

Assessment of compliance with the Code of Practice for Official Statistics

Statistics on Ambulance Service Quality in England

(produced by NHS England)

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About the UK Statistics Authority

The UK Statistics Authority is an independent body operating at arm's length from government as a non-ministerial department, directly accountable to Parliament. It was established on 1 April 2008 by the *Statistics and Registration Service Act 2007*.

The Authority's overall objective is to promote and safeguard the production and publication of official statistics that serve the public good. It is also required to promote and safeguard the quality and comprehensiveness of official statistics, and good practice in relation to official statistics.

The Statistics Authority has two main functions:

1. oversight of the Office for National Statistics (ONS) – the executive office of the Authority;
2. independent scrutiny (monitoring and assessment) of all official statistics produced in the UK.

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ASSESSMENT AND DESIGNATION

The *Statistics and Registration Service Act 2007* gives the UK Statistics Authority a statutory power to assess sets of statistics against the *Code of Practice for Official Statistics*.

Assessment will determine whether it is appropriate for the statistics to be designated as National Statistics.

Designation as National Statistics means that the statistics comply with the *Code of Practice*. The *Code* is wide-ranging. Designation can be interpreted to mean that the statistics: meet identified user needs; are produced, managed and disseminated to high standards; and are explained well.

Designation as National Statistics should not be interpreted to mean that the statistics are always correct. For example, whilst the *Code* requires statistics to be produced to a level of accuracy that meets users' needs, it also recognises that errors can occur – in which case it requires them to be corrected and publicised.

Assessment reports will not normally comment further on a set of statistics, for example on their validity as social or economic measures. However, reports may point to such questions if the Authority believes that further research would be desirable.

Assessment reports typically provide an overview of any noteworthy features of the methods used to produce the statistics, and will highlight substantial concerns about quality. Assessment reports also describe aspects of the ways in which the producer addresses the 'sound methods and assured quality' principle of the *Code*, but do not themselves constitute a review of the methods used to produce the statistics. However the *Code* requires producers to "seek to achieve continuous improvement in statistical processes by, for example, undertaking regular reviews".

The Authority may grant designation on condition that the producer body takes steps, within a stated timeframe, to fully meet the *Code's* requirements. This is to avoid public confusion and does not reduce the obligation to comply with the *Code*.

The Authority grants designation on the basis of three main sources of information:

- i. factual evidence and assurances by senior statisticians in the producer body;
- ii. the views of users who we contact, or who contact us, and;
- iii. our own review activity.

Should further information come to light subsequently which changes the Authority's analysis, it may withdraw the Assessment report and revise it as necessary.

It is a statutory requirement on the producer body to ensure that it continues to produce the set of statistics designated as National Statistics in compliance with the *Code of Practice*.

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1 Summary of findings

1.1 Introduction

- 1.1.1 This is one of a series of reports¹ prepared under the provisions of the *Statistics and Registration Service Act 2007*². The Act allows an appropriate authority³ to request an assessment of official statistics against the *Code of Practice for Official Statistics*⁴ in order for them to gain National Statistics status. This report is in response to such a request. The report covers the set of statistics reported in *Ambulance Quality Indicators - monthly update for England*⁵ (AQI), produced by NHS England.
- 1.1.2 Section 3 of this report adopts an ‘exception reporting’ approach – it includes text only to support the Requirements made to strengthen compliance with the *Code* and Suggestions made to improve confidence in the production, management and dissemination of these statistics. This abbreviated style of report reflects the Director General for Regulation’s consideration of aspects of risk and materiality⁶. The Assessment team nonetheless assessed compliance with all parts of the *Code of Practice* and has commented on all those in respect of which some remedial action is recommended.
- 1.1.3 This report was prepared by the Authority’s Assessment team, and approved by the Regulation Committee on behalf of the Board of the Statistics Authority, based on the advice of the Director General for Regulation.

1.2 Decision concerning designation as National Statistics

- 1.2.1 The Statistics Authority judges that the statistics covered by this report are readily accessible, produced according to sound methods and managed impartially and objectively in the public interest, subject to any points for action in this report. The Statistics Authority confirms that the statistics published in AQI can be designated as new National Statistics, subject to NHS England implementing the enhancements listed in section 1.5 and reporting them to the Authority by January 2015.
- 1.2.2 NHS England has informed the Assessment team that it has started to implement the Requirements listed in section 1.5. The Statistics Authority welcomes NHS England’s positive approach to addressing the requirements, making substantial improvements to the statistical report and accompanying supporting information, and its constructive engagement with users.

