Statistical Note: Ambulance Quality Indicators (AQI)

In England, for all four categories, average response times in May 2024 were longer than in April 2024, but shorter than in each of the seven months before that.

Today we are publishing revisions to Ambulance Systems Indicators for October 2022 and from April 2023 to April 2024.

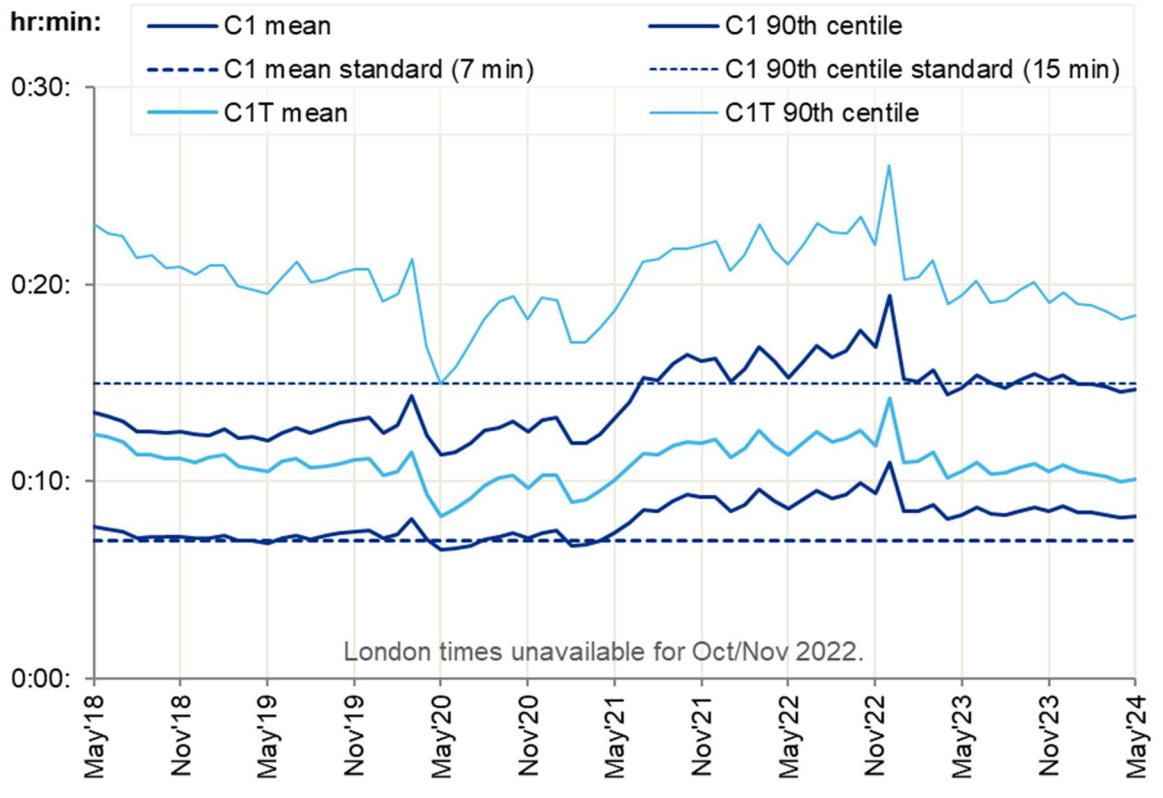
1. Ambulance Systems Indicators (AmbSYS)

1.1 Response times

For England, the mean average response time in May 2024 for C1, the most urgent category, was 8 minutes and 16 seconds, longer than the standard[1] of 7 minutes, but the 90th centile time was 14:41, shorter than the standard of 15 minutes.

