

Assessment of compliance with the Code of
Practice for Statistics

Accident and Emergency Statistics

(produced by NHS England)

Office for Statistics Regulation

We provide independent regulation of all official statistics produced in the UK. Statistics are an essential public asset. We aim to enhance public confidence in the trustworthiness, quality and value of statistics produced by government.

We do this by setting the standards they must meet in the [Code of Practice for Statistics](#). We ensure that producers of government statistics uphold these standards by conducting assessments against the Code. Those found to comply with the standards of trustworthiness, quality and value in the Code are given accredited official statistics status (called National Statistics in the Statistics and Registration Service Act 2007). We also report publicly on system-wide issues and on the way statistics are being used, celebrating when the standards are upheld and challenging publicly when they are not.

Overview

Why we carried out this assessment

- 1.1 The performance of the National Health Service in England (NHS England) is a hugely topical issue, often covered in public and political discourse. Individuals and organisations want to hold the UK Government to account against its commitments, understand what level of service can be expected in local areas and understand how performance compares against other countries.
- 1.2 At the Office for Statistics Regulation (OSR), we champion the effective communication of statistics which support society's key information needs. Given the high public interest in NHS performance, we welcomed the [request by NHS England](#) to assess its statistics about accident and emergency (A&E) activity. We agreed with NHS England that the high profile nature of these statistics, as well as ongoing data developments, presented a good opportunity for OSR to provide feedback on the statistics and assess their compliance with the [Code of Practice for Statistics](#). In requesting this assessment, the team has demonstrated its commitment to produce statistics that meet the standards required of accredited official statistics and the Code of Practice for Statistics.

A&E statistics in England

- 1.3 NHS England publishes statistics on A&E activity in England in three separate releases. This assessment considered all three outputs:
 - [A&E Attendances and Emergency Admissions](#)
 - [Provisional Accident and Emergency Quality Indicators for England](#)
 - [Hospital Accident and Emergency Activity](#)
- 1.4 The first release (A&E Attendances and Emergency Admissions) is published monthly. It provides information at NHS Trust level in England on the number of attendances to A&E units and how many of these were discharged, admitted, or transferred within four hours (the operational standard for A&E waiting times in England is that 95% of patients should be admitted, transferred, or discharged within four hours of arrival). The statistics are produced from the Monthly Trust Situation Reports (MSitAE) – an aggregated data collection submitted to NHS England by NHS Trusts each month. In April 2023, NHS England started publishing monthly information on the number of attendances discharged, admitted, or transferred within 12 hours. These new statistics are produced using a different source – the Emergency Care Data Set (ECDS), which is a record-level data set.
- 1.5 The second release (Provisional A&E Quality Indicators) is also published monthly and provides information on total attendances, time to assessment, time to treatment and unplanned reattendances. The statistics are sourced from the ECDS.
- 1.6 The third release (Hospital A&E Activity) is published annually and provides analysis of attendances and waiting times by patient demographics, as well as comparisons of 4 and 12-hour waits between the four UK nations. The statistics are sourced from both the monthly aggregated data and the ECDS.

Our approach to the assessment

- 1.7 This assessment was conducted between June and September 2023. We reviewed published information about the statistics, as well as supplementary evidence provided to us by NHS England, such as internal work programmes and guidance.
- 1.8 An important part of the assessment process involved us talking to people who use the statistics, so that we could understand the current value of the statistics, and where there is the potential to increase this value. Users we engaged with included government analysts, health think tanks and unions, Royal Colleges, journalists, parliamentary researchers, and members of the public. We would like to thank everyone who gave their time to speak with us.
- 1.9 We have identified six actions for NHS England to fulfil in order for the statistics to become accredited official statistics (called National Statistics in the Statistics and Registration Service Act 2007). NHS England should aim to achieve this by July 2024. Once NHS England demonstrates that these steps have been undertaken, OSR will recommend that the UK Statistics Authority confirm the accredited official statistics status.

