

## Statistical Note: Ambulance Quality Indicators (AQI)

The latest Systems Indicators for July 2018 for Ambulance Services in England showed that, as in May and June, one of the six response standards in the Handbook<sup>1</sup> to the NHS constitution was met.

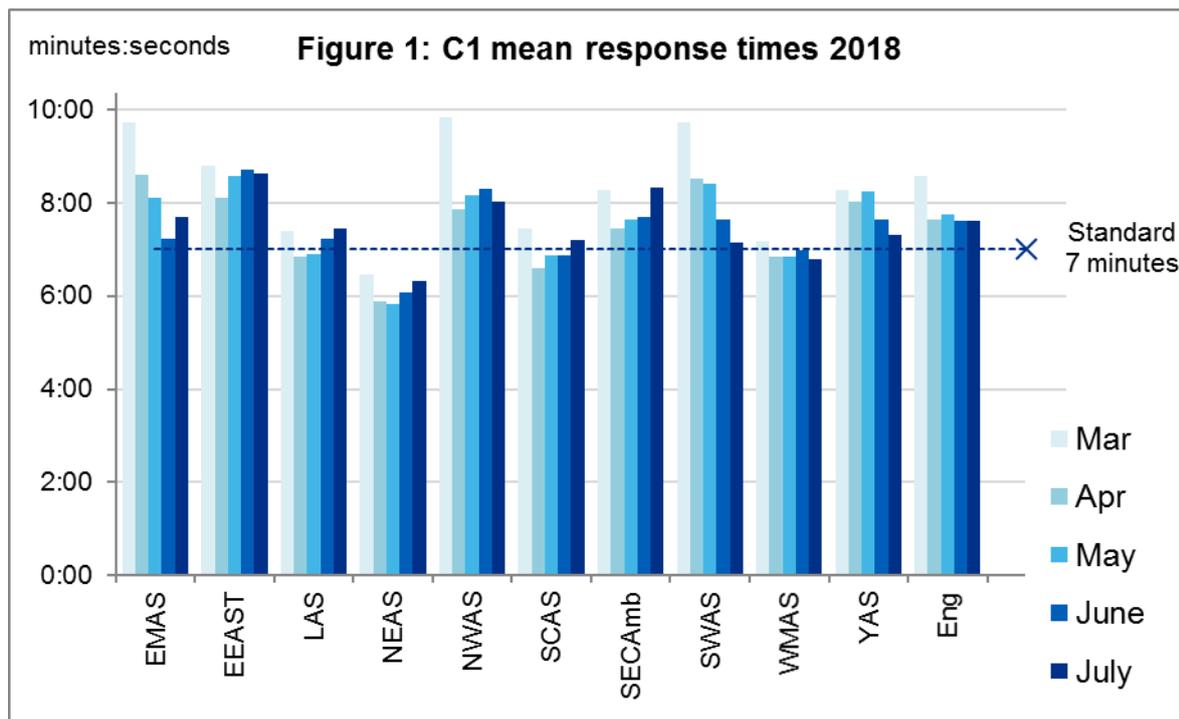
Systems Indicators for January to June 2018 have been revised, but at England level, this does not affect in which of these months each standard was met.

### 1. Systems Indicators

#### 1.1 Response times

In July 2018, the average of the C1<sup>2</sup> 90th centile response times across England was the shortest ever; but the C2, C3 and C4 averages were longer than in June.

The C1 mean across England was 7 minutes 37 seconds in July 2018, the same as in June 2018, and shorter than in all other months since recording throughout England<sup>3</sup> began in December 2017. Two Services met the C1 mean standard of 7 minutes in July 2018: North East (NEAS) and West Midlands (WMAS).

