Statistical Note: Ambulance Quality Indicators (AQI)

For all four categories C1-C4, the average response time in November 2021 for England was shorter than in October 2021, but longer than in all previous months for which England data are available. The count of 999 calls answered per day was fewer than in the previous five months, but more than in all earlier months.

For patients with resuscitation attempted by an Ambulance Service in July 2021, the proportion who survived for 30 days was more than the 2021 average.

1. Ambulance Systems Indicators

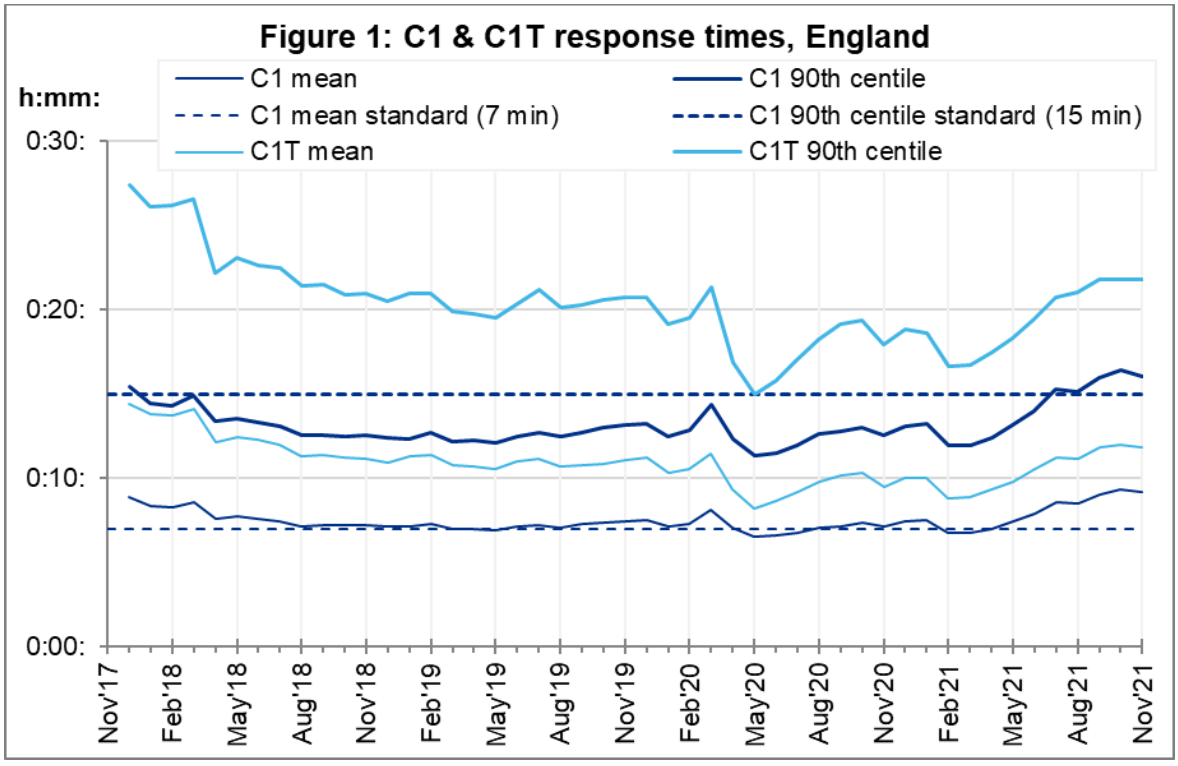
Today we publish our scheduled revisions to Systems Indicators (AmbSYS) by Ambulance Services. Revisions go back to September 2019 for London, April 2020 for East of England, and April 2021 for West Midlands and South East Coast.

1.1 Response times

In November 2021, the England mean average response time for Category C1, the most urgent incidents, was 9:10, and the C1 90th centile was 16:04, so neither the 7-minute mean nor the 15-minute 90th centile standards[1] were met. For C1T (response times for arrival of transporting vehicle, for C1 patients transported), the mean was 11:50, and the 90th centile was 21:49 (Figure 1).

