

Statistical Note: Ambulance Quality Indicators (AQI)

The latest Systems Indicators for February 2019 for Ambulance Services in England showed that one of the six response standards in the Handbook¹ to the NHS constitution was met.

Clinical Outcomes following cardiac arrest and heart attack in October 2018 were similar to recent months.

1. Systems Indicators

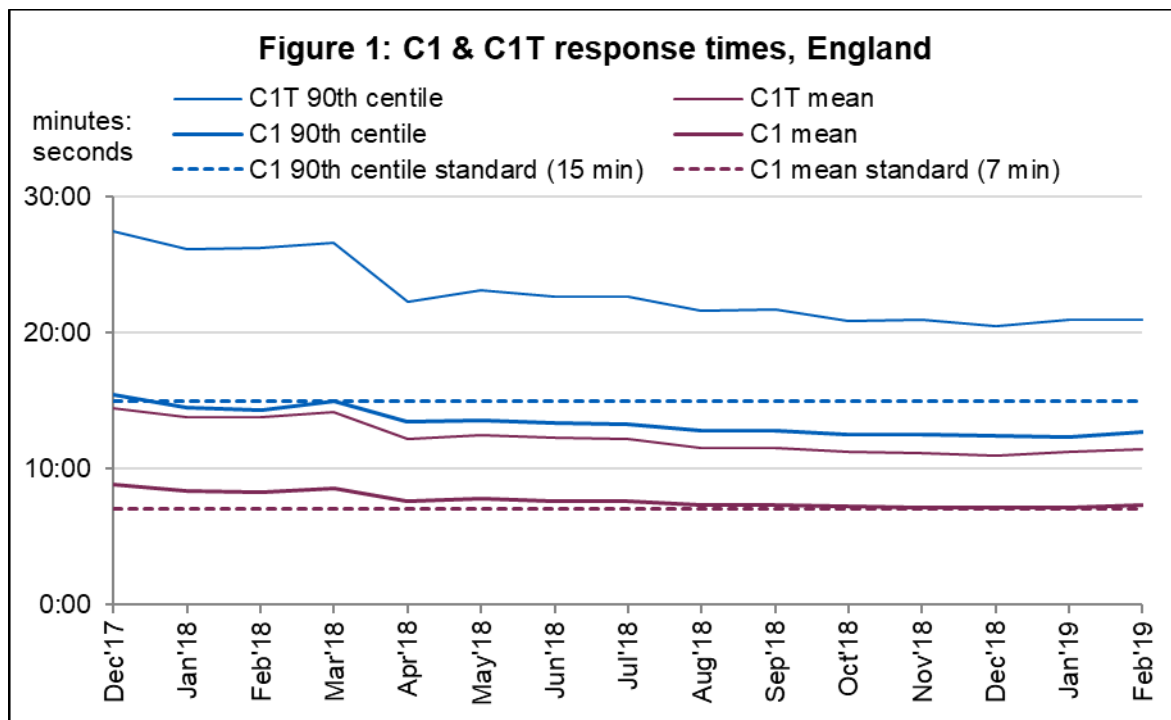
1.1 Response times

In February 2019, the average response times for all categories in England were the longest over the three months of winter (December 2018, January and February 2019).

The mean average C1 response time across England was 7 minutes 17 seconds in February 2019, just longer than the standard of 7 minutes.