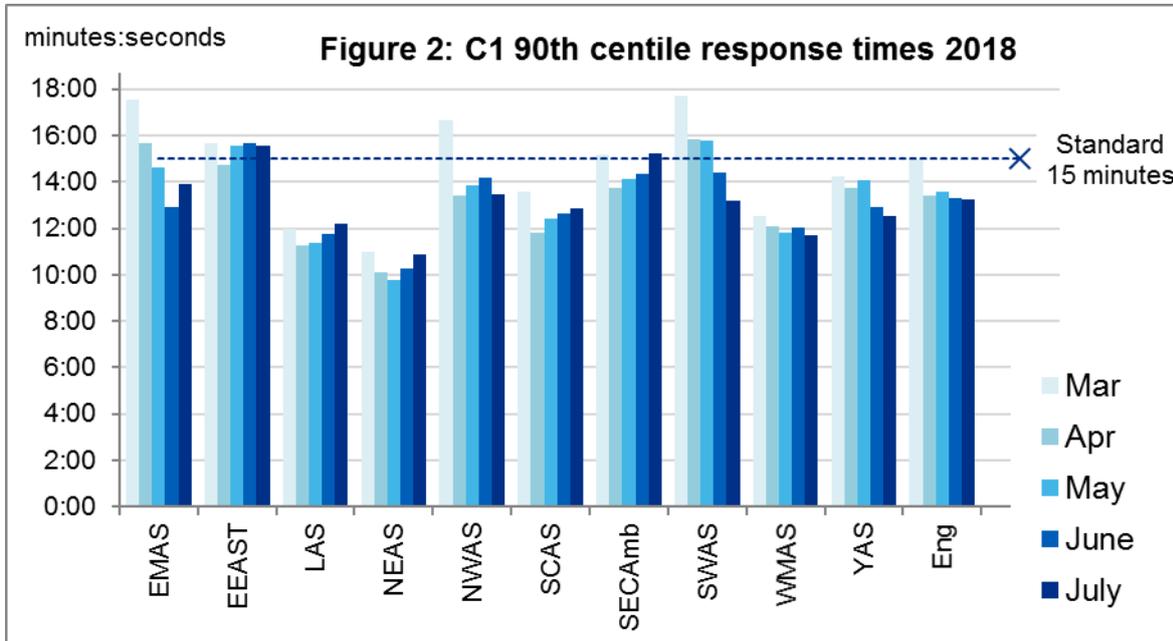


<sup>1</sup> Ambulance standards are in the September 2017 addendum to the Handbook to the NHS Constitution: [www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england](http://www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england)

<sup>2</sup> Categories introduced across England in 2017: [www.england.nhs.uk/urgent-emergency-care/arp](http://www.england.nhs.uk/urgent-emergency-care/arp)

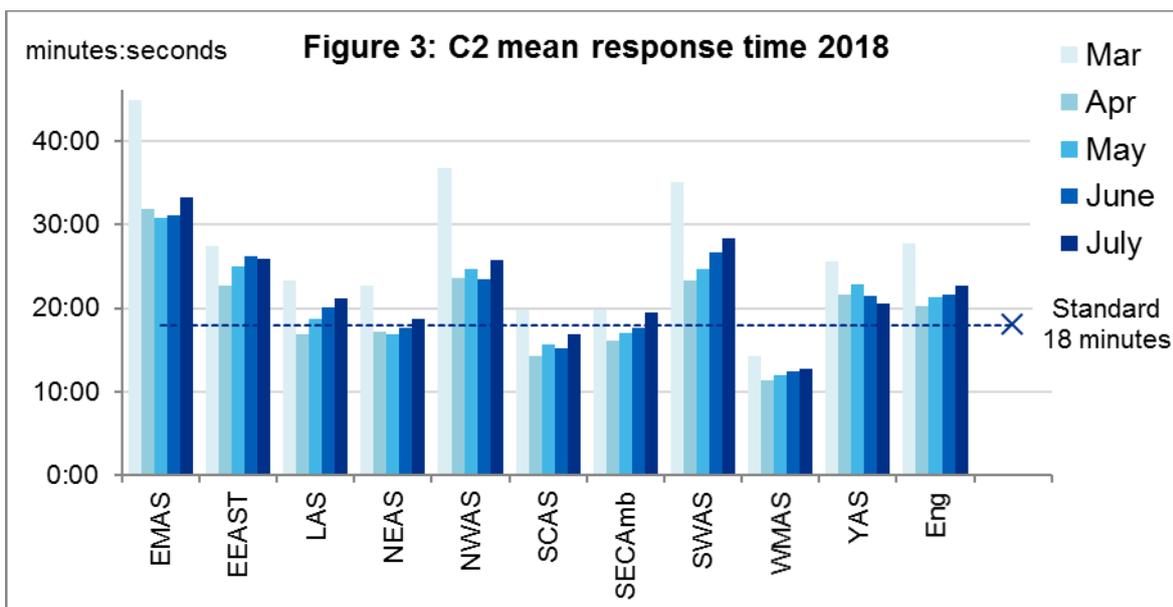
<sup>3</sup> The Isle of Wight (IOW) Ambulance Service has provided data from April 2018, including response times against the new categories C1 to C4. However, operationally, it is still using the old Red 1 / Red 2 / Green categories, so its response times will reflect the old category used at the time of the incident, rather than the new category that the incident corresponds. In this Statistical Note, we include IOW in England data from April; but exclude IOW in charts and descriptions of which trusts met the standards, or had the shortest / longest response time.

