Ambulance Quality Indicators: Quality statement, September 2014

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1. Introduction

This Statement, describing many aspects of quality, accompanies the Ambulance Quality Indicators (AQI) published monthly by NHS England at www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators. NHS England will update this Statement each summer.

1.1 Contact information

We welcome feedback on the AQI, and this Statement, to:

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2. Relevance

2.1 Purpose

The purposes of the AQI are for;

- Ambulance Trusts to manage the service they provide;
- NHS England to monitor the service, and respond to enquiries from the media and the public;
- Department of Health (DH) to brief ministers on performance and account to Parliament;
- Parliament, the media and the public to hold the public service organisations to account;
- Clinical Commissioning Groups to commission services.

The 26 March 2013 Handbook to the NHS Constitution[1] lists 13 bullets with government pledges on waiting times, and one bullet relates to two of the AQI:

- "all ambulance trusts to respond to 75 per cent of Category A calls within eight minutes and to respond to 95 per cent of Category A calls within 19 minutes of a request being made for a fully equipped ambulance vehicle (car or ambulance) able to transport the patient in a clinically safe manner."

[1] Handbook: www.nhs.uk/choiceintheNHS/Rightsandpledges/NHSConstitution/Pages/Overview.aspx

2.2 Specification

NHS England creates a specification[2] for the data to be collected, based upon user requirements, and discussion with data providers. These include the National Ambulance Information Group (NAIG) for Ambulance Systems Indicators (SI) data; and the National Ambulance Service Clinical Quality Group (NASCQG) for Clinical Outcomes (CO) data.

NAIG and NASCQG represent the eleven Ambulance Trusts in England who provide and use the data.

Operational changes can affect the specification. For example, in June 2012, Ambulance calls in Category A were split[3] between the new definitions of Red 1 and Red 2. Therefore, NHS England created a new data specification, informed by advice from NAIG, and labelled the statistics to explain the change.

2.3 Users

We receive many enquiries from NHS England staff, including the Operations Directorate, Chief Executive's Office, and Media Relations relaying questions from the media. We also receive many enquiries from DH including the Performance Insight Team (PIT), Urgent and Emergency Care Team, and relayed enquiries from Parliament. Our engagement plan is to continue to answer queries and discuss products with these staff, and to annually review our service to them.

Requests from the above contacts in 2014 included:

- several parliamentary questions on ambulance response times;
- comparing how response times vary with call volumes;
- comparing, for 999 and 111 telephone calls, the proportions of emergency ambulance journeys that result in patient transportation to A&E, to check each telephone triage system works as it should;
- using counts of calls presented to switchboard to allocate some 2014/15 operational resilience funding to Ambulance Trusts.

Less frequently, we receive requests from other users. In the first half of 2014 we had enquiries from Clinical Commissioning Groups, students, academic institutions, Monitor, other government Departments, commercial organisations and the public.

We have registered with the Health Statistics User Group and StatsUserNet forums in order to post and respond to any discussions there regarding the AQI.

The AQI website received 1111 unique page views during June 2014.

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[2] The specification for the data that Ambulance Trusts provide is in the AQI Guidance v1.31 at www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators.

[3] Red 1 calls are the most time critical, and cover cardiac arrest patients who are not breathing and do not have a pulse, and other severe conditions such as airway obstruction. Red 2 calls are serious, but less immediately time critical, and cover conditions such as stroke and fits. www.gov.uk/government/news/changes-to-ambulance-response-time-categories

We have announced the monthly publications from 4 July 2014 onwards on twitter.com, using the @NHSEnglandStats account, which had 636 followers as at 2 September 2014.

2.4 Use of feedback

We encourage users to contact us with questions and feedback, and we are interested in how they use our data.

We improved the AQI commentary in January 2014, with the addition of more guidance, definitions, tables and graphs. We refined graphs in June 2014, following discussions with NHS England policy staff, and expanded the commentary in September 2014 using advice from the UK Statistics Authority.