¹ <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

² http://www.opsi.gov.uk/Acts/acts2007/pdf/ukpga_20070018_en.pdf

³ Subsection 12(7) of the Act defines ‘appropriate authority’ as Ministers of the Crown, Scottish Ministers, Welsh Ministers, Northern Ireland departments or the National Statistician

⁴ <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

⁵ <http://www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators/>

⁶ <http://www.statisticsauthority.gov.uk/assessment/assessment/guidance-about-assessment/criteria-for-deciding-upon-the-format-of-an-assessment-report.pdf>

1.3 Summary of strengths and weaknesses

- 1.3.1 NHS England has established strong links with users of AQI within the NHS – in particular, the ambulance trusts, Department of Health (DH) policy officials and users with access to the Unify2 web portal⁷. It engages regularly with these users and data suppliers. NHS England engages less with users outside the NHS, mainly through attending the Health Statistics User Group. It has documented the use made of the ambulance statistics by different types of users.
- 1.3.2 The statistics are presented with some commentary describing the latest statistics for ambulance trusts and recent changes over time. AQI presents the longer-term trend in accompanying charts and sets the figures in the context of standards in the NHS Constitution. However, it does not describe the wider operational context.
- 1.3.3 NHS England has published its data collection guidance for the ambulance trusts which provides useful definitional and data collection information. Following advice from the Assessment team, NHS England prepared supporting information about the quality of the ambulance trust administrative data in the AQI quality statement⁸. This statement gives an outline of NHS England's approach to the quality assurance of the AQI data. It also highlights the governance and audit arrangements involving the Association of Ambulance Chief Executives and regulatory bodies. However, this information does not describe the findings from the checks of ambulance services carried out by the regulatory bodies. It also does not adequately explain the steps taken by the ambulance trusts to assure the quality of the data and the implications for the quality of the AQI statistics.

1.4 Detailed recommendations

- 1.4.1 The Assessment team identified some areas where it felt that NHS England should improve the production and presentation of statistics on ambulance quality indicators. Those which are essential for NHS England to address in order to strengthen its compliance with the *Code* and to enable designation as National Statistics are listed – as Requirements – in section 1.5, alongside a short summary of the key findings that led to each Requirement being made. Other recommended changes, which the Assessment team considers would improve the statistics and the service provided to users but which are not formally required for their designation as National Statistics, are listed – as Suggestions – in section 1.6.

1.5 Requirements for designation as National Statistics

- 1.5.1 This section includes those improvements that NHS England is required to make in respect of its statistics on ambulance quality indicators in order to fully comply with the *Code of Practice for Official Statistics*, and to enable designation as National Statistics.

⁷ http://www.datadictionary.nhs.uk/web_site_content/navigation/central_return_data_sets_menu.asp

⁸ <http://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2013/04/AQI-Quality-Statement-2014.pdf>

Finding	Requirement	
<p>NHS England has a good understanding of the uses and needs of the main users of AQI but has less engagement with users outside the NHS and DH. NHS England should:</p>	1	<p>Engage regularly with the full range of users, including patient groups and the third sector (para 3.2).</p>
<p>The AQI quality statement does not describe the nature and effectiveness of the quality assurance measures undertaken by ambulance trusts. NHS England should:</p>	2	<p>Extend the AQI quality statement to summarise the audit and assurance arrangements of the ambulance trusts and make clear the implications for the quality of the AQI statistics (para 3.6).</p>
<p>NHS England refers to the role of regulatory bodies in overseeing ambulance trusts but does not make clear whether practices are found to be effective. NHS England should:</p>	3	<p>Extend the AQI quality statement to summarise the outcomes of the reviews of the ambulance trusts' practices by regulatory bodies with respect to the quality of the AQI data (para 3.8).</p>
<p>NHS England does not describe the risks associated with financial incentives in the ambulance service and does not explain what actions it takes to monitor for distortive effects. NHS England should:</p>	4	<p>Extend the AQI quality statement to summarise the potential for distortive effects associated with the ambulance performance standards and the steps taken to monitor for such effects (para 3.10).</p>
<p>NHS England does not fully explain which emergency</p>	5	<p>Clarify the explanation of the types of emergency call included in the AQI statistics and highlight any implications for the statistics</p>

telephone numbers underpin the emergency calls used in the AQI data. NHS England should:		to aid user interpretation (para 3.12).
NHS England has made welcome improvements to AQI during the course of the Assessment. However, it does not provide an overview of the main findings at the start of the report or sufficiently describe the variability in clinical outcomes over time. NHS England should:	6	Provide a brief overview of the main AQI findings at the start of the release, include charts to summarise the clinical outcome indicators and indicate the degree of variability over time in the clinical outcomes statistics (para 3.15). In meeting this requirement NHS England should address the weaknesses highlighted this paragraph, and consider the further points detailed in annex 1 and annex 2.
HSCIC publishes an annual report of the AQI statistics. NHS England should:	7	Work with HSCIC to better integrate the monthly and annual AQI statistics, providing clearer access to the related statistics (para 3.16).

1.6 Suggestions for extracting maximum value from the statistics

1.6.1 This section includes some suggestions for improvement to NHS England's statistics on ambulance quality indicators, in the interest of the public good. These are not formally required for designation, but the Assessment team considers that their implementation will improve public confidence in the production, management and dissemination of official statistics.

We suggest that:

1	NHS England refer to the types of use put forward in the Statistics Authority's Monitoring Brief, <i>The Use Made of Official Statistics</i> when documenting use (para 3.2).
2	The statistical Head of Profession should inform the Director General for Regulation if he is unable to access information about the audit arrangements undertaken by the relevant regulatory bodies (para 3.8).
3	NHS England use a frequency distribution chart for each ambulance trust showing response times by numbers of calls, as part of its quality assurance monitoring (para 3.10).

