

**NHS Patient Survey Programme**

**2018 Urgent and  
Emergency Care Survey:  
Quality and Methodology  
Report**

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## Questions and comments

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# 1. Introduction

The Urgent and Emergency Care Survey 2018 (UEC18) is the seventh iteration in a series of surveys focusing on patient experiences of emergency services, and was conducted as part of the NHS Patient Survey Programme (NPSP). The Survey Coordination Centre for Existing Methods, based at Picker, manages and co-ordinates the programme on behalf of the Care Quality Commission (CQC). Surveys of emergency departments as part of the NPSP were previously run in 2003, 2005, 2008, 2012, 2014 and 2016.

Information drawn from surveys in the NPSP are used by the CQC in its assessment of trusts in England. The results of the surveys are also used by NHS England and NHS Improvement, and the Department of Health and Social Care to understand patient experience and highlight areas for improvement.

This report details the quality and methodological issues relating to UEC18. It covers the development, implementation, data quality, and analysis of the survey, as well as the quality of the data and any points that should be noted when using the outputs. Additional information on the [development of the 2018 survey](#) and errors made during the sampling process can also be found on the [NHS surveys website](#).

An overview of the approaches taken to ensure quality within the NHS Patient Survey Programme (NPSP) is available in the '[NHS Patient Survey Programme: Quality Statement](#)'.

The 2018 iteration of the survey involved 132 acute and specialist NHS trusts with a Type 1 accident and emergency department<sup>1</sup>. Sixty three of these trusts also had direct responsibility for running a Type 3 department<sup>2</sup> that was eligible to participate in the survey (please see [Section 3.1](#) for further information about the eligibility criteria). Two questionnaires were used tailored to Type 1 and Type 3 services which can be found on the [NHS Surveys website](#).

Responses were received from 42,707 people using Type 1 services; a response rate of 30%. For people using type 3 services, response were received from 7,419 people; a response rate of 29%.

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<sup>1</sup> A Type 1 department is a major, consultant led A&E Department with full resuscitation facilities operating 24 hours a day, 7 days a week.

<sup>2</sup> A Type 3 department is an A&E/minor injury unit with designated accommodation for the reception of accident and emergency patients. The department may be doctor or nurse-led, treats at least minor injuries and illnesses, and can be routinely accessed without appointment.

## 2. Survey Development

### 2.1. Survey Design and Implementation

The NPSP is committed to best practice for all stages of the survey, including the processes taken to improve the methodology. From extensive desk research, consultation with stakeholders and pilot work, a number of measures have been implemented to help maximise response rates, including:

- The development of survey questions that are relevant to all, or most, people in the sample.
- Questionnaires are produced using clear and simple language.
- Questions and response options are tested, by way of cognitive interviews with people who have recently used services to ensure that they are easily understood and relevant.
- Reassurances of anonymity and confidentiality are made.
- Up to two reminders are sent to non-responders.
- The time between the initial contact (first mailing letter) and first reminder to complete the survey (second mailing letter) has been reduced from 2 weeks to 5 working days.
- The covering letters that are sent alongside the survey have been redesigned to make them more appealing to recipients and encourage participation.
- There is a long fieldwork period to encourage less frequently heard demographic groups, such as minority ethnic groups, to respond<sup>3</sup>.
- The availability of a Freephone language line that provides translation services.
- MENCAP provided support for people with learning difficulties to complete the questionnaire.
- Thorough quality assurance checks of all survey materials and results in order to reassure patients that the research is reliable and of a high quality, thereby indirectly encouraging participation.

Like most surveys in the NPSP, the Urgent and Emergency Care Survey uses a postal survey approach, with a questionnaire being sent to the residential address of potential participants. This method enables a probability sample to be drawn as it reduces any selection bias that may be present if the survey was administered by front line staff at the time of attendance, when, for example, busy staff may not have the time to distribute questionnaires to all patients, or may not give questionnaires to patients who they do not think will give favourable feedback. It also removes the

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<sup>3</sup> For more information please see: [www.nhssurveys.org/Filestore/documents/Extension\\_of\\_fieldwork\\_for\\_inpatient\\_survey\\_2007.pdf](http://www.nhssurveys.org/Filestore/documents/Extension_of_fieldwork_for_inpatient_survey_2007.pdf)

possibility of a social desirability bias occurring, which may happen when people give feedback either directly to staff or whilst on hospital premises, where respondents are more likely to give positive responses during face-to-face interviews.

A number of steps are taken to ensure the robustness of the survey design and implementation. As with all surveys in the NPSP, an external advisory group was formed to ensure a range of stakeholders were given the opportunity to provide input during survey development. Membership included representatives from CQC, Department of Health and Social Care, NHS England and NHS Improvement, acute trusts, third sector organisations (Age UK and Independent Age) and people who have used services.

Questionnaires are cognitively tested before the surveys commence in order to ensure that questions and response options are understood as intended. This involves a researcher working through the questionnaire with participants, to understand how the questions are interpreted and what they are thinking about when they answer. There is further information in [Section 2.3](#) about the people interviewed during the development of the 2018 questionnaire.

## 2.2. Methodological Changes in 2018

To reflect the use of two different questionnaires in 2018, the survey was renamed from 'The Emergency Department Survey' as in the 2016 iteration to 'The Urgent and Emergency Care Survey'.

As per the 2016 survey, trusts that do not have an eligible type 3 department submitted a sample of 1,250 type 1 attendances only, and trusts that have both a type 1 and type 3 department submitted a sample of 950 type 1 patients and 420 type 3 patients. This is an increase from 300 type 3 patients in 2016. The decision to increase the type 3 sample from 300 to 420 was calculated based on the response rate to the 2016 survey and the minimum number of responses needed per trust, per question for trust level analysis.