During spring 2013, we considered collecting Clinical Outcomes (CO) for a particular month in the seventh month after that month had ended. However, we decided in July 2013 to continue to collect in the fourth month, following feedback from users. The Association of Ambulance Chief Executives (AACE) said:

- "as a measure of quality, data that is 6 months old is not helpful.
- although data might be more complete, by taking the pressure off the hospitals to provide the data, we would be giving out the message that the importance of the information has diminished.
- many ambulance services have worked very hard to build up relationships with hospitals, and the increased time period would be seen as a backwards step."

2.5 Other feedback received

The DH Urgent and Emergency Care Team told us:

- "Information from the Ambulance Quality Indicators (AQI) collection is used by the Department of Health to brief Ministers, answer Parliamentary Questions and provide responses to correspondence on the Category A response times, the number of emergency calls, the number of emergency responses and the number of emergency patient journeys, and how these have changed since the last year."

North West Ambulance Service NHS Trust told us:

- "The Ambulance Quality Indicators (AQI) provide a regulatory check as the central mandated return for ambulance services. The information provides a high level benchmark of ambulance services for comparison. The development of the measures and supporting guidance have enabled Trusts to provide a patient centred holistic view of ambulance service provision."

2.6 Statistical planning

The collection of ambulance quality indicators from the NHS is 'licensed' through a formal process operated by the Health and Social Care Information Centre that assesses the reasons why such information needs to be collated centrally and the burden on the NHS of supplying the information. Licenses require ministerial approval. In addition, fundamental reviews of existing data collections have been carried out in recent years.

Within NHS England, planning is typically carried out across analytical services as a whole rather than limited to statistical functions. This is done on an ongoing basis, in response to emerging demands for information and analysis. Those demands can originate from within the organisation, from other health organisations or from external sources such as public debate. Such requests for new information and analysis need to be prioritised against existing work. Wider prioritisation exercises are often carried out as part of the annual business planning process or as part of strategic reviews.

NHS England seeks users' views where any changes would have a material effect on existing statistical products.

3. Accuracy

The "Joint DH – NHS England Statement of Administrative Sources" at www.england.nhs.uk/statistics/code-compliance contains information on how we use the Administrative Sources for AQI.

The collection is intended to be a census of all activity, not a sample, so there should be no sampling error. However, as calls and responses are part of a stochastic process, the statistics are subject to random variation, both between Trusts and over time. There are also sources of non-sampling error.

3.1 Coverage error

The statistics do not include details of some emergency events, because the information has not been captured in administrative systems in time for it to be included in the publication.

This could be caused where time is required after emergency events for the details to be recorded in administrative systems. The timetable for the Systems Indicators (SI) data collection is quick, with Trusts only having about three weeks after a month ends to supply total numbers of calls, incidents and responses.

This is why we give Trusts an opportunity to revise data every six months, to pick up any late reporting that was not available when they first submitted data.

3.3 Processing error

Ambulance Trusts use two approved call prioritisation systems (the Medical Priority Dispatch System and NHS Pathways) to categorise category A (immediately life threatening) and other less serious incidents. These systems also generate the data required by the specification, so the burden upon Trusts of providing data is low.

Ambulance Trust telephone operators who answer the calls ask a series of questions to ascertain the nature of the emergency, following a pre-agreed path depending on the input to the bespoke software, which classifies the category of the emergency. Processing (non-sampling) errors could occur where operators in the ambulance control centres incorrectly input data into their administrative system. Measurement errors could occur from operators who mis-interpret a response to a question or have different interpretations to the same question, thus leading to a mis-categorisation.

To ensure this is reduced to a minimum, ambulance Trusts have their own internal training and monitoring of actual calls, and act upon any mis-classification.

For Clinical Outcomes, each Ambulance Trust has a different Patient Report Form to be completed by clinicians for each individual outcome; some use paper records, others wholly electronic, and the remainder use a mix of electronic and paper.