2 Subject of the assessment

2.1 NHS England publishes *Ambulance Quality Indicators – monthly update for England*⁹ (AQI) as a statistical report with accompanying data tables. It was first released in April 2011 by DH which was at that time responsible for the oversight of NHS ambulance services in England. This responsibility moved to NHS England in the reorganisation of the NHS in April 2013. The National Audit Office reviewed¹⁰ the activities of the ambulance services in England in 2011 and emphasised the need for more timely and complete information than was included in either statistics from the annual Ambulance Services Data Set¹¹ (KA34), published by the Health and Social Care Information Centre (HSCIC) in *Ambulance Services, England*¹², or in *Ambulance weekly activity statistics, Ambulance trusts in England*¹³ (*Weekly Ambulance SitReps*), which was previously published by DH but is now discontinued.

2.2 The statistics in AQI were developed with input from policy and information officials in DH and the ambulance trusts and replaced *Weekly Ambulance SitReps*. Two sets of indicators are included in AQI: the Ambulance Systems Indicators (AmbSYS) and Ambulance Clinical Outcomes (AmbCO). The system and clinical outcome indicators presented in AQI relate to different time points since the clinical outcomes require a three-month period of follow up for the health outcomes to occur (for example, allowing time to see whether patients recover following a cardiac arrest) and for the data to be collected from the acute hospital trusts and recorded by the ambulance trusts. The two sets of statistics enable users, including the ambulance trusts themselves, to benchmark performance across the service and to encourage good performance. AQI also allows NHS managers to determine the variance between service providers and this is used as the basis for improving poor performance. The Handbook to the NHS Constitution¹⁴ lists 13 bullets with government pledges on waiting times; one bullet relates to two AQI standards:

- 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

The indicators of particular interest to the ambulance trusts include further breakdowns of the 'Category A' calls into two categories, and four clinical outcomes:

- The proportion of Red 1 ('most urgent') calls resulting in an emergency response responded to within 8 minutes
- The proportion of Red 2 ('serious but less time critical') calls resulting in an emergency response responded to within 8 minutes

⁹ <http://www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators/>

¹⁰ <http://www.nao.org.uk/report/transforming-nhs-ambulance-services/>

¹¹ <http://www.isb.nhs.uk/library/standard/122>

¹² <http://www.hscic.gov.uk/catalogue/PUB11062>

¹³ http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Statistics/Perfomancedataandstatistics/WeeklySituationReports/DH_128506

¹⁴ Handbook, 26 March 2013:

www.nhs.uk/choiceintheNHS/Rightsandpledges/NHSConstitution/Pages/Overview.aspx

- Return of Spontaneous Circulation (for example, signs of breathing)
 - Outcome from acute myocardial infarction ('heart attack')
 - Outcome from stroke
 - Survival to discharge following cardiac arrest
- 2.3 The ambulance trusts also monitor other aspects of the service, including the number of calls abandoned before being answered, calls closed with telephone advice, and the re-contact rate – where patients subsequently re-contacted the ambulance service within 24 hours of receiving telephone advice or having been released from care. The ambulance trusts submit their aggregated data returns through the Unify2 web portal.
- 2.4 HSCIC's *Ambulance Services, England*¹⁵ (see paragraph 2.1) shows the annual volume of activity and performance levels against the required standards (responses within 8 or 19 minutes). It includes information about emergency and urgent calls, response times and patient destinations. HSCIC extended the report in 2013 to include annual statistics based on the AmbSys and AmbCO data collections used to produce AQI. In 2014, HSCIC stopped collecting KA34 data and published the annual report¹⁶ based on the AQI data alone. NHS England told us that it has held discussions with HSCIC about producing a joint annual report but they have agreed that the annual report will remain the responsibility of HSCIC.
- 2.5 Equivalent statistics for Wales, Scotland and Northern Ireland are published separately. The statistics for the Welsh NHS trusts¹⁷ are published as National Statistics by the Welsh Government. The Scottish Government has a HEAT standard¹⁸ that is similar to the target in England, which is monitored using statistics published by the Scottish Ambulance Service¹⁹ in its annual report (this is not published as National Statistics). The Department of Health, Social Services and Public Safety, Northern Ireland publishes ambulance statistics in its National Statistics report on emergency care²⁰.
- 2.6 NHS England publishes AQI in Word format, with supplementary tables in Excel and CSV formats. This equates to a level 3 rating under the Five Star Scheme proposed in the *Open Data White Paper: Unleashing the Potential*²¹ and adopted as UK government policy in November 2012²². Five stars represents the highest star rating within the Scheme.
- 2.7 NHS England told us that the cost to manage the ambulance quality indicator data collection and to produce the monthly publication is approximately 0.75 full time equivalent (FTE) staff.