Revisions to England C1 and C1T times are all 1 second or less.

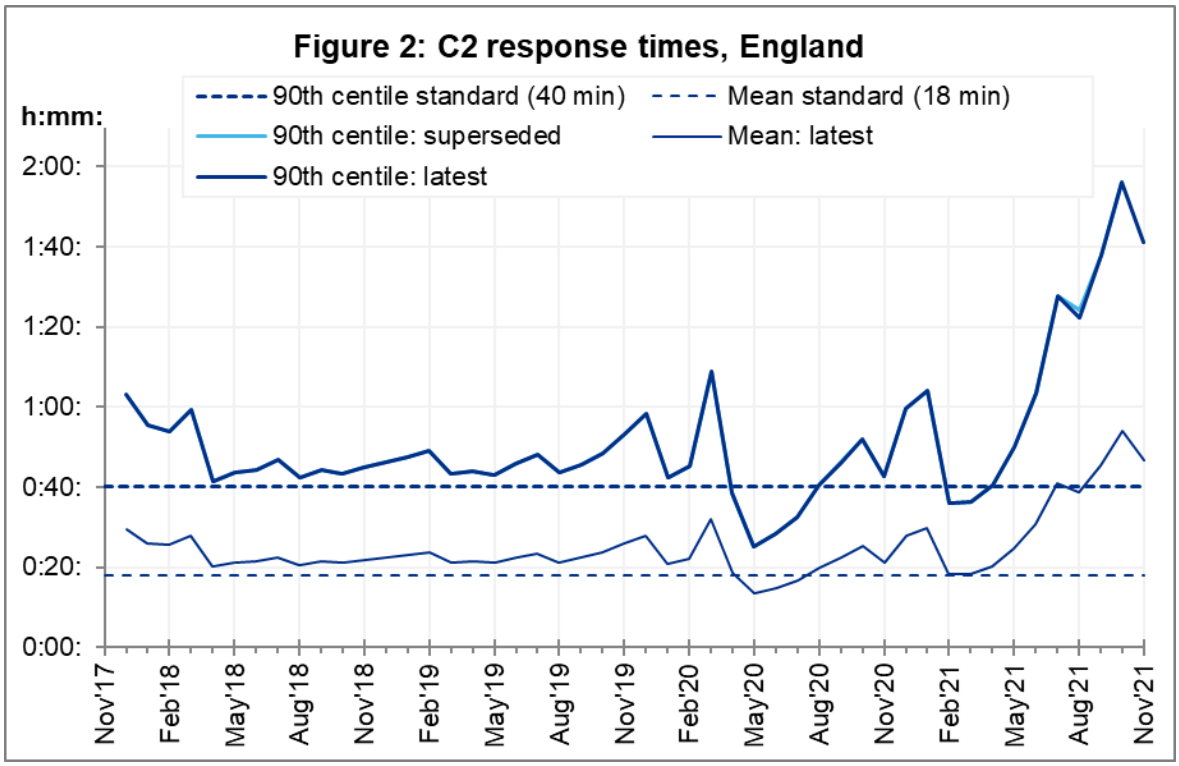
Figure 1: C1 & C1T response times, England



