

Statistical Note: Ambulance Quality Indicators (AQI)

For all four categories C1-C4, the average and 90th centile ambulance response times in May 2022 were shorter than in March or April 2022, but still longer than in every month of 2018, 2019, and 2020.

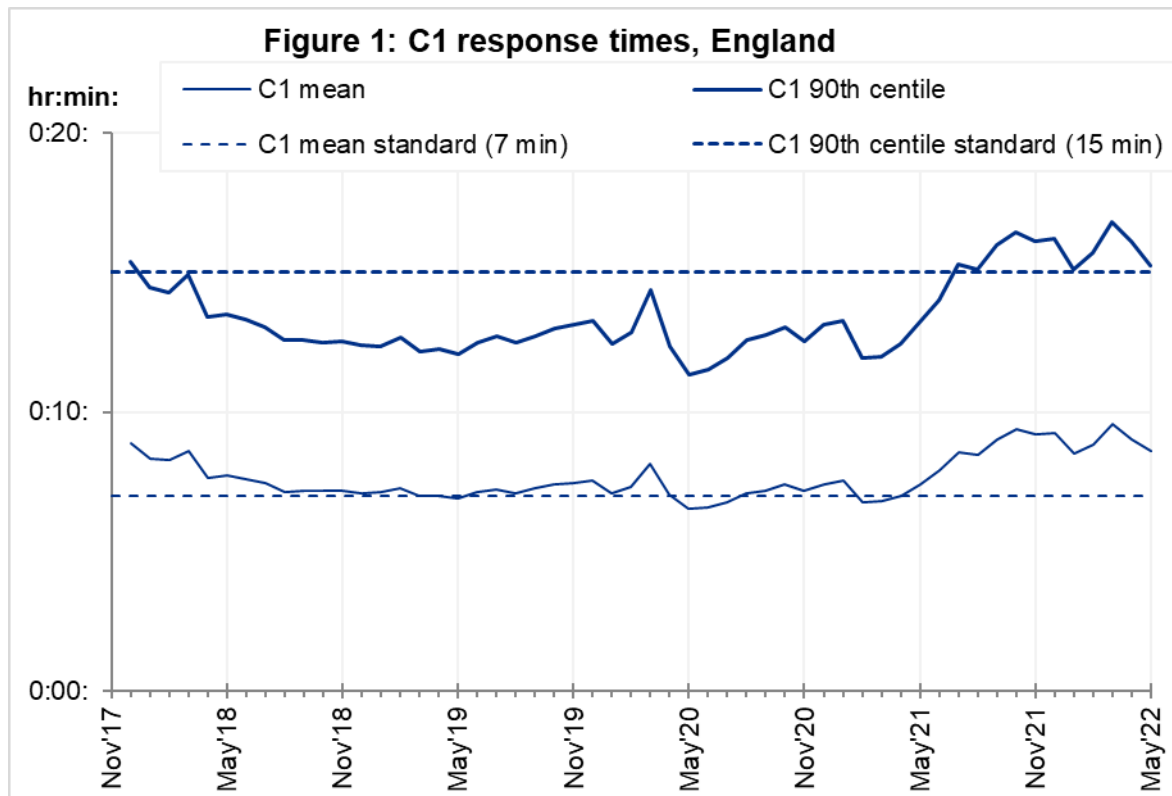
Alongside the latest Ambulance Systems Indicators for May 2022, today we are publishing revisions to data from May 2020 to April 2022. All Ambulance Services except Isle of Wight supplied revisions. The only indicators not revised by any trust are A4 and A114, the median and 90th centile call answer times, and A74, the count of Level 1 incidents resulting from a call from a healthcare professional.

For patients with STEMI (a type of heart attack), the times from 999 call to catheter insertion were shorter in January 2022 than in the four previous months, but still longer than the times recorded from November 2018 to August 2021.

1. Ambulance Systems Indicators

1.1 Response times

In May 2022, the England mean average response time for Category C1, the most urgent incidents, was 8:36, and the 90th centile was 15:15, so neither the 7-minute mean nor the 15-minute 90th centile standards¹ were met.