3.4 Validity

Ambulance Service Chief Executives are contractually responsible for ensuring that their data are submitted in accordance with the specification.

We provide Trusts with an Excel template that requires data suppliers to select their organisation and time period from drop-down lists, ensuring each Trust's data reach the NHS England Unify2 data collection system in an identical format.

It would be possible to include numeric validation checks on whether the figures supplied in the template, are within a certain acceptable range. However, because Trusts vary so much in activity, from 460,000 Category A calls in London to 7,000 in the Isle of Wight in 2013-14, the acceptable ranges would be too wide to be useful.

Instead, we use validation spreadsheets each month that highlight data that are not similar to previous data from the same Trust. We maintain several contact details for suppliers, and ask them to check the data, which leads to them either confirming the results or sending corrected data in good time for publication.

We maintain contact with data suppliers, and continue to request more information about their collection and quality assurance processes. We have instigated the first in what we intend to be a series of visits to Trusts to gain deeper insight into their collection and assurance processes.

Ambulance Trusts can be fined[4] for failing to meet the standards in the Handbook to the NHS Constitution, creating an incentive to ensure reported performance is maintained. Part of our confidence in the reliability of the data, is due to the fact that, in at least one month in the first half of 2014, every single trust reported that it had missed the 75% target for either Red 1 or Red 2. In addition, four trusts reported they had missed the Red 2 target for 2013-14 as a whole.

The Association of Ambulance Chief Executives (AACE) have told us they completed an informal internal audit in 2014. They found that trusts had a range of data quality measures in place, with a few examples of particularly good practice; no governance arrangements were found to be weak. They had no concerns over general misreporting although they did find that some AQI measures needed tighter definition in order to ensure consistent reporting. They plan to establish a small group of control managers and informatics staff to work on reaching a more consistent understanding in respect of those measures.

[4] "East Midlands Ambulance Service fined £3.5m for failing patient response target", www.itv.com/news/central/update/2013-05-22/east-midlands-ambulance-service-fined-3-5m-for-missing-patient-target

NASCQG organised a benchmarking day in 2014, where all Ambulance Trusts mapped and compared their CO data collection processes. NASCQG collated the information into a paper for the National Ambulance Services Medical Directors Group and for AACE. NASCQG are also developing a programme of peer-to-peer review, where Trusts visit each other to harmonise their data systems.

For non-Foundation Trusts (FT), the NHS Trust Development Authority is responsible for providing assurance that Trusts have effective arrangements in place that enable them to record data accurately.

For FTs, Monitor ensures they are well-governed. It is the responsibility of each FT's Board to put processes and structures in place to ensure its national data returns are accurate. If it came to light that data returns were not accurate, Monitor would consider whether the Trust is in breach of its licence, although Monitor does not have the mandate to audit FT performance data.

We will use the UK Statistics Authority *Quality Assurance and Audit Arrangements for Administrative Data* to further evaluate our current practices.

4. Timeliness

We publish Ambulance Systems Indicators (SI) for each complete month about five weeks after the month ends, at 9:30am on a pre-announced Friday. Our Timetable on the AQI website itself (see Introduction) shows publication dates as far forward as August 2015. Publication dates are also on the National Statistics publication hub[5], and in the NHS England 12 month statistical calendar[6].

We publish Clinical Outcomes (CO) data three months after SI data. This is because, for patients assisted by Ambulance Trusts, enough time must pass before assessing the condition of patients. Further time is then needed, for Ambulance Trusts to collect and process outcome information from hospitals, before passing it on to us.

Section 2.4 Use of feedback describes how the timeliness for CO data was decided.

5. Accessibility

The AQI are accompanied by a Statistical Note to help interpret the data. To meet Public Data Principles, all data items are available in comma separated variable (csv) format as well as in spreadsheets.