The standard for the 90th centile response time for Category C1 (Figure 2) is 15 minutes. The average 90th centile across England was 13:15 in July 2018, the shortest ever. It ranged from 10:52 for NEAS to 15:35 for East of England (EEAST). Eight Services met the standard in July, one less than in June.



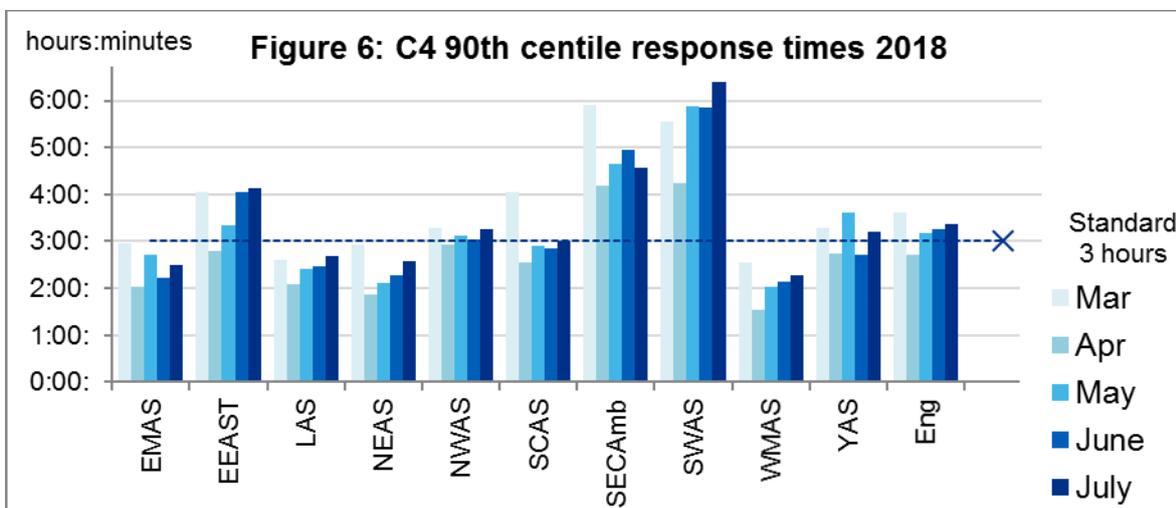
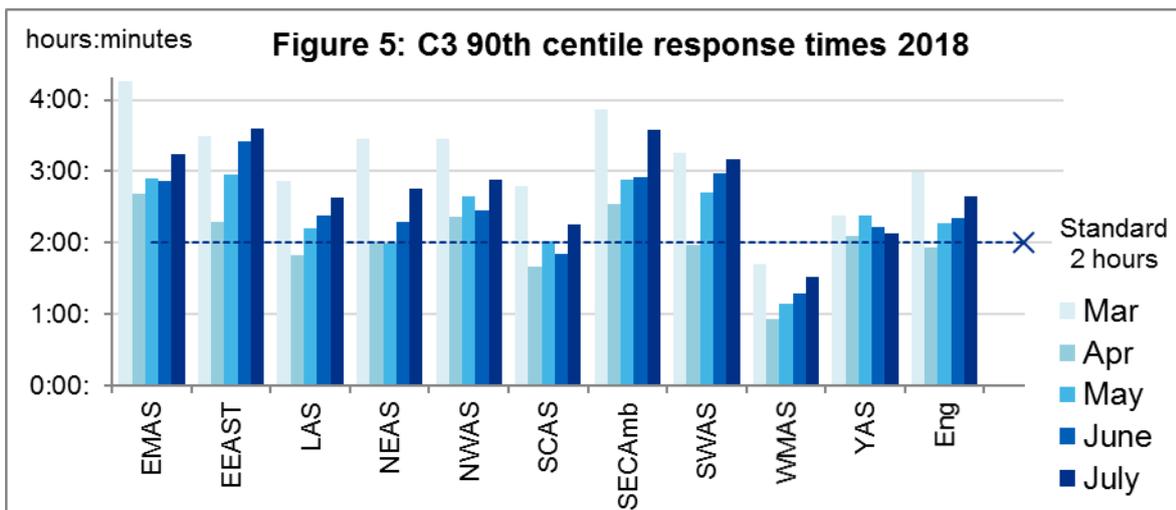
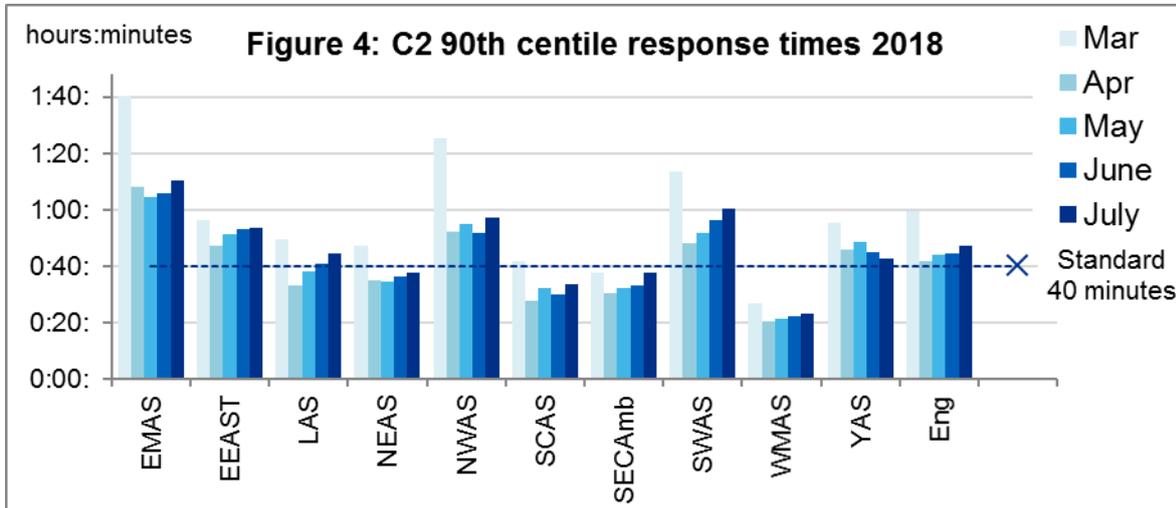
The C2 mean average response time for England was 22:41 in July 2018. Like the averages of the C2, C3, and C4 90th centiles, this was longer than the standard (18:00), and longer than in April, May and June, but shorter than in February and March.

Figure 3 shows that WMAS and South Central (SCAS) met the C2 mean standard in July. The longest average response time was 33:17 for East Midlands (EMAS).



In July, the average 90th centile response time across England was 47:10 for C2 (Figure 4), 2:38:50 for C3 (Figure 5), and 3:22:25 for C4 (Figure 6). Each was longer than the standards of 40:00, 2:00:00, and 3:00:00 respectively.

WMAS met all three of the C2, C3, and C4 90th centile standards; NEAS met two; and London (LAS), EMAS, South East Coast (SECamb) and SCAS met one.



## 1.2 Other Systems Indicators

The mean average call answer time in July was 13 seconds, continuing the increase from 6 seconds in April.

In July 2018, per day, there were:

- 25.4 thousand calls to 999 answered per day, an increase of 5% on June;
- 22.8 thousand incidents per day that received a response from an Ambulance Service, an increase of 2% on June;
- 13.3 thousand incidents per day where a patient was transported to an Emergency Department (ED), an increase of 1% on June.