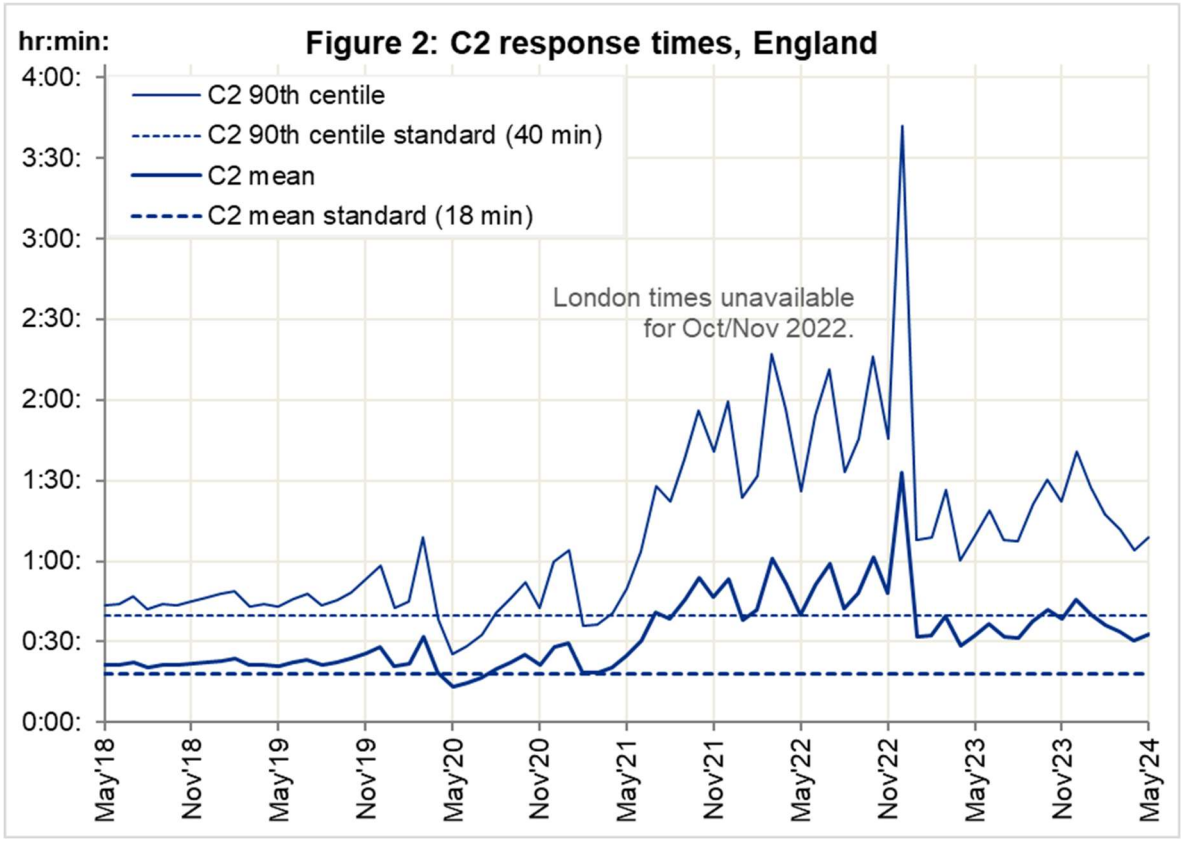
For C1T (time to the arrival of the transporting vehicle for C1 incidents), the average was 10:08, and the 90th centile was 18:25 (Figure 1).