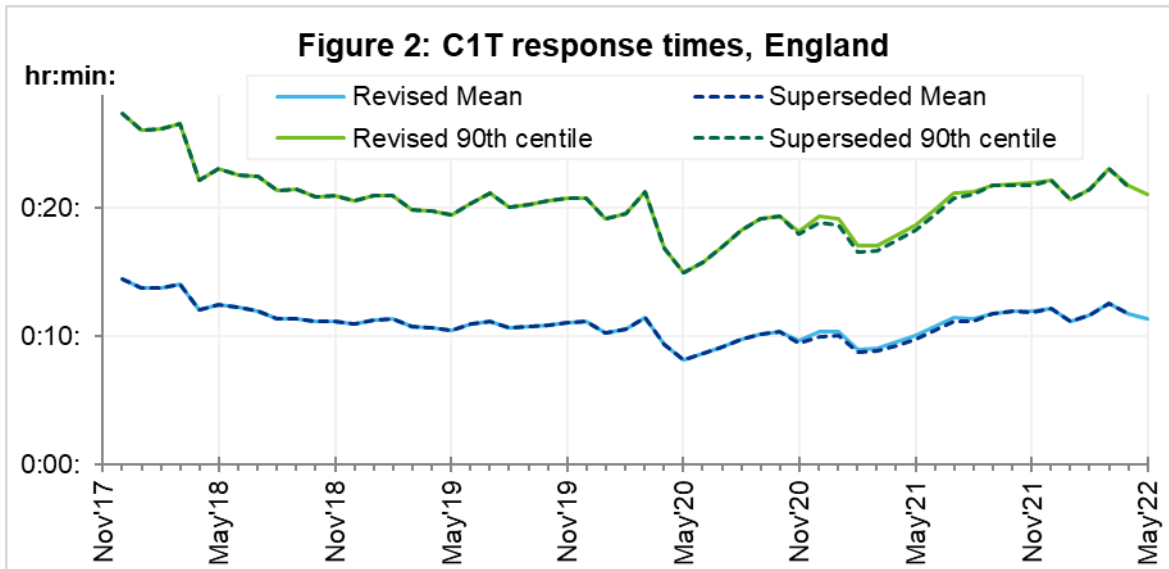


¹ Standards in the NHS Constitution Handbook: www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england

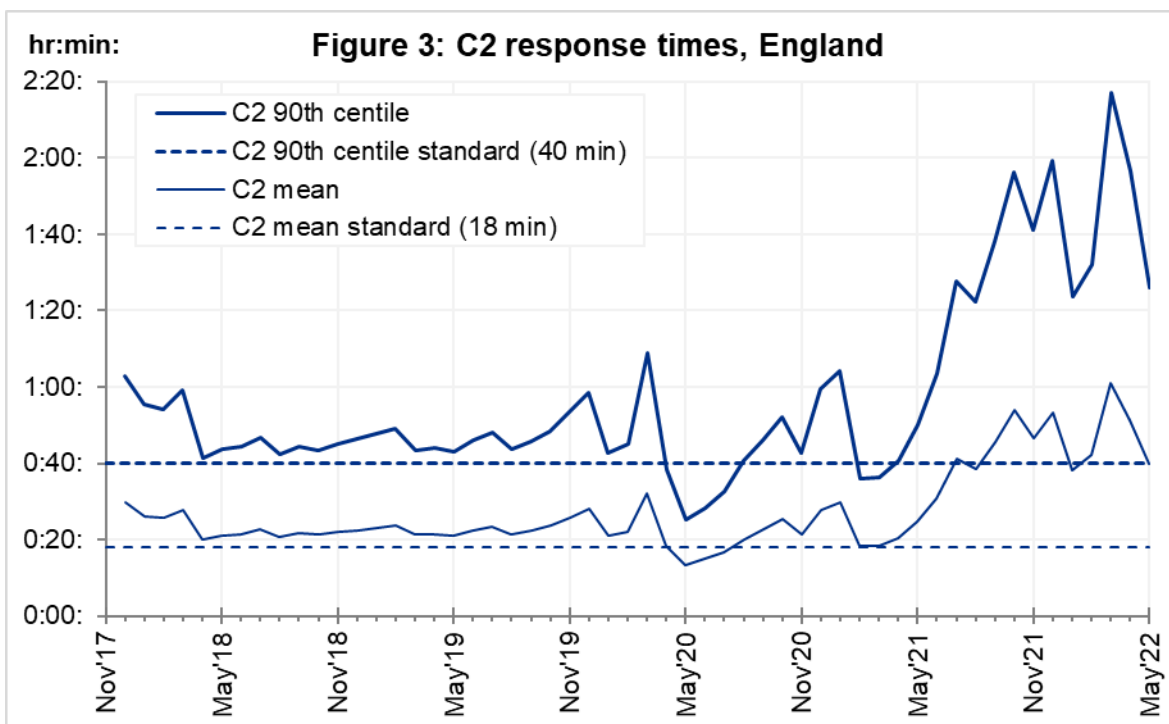
Revisions published today do not change any previously published C1 response times for England by more than 3 seconds.

C1T response times (the arrival of the conveying vehicle for C1 incidents with a patient conveyed) have been revised, particularly for East of England. At England level, the largest changes are to the 90th centiles for December 2020 and January 2021, which are now 32 seconds longer than when originally published (Figure 2).