This statement, the Statistical Notes, and data files, are all available free of charge via the website at the top of this statement.

[5] National Statistics Publication Hub: www.gov.uk/government/statistics/announcements
[6] NHS England statistical calendar: www.england.nhs.uk/statistics/12-months-statistics-calendar

6. Coherence

6.1 KA34 collection

We first collected the AQI in April 2011. Some data items overlapped with the existing KA34 collection by the Health and Social Care Information Centre (HSCIC) that dated back to 2004. Other data items were new, to meet the requirement in the Department of Health NHS Outcomes Framework[7] for outcomes that matter most to people, and not just process targets. Conversely, the KA34 collection included some information on Category C calls, not included in the AQI.

Like the AQI, the KA34 collected data direct from Ambulance Trusts, but data from the two collections did not always match. Trusts had several months to provide KA34 data, unlike the AQI, where Trusts submit data to us about three weeks after the end of each month. Also, NHS England includes the revisions described in Section 7 below, which do not feature in the KA34 collection.

The 2013 HSCIC publication at www.hscic.gov.uk/catalogue/PUB11062 includes both KA34 and AQI data, so comparisons can be made for 2011-12 and 2012-13 where the two sources overlap. HSCIC discontinued the KA34 collection in March 2013.

6.2 Dashboard

Each month we email an updated Dashboard with the latest AQI data to the Ambulance Trusts, and the following organisations place it on their own websites:

North East	www.neas.nhs.uk/patient-information/performance-information.aspx
North West	www.nwas.nhs.uk/about-us/how-we-are-doing/delivering-quality/quality-indicators/quality-indicator-dashboard
Yorkshire	www.yas.nhs.uk/Publications/Ambulance_Quality_Indicat.html
East Midlands	www.emas.nhs.uk/about-us/ambulance-quality-indicators
West Midlands	www.wmas.nhs.uk/Pages/TrustPerformanceACQI.aspx
East of England	www.eastamb.nhs.uk/Performance/ambulance-quality-indicators.htm
London	www.londonambulance.nhs.uk/about_us/how_we_are_doing/clinical_quality_indicators/clinical_dashboard.aspx
South Central	www.southcentralambulance.nhs.uk/our-services/performance information/ambulanceclinicalqualityindicators.ashx
South West	www.swast.nhs.uk/What%20We%20Do/How-we-are-doing.htm
Association of Ambulance Chief Executives	http://aace.org.uk/national-performance/national-clinical-dashboards

[7] The NHS Outcomes Framework 2011/12 from the Department of Health: www.gov.uk/government/publications/nhs-outcomes-framework-2011-to-2012

The data in the Dashboard are identical to the AQI, but the Dashboard has an interactive map, and a facility for Trusts to embed their own commentary in Portable Document Format (PDF).

6.3 Other parts of the UK

We have contacted organisations that produce similar ambulance data in other countries of the UK, and who have agreed these brief descriptions of their data. The following links to websites for Wales, Scotland and Northern Ireland are also on the NHS England AQI website.

The Welsh Ambulance Services NHS Trust provides monthly data for Wales. Until July 2007, the data was collected quarterly on the KA34 Patient Transport Services return. The publication contains no Clinical Outcome (CO) data; it concentrates on the ambulance response to Category A calls within 8 minutes and other intervals, which are shown for smaller geographies than those in the AQI.
http://wales.gov.uk/statistics-and-research/ambulance-services/?lang=en

Data for Scotland are published directly by the Scottish Ambulance Service. They include monthly Systems Indicators for areas of Scotland, and CO data for strokes and Return of Spontaneous Circulation. They are available in extensive Quality Improvement Indicators (QII) documents.
www.scottishambulance.com/TheService/BoardPapers.aspx

The Northern Ireland Ambulance Service (NIAS) provides data on a monthly basis to the Department of Health, Social Services and Public Safety using the KA34 information return. The publication contains similar System Indicators to England, along with other statistics on Emergency Care Departments. These are detailed monthly and broken down by Local Commissioning Group (LCG) to help report against the Ministerial target on ambulance response times.
www.dhsspsni.gov.uk/index/stats_research/hospital-stats/emergency_care-3/emergency-care-stats.htm

The definition of Category A, as immediately life-threatening calls, is the same in England[8], Wales[9], Scotland[10], and Northern Ireland[11], but clock start definitions differ, and England also splits Category A into Red 1 and Red 2.