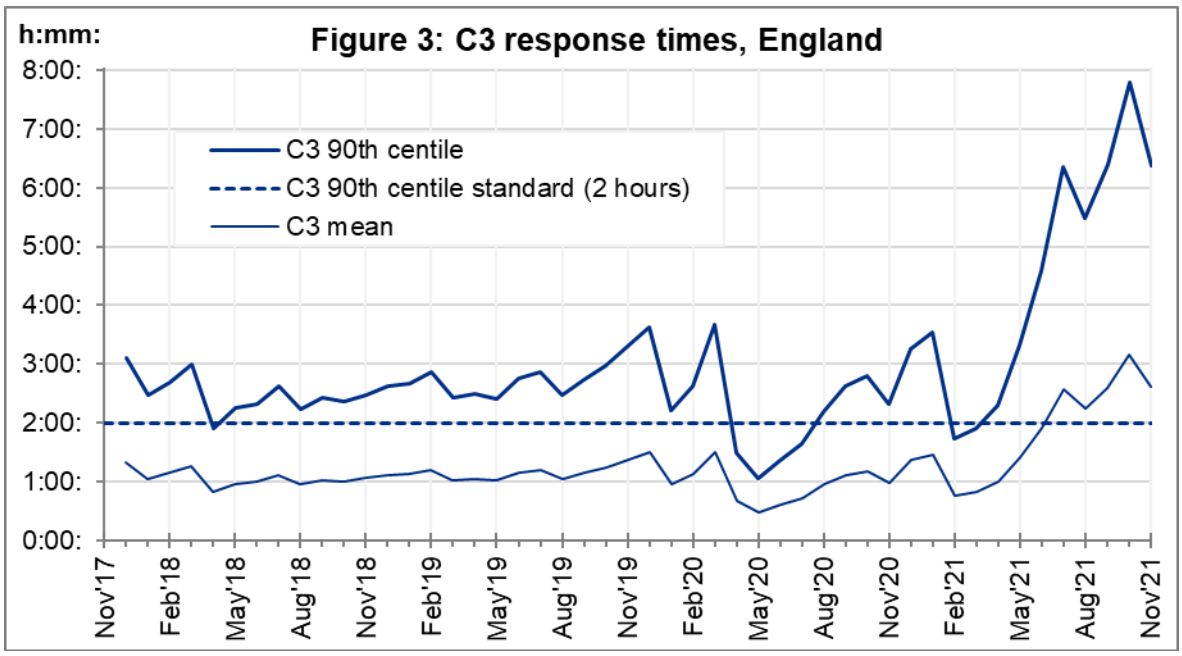
[1] Standards in the NHS Constitution Handbook: www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england/the-handbook-to-the-nhs-constitution-for-england

For C2 in England, the average response time in November 2021 was 46:37, and the 90th centile was 1:40:57, so the 18- and 40-minute standards were not met.

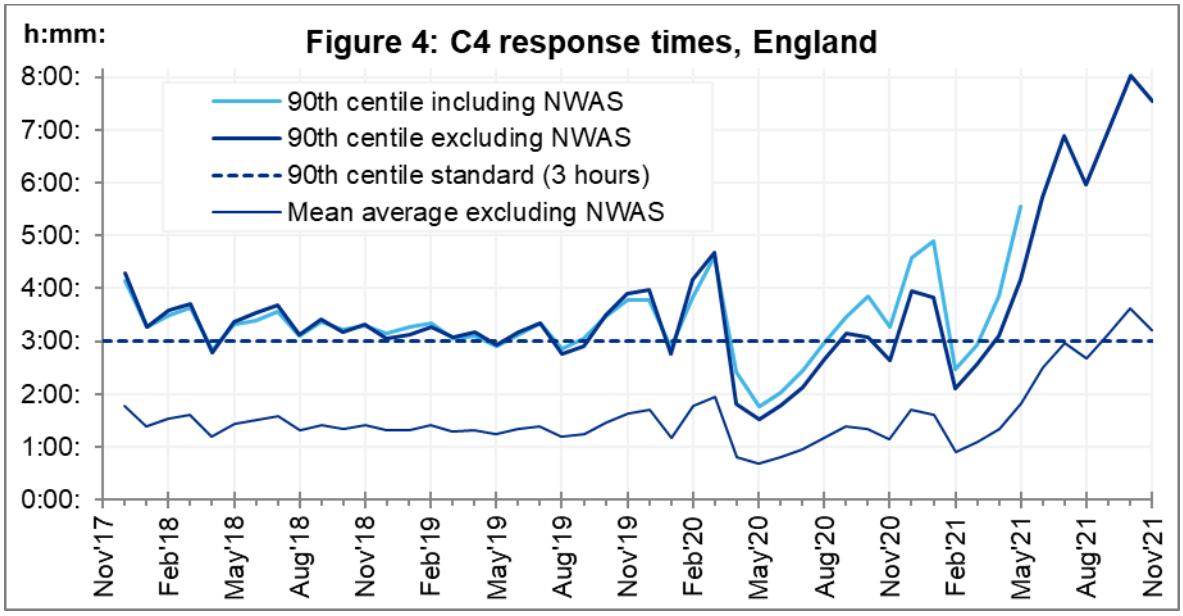
Of Figures 1-6, revisions are only perceptible in Figure 2. The England August 2021 C2 90th centile response time is 1:22:21, not 1:24:18 as we previously reported.