Trustworthiness

Leadership and organisational practices

- 1.10 [Trustworthiness](#) is a product of the people and processes within organisations that enable and support the production of statistics and data. Users told us that they have confidence in NHS England's statistics and those who produce them, and we found evidence of strong statistical leadership and organisational practices.
- 1.11 In January 2023, NHS England and NHS Digital merged to create a new, single organisation. Following the merger, there are two Heads of Profession for Statistics/Chief Statisticians at NHS England. They work closely together to oversee the large portfolio of official statistics produced by the organisation and are both active members of the [England Health Statistics Leadership Forum](#). The merger of the two organisations also means that there is now a dedicated statistical governance team (formerly part of NHS Digital) to support the production of official statistics within NHS England.
- 1.12 NHS England demonstrates good practice in accordance with the [orderly release requirements](#) of the Code of Practice. Publication dates for the A&E statistics are pre-announced via the [NHS England release calendar](#) and the [NHS Digital release calendar](#). Any revisions to the statistics are carried out in line with published guidance (see the [NHS England policy](#) and the [NHS Digital policy](#)) and are accompanied by a note on the relevant publication page. One user commented that it is not always clear that revisions have been made to data tables, so NHS England should consider how to make revision notices even more prominent on its outputs.
- 1.13 Staff involved in the production of the statistics undertake mandatory training on topics such as information governance. They also have access to a range of analytical training, for example on statistical methods, communication and software, and are encouraged to spend time on learning and development. However, a significant challenge for staff is ongoing resource pressures which often impact opportunities for personal development and development of the statistics. It will be helpful to NHS England in addressing the requirements in our report if sufficient resource is made available to the relevant teams.
- 1.14 We raised some minor issues for improvement which NHS England quickly addressed during the assessment, such as making contact details and latest release dates easier to find. We identified two further requirements in relation to trustworthiness for NHS England to address. These are discussed in the following sections.

Pre-release access to the statistics

- 1.15 A core principle of the Code of Practice is that statistics should be equally available to all, and not given to some people before others. To preserve this principle, the circulation of statistics in their final form ahead of publication should be restricted, in line with the [rules on pre-release access](#) set out in legislation.
- 1.16 It is good that NHS England publishes pre-release access lists for each of the three statistics releases about A&E activity and that these lists detail the department and job title for those who were granted access. While no pre-release access has been required for the quality indicators release since December 2022, the most recent lists for the monthly and annual A&E releases show pre-release access was

granted to more than 80 and 40 people respectively. These appear to be excessively large numbers of people, especially in the context of pre-release access not being required at all for one of the three publications. In addition, both of these lists contain several instances of multiple members of the same team being granted pre-release access.

- 1.17 We have [intervened with other statistics producers](#) in the past where long pre-release access lists have resulted in data leaks. We have subsequently seen the [success that producers can have in reducing lists](#) – for example, by improving pre-release discipline (ensuring that those absent, not required or temporarily deployed to other areas at the time of release are removed) and by working closely with colleagues in press and private offices to find an approach that balances the requirements of the Code with the need to brief officials and Ministers to allow them to respond or take action at, or shortly after, the time of publication. It is also our view that multiple members of the same team should not require pre-release access and that team mailboxes should not be used for sharing the statistics.

Requirement 1: NHS England should review and reduce its pre-release access lists, bearing in mind the principles of good pre-release practice, to support the principle of equality of access and reduce the risk of data leaks. As part of meeting this requirement, NHSE should share its justification for each requirement with OSR.

Transparency of development plans

- 1.18 Producers of statistics should be open about plans and priorities for their statistics and about progress towards meeting these plans. Evidence provided directly to us demonstrated that there are clear work programmes in place for producing each of the three statistics releases. Through conversations with the teams, it was also great to hear about the plans and ambitions for future data developments and improvements to the statistics, such as improving the presentation of outputs or using the rich data within the ECDS to produce new and better measures. However, there is very little information about any of these plans in the public domain beyond, for example, some information that was provided in a consultation carried out on the quality indicators and annual A&E publications during Summer 2023. Publishing and maintaining a development plan would make users aware of planned changes to the statistics and allow them to provide feedback on these plans, which may lead to NHS England being able to make further improvements to the statistics.