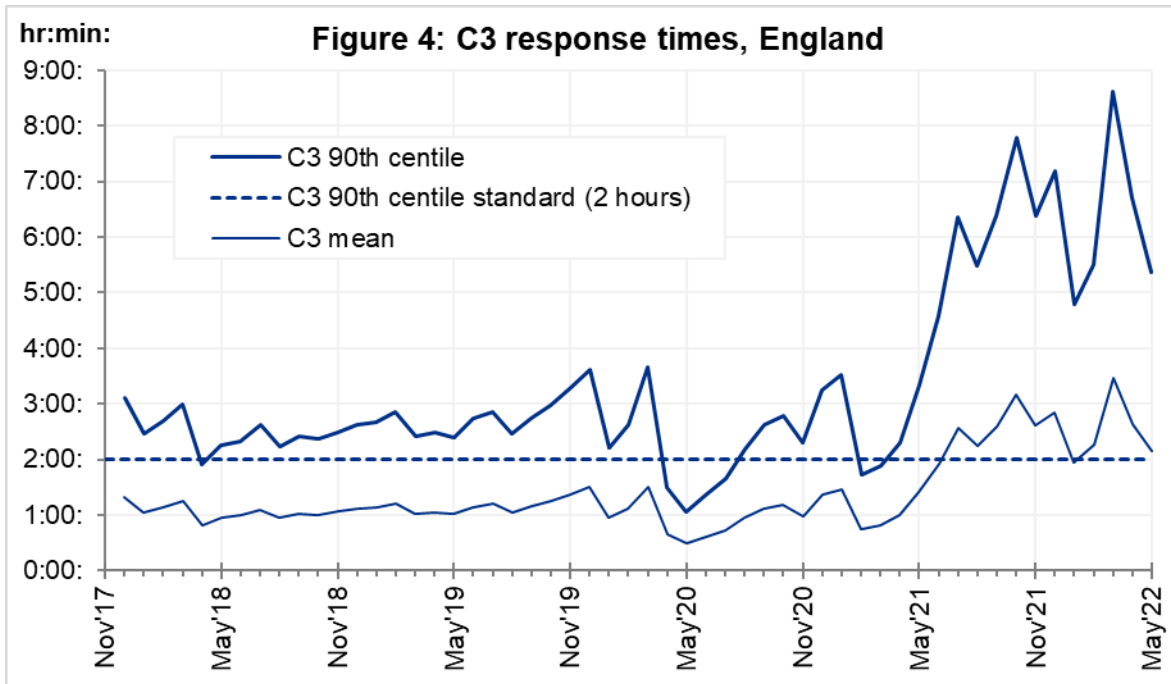
In May 2022, the mean for England was 11:20, and the 90th centile was 21:03.



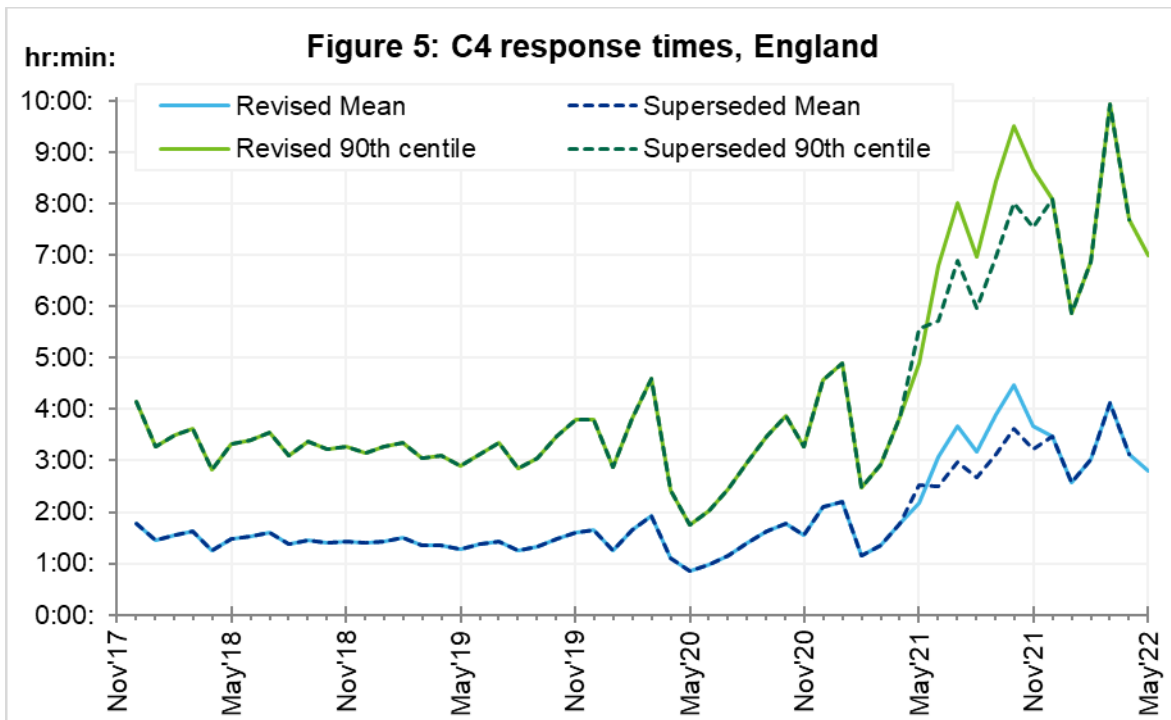
The C2 mean response time in May 2022 was 39:58, and the 90th centile was 1:25:52, so the 18- and 40-minute standards were not met (Figure 3). For C2 and C3 times, revisions were no more than 8 seconds for England.



For C3 (Figure 4), the May 2022 mean average response time was 2:09:32 and the 90th centile was 5:22:06. Both were shorter than in April 2022.



C4 data were unavailable for June to November 2021 for North West Ambulance Service (NWAS) but have now been supplied. The largest change at England level is to the 90th centile for October 2021, which is 9:29:47, rather than 8:01:16 as originally published (Figure 5); but still much longer than the three-hour standard.