The proportion of incidents where a patient was transported to ED was 58.5% in July. All earlier months of 2018 had a higher proportion, although always less than 60%. Other incidents in July comprised 5.5% where a patient was transported elsewhere, 30.4% where patients were attended but not transported, and 5.7% resolved on the telephone.

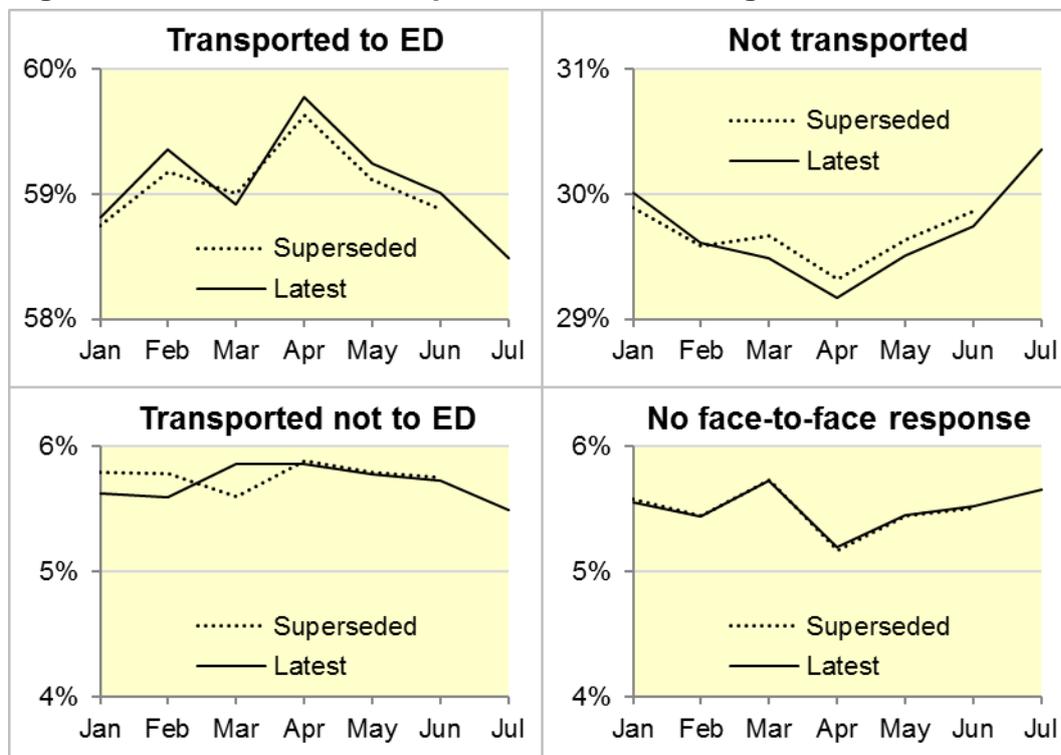
## 1.3 Revisions

Every Trust except NEAS has supplied us with revisions to data for January to June 2018, which are included in the data in Sections 1.1 and 1.2 above.

The only item not revised for any Trusts and any month was median time to call answer.

Data items for transport to Emergency Department (ED; item A53) and to elsewhere (item A54) were revised by all Trusts except IOW, NEAS and YAS.

**Figure 7: Revisions to transported incidents, England, 2018**



The total count of contacts was revised by +0.5% over the whole 6 month period, with January's figure showing the largest revision (+2.4%). The count of telephone calls over the period was barely affected. The only call answer time revisions were for January to March and for EMAS or NWAS.

For response times, revisions of over 2% are shown in the table below. These were mainly upward revisions by NWAS for the month of March.

Trust	Indicator	Month	From	To	Revision
EMAS	C4 90th centile	Jan	2:48:57	3:15:08	+15.5%
		Feb	2:27:40	3:04:21	+24.8%
NWAS	C1 mean	Mar	8:40	9:50	+13.5%
	C1 90th centile	Mar	14:43	16:40	+13.3%
	C2 mean	Mar	32:34	36:44	+12.8%
	C2 90th centile	Mar	1:14:15	1:25:08	+14.7%
	C3 90th centile	Mar	3:14:19	3:27:00	+6.5%
	C4 90th centile	Mar	3:26:02	3:16:31	-4.6%
SCAS	C3 90th centile	Jun	1:40:08	1:50:15	+10.1%

## 2. Clinical Outcomes

We will introduce new care bundle measures for sepsis and post-resuscitation patients later in 2018. To give Ambulance Services time to develop these new measures, we will only collect and publish bundle data once a quarter for the rest of 2018: Stroke diagnostic bundle for February, May, August and November, and ST-elevation myocardial infarction (STEMI, a type of heart attack) care bundle for January, April, July and October.