Figure 1: C1 response times, England

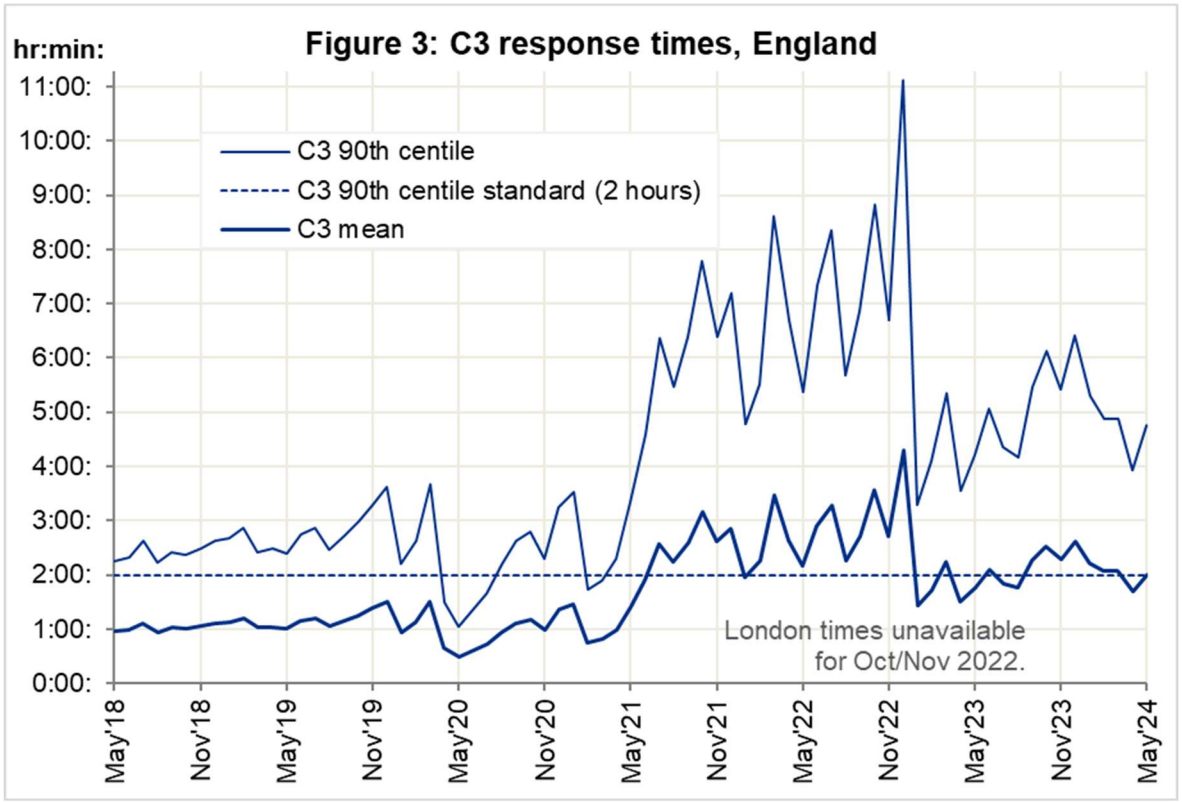


For England as a whole, revisions did not change any C1 or C1T times by more than 1 second, or any C2 response times by more than 5 seconds.

[1] 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

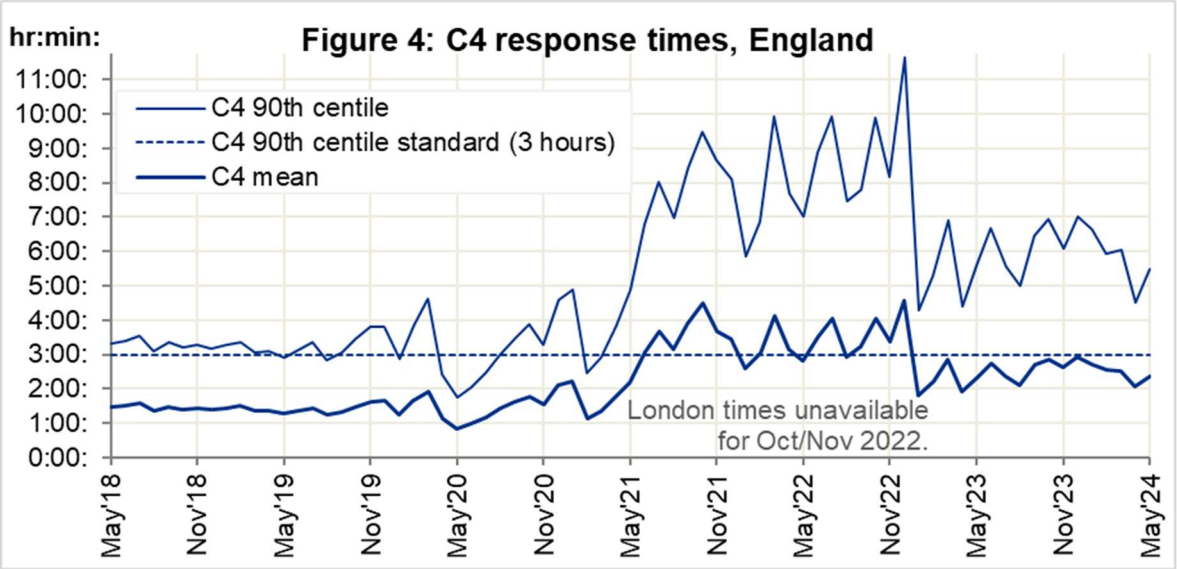


For England in May 2024, C2 had an average of 32:44 and a 90th centile of 1:08:52 (Figure 2); C3 had an average of 2:00:00 and a 90th centile of 4:45:38 (Figure 3).



The May 2024 C4 average was 2:21:11 and the 90th centile was 5:28:44 (Figure 4).

The largest revision to a monthly response time increased the September 2023 Yorkshire C4 90th centile from 5:23:29 to 5:46:22 and the England equivalent from 6:25:35 to 6:27:12.