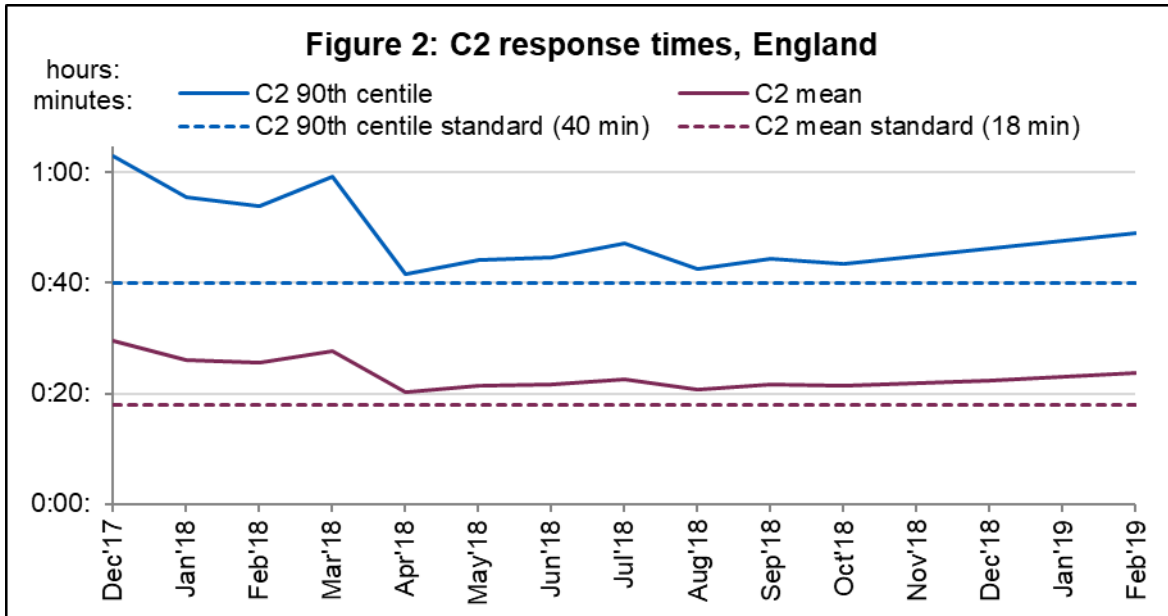
The C1 90th centile response times averaged 12:41 across England in February 2019, shorter than the standard of 15 minutes.

The mean and 90th centile for C1T (arrival of transporting vehicle, for C1 patients transported) were 11:23 and 20:56 respectively in February.



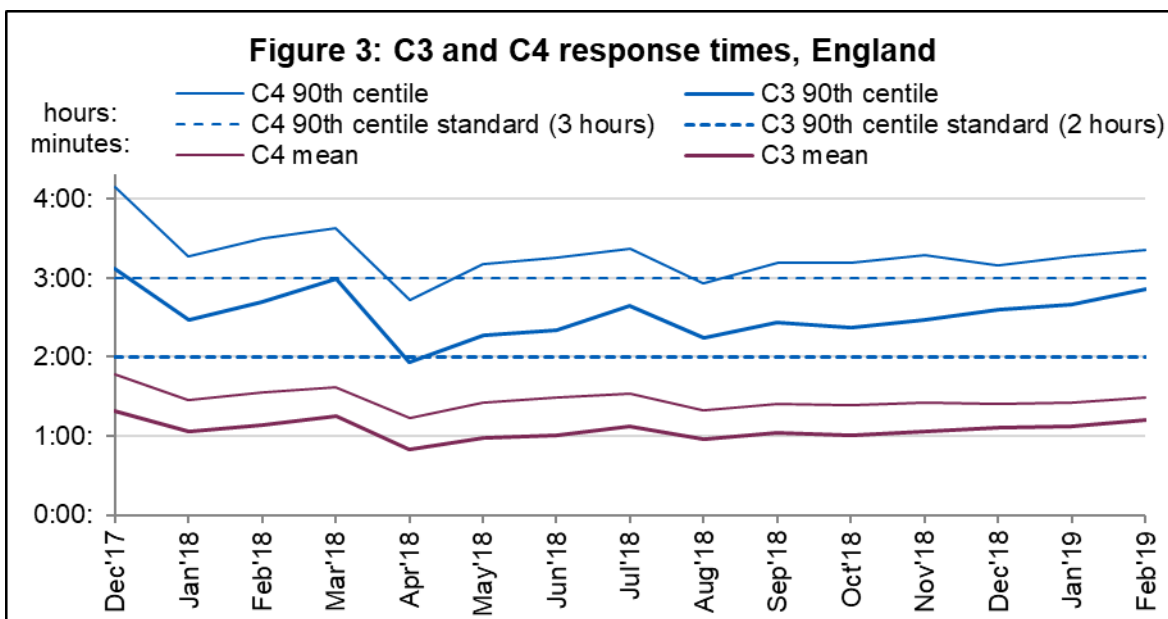
¹ Ambulance standards are in the Handbook to the NHS Constitution: www.gov.uk/government/publications/supplements-to-the-nhs-constitution-for-england

Figure 2 shows the C2 mean average response time for England was 23:37 in February 2019, longer than the standard of 18 minutes. The C2 90th centiles averaged 48:57 across England, also longer than the standard of 40 minutes. For the fourth month in a row both C2 response time measures have risen on the previous month.