### 2.1 Cardiac arrest: return of spontaneous circulation (ROSC)

At England level, all four cardiac arrest measures in Figures 7 and 8 decreased for three consecutive months to January 2018, reaching levels significantly<sup>4</sup> less than the average for the year ending September 2017, before increasing back to more typical levels in February and March.

Patients in cardiac arrest will typically have no pulse and will not be breathing. Figure 7 shows, of patients for whom resuscitation was commenced or continued by ambulance staff out-of-hospital, how many had ROSC, with a pulse, on arrival at hospital.

The proportion of patients with ROSC (dotted line) was 28% in March, similar to the average for the year ending March (30%).

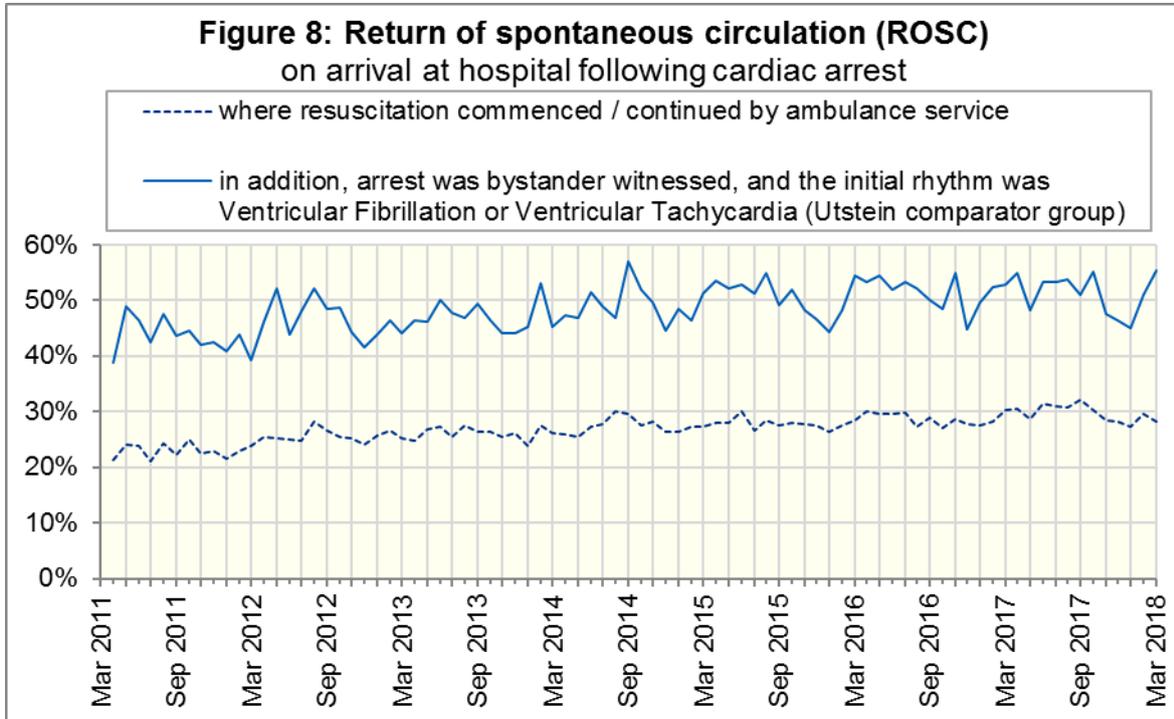
The Utstein comparator group<sup>5</sup> comprises patients who had resuscitation commenced or continued by the Ambulance Services, following an out-of-hospital cardiac arrest of presumed cardiac origin, where the arrest was bystander

<sup>4</sup> Significance calculations in this document are Student's t-test with 95% significance.