¹⁵ <http://www.hscic.gov.uk/article/2021/Website-Search?productid=11839&q=ambulance&sort=Relevance&size=10&page=1&area=both#top>

¹⁶ <http://www.hscic.gov.uk/catalogue/PUB14601/ambu-serv-eng-2013-2014-rep.pdf>

¹⁷ <http://wales.gov.uk/topics/statistics/headlines/health2013/ambulance-services-september-2013/?lang=en>

¹⁸ <http://www.scotland.gov.uk/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/ambulanceStandard>

¹⁹ <http://www.scottishambulance.com/TheService/annualreport.aspx>

²⁰ http://www.dhsspsni.gov.uk/index/stats_research/hospital-stats/emergency_care-3/emergency-care-stats.htm

²¹ http://data.gov.uk/sites/default/files/Open_data_White_Paper.pdf

²² <https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles>

3 Assessment findings

- 3.1 The NHS England ambulance statistics team has developed strong ties with the ambulance trusts and policy officials in DH. The statisticians see these users as their main stakeholders and have regular contact with them. NHS England consulted these organisations in developing the ambulance quality indicator statistics. The feedback from the ambulance trusts was central to the preparation of the data specification on which the aggregate return was based. User and data supplier feedback was also used to set the interval for collecting the clinical outcome data, balancing the time period for the clinical follow up and data collection with sufficiently timely data to inform practice. NHS England told us that it has a representative who attends the meetings of the Health Statistics User Group²³, one of the groups sponsored by the Royal Statistical Society. NHS England sees this group as the main forum for hearing the views of users outside the NHS and DH. The contact telephone number and email address of the responsible statistician are given in *AQI* and in supporting the quality statement.
- 3.2 During the course of the Assessment, NHS England has documented the uses made of the statistics and users' needs by reviewing its log of queries. The performance of ambulance trusts is of great public interest, reflected in recent media attention²⁴. The performance of ambulance trusts is also of interest to voluntary sector groups, such as the Patients Association²⁵ and to professional bodies such as the trades union, Unison²⁶. NHS England has not developed effective ways of regularly engaging with such groups to understand their use, or potential use, of *AQI*. The statistics team told us that it would in future consult the ambulance trusts, as well as DH and other users more widely, about planned changes. As part of the designation as National Statistics, NHS England should engage regularly with the full range of users, including patient groups and the third sector²⁷ (Requirement 1). We suggest that in meeting this Requirement NHS England should refer to the types of use put forward in the Statistics Authority's Monitoring Brief, *The Use Made of Official Statistics*²⁸.
- 3.3 NHS England makes scheduled revisions in *AQI*. It signposts these in the main part of the statistical report, giving the scale of the latest revision. It also gives a list of when revisions have been made. During the course of the Assessment,

²³ <http://www.rss.org.uk/hsug>

²⁴ Media reports on the topic, for example:

<http://www.telegraph.co.uk/health/healthnews/11022082/Patients-left-stranded-in-ambulances-for-8-hours.html> ;

http://www.southwalesargus.co.uk/news/11438909.ARGUS_COMMENT__Ambulance_response_times__still_not_getting_there/ ;

<http://www.bbc.co.uk/news/uk-wales-28568751> ;

<http://www.cambridge-news.co.uk/East-England-Ambulance-Serviceconsistently-failing-meet-response-targets-theyve-got-staff-vehicles/story-22369169-detail/story.html>

²⁵ <http://patients-association.com/default.aspx>

²⁶ <http://www.unisoneastern.org.uk/news/unison-reacts-to-external-review-east-engl-ambulance-nhs-trust>

²⁷ In relation to Principle 1, Practices 1 and 2 of the *Code of Practice*

²⁸ <http://www.statisticsauthority.gov.uk/assessment/monitoring/monitoring-reviews/monitoring-brief-6-2010---the-use-made-of-official-statistics.pdf>

NHS England published an AQI quality statement²⁹ that provides a fuller explanation of the revisions made, together with a publication schedule for the revisions. The statement signposts users to the latest report that provides revisions and which specifies the scale of revisions made for individual ambulance trusts. NHS England also extended its presentation of revisions for clinical outcomes in AQI³⁰, by including charts to illustrate the changes for each indicator by month over the previous year.

- 3.4 NHS England provides the data suppliers in ambulance trusts with information about the collection and provision of the ambulance data in the AQI specification guidance³¹; this document is available on the main ambulance quality indicator web page. While designed for the data suppliers, it does contain useful definitional information for users.
- 3.5 The Authority regards the ambulance quality indicators as being of high public interest, reflecting their importance in demonstrating the level of effectiveness of the emergency response in life-threatening situations. It also considers that there is a high-level risk to the accuracy of the data underlying the statistics: different practices among ambulance trusts may result in a lack of consistency in the recording of the administrative data. In addition, the presence of a performance management regime leads to the potential for distortive effects in the statistics.
- 3.6 In light of the de-designation of police recorded crime statistics in January 2014 (in Assessment report 268³²) and emerging advice from the Statistics Authority on the approach that statistical teams should take in relation to the use of administrative data for statistical purposes, NHS England sought further information from the AQI data suppliers about their assurance arrangements. During the course of the Assessment, NHS England prepared and published the AQI quality statement, describing different aspects of the quality of the administrative data used to produce these statistics. The statement outlines the quality assurance arrangements in NHS England. It describes conducting internal consistency checks and requests that data be resubmitted when anomalies are found. Ambulance trusts are also asked to confirm that their statistics are complete and accurate before publication by NHS England. This statement also includes a description of some steps taken by the ambulance trusts to minimise potential sources of error in the data recording, through training, the monitoring of emergency calls and the completion of records by clinicians. The effectiveness of these safeguards is not explained. The statement does not provide sufficient information about the steps taken by trusts to assure their data. As part of the designation as National Statistics, NHS England should extend the AQI quality statement to summarise the audit