For England in February 2019, the C3 mean average response time was 1:12:19. The C3 90th centile times averaged 2:51:15, longer than the standard of 2 hours. Similar to the C2 average response times, both of the C3 times have risen for the fourth month in succession.

The C4 mean average response time was 1:29:45 for England in February 2019. The C4 90th centile times averaged 3:20:49, longer than the standard of 3 hours. Both C4 times were the longest since July 2018.

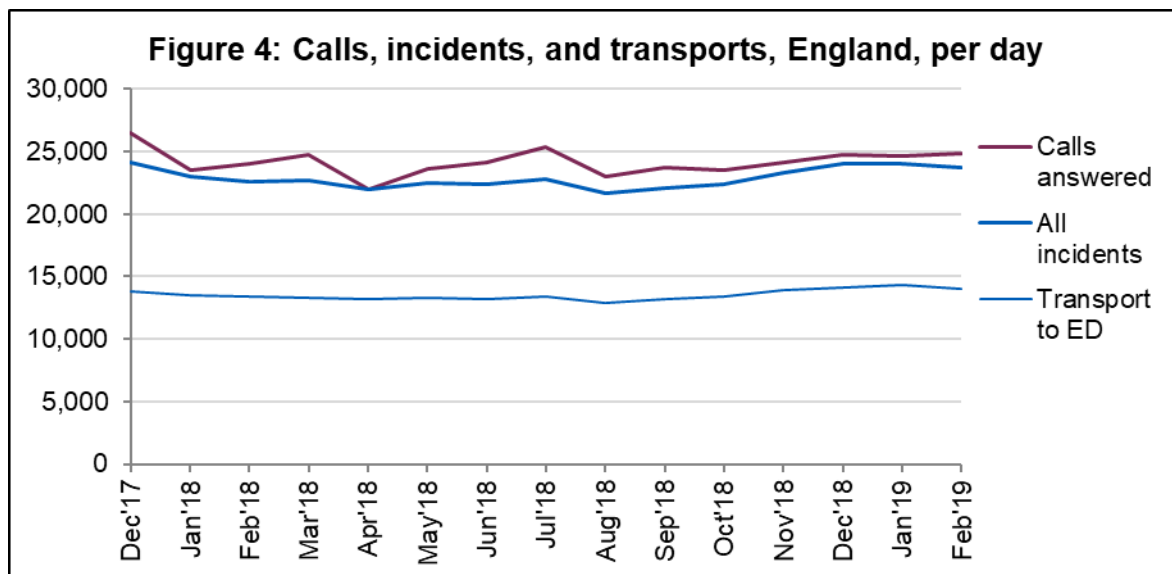


1.2 Other Systems Indicators

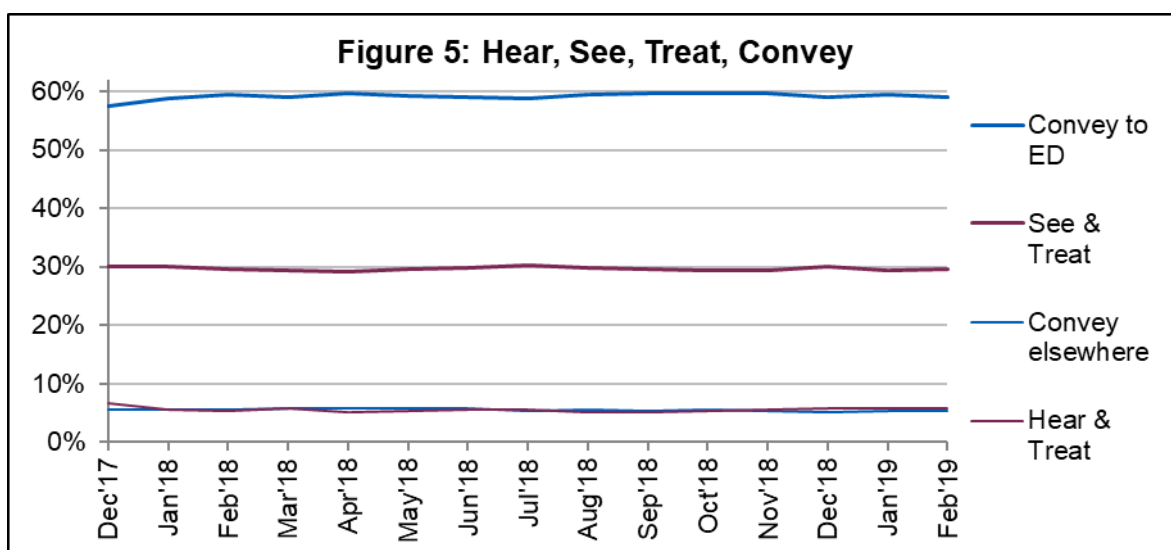
The mean average call answer time in February 2019 was 7 seconds, with a median call answer time of 1 second.