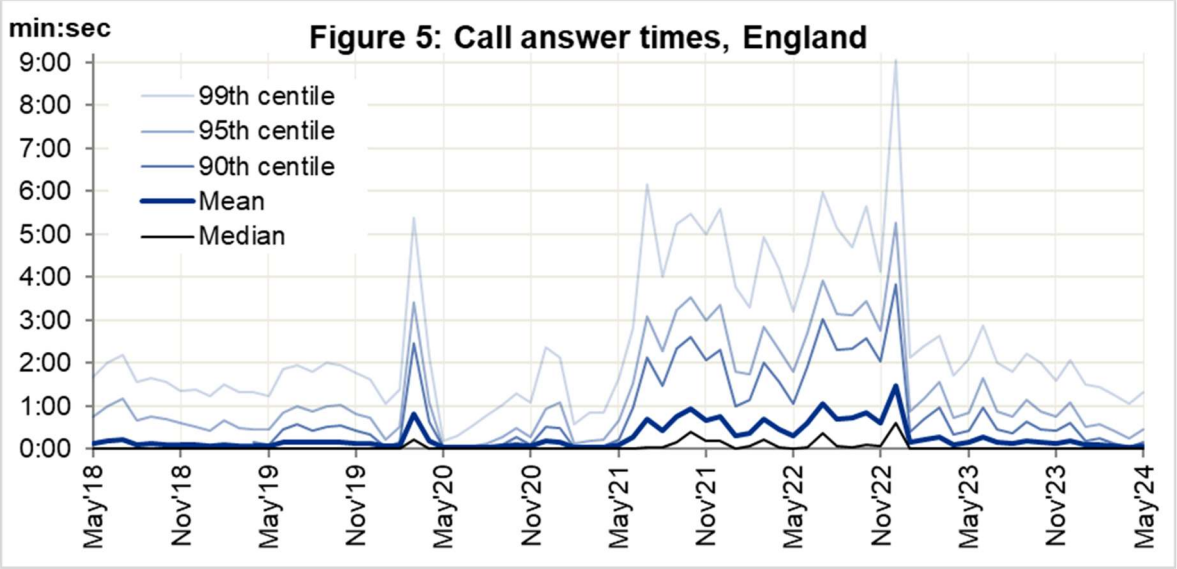
1.2 Other Systems Indicators

Isle of Wight AmbSYS data have not been revised. For South Central, only call diverts have been revised.

The largest revisions are generally for Clinical Assessment and Validation, for which some other data items have been provided that were previously missing, which is also true for Bystander CPR.

The median call answer time was the only indicator not revised by any trust.

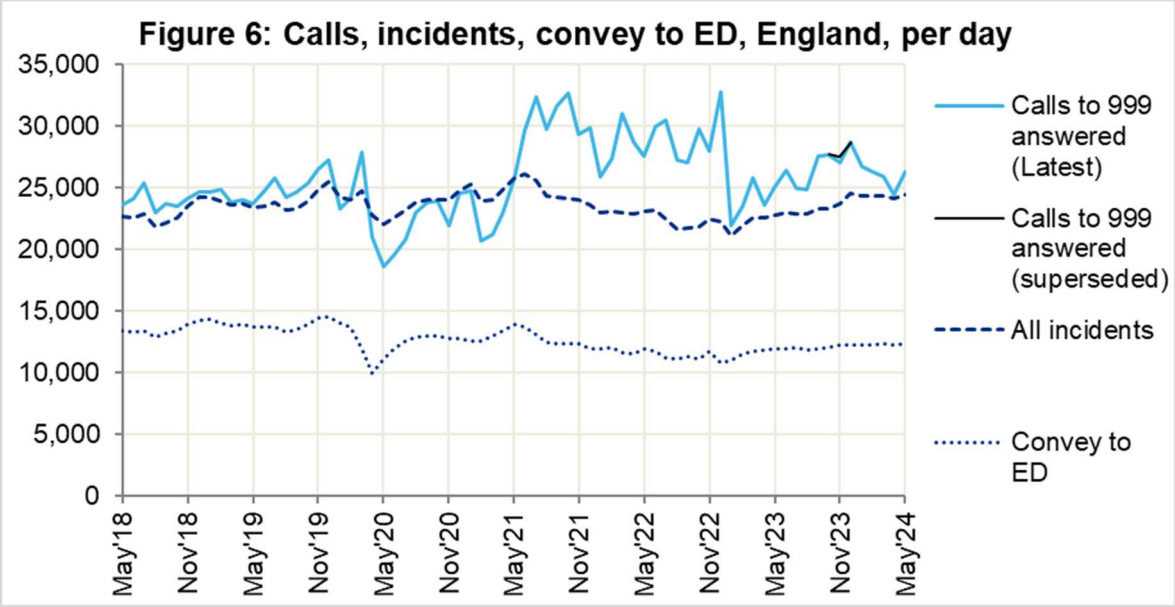
In May 2024, the average 999 call answer time was 5 seconds, longer than in April 2024, but shorter than in every month from May 2021 to February 2024 (Figure 5).