²⁹ <http://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2013/04/AQI-Quality-Statement-2014.pdf>

³⁰ AQI clinical outcomes April 2013 - April 2014, published on 5 September 2014:

http://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2014/06/Stats_Note_SYSto20140731_COto20140430.docx

³¹ <http://www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators/>

³² <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/assessment-report-268---statistics-on-crime-in-england-and-wales.pdf>

- and assurance arrangements of the ambulance trusts and make clear the implications for the quality of the AQI statistics³³ (Requirement 2).
- 3.7 We received comments from users and data suppliers in ambulance trusts about differences in the data recording for the AQIs (see annex 2). We were told by ambulance trusts about benchmarking activities that they are undertaking to address the differences. The AQI quality statement highlights an internal audit undertaken on behalf of the Association of Ambulance Chief Executives (AACE), which also intends to address the mis-recording issue. The quality statement summarises the outcome of the internal audit, which found that governance arrangements were satisfactory and some examples of particularly good practice. AACE said that it had no concerns over general misreporting but did find some AQI measures needed tighter definition to ensure consistent reporting.
- 3.8 The AQI quality statement also refers to the programme of peer review that is being introduced by the National Ambulance Service Clinical Quality Group which oversees the clinical outcome data – the group reported on the consistency of practices between ambulance trusts for the National Ambulance Services Medical Directors. The NHS Trust Development Authority is responsible for providing assurance that non-foundation trusts have effective arrangements to record data. Monitor is responsible for ensuring that Foundation Trusts are well-governed and have effective arrangements to ensure that data are recorded accurately. The Chief Inspector of Hospitals in the Care Quality Commission has a responsibility for overseeing the regulatory activity and assessments of quality of ambulance services provided by NHS Trusts, private providers or the voluntary sector³⁴. NHS England's quality statement does not make clear whether these regulatory activities demonstrate that the Trusts are recording data correctly. It also does not make sufficiently clear whether there are any implications for the quality of the statistics in AQI that users should allow for when using the figures. As part of the designation as National Statistics, NHS England should extend the AQI quality statement to summarise the outcomes of the reviews of the ambulance trusts' practices by regulatory bodies with respect to the quality of the AQI data³⁵ (Requirement 3). We suggest that should NHS England be unable to access information about the audit arrangements undertaken by the relevant regulatory bodies, the statistical Head of Profession should inform the Director General for Regulation.
- 3.9 The AQI quality statement refers to the clinical dashboard³⁶ published by most of the trusts on their websites and by AACE. The dashboard is an Excel workbook prepared by NHS England, giving the ambulance statistics underpinning AQI. The trusts can add explanatory text in a linked PDF document. NHS England uses statistical process control charts and funnel plots in the dashboard to indicate whether fluctuations in performance are statistically significant. The AQI quality statement does not present any quality

³³ In relation to Principle 4, Practice 2, Principle 8, Practice 1 and Protocol 3 Practice 5(e) of the *Code of Practice*

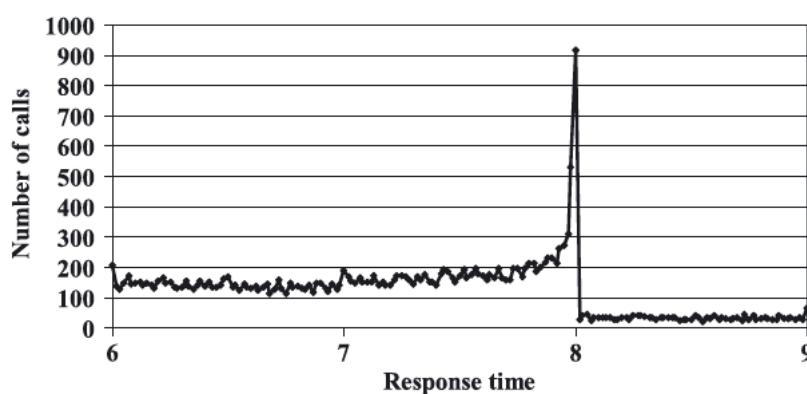
³⁴ http://www.cqc.org.uk/sites/default/files/ambulance_signposting_document_-_final.pdf

³⁵ In relation to Principle 4, Practice 2, Principle 8, Practice 1 and Protocol 3 Practice 5(e) of the *Code of Practice*

³⁶ http://www.londonambulance.nhs.uk/about_us/how_we_are_doing/clinical_quality_indicators/clinical_dashboard.aspx

indicators for the ambulance trusts or summarise the results of the statistical process control analysis. The NHS England statistics team has recently undertaken the first of what it has told us is a series of visits it plans to make to ambulance trusts, to gain a better insight into their practices.

- 3.10 The AQI quality statement highlights that ambulance trusts can be fined for failing to meet the standards in the *Handbook to the NHS Constitution*: East Midlands Ambulance Trust was fined³⁷ £3.5m in 2013 for failing to meet the patient response target. Bevan and Hamblin (2009)³⁸ examined the effects of targets on ambulance response times to emergency calls in each of the UK countries. Their paper highlighted the findings of the Commission for Health Improvement³⁹ (CHI, formerly the NHS's independent inspection body) in its investigations of data recording by individual ambulance trusts. CHI found in 2003 that a third of the trusts had made manual corrections so that their records of response times were rerecorded as taking less than 8 minutes. The chart below shows an example of the adjusted response times by the number of calls for one ambulance trust, as found by CHI.