In February 2019, per day, there were (Figure 4):

- 24.8 thousand calls to 999 answered, a 0.9% increase on January;
- 23.7 thousand incidents that received a response from an Ambulance Service, a decrease of 1.2% on January;
- 14.0 thousand incidents where a patient was transported to an Emergency Department (ED), a 1.8% decrease on January.



The proportion of incidents where a patient was transported to ED was 59.1% in February. Other incidents (Figure 5) comprised 5.4% with a patient transported elsewhere, 29.7% where patients were attended but not transported (see and treat), and 5.8% resolved on the telephone (hear and treat).



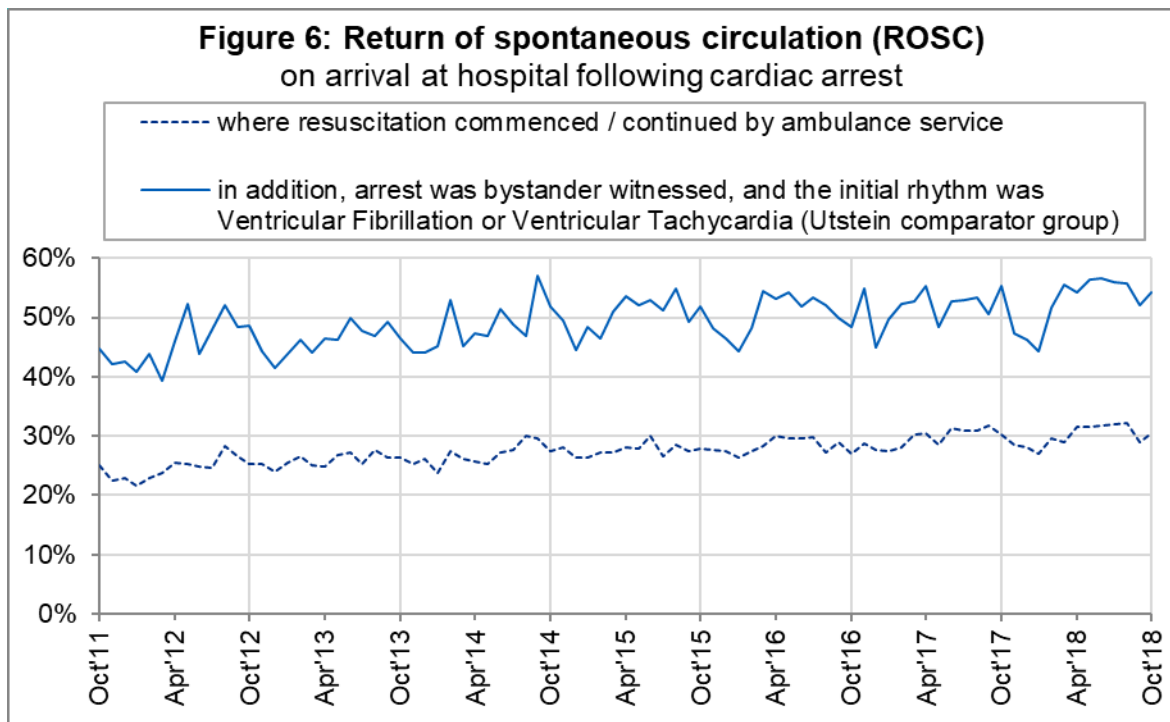
2. Clinical Outcomes

We continue to publish Clinical Outcomes data in spreadsheets each month, and until this month only described them in Statistical Notes once per quarter. However, as announced in last month's publication we will discuss each area in the month when we publish new bundle data for that topic. Therefore, today we will describe the cardiac arrest (section 2.1) and STEMI (section 2.2) data for October 2018.