The covering letters included in the mailings to patients alongside the questionnaire were redesigned to make them more appealing, as this proved to increase response rate in a [2017 Community Mental Health pilot study](#). The changes included: using colour to highlight key words and phrases; using a more informal font; removing superfluous and repetitive text; and incorporating potentially motivating and empowering messages.

In 2018, there was a reduction in time between the first mailing letter and second mailing letter to 5 working days. This was decided following the results of a pilot

study run during the 2017 Adult Inpatients survey where a faster postal reminder significantly increased response rates from 40.8% to 44%<sup>4</sup>.

Further information about these methodological changes can be found in the [survey development report](#).

### 2.3. Questionnaire Development

To ensure that the questionnaire is up-to-date and in line with current policy and practice, questions are reviewed before each survey to determine whether any new questions are needed.

Following consultations with key stakeholders and analysis of the 2016 survey results, a large number of changes have been made to the questionnaire for UEC18. These changes, and the reasons for them, are detailed in the [survey development report](#), available on the NHS Surveys website.

In 2018 two questionnaires were used tailored to Type 1 and Type 3 services. This was decided following analysis of the 2016 survey, which revealed that many questions were not relevant for patients who had visited an urgent care centre which resulted in high levels of non-response for some questions.

In 2016, there were 53 questions: this year, the type 1 2018 questionnaire had 55 questions and the type 3 questionnaire had 52. Five questions were added to the 2018 type 1 questionnaire, three were removed and twelve were amended. In addition to the amendments, all references to the 'Emergency Department' were changed to 'A&E'.

Five new questions were also added to the type 3 questionnaire, six were removed and ten were amended. All references to the 'Emergency Department' were changed to 'urgent care centre', and mentions of doctors and/or nurses were changed to 'health professionals'.

The re-development of all questionnaires in the NPSP follows best practice for survey design<sup>5</sup>. As such, all of these question changes, regardless of their extent, are cognitively tested with a group of people with recent experience of using urgent and emergency department facilities.

These participants are recruited via different means, including advertisements in local newspapers, public buildings (shops, cafes, libraries, community centres,

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<sup>4</sup> This report is unpublished at the time of writing.

<sup>5</sup> Dillman, D., Smyth, J., & Melina Christian, L. (2014) *Internet, Phone, Mail and Mixed Mode Surveys: The Tailored Design Method*, pg 373-389, Hoboken, New Jersey: John Wiley & Sons, Inc.

community noticeboards etc.), online forums, as well as websites (such as Gumtree) and social media. The demographic make-up of these participants are intended to cover a wide demographic base and range of experiences.

A total of 23 people were cognitively interviewed to test the UEC18 questionnaire:

- 10 were type 1 attendees, 13 were type 3 attendees.
- 8 were males, 15 were females.
- Ages ranged from 24 to 75.
- 5 participants were from black and minority ethnic groups.
- 8 participants had long-term conditions.

Cognitive interviews were conducted during June and July 2018, primarily in Oxford and the surrounding areas. These interviews were conducted in three rounds, with alterations made to certain questions between rounds in accordance with feedback from participants and stakeholders. Further details of this process can be found in the [‘Survey Development Report’](#).

## 3. Sampling and Fieldwork

### 3.1. Sampling

One hundred and thirty two trusts took part in the 2018 Urgent and Emergency Care Survey<sup>6</sup>. Of these, 69 trusts had a type 1 department only, while 63 had both type 1 and type 3 departments. People were eligible for participation in this survey if they were aged 16 or over at the time of attendance, and if they attended a type 1 or type 3 department between 00:00 on 1<sup>st</sup> September 2018 and 23:59 on 30<sup>th</sup> September 2018. Trusts that had eligible type 3 department and were not able to achieve the required sample size in September could also sample back to August.

The survey does not have full coverage of all type 3 departments in England as trusts only include type 3 departments in their sample that were run directly by the trust: services that were on trust premises but run by, or in collaboration with, other providers (such as independent providers, CCGs or other trust types) were ineligible. This ensures that the results from the survey can be attributed back to the trusts and they can make any necessary improvements. However it means that the results from this survey can only be considered to be representative of type 3 departments in England that are specifically ran by acute trusts. Trusts were required to draw a total sample of 1,250 or 1,370 patients. Trusts that did not have an eligible type 3 department submitted a sample of 1,250 type 1 attendances only, while trusts that had both type 1 and type 3 department submitted a sample containing 950 type 1 patients and 420 type 3 patients.

Trusts were instructed that their sample should exclude:

- Deceased patients.
- Children or young persons aged under 16 years at the date of their attendance at the A&E department or urgent care centre.
- Any attendances at Walk-in Centres.
- Any attendances at type 3 departments that are not wholly managed by the Trust.
- Any patients who were admitted to hospital via Medical or Surgical Admissions Units and therefore have not visited A&E (or an urgent care centre, if applicable).
- Any patients who are known to be current inpatients.
- Planned attendances at outpatient clinics which are run within the A&E or urgent care centre (such as fracture clinics).

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<sup>6</sup> One trust was excluded from the survey during sample checking due to their type 1 emergency department not being open 24 hours a day. After some analysis of the trust's 2016 data, it was decided that there was a statistically significant difference between day and night attendances and therefore data solely from day attendances would be biased and therefore it would not be appropriate to make comparisons with other trusts. Another trust that had very recently merged took part in the survey as their predecessor organisations.

- Patients attending primarily to obtain contraception (e.g. the morning after pill), patients who suffered a miscarriage or another form of abortive pregnancy outcome whilst at the hospital, and patients with a concealed pregnancy.
- Patients without a UK postal address.
- Any patient known to have requested their details are not used for any purpose other than their clinical care.