1.2 Annual comparisons

Our published incident counts (indicator A7) for 2019-20, 2020-21, and 2021-22 respectively, are 8,783,204 (23,998 per day), 8,650,028 (23,699 per day), and 8,871,533 (24,306 per day). For comparisons, we should use per day figures, because 2019-20 is a leap year. In 2021-22, the number of incidents per day was 2.6% greater than in 2020-21 and 1.3% greater than in 2019-20.

It is difficult to compare data before 2017-18 (available in the Old AmbSYS Time Series spreadsheet on the website in section 3.1) with these latest figures, because we changed definitions in that year; but we remain confident that these latest three financial years had more incidents than all previous financial years.

The average C1 response times for England (A25) in 2019-20, 2020-21, and 2021-22 were 7:18, 7:03, and 8:39 respectively, so the 7-minute standard was not met in any year. The average C1 response time in 2021-22 was 23% longer than in 2020-21, when it was 3% shorter than in 2019-20.

The C2 mean response times for England (A31) in 2019-20, 2020-21, and 2021-22 are 23:50, 20:57, and 41:18 respectively. The 18-minute standard was also not met in any year (although, like the 7-minute standard, it was met in some individual months). The average C2 response time in 2021-22 was 97% longer than in 2020-21, when it was 12% shorter than in 2019-20.

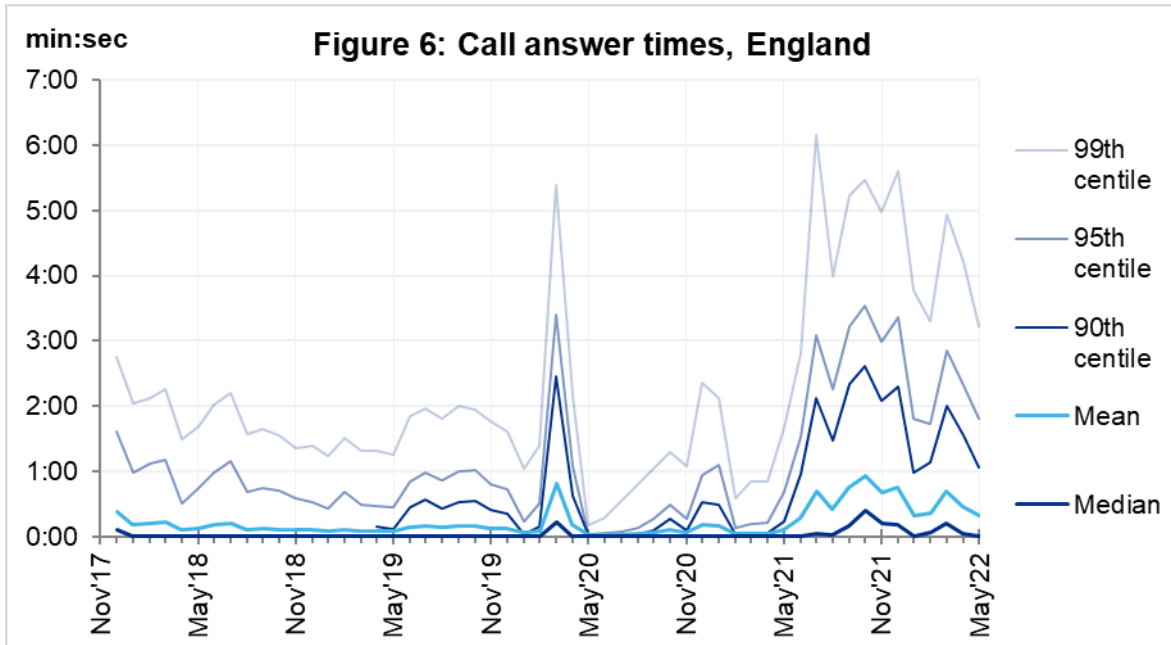
Annual comparisons should consider data quality, which we describe in footnotes in our time series spreadsheet. For data from April 2018 onwards, there are no footnotes affecting total incident counts or C1 and C2 mean response times, but there are for 999 calls answered (A1), which show that counts should be larger than published for Yorkshire from November 2019 to September 2021 inclusive, and for West Midlands in November 2020.

Excluding both Yorkshire and West Midlands, to enable a consistent comparison, the financial year 2021-22 had more 999 calls answered per day (23,243) than any previous financial year. This was 29% more than in 2020-21 (17,972) and 14% more than in 2019-20 (20,377). The large fall in calls to 999 answered in 2020, and larger rise in 2021, particularly in comparison to incidents, can be seen in Figure 7.

For incidents featuring conveyance to ED (A53), our footnotes show that we should exclude West Midlands when comparing before and after July 2019, exclude East Midlands when comparing before and after spring 2020, and exclude South East Coast when comparing before and after May 2020. Excluding all three, in 2021-22, 8,791 incidents per day ended in conveyance to ED, 2.5% higher than in 2020-21 (8,576) but 7.3% lower than in 2019-20 (9,486).