For C3, the November 2021 mean average response time was 2:37:08, fractionally more than in September 2021. The 90th centile was 6:23:03, fractionally less than in September 2021, so the two-hour standard was not met. (Figure 3)



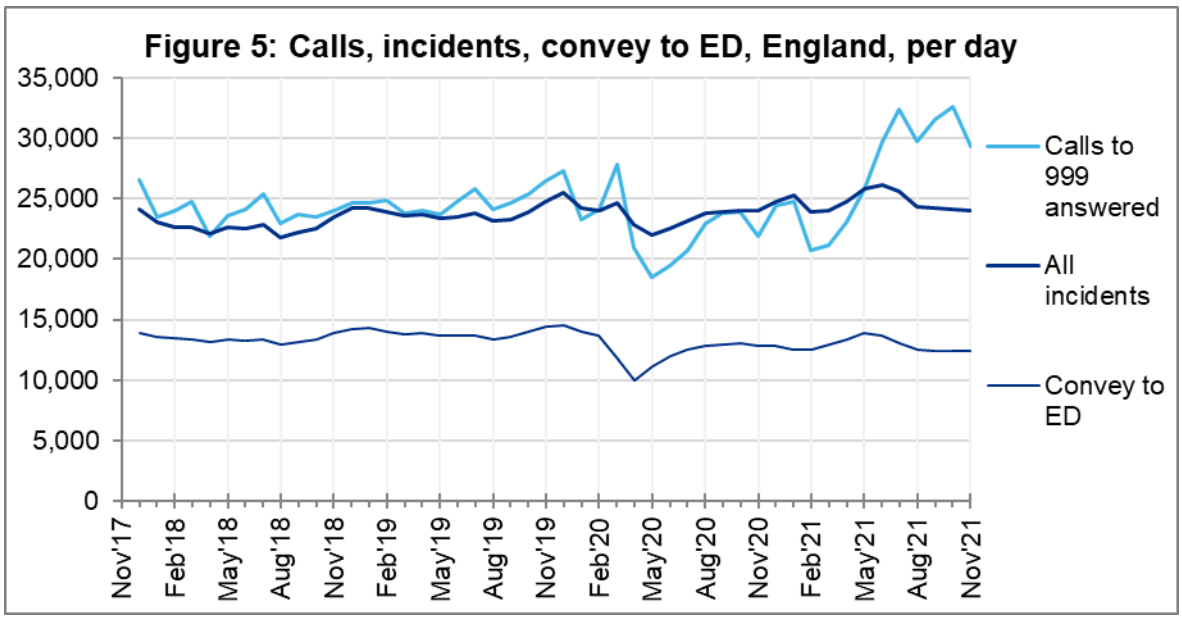
C4 information for North West Ambulance Service (NWAS) is unavailable after May 2021. The dark lines in Figure 4, for England excluding NWAS, show the C4 mean (3:12:49) and C4 90th centile (7:32:38) in November 2021 were less than in October 2021 but more than in all previous months.