Source: Bevan and Hamblin (2009)⁴⁰

NHS England receives aggregated information about the time to treat patients following an emergency call (displayed in the clinical dashboard as the time at which 50 per cent, 95 per cent and 99 per cent of patients, respectively, were treated); however, ambulance trusts do not provide NHS England with data for the complete response time distribution. NHS England is not sufficiently forthcoming about the risks associated with performance targets and does not explain what actions it takes to monitor for distortive effects. As part of the designation as National Statistics, NHS England should extend the AQI quality statement to summarise the potential for distortive effects associated with the ambulance performance standards and the steps taken to monitor for such effects⁴¹ (Requirement 4). We suggest that NHS England use a frequency

³⁷ "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

³⁸ G Bevan and R Hamblin (2009) Hitting and missing targets by ambulance services for emergency calls: effects of different systems of performance measurement with the UK. *Journal of the Royal Statistical Society*, 172, Part 1, pp161-190: <http://www.ncbi.nlm.nih.gov/pubmed/19381327>

³⁹ <http://webarchive.nationalarchives.gov.uk/20040315011120/chi.nhs.uk/>

⁴⁰ See footnote 38, Figure 7, page 180

⁴¹ In relation to Principle 4, Practice 2 and Principle 8, Practice 1 of the *Code of Practice*

distribution chart for each ambulance trust showing response times by numbers of calls, as part of its quality assurance monitoring.

- 3.11 *AQI* includes a further information section that refers to other related statistics in England and the devolved administrations. It provides a link to DH's discontinued *Weekly Ambulance SitReps*, to HSCIC's *Ambulance Services, England* and to the equivalent statistics for the other UK countries. The *AQI* quality statement includes a section on coherence, listing the differences in the two data collections, *AQI* and *KA34* (collated from ambulance trusts by HSCIC until 2013). The statement also provides links to the other related statistics and outlines those published by the devolved administrations. It summarises the issues affecting the comparability between the statistics for the UK countries.
- 3.12 *AQI* presents statistics on the performance for England and for individual ambulance trusts against the 8 minute response time and 19 minute transportation standards. These figures are based on responses to emergency calls to 999. Requests for ambulance emergency service can also be routed from NHS 111 (the service that has replaced NHS Direct, with calls made to the 111 telephone number). *AQI* does not provide a sufficiently clear explanation of the types of emergency calls and the implications of including or excluding 111 calls. *AQI* also does not make clear whether calls made to the European emergency number, 112, are included in the statistics. As part of the designation as National Statistics, NHS England should clarify the explanation of the types of emergency call included in the *AQI* statistics and highlight any implications for the statistics to aid user interpretation⁴² (Requirement 5).
- 3.13 NHS England told us that the statistics in *AQI* do not disclose personal information as they are published in aggregate form. It said that it has assessed the risk of disclosure and published a confidentiality statement⁴³ jointly with DH. NHS England includes a brief description in the *AQI* quality statement about how the privacy of individuals is protected in the data.
- 3.14 NHS England told us that it does not have a statistical work programme since statistical operations are not centralised; statisticians are embedded in teams across the organisation, and priorities and resources are assessed as part of normal business planning. NHS England has included a description of its approach to statistical planning in the *AQI* quality statement, including the use of fundamental reviews of data collections, the process for gaining permission to collect data and prioritisation exercises within the annual business planning process.
- 3.15 Following feedback from the Assessment team during the course of the assessment, NHS England reviewed the presentation, structure and content of *AQI*. It describes the main ambulance systems and clinical outcome indicators and provides helpful, straightforward explanations of the important terms in the main body of the text and in footnotes. NHS England replaced a brief summary of the latest findings in bullet-point lists with a more detailed narrative which places the findings in the longer-term context and relates the statistics to the standards in the NHS Constitution. It also improved the presentation of its summary tables and service indicator charts – these are now integrated into the

⁴² In relation to Principle 4, Practice 1 of the *Code of Practice*

⁴³ <http://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2012/04/Joint-DH-NHS-England-Disclosure-and-Confidentiality-Policy-January-2014.pdf>

relevant commentary. *AQI* now highlights which ambulance trusts have failed to achieve the targets and states whether this is part of a consistent pattern. However, in making these changes NHS England removed the clinical outcome charts and does not provide a guide to the degree of variability observed in the clinical outcome indicators over time. As part of the designation as National Statistics, NHS England should provide a brief overview of the main *AQI* findings at the start of the release, include charts to summarise the clinical outcome indicators and indicate the degree of variability over time in the clinical outcomes statistics⁴⁴ (Requirement 6). In meeting this requirement NHS England should address the weaknesses highlighted in this paragraph, and consider the further points detailed in annex 1 and annex 2.