Fieldwork for the survey (the time during which questionnaires were sent out and returned) took place between 22<sup>nd</sup> October 2018 and 22<sup>nd</sup> March 2019.

The length of time in field was dependent on the time it took trusts to submit a correct sample to the Survey Coordination Centre for Existing Methods for approval and very few trusts were able to take advantage of the full fieldwork period. Five trusts mailed out on the 29<sup>th</sup> October 2018, and so were in field for 20 out of the 21 weeks. Due to sampling issues, there were 3 trusts who did not mail out until February, and so these trusts were only in field for 7 weeks. On other surveys, response data from trusts who were in field for 6 weeks or less were analysed to see if the short fieldwork period had impacted response rates or respondent demographics. As all trusts in UEC18 had 7 or more weeks in field, this additional analysis was not conducted.

### 3.2. Sampling Methodology

UEC18 used the same multi stage, stratified sample technique that was introduced in UEC16. This was introduced due to the inclusion of Type 3 departments into the survey because this sampling method ensured that there were appropriate numbers of patients in both samples. It also has the additional effect of improving representativeness for Type 3 samples where some trusts could otherwise end up with very small sample. With the appropriately large samples obtained by the multi stage, stratified method, data could be disaggregated to department type to allow more granular reporting for improvement at the local level.

Multi stage sampling is a more complicated version of cluster sampling; which involves the total population being divided into clusters, or groups, and individuals being selected from these clusters at random. Multi-stage sampling, however, differs in that after dividing the population by the first-level clusters, the resulting sub-clusters are further divided in accordance with some selection criteria. The key point here is that, at every consecutive sub-division, the sample size becomes smaller and more precise.

In practice, this meant the following steps were taken: Firstly, a list of all eligible individual attendances to departments during September 2018 was compiled. Secondly, this list was sorted sequentially, first by department type, then gender,

then year of birth, and finally by CCG code. Then a sample was drawn from the ordered list of all attendances.

In UEC18, there were 69 trusts with only type 1 departments and 63 with both type 1 and type 3. The latter would therefore have two clusters at level-one. The former would not technically have any clusters at level-one, but for simplicity, we'll say that they have one cluster at this level. In UEC18, the size of these level-one clusters were pre-defined, in that trusts with both type 1 and type 3 departments would have 950 records from the former and 420 from the latter. While trusts with only type 1 departments would draw the full sample of 1,250 records from the type 1 departments. In other words, the cluster size at level one was not proportionally calculated in accordance with the available population.

As stated above, the sampling methodology for UEC18 then required three additional levels of clusters; the second of which was gender. The clusters at this second level, as with all subsequent cluster levels, was calculated proportionally in accordance with the sampling interval for this level.

The sampling interval is the crucial component of the UEC18 methodology and constitutes the stratified component of the approach. The sampling interval refers to the way in which one in every  $k$  records is sampled as they become available; where  $k$  is the rounded quotient of dividing the total population size,  $p$ , by the total sample size,  $y$ :

$$k = \left\lfloor \frac{p}{y} \right\rfloor$$

As an example, assume we are looking at a trust that has both type 1 and type 3 departments. The size of the type 1 cluster in level 1 would be 950. Then, let's say that this cluster is sorted by gender and that there are 425 males and 525 females in this type 1 cluster. The sampling interval for the male and female clusters at this second cluster level would then be calculated as follows:

Male cluster sample interval:

$$k = \frac{950}{425}$$

$$k = [2.23]$$

$$k = 2$$

Female cluster sample interval:

$$k = \frac{950}{525}$$

$$k = [1.80]$$

$$k = 2$$

This means that the male sample cluster would be selected from the total 425 males by selecting every second male patient in the type 1 cluster, while the female cluster would be compiled by selecting every second patient from the female cluster. Both of these second level clusters would then be further sub-divided by year of birth. As an

example, let's say that all 425 patients in the male cluster fall into one of four different years of birth; 152 patients born in 1950, 97 in 1964, 90 in 1986 and 86 in 2002, then the following calculations would be performed:

1950 cluster sample  
interval:

$$k = \frac{425}{152}$$

$$k = [2.79]$$

$$k = 3$$

1964 cluster sample  
interval:

$$k = \frac{425}{97}$$

$$k = [4.38]$$

$$k = 4$$

1986 cluster sample  
interval:

$$k = \frac{425}{90}$$

$$k = [4.72]$$

$$k = 5$$

2002 cluster sample  
interval:

$$k = \frac{425}{86}$$

$$k = [4.94]$$

$$k = 5$$

Combined, these four clusters make up the third level, and are then sampled from the male cluster in level two by selecting every third patient in the male cluster who was born in 1950, every fourth patient in the male that was born in 1964, and so on.