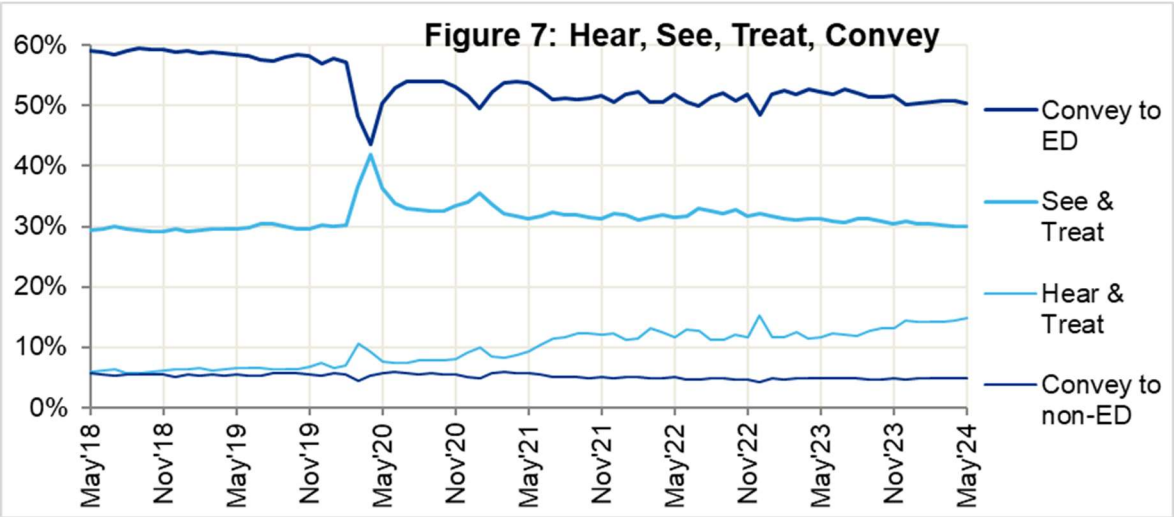
The count of 999 calls answered was 813,631 in May 2024.
This was 26.2 thousand per day, about the same as the average for 2023-24.

November 2023 had 27.0 thousand calls answered per day in England, and not 27.5 thousand as originally published, after a revision by East Midlands, who also revised their Contact Counts from July to November 2023, generally by a similar amount.

There were 758,014 incidents in May 2024, of which 381,432 had conveyance to ED. Per day, these are 24.5 and 12.3 thousand respectively, both the second largest since 2021. (Figure 6)



Of incidents in England in May 2024, 14.8% were resolved on the telephone (Hear & Treat), the largest ever apart from December 2022.
The proportion resolved on scene (See & Treat) was 30.1%, the second smallest in over four years.
The rest comprised 50.3% with conveyance to an Emergency Department (ED) and 4.8% with conveyance to non-ED (Figure 7).
None of these proportions have been revised by more than 0.1 percentage points.



2. Ambulance Clinical Outcomes (AmbCO)

We will continue to summarise data in these Statistical Notes for each topic when we publish care bundle data for that topic, so today's commentary on January 2024 data covers STEMI and cardiac arrest data, and includes the effects of the AmbCO revisions that we published on 11 April 2024.

2.1 Return of spontaneous circulation (ROSC) after cardiac arrest (Figure 8)

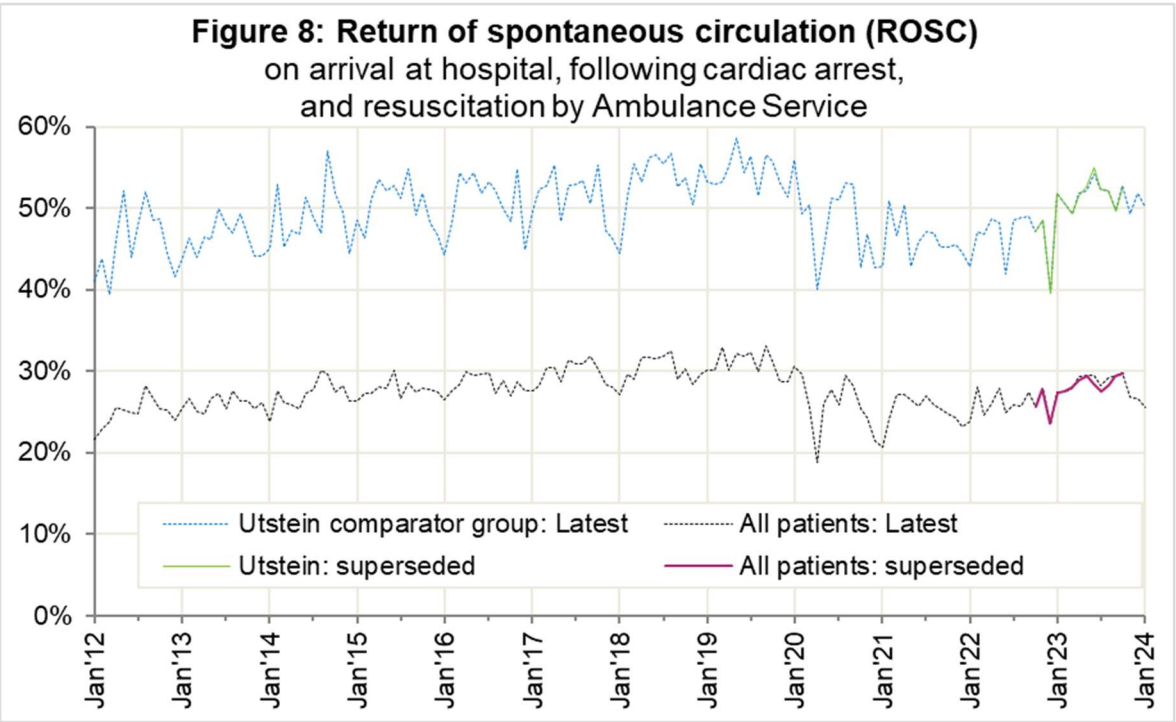
In England, 3,264 patients had resuscitation by an ambulance service with a known outcome after cardiac arrest in January 2024, and 832 (25%) had ROSC on arrival at hospital, significantly[2] fewer than in the year ending September 2023 (28%).