- 3.16 As noted above, *AQI* signposts users to HSCIC's annual report on ambulance services as related statistics. However, NHS England does not make sufficiently clear that HSCIC's report provides an annual analysis and commentary of the *AQI* statistics. It does not describe the nature of the additional information provided and draw users' attention to how the annual report may be of relevance in better understanding the *AQI* statistics. As part of the designation as National Statistics, NHS England should work with HSCIC to better integrate the monthly and annual *AQI* statistics, providing clearer access to the related statistics⁴⁵ (Requirement 7).
- 3.17 *AQI* is available through the ambulance quality indicator web page on NHS England's website via a link that refers to 'Data'. Following advice from the Assessment team, NHS England has improved the signposting to the statistical report. The supplementary data tables are available in Excel and CSV formats. NHS England also revised *AQI* to make clear that it is the responsible producer body and gives the date of publication.
- 3.18 NHS England has published a joint Statement of Administrative Sources⁴⁶ with DH. It identifies the administrative systems used in the production of official statistics, and during the course of the Assessment, added information about the data collected from ambulance trusts used to produce the monthly statistics in *AQI* via Unify2.

⁴⁴ In relation to Principle 8, Practices 1 and 2 of the *Code of Practice*

⁴⁵ In relation to Principle 8, Practice 4 of the *Code of Practice*

⁴⁶ <http://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2012/04/Joint-DH-NHS-England-Statement-of-Administrative-Sources-January-2014.pdf>

Annex 1: Compliance with Standards for Statistical Reports

- A1.1 In November 2012, the Statistics Authority issued a statement on *Standards for Statistical Reports*⁴⁷. While this is not part of the *Code of Practice for Official Statistics*, the Authority regards it as advice that will promote both understanding and compliance with the *Code*. In relation to the statistical reports associated with the ambulance quality indicators, this annex comments on compliance with the statement on standards. The comments included in this annex are based on a review of *AQI* published in September 2014 covering the July 2014 ambulance system ('Ambsys') and April 2014 clinical outcomes ('AmbCO') statistics⁴⁸.
- A1.2 In implementing any Requirements of this report (at paragraph 1.5) which relate to the content of statistical reports, we encourage the producer body to apply the standards as fully as possible.

Include an impartial narrative in plain English that draws out the main messages from the statistics

- A1.3 *AQI* presents the main findings for each of the systems indicators and then for the clinical outcomes. It defines the main indicators and terms at the start of each section and in footnotes. The commentary presents the latest monthly findings, and describes the associated trend. In revising the structure and presentation of *AQI*, NHS England removed the summary bullet list – the report is no longer introduced with an overview of the five or so main points from the bulletin.
- A1.4 The report provides a comparison of performance by trust in the latest period and makes clear where ambulance trusts have regularly performed below the standards. *AQI* also compares the performance against the average for the year to date. It provides a range of measures of performance of the ambulance trusts but it does not provide background information to explain the relevance of the findings, such as operational factors that may underpin the statistics or other possible reasons for the changes. NHS England has, however, extended the analysis of ambulance volumes to compare the monthly figures for the last three years with the number of category A calls resulting in an ambulance at the scene and with the number requiring the emergency transfer of a patient to hospital. The description does not draw out the full meaning of the findings illustrated in Figure 3.
- A1.5 The report signposts users to similar statistics in the devolved administrations and highlights the differences in the statistics that might affect comparisons between the UK countries. It also highlights that *Ambulance Services, England*, published by HSCIC, is based on the same data, and briefly summarises the coherence between the statistics presented in the two reports. However, it does not make clear that HSCIC's report presents an annual analysis of the same *AQI* statistics, nor highlight how they can better inform users about the patterns in the statistics. NHS England highlights that a clinical dashboard is published

⁴⁷ <http://www.statisticsauthority.gov.uk/news/standards-for-statistical-reports.html>

⁴⁸ <http://www.england.nhs.uk/statistics/statistical-work-areas/ambulance-quality-indicators/ambulance-quality-indicators-data-2014-15/>

with the performance data for each trust, and explains that the statistics are comparable with *AQI*.

Include information about the context and likely uses of the statistics

A1.6 The main service indicators (8 minute response time and 19 minute transportation standards for Category A calls, broken down by severity – i.e. Red 1 and Red 2) are listed at the start of the release for each of the two sets of indicators. The reasons underpinning the indicators are explained in relation to the NHS Constitution. No information is given about the wider health policy context or operational practices, such as signposting users to relevant policies or giving factual information about such policies or practices and any known effect on the statistics. However, the *AQI* quality statement outlines the main purposes of the statistics and types of users, predominantly for assessing the performance of the ambulance trusts. It also provides links in footnotes to additional guidance material given in *Ambulance Quality Indicators* (the guidance document for data providers).

Include information about the strengths and limitations of the statistics in relation to their potential use

A1.7 While no information is given about the strengths and limitations of the statistics in *AQI*, such as about coverage issues and the impact of differences in recording between ambulance trusts, the statistical report does provide a link to the *AQI* quality statement. This statement includes guidance about the nature of the data collection and a description of quality against the six dimensions of the ESS Quality Framework. It also gives an indication of the approaches taken to assure the administrative data by NHS England. It outlines the governance arrangements within the ambulance service, summarises a recent internal audit, and refers to the introduction of peer review to ensure the quality and consistency of the practices by ambulance trusts. However, information is not given on the assurance gained by the regulator bodies in determining whether the safeguards adopted by ambulance trusts are effective. The statement highlights some aspects of ambulance trust practices for reducing the risk of processing error – through training and monitoring of emergency calls and the completion of records by clinicians; however, it is not clear how these activities are assured by trusts to ensure the accuracy of the data.