The fourth and final level then involves dividing each of the year of birth clusters in the third level by CCG code. Again, for simplicity, let's assume that there are only two CCG codes. Taking the level three 1950 year of birth cluster from the level two male cluster as an example, let's say that there are 74 patients with a CCG code of A60 and 78 with G96. The sampling intervals for these two clusters would be calculated as follows:

A60 cluster sample  
interval:

$$k = \frac{152}{74}$$

$$k = [2.05]$$

$$k = 2$$

G96 cluster sample  
interval:

$$k = \frac{152}{78}$$

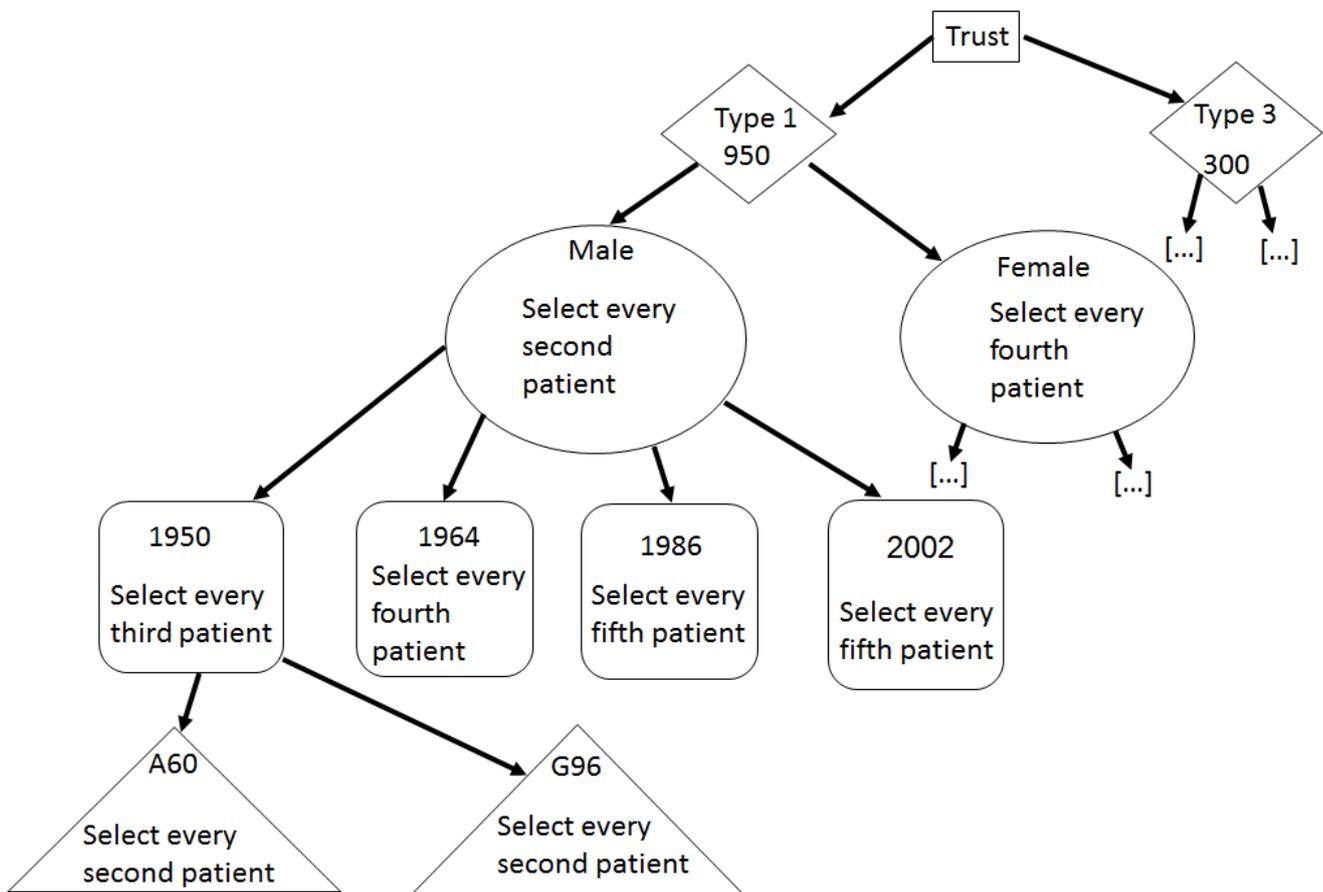
$$k = [1.94]$$

$$k = 2$$

Thus, as before, we include in the final sample every second patient in the current cluster with a CCG code of A60 and every second patient with a CCG code of G96.

After the required number of patients have been drawn from each of the clusters in this fourth, and final level, they are combined into a single sample file to produce a trust's sample data. A diagrammatic representation of this example can be seen in [figure 1](#).

**Figure 1: Diagrammatic representation of the UEC18 sample drawing methodology.**



Note that [...] signifies that a procedure occurs on the current branch that is analogous to that which occurs on the parallel branch.

### 3.3. Sampling Error

As the survey does not use a random sample, sampling error calculations were not applicable when determining the minimum sample size. The sample size for UEC18 was either 1,250 participants per trust (of which there are 69) or 1,370 participants per trust if there was also a type 3 department (of which there are 63). This sample size was large enough to minimise sampling error, while a much smaller sample size could have resulted in a trust sampling a subset of patients who could have had a significantly more positive or negative experience than their population as a whole. Assuming the sample period is not atypical, then given the large sample size and number of responses, the 2018 sample can be considered representative of the target population - all eligible urgent care and emergency department attendances in

England. The final data had a total of 50,126 responses, consisting of 42,707 type 1 responses and 7,419 type 3 responses

There is no reason to suggest that the provision of NHS A&E and urgent care services in September 2018 was 'atypical'. During 2016, the sampling period was discussed with stakeholders and September was chosen because it was not affected by holidays, which may cause changes to emergency attendances (increased number of attendances, or attendances by different user groups such as tourists), or by seasonal emergencies such as the common flu or a high proportion of older people with respiratory problems during the winter. As such, the risk of sample bias is small.

In 2016, it was concluded that the size of the type 3 dataset was too small and had a high chance of sampling error and therefore, while the pooled data could be insightful when looking at England as a whole, trust-level data was unreliable. This meant that no trust level results were published in 2016. As a result, the sample size for type 3 departments was increased from 300 to 420 in 2018. There were also sixteen more trusts in 2018 who submitted a type 3 sample. However, although it should be borne in mind when interpreting the results that service provision has changed since 2016, the survey sample and analysis methodology are designed to be reflective of the overall picture for England.