1.3 Other Systems Indicators

Figure 6 shows that the average, 90th centile, and 95th centile answer times for ambulance 999 calls in England peaked in October 2021, with the average at 56 seconds. The average reduced to 19 seconds for May 2022. Revisions do not affect any England data for these times.



In May 2022, per day, there were (Figure 7):

- 27.5 thousand calls to 999 answered, 4% fewer than in April 2022, but 7% more than in May 2021;
- 23.1 thousand incidents receiving a response from an ambulance service (whether on the telephone or on the scene), just over 1% more than the April 2022 figure;
- 12.0 thousand incidents where a patient was conveyed to an Emergency Department (ED), just over 3% more than the April 2022 figure.
- Revisions to these measures for England are small, with the largest for calls per day in June 2021, from 29,735 to 29,609.

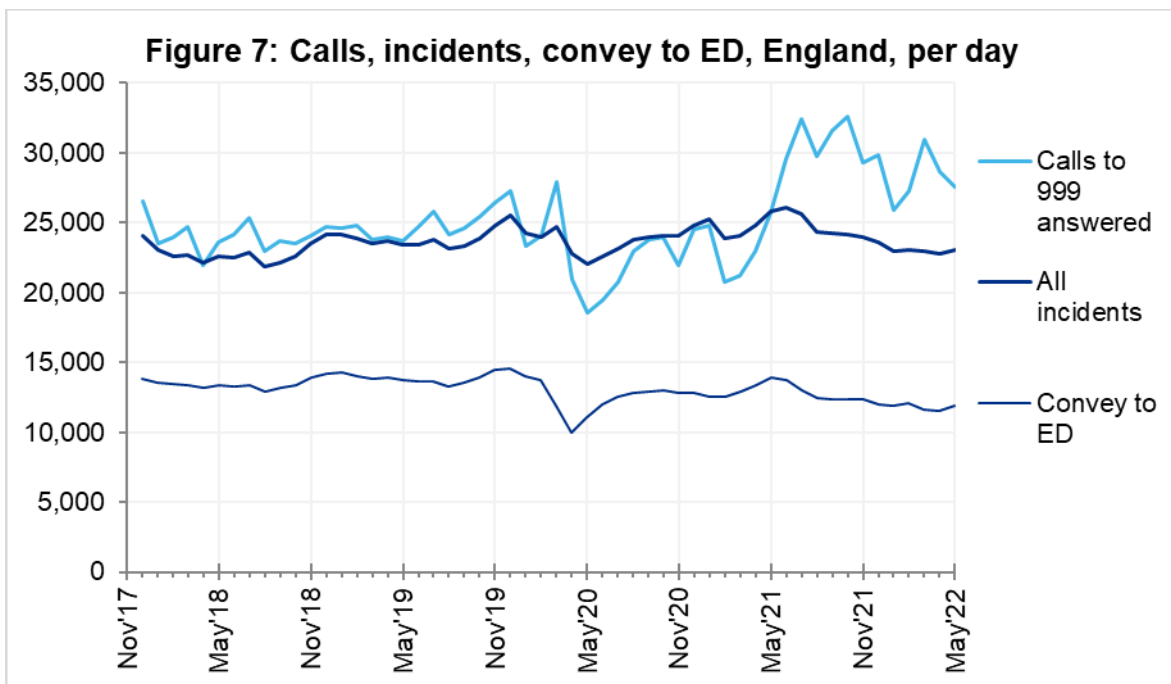
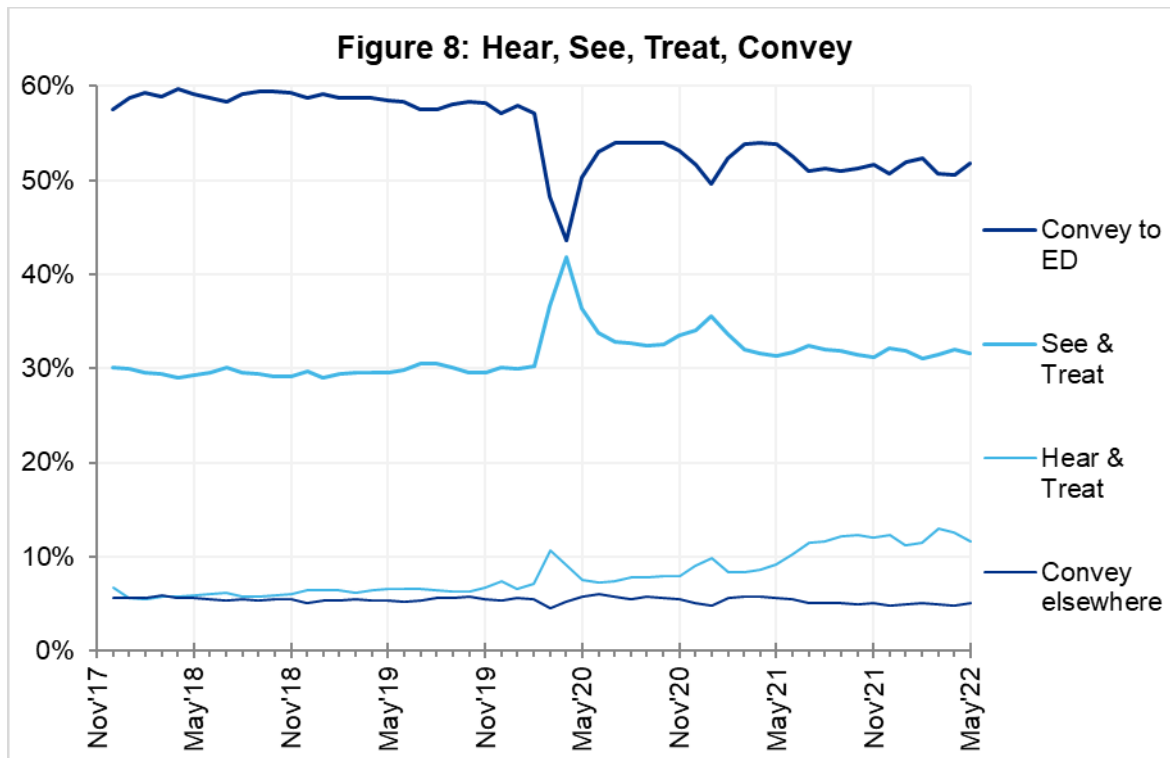