1.2 Other Systems Indicators

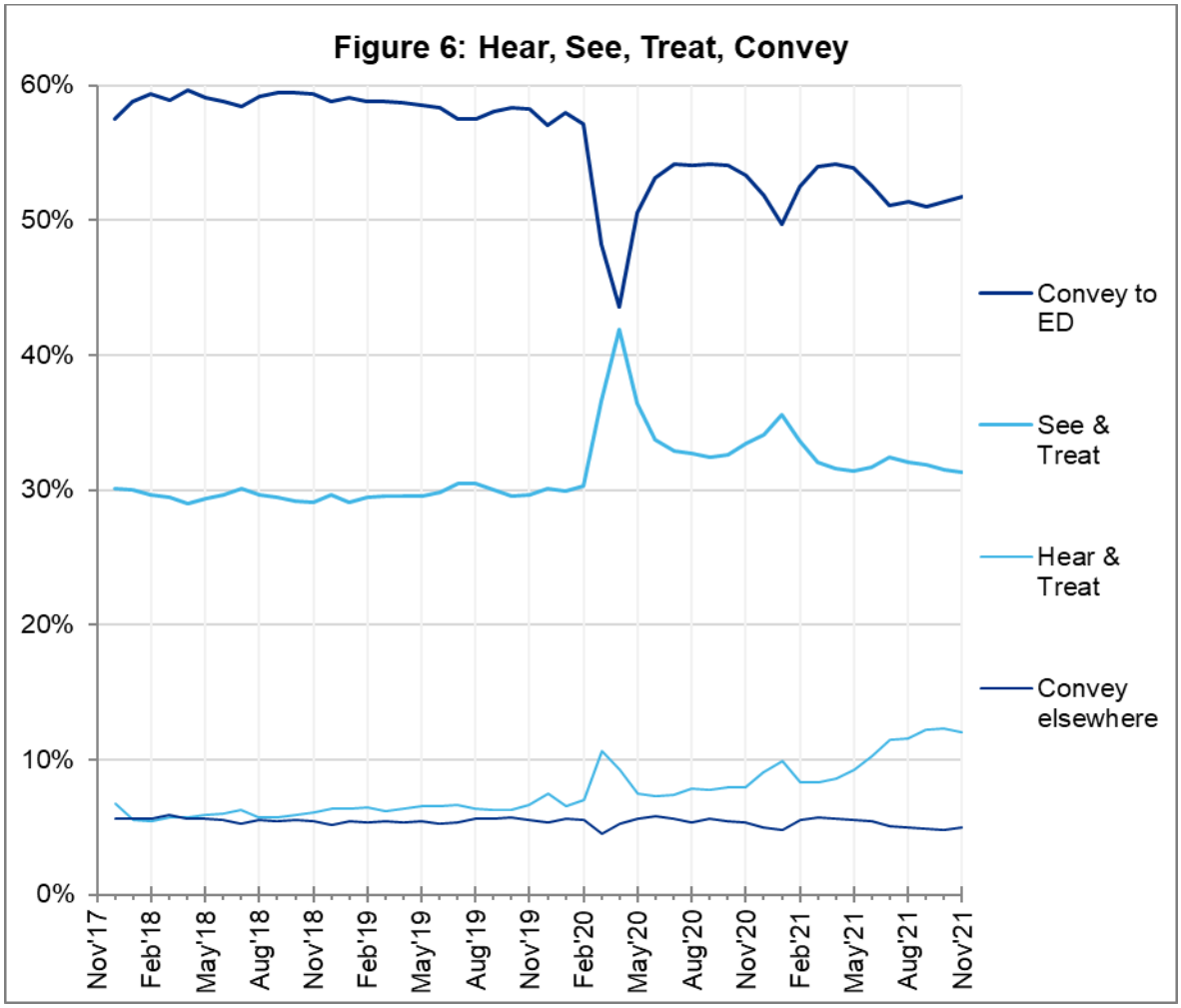
In November 2021, per day, there were (Figure 5):

- 29.3 thousand calls to 999 answered, 10% less than in October 2021, but 11% more than in November 2019, and 34% more than in November 2020;
- 24.0 thousand incidents that received a response (whether on the telephone or on the scene) from an ambulance service, 0.6% less than in October 2021;
- 12.4 thousand incidents where a patient was conveyed to an Emergency Department (ED), 0.1% more than in October 2021.