### 3.4. Errors in Drawing Samples

The chances of mistakes being made by trusts when drawing their sample are minimised by multi-stage sample checks. In the first instance, trusts are provided with a checklist to review their drawn sample. Those trusts that appoint an 'approved contractor'<sup>7</sup> to undertake the survey on their behalf will have their sample reviewed by their contractor. Finally, all anonymised samples are checked by the Survey Coordination Centre which looks for errors that are more noticeable when pooling data together, such as unusual or skewed age distributions.

In addition, a sample declaration form<sup>8</sup> is used to further help reduce sampling errors. This form outlines a number of checks that have to be completed by the trust before the sample is submitted to an approved contractor or the Survey Coordination Centre for Existing Methods, and also ensures adherence to the sampling methodology on the part of both the person drawing the sample and the trust's Caldicott Guardian. Crucially, this form ensures that trusts have maintained

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<sup>7</sup>These are companies approved by the Care Quality Commission during a competitive tendering process to carry out surveys in the NPSP on behalf of trusts. For more information please see: <http://nhssurveys.org/approved-contractors/>

<sup>8</sup> There are separate forms for trusts conducting the survey in-house or using an approved contractor. These are available on in the 'Instructions and Guidance' section of the NHS surveys website: <https://nhssurveys.org/all-files/03-urgent-emergency-care/03-instructions-guidance/2018/>

confidentiality of patients by taking the steps laid out in the instruction manual, such as only passing on specific variables. Approval of this form by the Survey Coordination Centre for Existing Methods prior to data submission thus fulfils the trust's own requirements under the Data Protection Act, as well as reducing the potential for breaches to the support received under Section 251 of the NHS Act 2006<sup>9</sup>.

All anonymised samples are then checked by the Survey Coordination Centre for Existing Methods at Picker, who look for errors that are more noticeable when pooling data together; unusual or skewed age distributions, for example. Several items are also checked against the trust's data submissions for previous surveys, so as to ascertain whether or not the trust has followed the sampling instructions correctly both for the current year and to identify any historical sampling concerns. These checks include comparisons of population size, demographics, etc. Should there be any discrepancies that merit investigation, queries will be raised with the trust or contractor responsible for the data sample.

Any errors identified during this process are categorised as either minor or major in nature.

A minor error is defined as a mistake that will not affect the usage or quality of the survey response data. An example of this is if the patient record numbers (PRNs) are applied in an incorrect format. This is an error that could be rectified by the trust, contractor or the Survey Coordination Centre for Existing Methods by amending the sample's PRNs, which would not undermine the quality of the sample.

A major error is defined as a mistake that would affect the usage or quality of the survey response data. An example of this is an error in the coding used by a trust to extract the sample from their records which leads to a biased sample, such as a disproportionate number of males to females. This error would result in a trust having to re-draw the sample in line with the sampling instructions. There was 1 major error and 18 minor errors in the 2018 iteration of the survey.

A [Sampling Errors Report](#), which details the errors identified by the Survey Coordination Centre for Existing Methods, is produced after each iteration of the survey. It is strongly advised that trusts and contractors review this report before drawing the sample in an attempt to minimise the re-occurrence of previously detected errors.

The '[Statement of Administrative Sources](#)' outlines the chances of errors occurring at the stage where trusts input patient data into administrative systems; data from

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<sup>9</sup> Section 251 of the NHS Act 2006 provides a legal basis for the transfer of data to a survey contractor.

which samples are drawn. It was concluded that, although the potential does exist for inaccurate addresses or coding of cases at this stage, this is unlikely to occur due to the data quality requirements placed upon NHS trusts. As a result, the chances of such errors occurring at this stage are small enough that any impact upon trust results are likely to be minimal, and in turn, would have an even smaller effect upon the aggregated, results for England.

### 3.5. Data Quality Issues During Sampling

During sampling, some trusts encountered issues with data quality, such as having large amounts of missing data or no clinical coding. These were dealt with on a case-by-case basis. In the two circumstances detailed below, these data quality issues impacted on a trust's sample.

One trust had data quality issues following the implementation of the Emergency Care Data Set (ECDS) system which caused one of their main outcome fields to go blank for attendances in the final week of September in their Type 1 department. Due to this, they were unable to identify eligibility for 20% of attendances between September 22<sup>nd</sup> and 30<sup>th</sup> and so it was decided that the trust would draw their sample from patients attending between September 1<sup>st</sup> and 21<sup>st</sup>. As it was a large trust, they had a large volume of attendances between September 1<sup>st</sup> and 21<sup>st</sup> which reduced the possibility of bias. Although analysis by the Survey Coordination Centre for Existing Methods found some differences in the age and gender profiles of their 2018 sample they were provided with historical comparisons.

Another trust also had data quality issues because of an IT failure in their Type 3 department during September. The system was out of action for several days in September and there had only been a partial recovery of the data by the time of sampling. To enable the trust to draw its Type 3 sample with enough time to have a long fieldwork period, it was decided that they would draw their entire Type 3 sample from August: as other trusts with fewer Type 3 attendances also sampled from August and so it would not impact comparability.

### 3.6. Historical Sampling Errors and Trusts Historical Comparisons

The sample checking process carried out by the Survey Coordination Centre for Existing Methods involves comparing trust sample data to that from previous iterations of the survey, to help ensure that the sample has been drawn correctly. For UEC18, sample data was compared to that submitted for the 2016 survey. On occasion, these checks can find errors made during these previous survey iterations. These are important to note as, if any of these errors are deemed to be major ones, then historical comparisons may not be an option for the trust in question.