Requirement 2: NHS England should publish a development plan for its A&E statistics to enhance transparency and allow users to input to developments. It should share this plan both with its known users and more generally on its website, to ensure it reaches as wide a range of individuals and organisations as possible.

Quality

Data sources and quality assurance

- 1.19 The two data sources used in production of these statistics are the Monthly Trust Situation Reports (MSitAE) and the Emergency Care Data Set (ECDS). Both datasets are administrative data sources and the data are appropriate for producing A&E statistics.
- 1.20 MSitAE is a collection of aggregate data covering A&E attendances and emergency admissions from NHS Trusts in England and is used by NHS England to monitor activity and performance levels. The data are also used to produce the monthly A&E statistics. Data are submitted to NHS England via the Strategic Data Collection Service (SDCS). SDCS is a secure data collection system used by health and social care organisations to submit data. Before submission, data are quality-assured and signed off by providers. NHS England also performs central validation checks aiming to ensure good data quality.
- 1.21 ECDS is a collection of patient-level data on A&E attendances from NHS Trusts in England. ECDS replaced the Hospital Episode Statistics dataset, which had previously been used to produce the quality indicators and annual A&E statistics, in April 2020. Trusts (or 'providers') collect administrative and clinical information locally to support the care of patients; these data are then transferred as a fully automated daily feed to the Secondary Uses Service (SUS) at NHS England and the ECDS dataset is derived. Data are submitted using an xml schema, which returns an error if mistakes have been made. The use of the schema aims to ensure some standardisation of the data received and means that the data have to meet certain validation rules before being submitted to SUS. Each month, NHS England creates data quality dashboards to show NHS providers the completeness and validity of their data submissions. This helps to highlight any issues in the provisional data, allowing time for corrections to be made before the annual data cut is taken and the databases for the year are frozen. NHS England has commissioned support from a central team to help providers improve the quality of their submissions.
- 1.22 There are some differences between the ECDS data and MSitAE data. The main difference is that, as discussed above, the ECDS data are available at a more granular level. Another difference between the datasets is that MSitAE data do not include attendances where the A&E appointment has been pre-arranged. Therefore, when comparing ECDS directly with MSitAE, NHS England excludes planned follow-up attendances from the analysis.
- 1.23 Data collection in relation to performance monitoring is often at risk of misleading practices such as gaming and misreporting because those providing the data may be incentivised to submit inaccurate figures. NHS England told us that it is increasing use of record-level data allows for comparisons with aggregate returns, and that it expects that these would highlight discrepancies arising from such practices. While users did not raise misleading practices as a concern and we have seen no evidence that they are occurring, we consider that NHS England could do more to assure itself and users that data quality is not being impacted by such issues.

Communicating quality and methods to users

- 1.24 The three statistical releases are each accompanied by their own individual information on quality and methods. Briefly, the [monthly A&E activity publication](#) provides comprehensive information on comparability both between the ECDS and MSitAE and with data for the other UK countries. The release also contains details of coverage and completeness for the ECDS, and some limited methodology information.
- 1.25 The annual A&E release for 2022/23 includes a link to [Hospital Accident and Emergency Care Activity supporting information](#). This contains quality information for the ECDS, as well as details of the methodology used to suppress confidential data. NHS England also publishes a separate [ECDS data quality page](#), which includes a link to a data quality dashboard. The monthly provisional release provides high-level quality and methodology information via a separate [supporting information](#) document.
- 1.26 Despite this, information on quality and methods overall does not consistently provide enough detail to fully reassure users about the quality of the statistics. For example:
- From the published information it is difficult to understand the methods involved for data submission and the overall data journey, as well as the statistical methods and processes. Some information is available across the publications and in the wider ECDS webpages, but overall this does not provide a complete picture.
 - Similarly, there is limited description of quality assurance processes across all three releases. NHS England have described the approach to quality assurance for both data sources to us, and this includes several steps from the data collection and submission stage to the point at which the data reaches the statisticians. However, this information is not clearly communicated for users to read and understand.
 - There is very limited information published about quality for MSitAE for the monthly A&E statistics.
 - There is very little explanation of limitations arising from the methodology or of uncertainty across all the releases.
- 1.27 Users we spoke to were generally happy with the quality of the statistics but raised some issues around the communication of data quality issues. Examples included a lack of information on missing data, very limited quality information around demographic variables, and lack of explanation around whether NHS trusts apply the definitions for the A&E unit types consistently.
- 1.28 Between May 2019 and May 2023, 14 NHS Trusts undertook field testing of new urgent and emergency care performance metrics and stopped reporting information on 4-hour performance. From June 2023 4-hour performance data from these 14 trusts has been reintroduced. Some of the users we spoke to requested a back-series including the missing data. NHS England has informed us that it is unable to produce this due to agreements it made with the 14 providers to not assess them by the 4-hour standard throughout the field test period. The team has published information, however, on the [impact of the clinical review of standards on the national A&E timeseries](#).