Figure 8 shows that in May 2022, 52% of incidents had a conveyance to ED, 5% had conveyance elsewhere, 32% were resolved on the scene (See & Treat) and 12% were resolved on the telephone (Hear & Treat). For England, Revisions to these measures are all 0.2 percentage points or less.



2. Ambulance Clinical Outcomes (AmbCO)

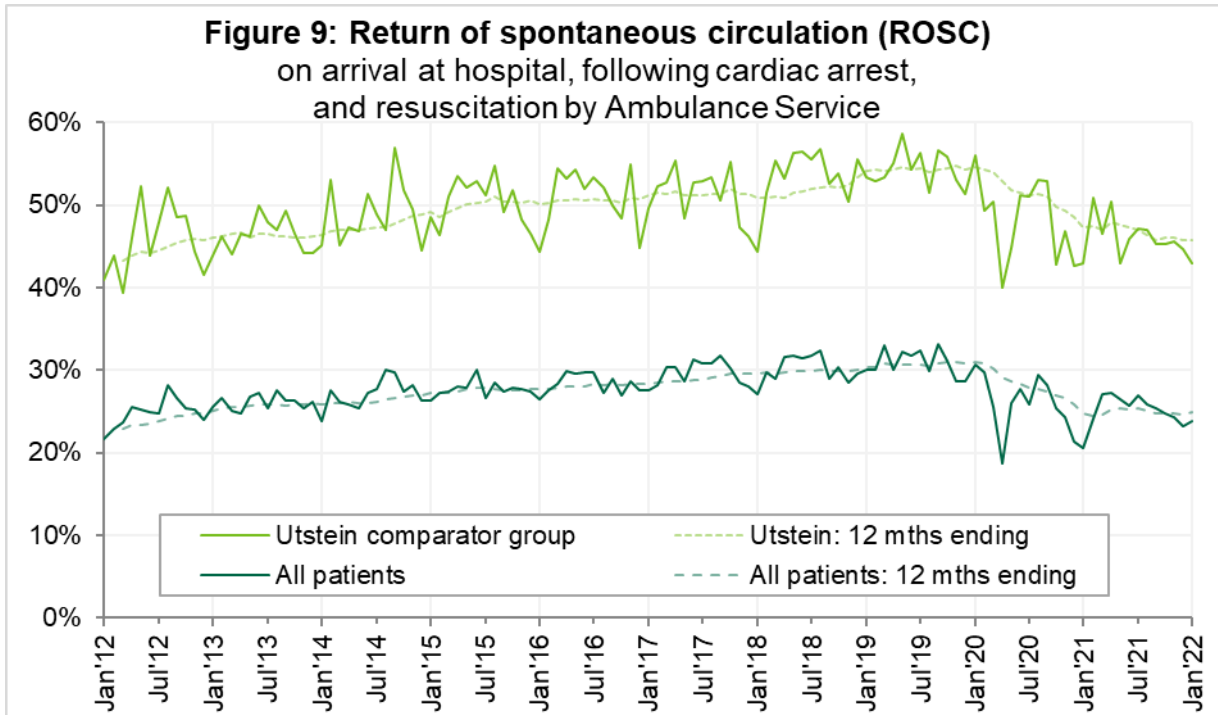
We continue to summarise data for STEMI (a type of heart attack) and cardiac arrest in this Statistical Note when we publish January, April, July, or October AmbCO data; stroke data in the following month; and sepsis data in the month after that.

2.1 Return of spontaneous circulation (ROSC) after cardiac arrest (Figure 9)

For the 3,070 patients in January 2022 with cardiac arrest and resuscitation by an ambulance service in England, 731 (23.8%) had ROSC on arrival at hospital, about 0.6% more than in December 2021. The January proportion was not significantly² different to the average for the year ending September 2021 (24.8%).