As a result, four trusts were excluded from being provided a historical comparison to 2016:

- Norfolk and Norwich University Hospitals NHS Foundation Trust
- North Middlesex University Hospital NHS Trust
- East and North Hertfordshire NHS Trust
- Chelsea and Westminster Hospital NHS Foundation Trust

In addition to the above, four trusts had major service changes and/or acquisitions. Although these trusts did not make a historical error, the change in the services offered by these trusts meant that historical comparisons were not appropriate to make<sup>10</sup>:

- University Hospitals Birmingham NHS Foundation Trust
- East Suffolk and North Essex NHS Foundation Trust
- Manchester University NHS Foundation Trust
- North West Anglia NHS Foundation Trust

As previously described in the 'sampling error' section ([Section 3.3](#)), no type 3 departments were provided with historical comparisons.

For more information about the historical errors and trusts with service changes identified during the 2018 survey please see the aforementioned [Sampling Errors Report](#).

## 4. Data Analysis and Reporting

### 4.1. Data Cleaning and Editing

Survey data from each participating trust are submitted to the Survey Coordination Centre for Existing Methods for cleaning. During fieldwork, a [data cleaning guidance manual](#) covering the checks that the Survey Coordination Centre for Existing Methods undertakes is made available, to allow participating trusts and contractors to understand the data cleaning processes undertaken and the types of common errors.

The data are submitted to the Survey Coordination Centre for Existing Methods using an Excel spreadsheet. However, the final dataset for the survey is in a SPSS data file format. A heavily redacted version of this data is made available for secondary data users at the [UK Data Service](#) (UKDS).

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<sup>10</sup> One trust that had very recently merged took part in the survey as their predecessor organisations.

There are a number of standard checks that are undertaken on the data, including:

- Checks of the hard copies of questionnaires from contractors and trusts to verify that questions, response options, routing, and instructions are as they should be.<sup>11</sup>
- Check the number of rows of data is as expected, i.e. the correct number of patients are in the data file.
- Variables, question, and response options wording checks; ensuring that the data matches the questionnaire.
- Out of range checks for variables such as age, on both sample and response data.
- Incorrect filtering, where respondents have answered a question that does not apply to them.
- Coding errors whereby the answer given is outside the expected range of response options for a given question.
- Data validation, whereby the response date is used to confirm whether the sample data submitted by the trust is valid for certain demographics.
- Use of the response data to check that only eligible patients were included in the survey.

The data are also checked for a number of other errors. This includes looking at questionnaire item non-response, to check whether there are high levels of missing data on suites of questions positioned next to each other on survey pages. This may indicate an issue with page turnover, as well as whether or not a question is being understood in the intended manner.

In instances where a trust has fewer than 30 responses for a question, the data are suppressed because the confidence interval around the trust's question score is considered too large to be meaningful. This is then cross-referenced against the raw data submitted by said trust so as to ensure that the suppression process was applied correctly.

During the data cleaning process, the Survey Coordination Centre for Existing Methods identified four questions in the type 3 dataset that had a significantly low response for a large number of trusts. These were:

- Q10. While you were waiting, were you able to get help from a member of staff? (Suppressed for 27 trusts).

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<sup>11</sup> The Survey Coordination Centre for Existing Methods has since implemented a further check in which a subset of scanned questionnaires are checked during fieldwork to ensure no changes were made after the hard copies were signed off.

- Q35. Did a member of staff explain the purpose of the medications you were to take at home in a way you could understand? (Suppressed for 29 trusts).
- Q36. Did a member of staff tell you about medication side effects to watch for? (Suppressed for 47 trusts).
- Q38. Did a member of staff tell you about what symptoms to watch for regarding your illness or treatment after you went home? (Suppressed for 26 trusts).

These questions were therefore excluded entirely from the following outputs:

- Benchmark data (and all other outputs that use benchmark data)
- National tables
- Trust outliers

## 4.2. Statistical Release

A statistical release is published, which provides full England-level results for 2018 compared with 2016<sup>12</sup> where possible, and a multi-level analysis of results for subgroups of patients. In order to control for the influence individual trusts' response rates have on the England-level average, data are standardised<sup>13</sup>.

The multi-level analysis of subgroups highlights the experiences of different demographic populations. Results for each demographic subgroup are generated as adjusted means (also known as estimated marginal means or population marginal means) using a linear mixed effects model. These means are compared on patient-centred care themes, derived from composites of results from specific questions. For type 1, there were 9 themes; 4 of which were composite scores; for type 3, there were 8 themes, 4 of which were composite scores:

**Table 1: Themes and the corresponding questions for Type 1.**

**Theme:** Information, communication and education

- Q13: Did you have enough time to discuss your condition with the doctor or nurse?
- Q14: While you were in A&E, did a doctor or nurse explain your condition and treatment in a way you could understand?
- Q21: While you were in A&E, how much information about your condition or treatment was given to you?

<sup>12</sup> Comparisons are done using a Z-test of column proportions with the design effect calculated.

<sup>13</sup> More information on the standardisation approach applied to the data can be found in [Section 6.5 'Addressing non-response bias in the survey results'](#).

**Theme:** Privacy

- Q6: Were you given enough privacy when discussing your condition with the receptionist?
- Q22: Were you given enough privacy when being examined or treated?

**Theme:** Transition and continuity

- Q40: Did a member of staff tell you when you could resume your usual activities, such as when to go back to work or drive a car?
- Q43: Did hospital staff tell you who to contact if you were worried about your condition or treatment after you left hospital?

**Theme:** Involvement & decision making

- Q15: Did the doctors and nurses listen to what you had to say?
- Q25: Were you involved as much as you wanted to be in decisions about your care and treatment?