The proportion of incidents with conveyance to ED in November 2021 was 51.7%, which was 0.4% more than in October 2021. Other proportions changed less, with 5.0% conveyance to non-ED, 31.3% resolved at the scene (See & Treat), and 12.0% resolved on the telephone (Hear & Treat) in November 2021. (Figure 6)

Figure 6: Hear, See, Treat, Convey



Trusts have not revised the counts of 999 calls answered (indicator A1) or call answer times (A2 to A6), but most other indicators have been revised by at least one trust, even if only slightly.

The largest revisions are on section 136 incidents (A106 to A110), and we are pleased to report that there are no longer any known discontinuities in these data.

Revisions from East of England have reduced the count of incidents identified as Category 1 using standardised Nature of Call questions (A13), and changed the identification times (A14 to A16).

The count of incidents in London for May to August 2021 with cardio-pulmonary resuscitation (CPR) by a bystander (A49) have been revised upwards by an average of 12 per cent, with smaller revisions to the CPR start times (A50 to A52).

Besides these, and the revision shown in Figure 2, all other revisions are by less than 1% at England level.

2. Ambulance Clinical Outcomes (AmbCO)

2.1 Cardiac arrest

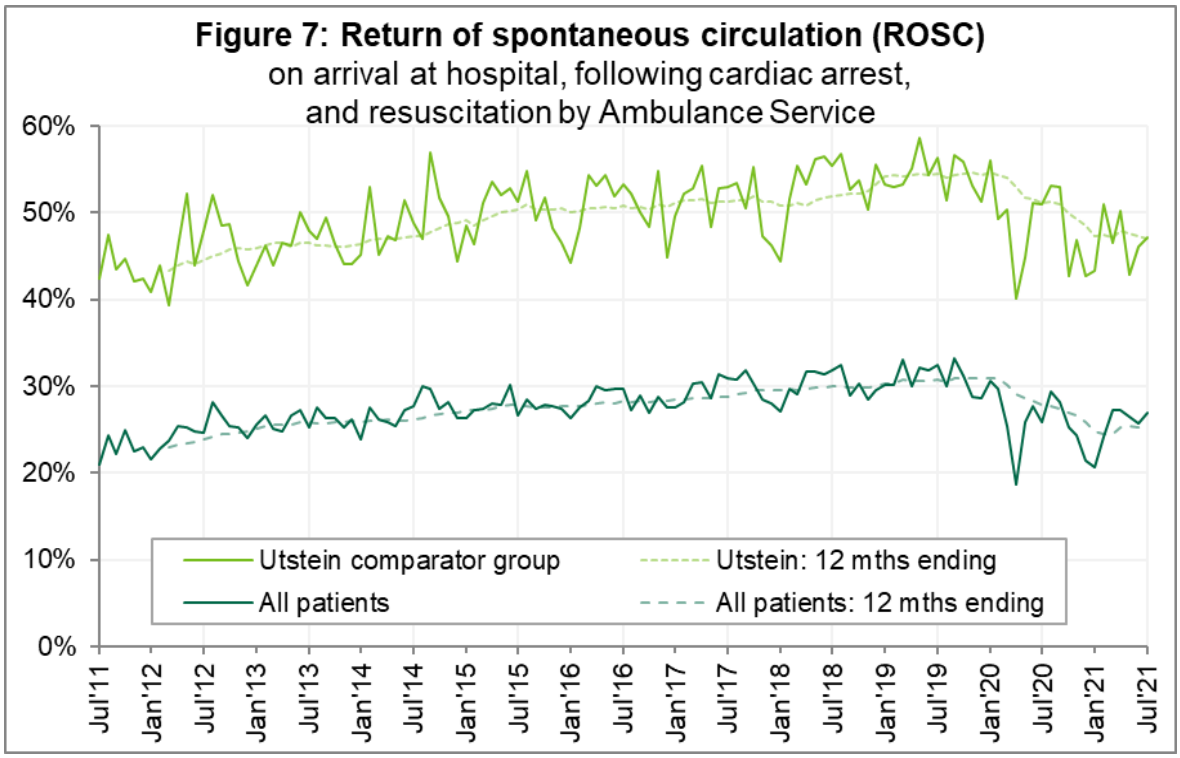
In England in July 2021, of the 2,600 patients with resuscitation commenced or continued by ambulance staff following a cardiac arrest out of hospital, 702 (27.0%) had return of spontaneous circulation (ROSC), with a pulse, on arrival at hospital (Figure 7). This July proportion was not significantly[2] different from the 2020-21 proportion (24.5%).