<sup>5</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>

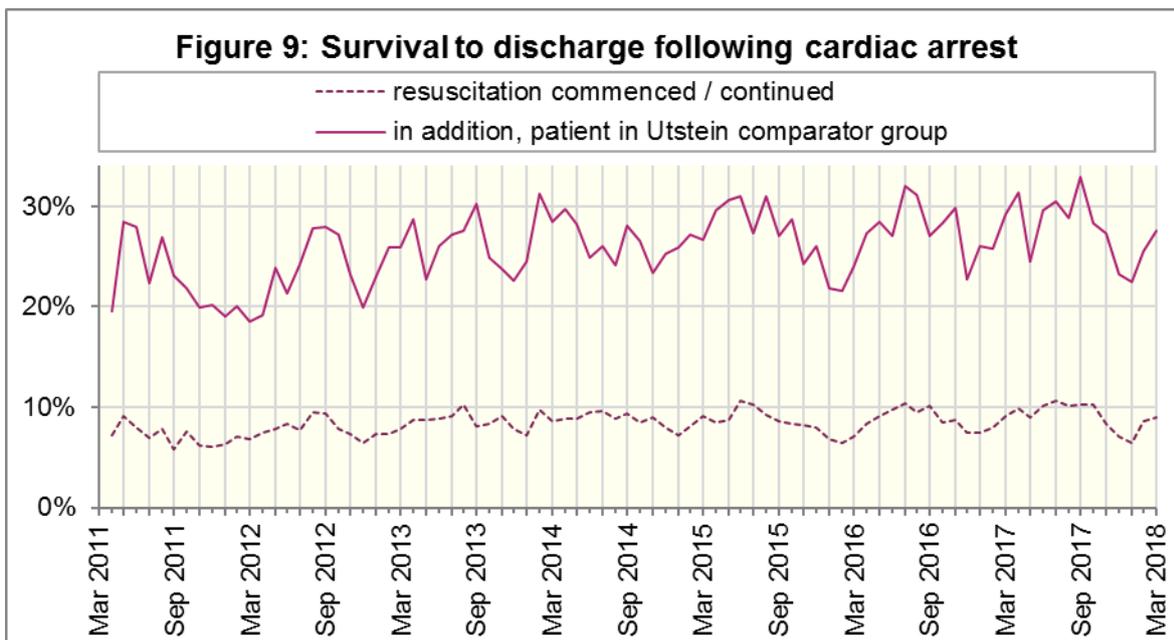
witnessed, and the initial rhythm was Ventricular Fibrillation or Ventricular Tachycardia. This group therefore have a better chance of survival.

The proportion of these with ROSC fell to 45% in January 2018, before rising to 55% in March 2018, which was significantly higher than the average for 2017/18 (51%).