2.1 Cardiac arrest

Patients in cardiac arrest will typically have no pulse and will not be breathing. We show, of patients for whom resuscitation was commenced or continued by ambulance staff out-of-hospital, how many had return of spontaneous circulation (ROSC), with a pulse, on arrival at hospital (Figure 6), and how many survived to be discharged from hospital (Figure 7).

Starting from April 2018, these data are supplied by Ambulance Services via the University of Warwick Out of Hospital Cardiac Arrest Outcomes (OHCAO) study, rather than directly to NHS England.



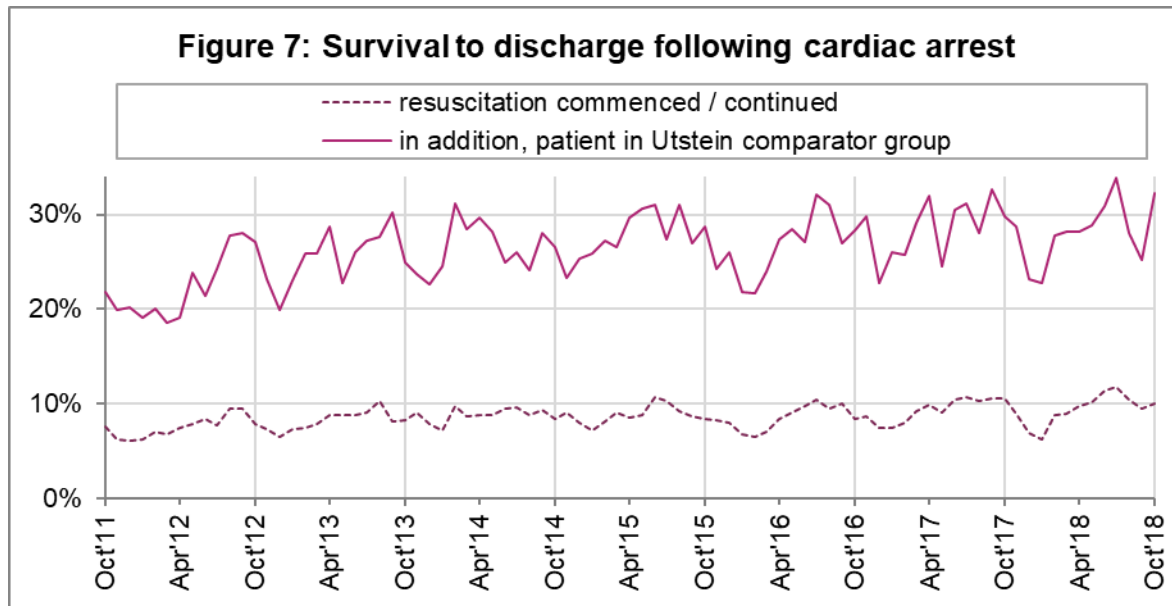
In October 2018, at England level, for all patients, ROSC (Figure 6) was 30.4%, similar to the average for the year ending September 2018 (29.8%).

The Utstein comparator group² 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 witnessed, and the initial rhythm was Ventricular Fibrillation or Ventricular Tachycardia. This group therefore have a better chance of survival.

² 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>

The Utstein group in October 2018 had ROSC for 54.2% of patients, also not significantly³ different to the year ending September 2018 (52.3%).

For patients with ROSC in October 2018, 65.3% received the post-ROSC care bundle, more than in the previous two months when this data has been collected (53.1% in April 2018 and 57.3% in July 2018).



Survival to discharge (Figure 7) for all patients in England was 10.0% in October 2018, similar to the average for the year ending September 2018 (9.2%).