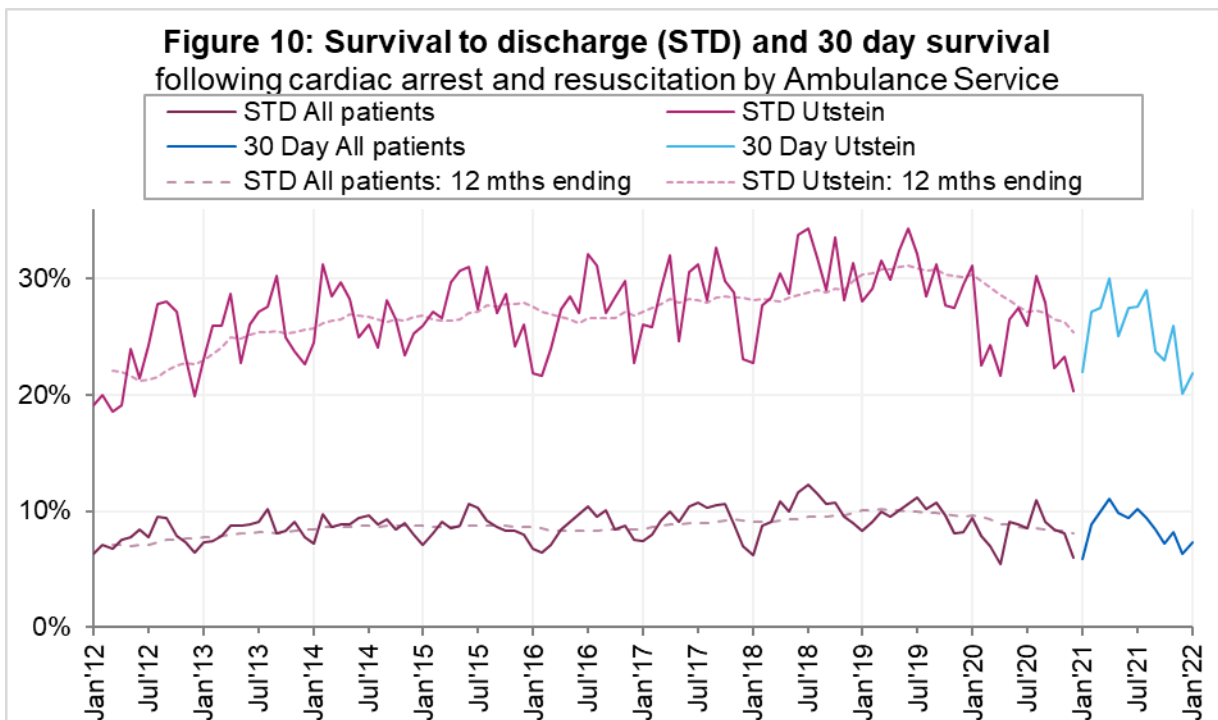
The Utstein comparator group comprises patients with an out-of-hospital cardiac arrest of presumed cardiac origin, where the initial rhythm was Ventricular Fibrillation or Ventricular Tachycardia, and the arrest was bystander witnessed. This group therefore have a better chance of survival. In January 2022, of the 3,070 cardiac arrest patients, 466 met the Utstein criteria, and of those, 200 (42.9%) had ROSC on arrival at hospital, 1.8% less than the proportion for the previous month (44.7%).

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



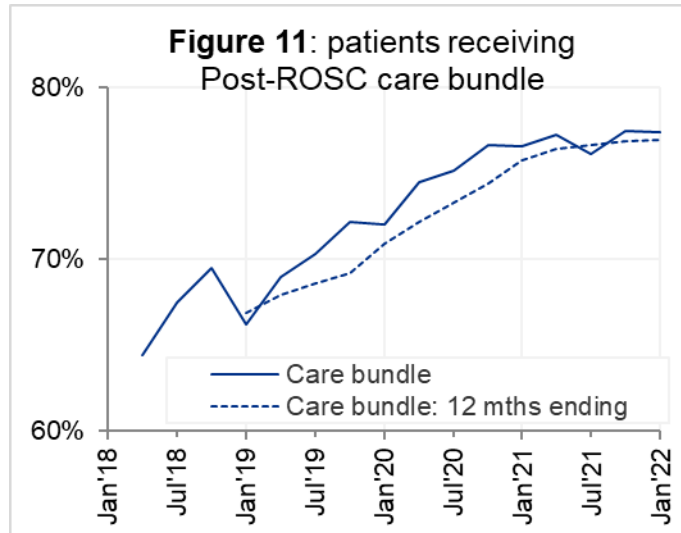
2.2 Survival following cardiac arrest (Figure 10)

Of 3,002 resuscitated cardiac arrest patients in England in January 2022, 219 (7.3%) survived for 30 days. For the Utstein group, 96 of 439 (21.9%) survived for 30 days. Figure 10 shows that survival from cardiac arrest is higher in summer.



