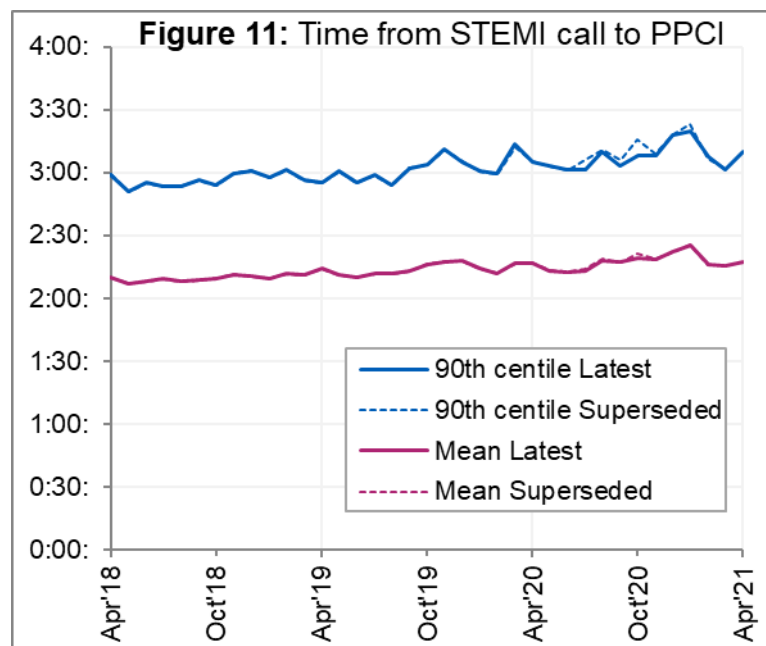


For STEMI patients, the Myocardial Ischaemia National Audit Project (MINAP) collects the time from ambulance call to insertion of a catheter for primary percutaneous coronary intervention (PPCI): inflation of a balloon inside a blood vessel to restore blood flow to the heart. (Figure 11)

In England in April 2021, for time from call to catheter insertion, the mean average was 2 hours 17 minutes, the same as the 2020-21 average, although that was an increase on 2019-20 (2:13) and 2018-19 (2:09).

The April 2021 90th centile was 3:09, also similar to the 2020-21 average (3:07) but an increase on 2019-20 (3:01) and 2018-19 (2:56). Both the mean and 90th centile reached a peak in January 2021.

The largest revision for England as a whole was from 3:15 to 3:07 for the 90th centile for October 2020. Revisions barely affected the mean times.



### 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 the call indicators, 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 Centiles

The centile data for England in this document, also published in spreadsheets alongside this document, are not precise centiles calculated from national record-level data. Instead, they are the centiles calculated from each individual trust's record-level data, weighted by their incident count, and averaged across England. So, if England only had two trusts, with centiles of 7:10 and 7:40, and the former had twice as many incidents as the latter, the England centile would be 7:20.

### 3.5 Contact information

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

The person responsible for producing this publication is Ian Kay; Performance Analysis Team; Finance, Performance and Planning Directorate; NHS England and NHS Improvement (NHSEI); [england.nhsdata@nhs.net](mailto:england.nhsdata@nhs.net); 0113 825 4606.

### 3.6 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.