Survival to discharge for the Utstein group was 32.2% in October, also not significantly different to the average for the year ending September 2018 (27.7%).

2.2 ST-segment elevation myocardial infarction (STEMI)

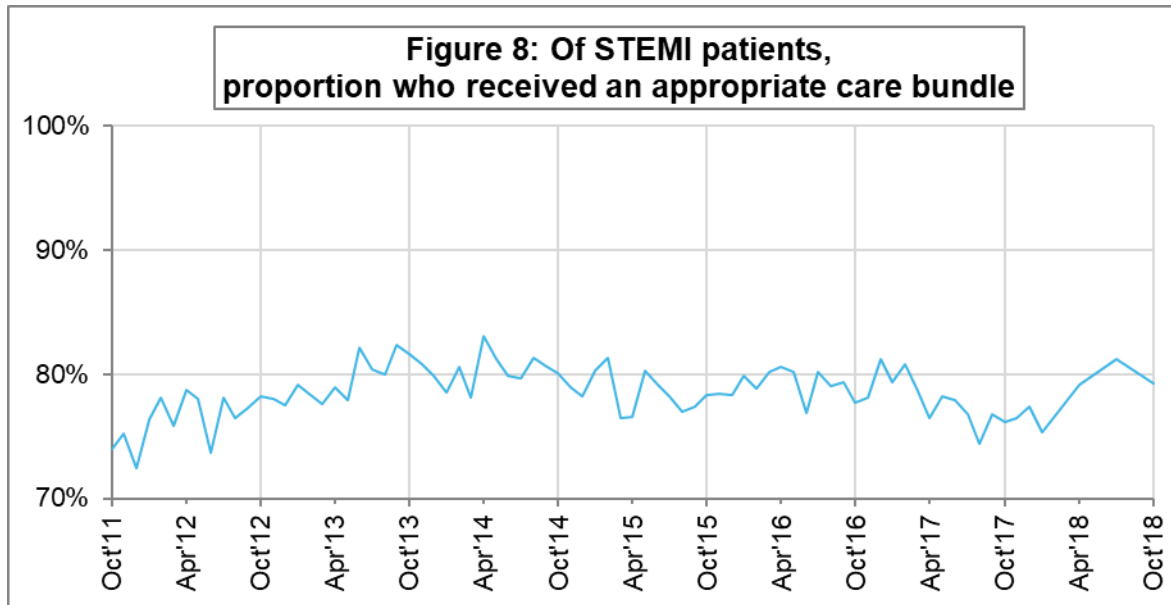
STEMI is a type of heart attack, determined by an electrocardiogram (ECG) test. Early access to reperfusion, where blocked arteries are opened to re-establish blood flow, and other assessment and care interventions, are associated with reductions in STEMI mortality and morbidity.

Starting with November 2017 data, the National Institute for Cardiovascular Outcomes Research (NICOR) have supplied data from their Myocardial Ischaemia National Audit Project (MINAP) for STEMI patients. These data include counts of patients and, for those patients, 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.

Across England for October 2018, the mean average time from call to catheter insertion was 2 hours 10 minutes, similar to the average for the previous months of 2018 (2:09); and the 90th centile time from call to catheter insertion was 2:53, a little less than the average for the previous months of 2018 (2:56).

³ Significance calculations reported in this document are Student's t-test with 95% significance.

Figure 8 shows that the proportion of patients with an acute STEMI in England in October 2018 that received an appropriate care bundle was 79.3%, similar to the average for the year ending September 2018 (77.6%).



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 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.

3.2 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, 2017-18, and 2018-19, at www.england.nhs.uk/statistics/statistical-work-areas/winter-daily-sitreps.



The Quality Statement described in section 3.1 includes information on: a dashboard with an alternative layout for AQI data up to April 2016; the “Ambulance Services” publications⁴ by NHS Digital, with data from before 2000, to 2013-14; and 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

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

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 guidance mentioned in section 3.1, incidents resulting from a call to NHS 111 are included in all Systems Indicators except call data items A1 to A6.

3.4 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 Information for Commissioning (Central), NHS England, Room 5E24, Quarry House, Leeds, LS2 7UE; 0113 825 4606; 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.

⁴ <https://digital.nhs.uk/data-and-information/publications/statistical/ambulance-services>