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 January 2024, of the 3,264 cardiac arrest patients, 449 met these criteria, of which 225 (50%) had ROSC on arrival at hospital, the same as for the year ending September 2023.

Revisions included cardiac arrest data for North West Ambulance Service for April to August 2023 inclusive, which was previously missing. Some data for these months and September remain missing for South Central, South Western, and Isle of Wight, following to a cyber-attack in summer 2023.

At England level, the largest revisions to the ROSC percentages are for June 2023, from 28.4% to 29.5% for all patients, and from 54.9% to 54.2% for the Utstein group.

Figure 8: Return of spontaneous circulation (ROSC) on arrival at hospital, following cardiac arrest, and resuscitation by Ambulance Service



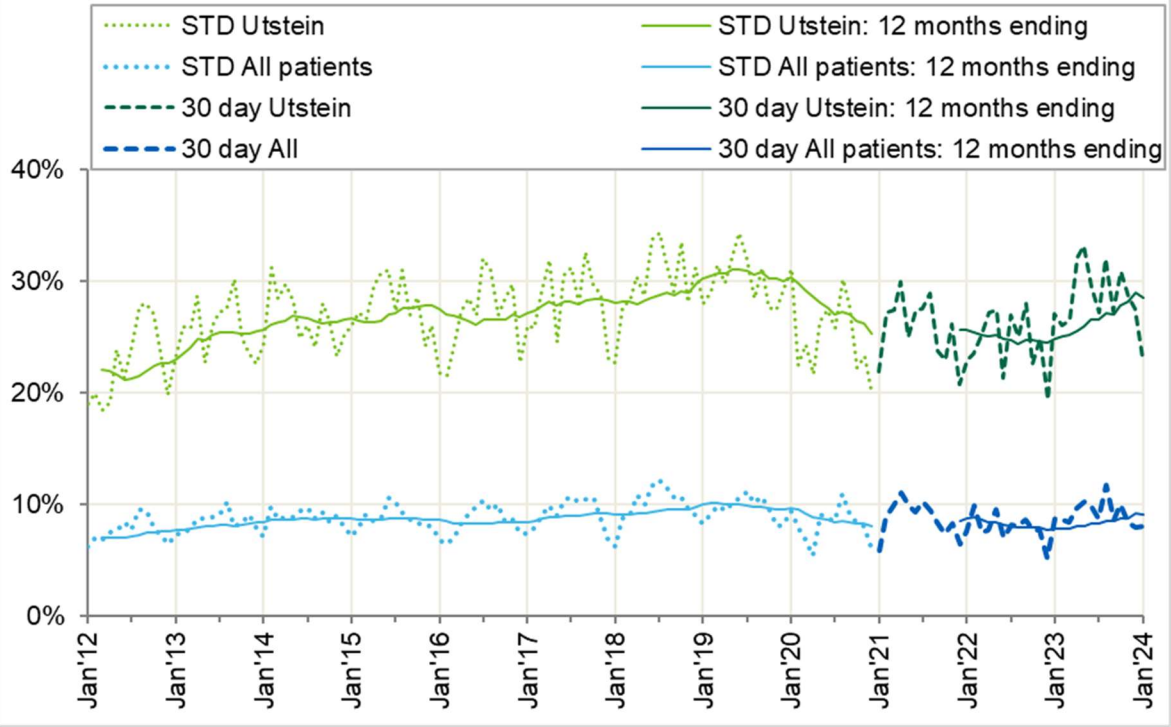
[2] Calculated using Student's t-test with 95% significance.

2.2 Survival following cardiac arrest (Figure 9)

For the 3,238 resuscitated cardiac arrest patients in England in January 2024 where survival at 30 days is known, 262 (8%) survived, similar to the 9% for the year ending September 2023. For the Utstein group, 102 of 442 (23%) survived for 30 days, which was not significantly different to the year ending September 2023 (27%).

For England as a whole, as with ROSC, the largest revisions to survival rates were for June 2023, from 9.3% to 9.9% for all patients, and from 28.5% to 29.5% for the Utstein group.