Of the 2,538 for who survival data are available, 259 (10.2%) survived for 30 days (Figure 8), more than in most of the previous months of 2021. Our previous measure of survival to discharge from hospital was higher in each July 2013 to 2020 than the average of the corresponding financial year.

The Utstein comparator group[3] 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.

In July 2021, 200 of 424 (47.2%) such patients had ROSC. In 2020-21 ROSC was 47.1% for the Utstein comparator group. The July proportion was not significantly different from this percentage. Where survival was known, 111 of 403 (27.5%) survived for 30 days.

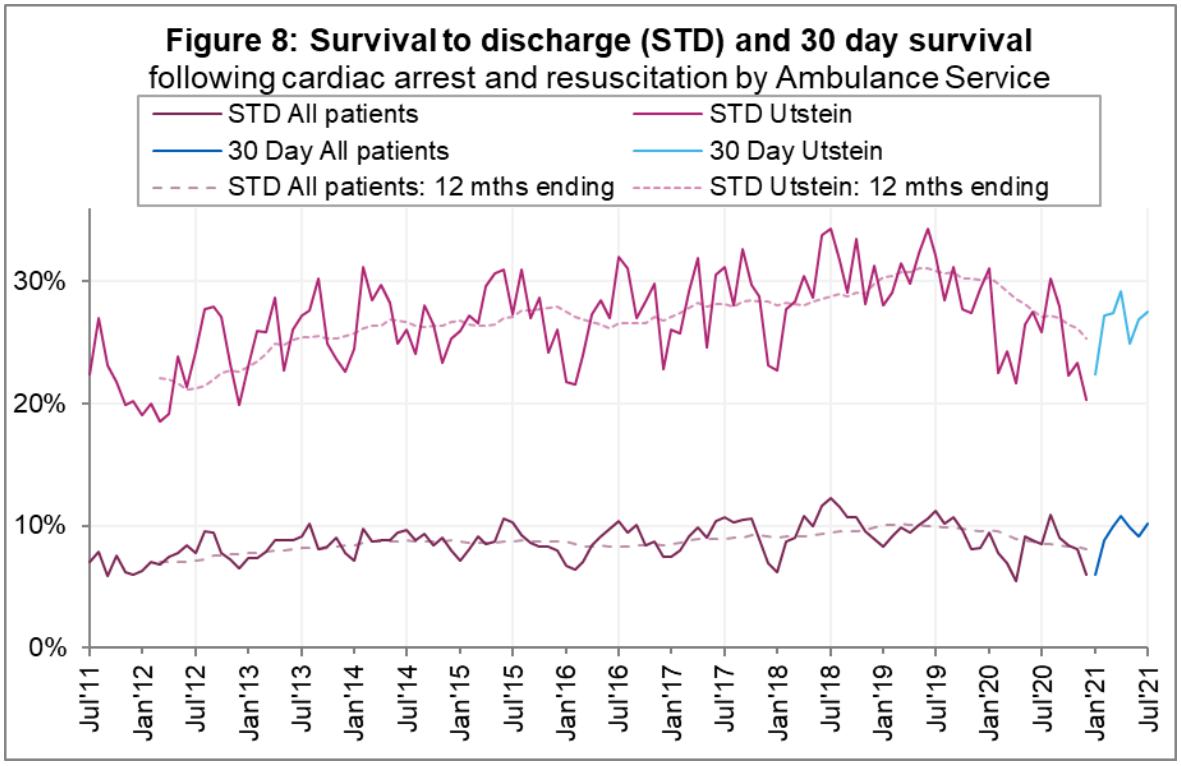
Figure 7: Return of spontaneous circulation (ROSC)
on arrival at hospital, following cardiac arrest,
and resuscitation by Ambulance Service



[2] Significance tests in this document use Student's t-test with 95% significance.