**Individual question analysis**

- Q45: Overall, did you feel you were treated with respect and dignity while you were in A&E?
- Q46: Overall...
- Q16: If you had any anxieties or fears about your condition or treatment, did a doctor or nurse discuss them with you?
- Q17: Did you have confidence and trust in the doctors and nurses examining and treating you?
- Q23: If you needed attention, were you able to get a member of medical or nursing staff to help you?

**Table 2: Themes and the corresponding questions for Type 3.**

**Theme:** Information, communication and education

- Q12: Did you have enough time to discuss your condition with the doctor or nurse?
- Q13: While you were in the urgent care centre, did a health professional explain your condition and treatment in a way you could understand?
- Q20: While you were at the urgent care centre, how much information about your condition or treatment was given to you?

**Theme: Privacy**

- Q4: Were you given enough privacy when discussing your condition with the receptionist?
- Q21: Were you given enough privacy when being examined or treated?

**Theme: Transition and continuity**

- Q37: Did a member of staff tell you when you could resume your usual activities, such as when to go back to work or drive a car?
- Q40: Did a member of staff tell you who to contact if you were worried about your condition or treatment after you left the urgent care centre?
- Q41: Did staff give you enough information to help you care for your condition at home?

**Theme: Involvement & decision making**

- Q14: Did the health professionals listen to what you had to say?
- Q23: Were you involved as much as you wanted to be in decisions about your care and treatment?

**Individual question analysis**

- Q42: Overall, did you feel you were treated with respect and dignity while you were in the urgent care centre?
- Q43: Overall...
- Q15: If you had any anxieties or fears about your condition or treatment, did a health professional discuss them with you?
- Q17: Did you have confidence and trust in the health professional examining and treating you?

This model takes into account trust clustering, as trusts are likely to have a big impact on reported patient experience at England level.

To assess whether experiences differ by demographic factors, F tests were performed on each factor (fixed effect) as a predictor of the target variable. P-values are also generated to show the likelihood of differences between groups observed in the results arising from a population where no actual differences occur. They relate to the demographic factor as a whole rather than to comparisons between specific categories within the factor. Variables are also checked for multicollinearity to ensure co-efficient estimates are not influenced by additional factors.

Differences of at least 0.1 standard deviations from the overall mean of the target variable are treated as being noteworthy if the confidence intervals do not cross the mean line.

For UEC18, the following demographic factors were analysed:

- Age group.
- Gender.
- Religion.
- Sexual orientation.
- Ethnicity.
- Disability or long-term condition.
- Day of attendance.
- Time of attendance, grouped into bands.
- Total length of visit (4 hours or less or more than 4 hours)
- Whether or not the participant had been to the emergency department before with the same condition or something relating to it (Q7 in type 1's questionnaire, Q5 in type 3).

### 4.3. Trust Results

Analysis is conducted on the data at trust level, so as to allow comparisons to be drawn between the performance of different trusts for individual questions in the survey. A report is produced for each individual trust, which illustrates how the trust performed on each question when compared to all other trusts. The method for this analysis is detailed in the [technical document](#). The results of this analysis are published in [benchmark reports](#) and made available on the [CQC's website](#).

For evaluative questions, each response option is assigned a score (0-10) and composite section scores are produced by grouping similar questions together. These sections mostly follow the questionnaire sections with the exception of one question (Q32 in Type 1 / Q29 in Type 3) which is included in the 'Care and Treatment' section as it is the only question in the 'Pain' section. Demographic questions, non-specific responses, some routing questions and questions that do not evaluate a trust's performance are not scored. A trust's score for a specific question is calculated by taking the weighted average<sup>14</sup> of scores of all trusts for the current question.

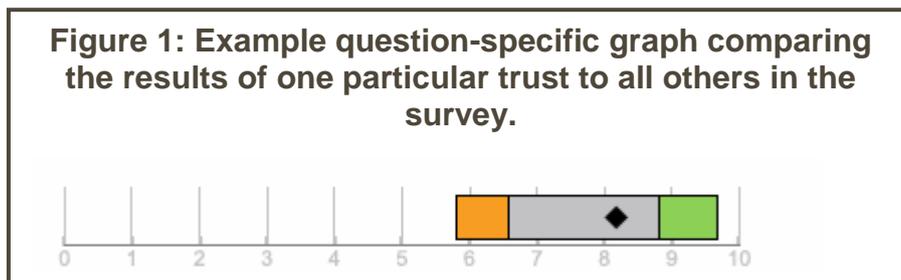
A chart is then produced for every scored question and each section of the questionnaire, unless a question has fewer than 30 responses<sup>15</sup>. Each chart depicts

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<sup>14</sup> Weighting the averages adjusts for variation between trusts in age and sex.

<sup>15</sup> If a question has fewer than 30 responses for a given trust, the confidence interval around the trust's question score is considered too large to be meaningful and results are not reported.

the range of scores for all trusts for its corresponding question/section. An example of such a graph can be seen in [figure 2](#). Here, the black diamond indicates the trust's score. If the diamond lies in the orange section, then the trust performed 'worse' than expected when compared to most other trusts. Similarly, if it lies in the green section, then the trust performed 'better' than most others. If the diamond lies in the grey section, as in the example, then the trust performed about the same as the other trusts on question being considered.



The benchmark reports contain two tables. The first details the range of scores, number of responses for each individual question and section, and the 2016 scores for that trust if it is a Type 1 trust that is receiving historic comparisons. The second, detail the number of respondents, response rate, and demographic information for the trust compared to that of all trusts featured in the survey as a whole<sup>16</sup>.