Figure 9: Survival to discharge (STD) and 30 day survival following cardiac arrest and resuscitation by Ambulance Service



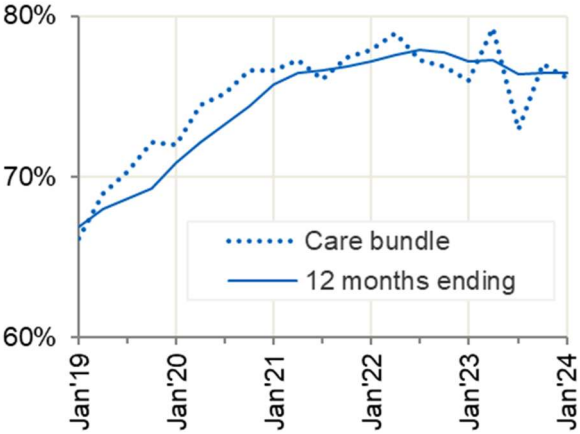
2.3 Cardiac arrest care bundle

In January 2024, there were 1,151 cardiac arrest patients resuscitated by an ambulance service in England who had return of spontaneous circulation on scene (not necessarily on arrival at hospital).

Of these, data show that 876 (76%) received the appropriate care bundle, the same as for the year ending September 2023. (Figure 10)

The largest revision to this proportion was for July 2023, from 72.3% to 73.0%.

Figure 10: patients receiving Post-ROSC care bundle



2.4 ST-segment elevation myocardial infarction (STEMI)

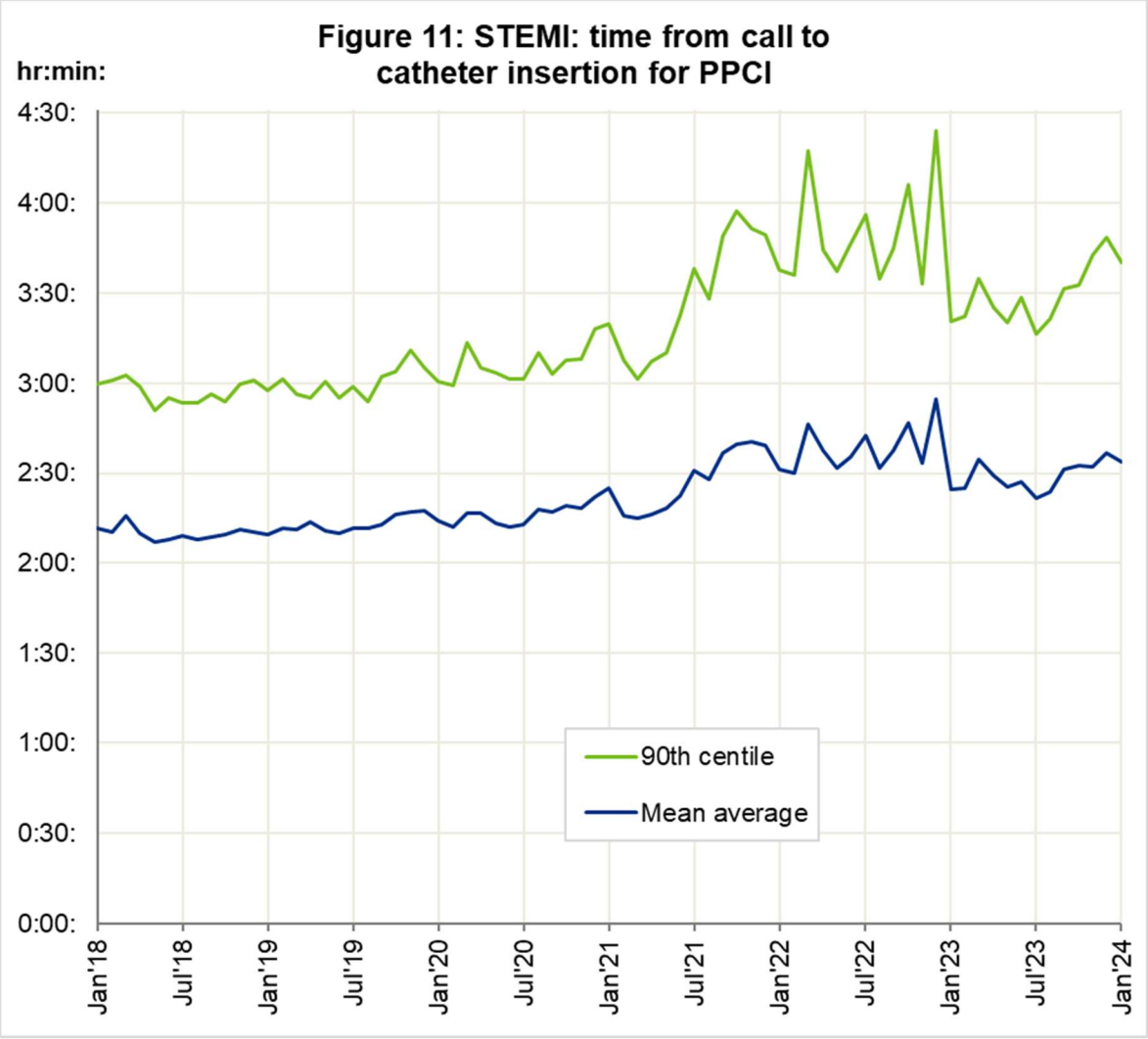
STEMI is a type of heart attack, determined by an electrocardiogram (ECG) test. Early access to reperfusion, where blocked arteries are opened to re-establish blood flow, and other assessment and care interventions, are associated with reductions in STEMI mortality and morbidity.