Category A emergency response clock start definitions

England	Red 1	When the call starts	
	Red 2	Earliest of:	chief complaint information is obtained; chief complaint (or Pathways initial DX code) information is obtained; first vehicle assigned; 60 seconds after Call Connect.

[8] www.gov.uk/government/news/changes-to-ambulance-response-time-categories
[9] Page 1, http://wales.gov.uk/docs/statistics/2013/130529-ambulance-services-quality-report-en.pdf
[10] Page 7, www.scottishambulance.com/UserFiles/file/TheService/Annual%20report/SAS_Annual%20Report%202013_web%20-%20final%20interactive.pdf
[11] Page 13, www.dhsspsni.gov.uk/nihs-emergency-care-2013-2014.pdf

Wales	When the location of the incident is established
Scotland	When the chief complaint is established
Northern Ireland	When these have been ascertained: caller's telephone number, exact location of incident, and the nature of the chief complaint

7. Revisions

7.1 Revisions Policy and practice

The AQI use the Unify revisions policy[12], which applies to all data collected by NHS England via the bespoke software of the Unify2 data collection system. This policy states that NHS England normally publishes revisions on a six-monthly basis, but changes this schedule when necessary.

Where an Ambulance Quality Indicators (AQI) publication contains revisions, we describe them in the Statistical Note accompanying that publication. For example, page 7 of the AQI Statistical Note on 5 September 2014[13] stated which Trusts were affected by revisions to Clinical Outcomes (CO). Graphs showed how all eight CO indicators were affected at national level by revisions, and all revisions to individual months of more than one percentage point were listed.

7.2 Revisions schedule

When collecting AQI data for September or March, we request revisions from Trusts for all the previous months in that financial year. So, for example, during October 2014, when we collect the Systems Indicators (SI) for September 2014, we will also collect revisions to the SI data already published for April to August 2014 inclusive. We will then publish such revisions on 7 November 2014.

Because three extra months are needed before Ambulance Trusts can provide CO data, we collect revisions to these at a different time. So, for example, during July 2013, when we collected CO data for March 2013, we also collected revisions to the CO data already published for April 2012 to February 2013 inclusive, and published those revisions on 2 August 2013.

7.3 Change to revisions schedule

In May 2014, data suppliers informed us about the Myocardial Ischaemia National Audit Project (MINAP). This Project led to revisions to ST-elevation myocardial infarction (STEMI) CO data. The timetable for the Project meant that revised data from hospitals on the outcomes of such patients would reach Trusts too late for our planned publication of revisions on 8 August 2014.

Therefore, we discussed the situation, via a facilitator in NASCQG, and agreed to accept the revisions during August rather than July. This meant that revisions were available to users at the earliest opportunity, on 5 September 2014, rather than the

[12] Unify revisions policy: www.england.nhs.uk/statistics/code-compliance/#Unifypolicy
[13] AQI Statistical Report with April 2014 CO data at www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators/ambulance-quality-indicators-data-2014-15

next six-monthly update in the schedule, 6 February 2015. We explained the change in our 8 August 2014 Statistical Note.

8. Privacy of individuals

For this publication, Ambulance Trusts purely provide us with counts each month for the appropriate categories, such as “All Red 1 calls resulting in an emergency response within 8 minutes”. We do not receive any identifying information such as names, addresses, dates, or demographics; so the privacy of individuals is protected.