[3] 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

Figure 8: Survival to discharge (STD) and 30 day survival
following cardiac arrest and resuscitation by Ambulance Service



For patients with ROSC on scene in July 2021, 76.1% received the appropriate care bundle, not significantly different to the year ending March 2021 (76.0%).

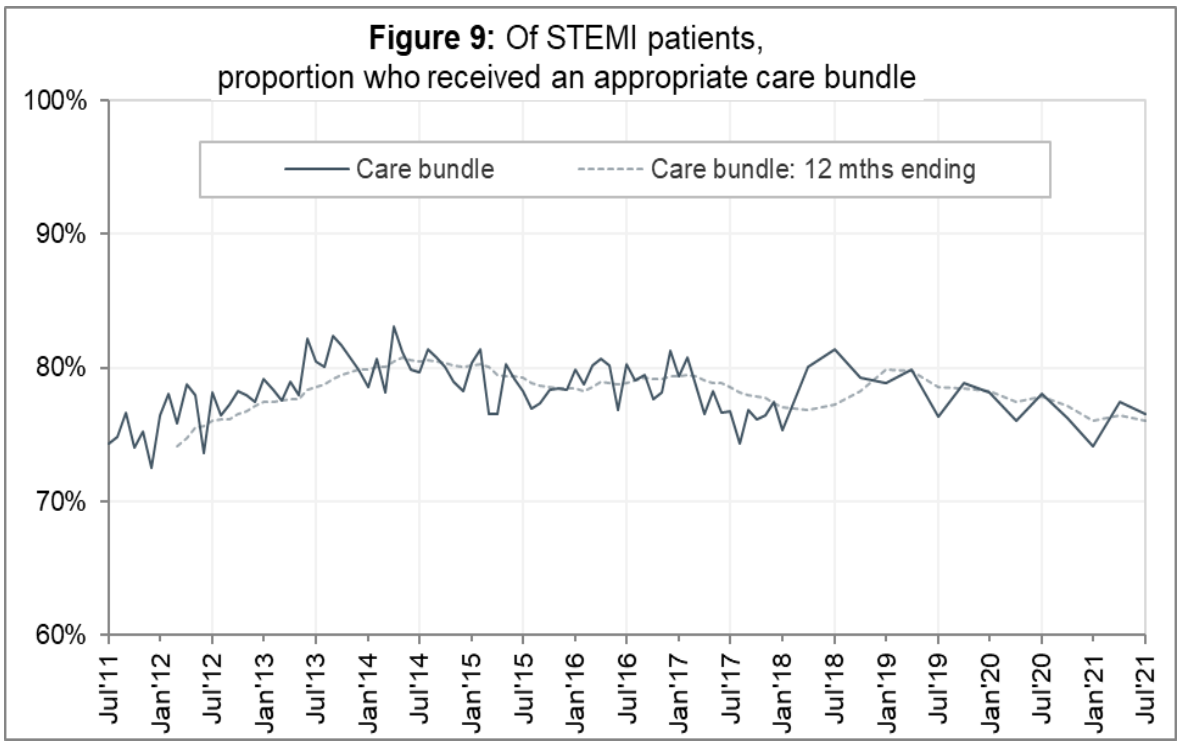
2.2 ST-segment elevation myocardial infarction (STEMI)

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 July 2021, for time from call to catheter insertion, the mean average was 2 hours 30 minutes, and the 90th centiles averaged 3 hours 36 minutes. Both were the longest since they were first collected in November 2017.

Figure 9 shows that of patients with an acute STEMI in England in July 2021, the proportion that received an appropriate care bundle was 76.6%, not significantly different to the average for the year ending March 2021 (76.1%).



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 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 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.

3.4 Related statistics

NHSEI publishes ambulance handover delays at Emergency Departments of over 30 minutes 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.

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.