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.

In England in January 2024, the mean average time from 999 call to catheter insertion was 2 hours 33 minutes, and the 90th centile was 3:40 (Figure 11). These were shorter than the times for 2022-23 but longer than the times for the previous four years.

The largest revision to these times was from 3:18 to 3:25 for the April 2023 90th centile.

Figure 11: STEMI: time from call to catheter insertion for PPCI



Of 1,705 patients with an acute STEMI in England in January 2024, 1,367 (80%) received an appropriate care bundle (Figure 12), significantly more than in the year ending September 2023 (76%). The largest revision to this proportion for England was for July 2023, from 76.4% to 78.1%

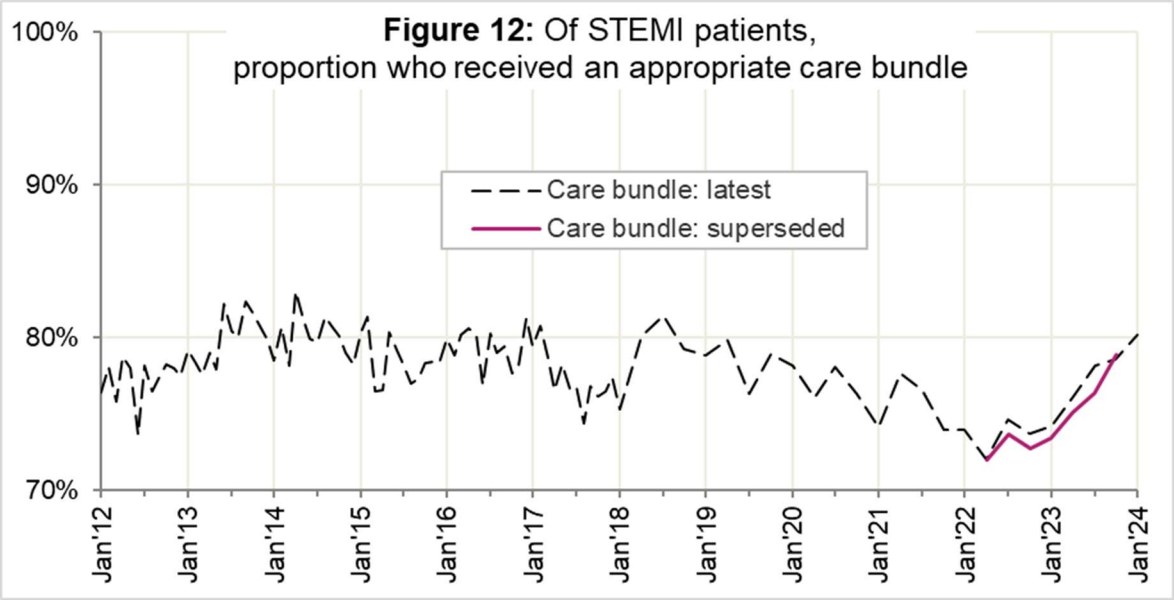


Figure 12: Of STEMI patients, proportion who received an appropriate care bundle

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, 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 3.5 below).

Publication dates are also at 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 Contact information

Media: NHS England Media team, nhsengland.media@nhs.net, 0113 825 0958.

The person responsible for producing this publication is Ian Kay, Operational Insights, Transformation Directorate, NHS England, 07918 336050, england.nhsdata@nhs.net.

3.3 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 in section 3.1, incidents resulting from a call to NHS 111 are included in all AmbSYS indicators, except the counts of 999 calls (indicators A1, A124, and A125) and answer times (A2 to A6 and A114).

3.4 Related statistics

NHS England publishes monthly data on ambulance handover delays by acute trust at www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators/ambulance-management-information starting from October 2023, and at www.england.nhs.uk/statistics/statistical-work-areas/uec-sitrep for individual days during winter from 2017-18.

The Quality Statement described in section 3.1 includes information on:

- the "Ambulance Services" publications by what became 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://easc.nhs.wales/asi
Scotland:	See Quality Improvement Indicators (QII) documents at www.scottishambulance.com/TheService/BoardPapers.aspx
Northern Ireland:	www.health-ni.gov.uk/articles/emergency-care-and-ambulance-statistics

3.5 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.

3.6 Accredited official statistics

These official statistics were independently reviewed by the Office for Statistics Regulation in May 2015. They comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics and should be labelled "accredited official statistics".