Requirement 3: NHS England should expand and improve its published information about quality and methods to help users understand the strengths and limitations of the statistics and support appropriate use of them. This should include explanations about the level of uncertainty associated with the statistics, including confidence in the accuracy of data submissions, and what this means for their use, as well as the quality assurance processes carried out. It would also be helpful to provide a summary of the data journey, from data submission to publication.

Value

User engagement

- 1.29 Users of statistics and data should be at the heart of statistical production – their needs should be understood, their views sought and acted on where practicable, and their use of statistics supported. This requires producers of statistics to maintain an open dialogue using proactive formal and informal engagement to listen to the views of new and established contacts.
- 1.30 We found some evidence of user engagement by NHS England. For example, the statisticians at NHS England engage with analysts at the Department for Health and Social Care and NHS England responded to user feedback by providing new statistics on 12-hour waits. In 2022, prior to the merger with NHS England, NHS Digital carried out discovery research which involved engagement with some users of its statistics (though this project was not specific to A&E statistics) and more recently carried out a consultation inviting feedback on proposed improvements to the quality indicator and annual A&E publications. However, beyond government colleagues, we found that the statisticians have very limited knowledge about who uses their statistics and do not carry out regular, proactive user engagement. Engaging more effectively with a broader range of users would enable NHS England to better understand user needs and help it to maximise the public value of the statistics, while at the same time prioritising limited resources. These users could include, for example, health think tanks, academic researchers and institutions, parliamentary researchers, journalists, and members of the public.

Requirement 4: NHS England should regularly and proactively engage with a wider range of users to understand their needs and implement improvements to the statistics which enhance their public value. It might be helpful to NHS England to publish a short user engagement plan setting out its intentions in relation to meeting this requirement.

Accessibility and insight

- 1.31 To support society's needs for information, statistics and data should be easily accessible, presented clearly and explained meaningfully. Statistics and data should also be released at the greatest level of detail possible to meet user needs.
- 1.32 Users we spoke to reported using the monthly A&E activity publication most often as it provides the timeliest information against the 4-hour target. Although used less frequently, users also highlighted the value of the additional measures and breakdowns provided in the quality indicator and annual A&E publications. We found that most direct users of the statistics are expert users who have a good understanding of the topic area and need to carry out their own analysis of the figures. As a result, most users we spoke to go straight to the data tables to access the statistics, though a couple said they also find the monthly commentary document useful for obtaining a quick overview of the main messages. Users of the commentary document appreciate its simplicity but highlighted that the addition of charts, particularly showing trends over time, would enhance its value. Users of the data tables have well-established processes for obtaining and analysing the data they need and find this relatively easy to do. However, some noted that unannounced changes have occasionally been made to the table design which causes their established processes to fail and require updating. While the current

format of the data tables is largely suitable for these users, many would prefer to access the statistics in a more reliable and automated way, such as via an API or open data platform. We appreciate that there will not be one format which will suit all users. Therefore, as part of the user engagement requirement above, NHS England should make improvements to enhance the accessibility of its outputs in line with users' priority requirements.