2.3 Cardiac arrest care bundle (Figure 11)

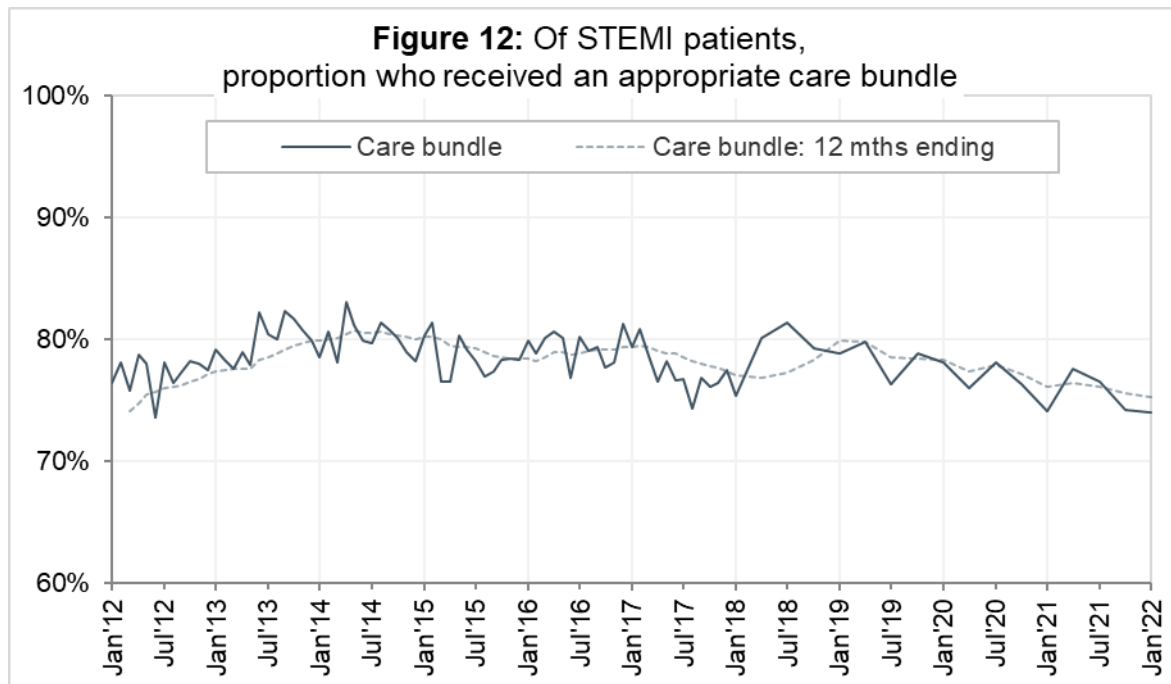
There were 1034 resuscitated cardiac arrest patients who had ROSC on scene (and not necessarily on arrival at hospital) in January 2022, of which 800 (77%) received the appropriate care bundle, practically the same as for the year ending September 2021.



2.4 ST-segment elevation myocardial infarction (STEMI)

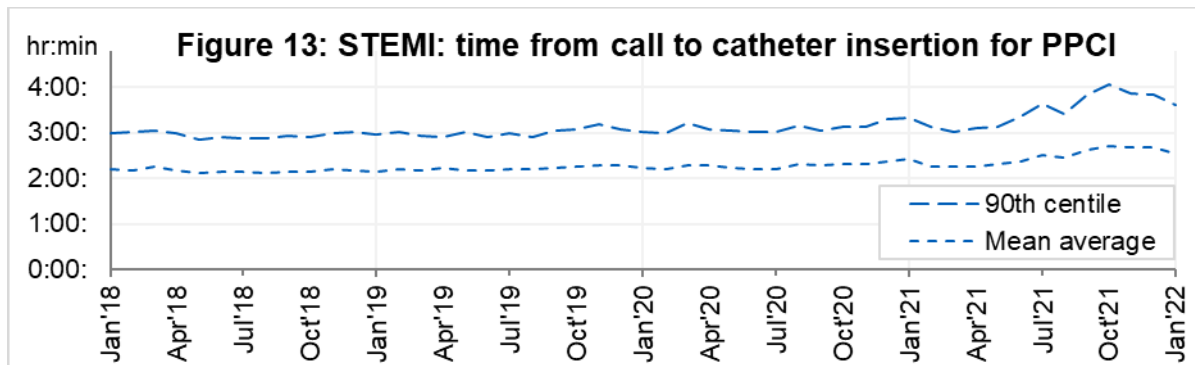
STEMI is a type of heart attack, determined by an electrocardiogram (ECG) test. Early access to reperfusion, where blocked arteries are opened to re-establish blood flow, and other assessment and care interventions, are associated with reductions in STEMI mortality and morbidity.

Of 1,687 patients with an acute STEMI in England in January 2022, 1,248 (74.0%) received an appropriate care bundle from the ambulance service (Figure 12), not significantly³ different to the average for the year ending September 2021 (76.1%).



³ Calculated using Student's t-test with 95% significance.

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 13)



In England in January 2022, the mean average time from call to catheter insertion was 2 hours 31 minutes, and the 90th centile was 3 hours 37 minutes, both lower than the previous month, but still higher than all months of 2018, 2019, and 2020.

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 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.

3.3 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 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.

3.4 Related statistics

NHSEI publishes ambulance handover delays at Emergency Departments of over 30 minutes during winter 2012-13 to 2014-15 and winter 2017-18 to 2021-22 at 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

Northern Ireland: www.health-ni.gov.uk/articles/emergency-care-and-ambulance-statistics

3.5 Contact information

Media: NHSEI Media team, 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; 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.