## 2.2 Cardiac arrest: survival to discharge

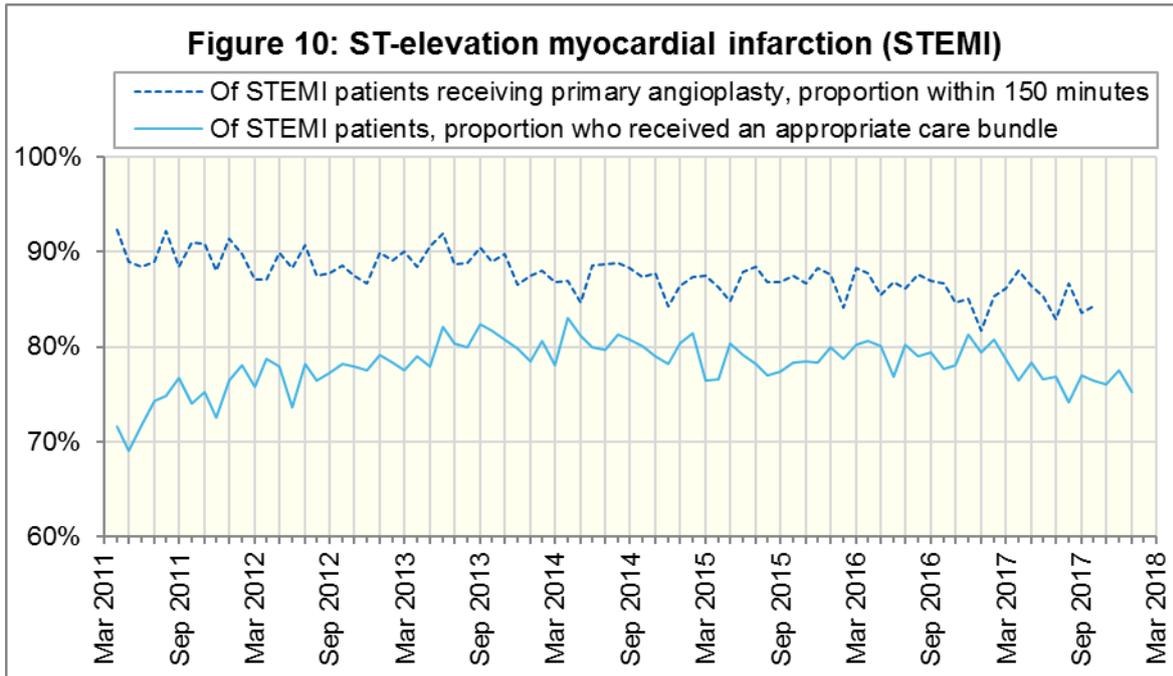
For all patients, and for the Utstein sub-group, the proportion of cardiac arrest patients in England discharged from hospital alive decreased in January 2018, but by March 2018 had increased back to match the average for 2017/18 (9% for all patients, 28% for the Utstein sub-group).



### 2.3 ST-segment elevation myocardial infarction (Figure 9)

ST-segment elevation myocardial infarction (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.

The proportion of patients with acute STEMI that received an appropriate care bundle (solid line) was 75% in January 2018, similar to the average of 78% for the 12 months to September 2017.



The Myocardial Ischaemia National Audit Project (MINAP) continue to supply the times from ambulance call to primary percutaneous coronary intervention (PPCI): inflation of a balloon inside a blood vessel to restore blood flow to the heart. From November 2017 onwards, these replace the previous 150-minute STEMI measure.

In March 2018, across England, the mean average time from call to catheter insertion was 2 hours 16 minutes, and the 90th centile time was 3 hours 2 minutes. For both measures, all the previous four months were within five minutes of these.

### 2.4 Stroke

Of stroke patients assessed face-to-face, the proportion that received an appropriate diagnostic bundle (dotted line) has stayed above 96% since May 2013, and was 97% for eleven consecutive months to February 2018.

Ambulance Services, and the Sentinel Stroke National Audit Project (SSNAP), continue to supply the times from call to arrival at hospital, and from arrival to CT scan and thrombolysis: dissolving of a blood clot inside a blood vessel to restore blood flow to the heart. From November 2017 onwards, these replace the previous stroke measure for arrival at a hyper-acute stroke centre.

The mean average time from call to hospital arrival was 1 hour 18 minutes in March 2018, similar to the average of 1 hour 20 minutes for the previous four months.

### 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 3.4 below).

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.

Publication dates are also at

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

#### 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 guidance mentioned in section 3.1, calls made to NHS 111 are included in all Systems Indicators except data on calls, items A1 to A6.

#### 3.3 Related statistics in England

Ambulance handover delays of over 30 minutes at each Emergency Department were published by NHS England for winter 2012-13, 2013-14, 2014-15 and 2017-18 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 has more information on the AQI. This includes a dashboard on the AQI landing page, which has an alternative layout for the AQI data up until April 2016. The Statement also describes the "Ambulance Services" publications<sup>6</sup> by NHS Digital, with data from before 2000, to 2013-14; and has information on the comparability of data for other countries of the UK:

Wales: <http://wales.gov.uk/statistics-and-research/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)

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<sup>6</sup> <https://digital.nhs.uk/data-and-information/publications/statistical/ambulance-services>



### 3.4 Contact information

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

The person responsible for producing this publication is Ian Kay, Operational Information for Commissioning (Central), NHS England, Room 5E24, Quarry House, Leeds, LS2 7UE; 0113 825 4606; [i.kay@nhs.net](mailto:i.kay@nhs.net)

### 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.