A1.8 The *AQI* quality statement describes the main sources of non-sampling error that can occur in the data – coverage and processing error. However the statement does not provide an assessment of the extent to which the *AQI* data are affected by these types of error; for example, whether coverage is complete for all records of emergency calls and for all items of information within the records, across the ambulance trusts. Quality indicators on such types of error are not reported.

A1.9 *AQI* refers to the ambulance trusts' clinical dashboard which provides the trust-level statistics and makes clear that these are taken from the *AQI* data. The dashboard provides users with a means to compare the results for ambulance trusts over time and to compare the performance for specific indicators across trusts. It also uses statistical process control charts and funnel plots to show the variations in the trusts' statistics.

A1.10 Revisions are highlighted on the first page of *AQI* in two editions each year (generally for statistics in March and September), giving the scale of the scheduled revisions made to previously published statistics. This policy lists each of the data collections on Unify2 that are subject to scheduled revisions and their frequency and explains the planned schedule for the different sets of ambulance indicators. The *AQI* edition released in September 2014 provides a set of charts showing the revisions for each of the clinical indicators and two tables showing the scale of revisions. Following advice from the Assessment team, NHS England provided a clear explanation of the revisions policy in the *AQI* quality statement, in which it highlights the latest statistical report that includes revised statistics.

Be professionally sound

A1.11 The descriptions are in line with the statistics and provide a helpful summary of the performance against the standards. The service indicator charts are sufficiently clear to support the interpretation of the statistics. In revising the presentation of *AQI*, NHS England removed the clinical outcome charts on return of spontaneous circulation and survival to discharge following cardiac arrest. The current narrative does not convey the degree of variability in the monthly statistics over time, although *AQI* does provide an indication of the variation between trusts in summary table B5.

Include, or link to, appropriate metadata

A1.12 The title of the report is clear in setting out the reference period and frequency of release. Following advice from the Assessment team, NHS England now states that it is the responsible producer body and gives the date of publication.

A1.13 *AQI* provides a link to the *AQI* quality statement which sets out the quality of the statistics in relation to the six dimensions of quality in the ESS framework. The statement includes a description of the non-sampling errors including coverage error and processing error, but does not provide an indication of the scale of these errors recorded in the ambulance trust systems.

Annex 2: Summary of assessment process and users' views

- A2.1 This assessment was conducted from July 2013 to September 2014.
- A2.2 The Assessment team – Penny Babb and Sara James – agreed the scope of and timetable for this assessment with representatives of NHS England in July 2013. The Written Evidence for Assessment was provided on 23 July 2013. The Assessment team subsequently met the statistical team in NHS England during October 2013 to review compliance with the *Code of Practice*, taking account of the written evidence provided and other relevant sources of evidence. The Authority asked that NHS England clarify the arrangements with ambulance trusts for the quality assurance of the administrative data and sought further evidence. The Assessment team met the statistical team in NHS England in June 2014 and received further evidence in July 2014.

Summary of users contacted, and issues raised

- A2.3 Part of the assessment process involves our consideration of the views of users. We approach some known and potential users of the set of statistics, and we invite comments via an open note on the Authority's website. This process is not a statistical survey, but it enables us to gain some insights about the extent to which the statistics meet users' needs and the extent to which users feel that the producers of those statistics engage with them. We are aware that responses from users may not be representative of wider views, and we take account of this in the way that we prepare Assessment reports.
- A2.4 The Assessment team received 16 responses from the user and supplier consultation. The respondents were grouped as follows:
- | | |
|----------------------|---|
| Department of Health | 1 |
| Central government | 1 |
| Other public sector | 5 |
| Regulator | 1 |
| Professional bodies | 1 |
| Media | 1 |
| Data suppliers | 6 |
- A2.5 Users and data suppliers were broadly satisfied with their engagement with statistical team in NHS England, although one user found it difficult to identify a person to contact to answer statistical enquiries. Most users were also satisfied that the statistics met their needs at a high level. Users who referred to the statistical commentary found it helpful in providing context to the statistics. However, several users noted that the usefulness of the indicators was limited and suggested other measures that would help provide more useful management information. These include indicators on number of ambulance responses crewed by paramedics, statistics about specialist paramedics, as well as improved statistics on clinical outcomes. Some users also noted the limited use of statistics based on HSCIC's KA34 data, since this data collection is being phased out.

A2.6 Concerns were expressed by users and data suppliers about the quality of the indicators resulting from a known variation in ambulance trusts' interpretation of the technical guidance available, affecting the comparability of the statistics across trusts. Some users felt that there was little guidance available about the strengths and limitations of the statistics; one user highlighted inaccurate clinical comments in AQI's commentary. Other suggestions for improvements include NHS England publicising the monthly statistics release more broadly; the process for supplying data being enhanced by using web tools; improving the design of the input spreadsheets; and including more information about the different uses of the statistics other than their use by ambulance trusts.

Key documents/links provided

Written Evidence for Assessment document

AQI Quality Statement