- 1.33 In February 2023, NHS England started publishing statistics on 12-hour waits from arrival to admission, transfer or discharge in response to user feedback and [our own intervention](#). Although this is an important addition to the monthly A&E statistics, it is currently published in a separate document. Several users commented that this makes it harder for them to find and use the new 12-hour waits information. They were not sure of the reason for the new information being separate and felt that it makes it harder for them to fully understand the overall picture in relation to A&E waits. Combining the new information into the existing monthly output would help to increase the overall insights offered by the statistics. We also consider that, in the short term, the accessibility of A&E statistics in England would be improved by more prominent signposting between the various outputs. In the longer term, accessibility may be maximised by publishing the outputs on the same website.

Requirement 5: NHS England should combine the 12-hour waits information with other monthly statistics about A&E and improve signposting between outputs on this topic to improve the overall accessibility of A&E statistics and insights that they provide.

- 1.34 NHS England currently presents the monthly A&E statistics at NHS Trust level. This is the level of legal accountability for the 4-hour target and there is strong user interest in these figures. However, many users also want the statistics to be broken down by site (i.e. hospital). NHS Trusts can comprise several sites with different characteristics, so figures presented at Trust level can mask big differences between individual site performance. There was also some interest in more-frequent breakdowns in the statistics by factors such as age, gender, and ethnicity. Currently demographic breakdowns such as these are available only in the annual publication.
- 1.35 NHS England explained to us that the aggregate data submitted by NHS Trusts each month do not allow for site or demographic breakdowns. To provide more-granular breakdowns in the monthly statistics, NHS England would need to change the source of the statistics to make increasing use of the record-level data provided by the ECDS. It is good that NHS England understands the user need for additional breakdowns and would like to address this. We are aware that it will take a considerable amount of work to implement this improvement and that this may take some time. It will be important to keep users updated on progress towards this improvement, even if timelines are tentative or change.

Requirement 6: Building on its current progress in responding to users' requirements, NHS England should explore the feasibility of publishing more-granular information in its monthly A&E publication to enhance the insights provided by the statistics. Based on user feedback, the priority for this work should be providing site-level breakdowns.

Comparability

- 1.36 We know from our [previous research](#) that users of health statistics often have a strong interest in comparing NHS performance between the four nations of the UK. We also know that direct comparisons are not always appropriate, or even possible, due to operational or policy differences between the four nations. Therefore, we expect statistics producers to provide comparable statistics where possible and, where this is not possible, clearly notify users that this is the case and provide guidance which supports appropriate use of statistics.
- 1.37 It is good that the annual A&E publication includes a section on four-nation comparisons of A&E attendances and 4 and 12-hour waiting times. The publication explains that, given the different models of service provision across the four nations, to allow the most like-for-like comparisons, the statistics used for comparisons are restricted to data for 'Type 1' or 'Major' A&E departments. The annual publication also provides a link to useful information produced by the UK Comparative Waiting Times Group which outlines some of differences between A&E services and policies across the four countries which impact the statistics.
- 1.38 We strongly support the [ongoing work](#) by the UK Comparative Waiting Times Group and ONS's Health Coherence Team to understand and explain differences in NHS performance statistics across the four nations. The group [plans to publish](#) a series of summaries in 2024 which will bring together published data from across the four nations and explain how the data fit within different policy frameworks and infrastructures. These summaries will cover several topics, including A&E waiting times. We encourage NHS England to continue to engage with these efforts to ensure that users are provided with clear information about comparability.

Reproducible analytical pipelines

- 1.39 The Reproducible Analytical Pipeline (RAP) is a set of principles and good practices which ensures that analyses are reproducible, auditable, efficient, and high quality. RAP principles support the highest standards of trustworthiness, quality and value, so we welcome the [Analysis Function's RAP strategy](#), which aims to embed RAP as the default approach to analysis in government. Prior to the merger, NHS Digital had already made good progress implementing RAP principles into its statistical production, including the use of automation to reduce the manual steps in the data processing pipelines and moving towards open-source code. The team has told us that next steps in this area include improving the current pipelines to increase the levels of automation and publishing code and supporting information to improve transparency. Team members have worked closely with the organisation's [RAP community](#) and we support the plans the team has in place to extend this to other publications. Following the merger of the two organisations, we would like to see teams share learning and support each other so that RAP principles can be adopted more widely across NHS England in the long term.