#### 4.4. NHS England National Statistics

Nineteen questions in the UEC18 type 1 survey contributed to [Overall Patient Experience Scores](#), as published by NHS England, and which cover five domains of patient experience:

- 1) Access and waiting.
  - Q8. How long did you wait before you first spoke to a nurse or doctor?
  - Q9. Sometimes, people will first talk to a nurse or doctor and be examined later. From the time you arrived, how long did you wait before being examined by a doctor or nurse?
  - Q12. Overall, how long did your visit to A&E last?
  
- 2) Safe, high quality, co-ordinated care.
  - Q17. Did you have confidence and trust in the doctors and nurses examining and treating you?
  - Q24. Sometimes, a member of staff will say one thing and another will say something quite different. Did this happen to you?

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Additionally, for any such question, the trust is excluded from national averages and the trust is not given a section score.

<sup>16</sup> 'National' figures are calculated using survey data from all trusts - these figures refer to the sampled population, which may have different characteristics to the population of England.

Q42. Did a member of staff tell you about what symptoms to watch for regarding your illness or treatment after you went home?

3) Better information, more choice.

Q21. While you were in A&E, how much information about your condition or treatment was given to you?

Q25. Were you involved as much as you wanted to be in decisions about your care and treatment?

Q38. Did a member of staff explain the purpose of the medications you were to take at home in a way you could understand?

Q39. Did a member of staff tell you about medication side effects to watch out for?

4) Building better relationships.

Q13. Did you have enough time to discuss your condition with the doctor or nurse?

Q14. While you were in A&E, did a doctor or nurse explain your condition and treatment in a way you could understand?

Q15. Did the doctors and nurses listen to what you had to say?

Q16. If you had any anxieties or fears about your condition or treatment, did a doctor or nurse discuss them with you?

Q18. Did doctors or nurses talk to each other about you as if you weren't there?

5) Clean, comfortable, friendly place to be.

Q22. Were you given enough privacy when being examined or treated?

Q32. Do you think the hospital staff did everything they could to help control your pain?

Q33. In your opinion, how clean was the A&E department?

Q45. Overall, did you feel you were treated with respect and dignity while you were in A&E?

More information on these domains can be found on the website for [NHS England](#).

## 5. Quality Assurance

### 5.1. Approved Contractor/In-house Trust Checks

Each contractor and in-house trust undertakes a series of checks at key stages of the survey, especially the sample preparation and data submission stages, where checks tend to focus on issues such as including ineligible patients. Due to contractors receiving mailing information, they also do validation checks to see if the address is complete enough for a questionnaire to be sent out. Contractors and in-house trusts will also have internal quality assurance guidelines they follow during the survey.

### 5.2. Survey Coordination Centre for Existing Methods Quality Assurance Checks

The first QA checks are on the sample files submitted by either contractors or in-house trusts. These checks help to determine whether there are any errors in the sample file, such as the exclusion of eligible patients.

The Survey Coordination Centre for Existing Methods also check hard copies of the covering letters and questionnaires used by each trust within the survey, with the aim of identifying where errors have been introduced when the survey documents are reproduced by either contractors or in house trusts; errors tend to be typographical in nature.

During the fieldwork stage, the Survey Coordination Centre for Existing Methods monitor the progress of the mailings and response rates at both overall and trust level. While not technically a QA check, this monitoring does allow the Survey Coordination Centre for Existing Methods to flag any concerns regarding how the survey is progressing. This may highlight issues that could have an impact upon the data collected due to low response rates affecting the representativeness of the data, thereby limiting its usability. Furthermore, the survey is administered in a standardised manner, with a set number of mailings during fieldwork and a particular final mailing date, so as to allow younger and black and ethnic minority groups more time to respond, as previous research has shown that these groups take longer to respond. For more information, please see the [Survey Handbook](#).

The final set of QA checks undertaken by the Survey Coordination Centre for Existing Methods focuses on the response data and data analysis. In addition to the aforementioned checks undertaken on the survey data, each stage of the data cleaning process is second- and third-checked internally.

Finally, all analysis outputs, including the trust level results and England level reporting, go through a two stage quality assurance process; being checked by both the Survey Coordination Centre for Existing Methods and CQC. The Survey Coordination Centre for Existing Methods has a three-level quality assurance process for every output that ensures any errors are picked up. This usually requires the output being recreated by several people and checked to ensure the figures are correct. Additionally, any syntax that is used to create an output is checked by a Senior Research Associate, as well as either the Chief Statistician, the Head of Survey Coordination, or the Head of Research, to ensure that the methodology is being correctly carried out.

## 6. Data Limitations

### 6.1. Context

As with any piece of social research, statistical analysis of the data collected as part of UEC18 is susceptible to various types of errors from different sources. As a result of this, potential sources of error are carefully controlled through development work, in terms of questionnaire design and sampling strategy, which in turn is supported by quality assurance at every stage.

### 6.2. Seasonal Effects

Participating NHS Trusts selected patients who had attended a Type 1 or Type 3 department between 00:00 on 1<sup>st</sup> September 2018 and 23:59 on 30<sup>th</sup> September 2018. All trusts managed to draw a 1,250 or 950 sample for their type 1 departments throughout the month of September, however there were nine trusts who were not able to draw an entire type 3 sample during this period, and were therefore required to sample back into August. 91.9% of the type 3 sample was drawn during September, with the remaining 8.1% drawn from August attendances.

There are seasonal effects on responses, in the form of factors such as differing staffing levels and school holidays. However, given that the sampling period is consistent for all trusts taking part in the survey, any such seasonal variation would not affect the comparability of the results or its use in assessing the performance of trusts.

### 6.3. Response Rates

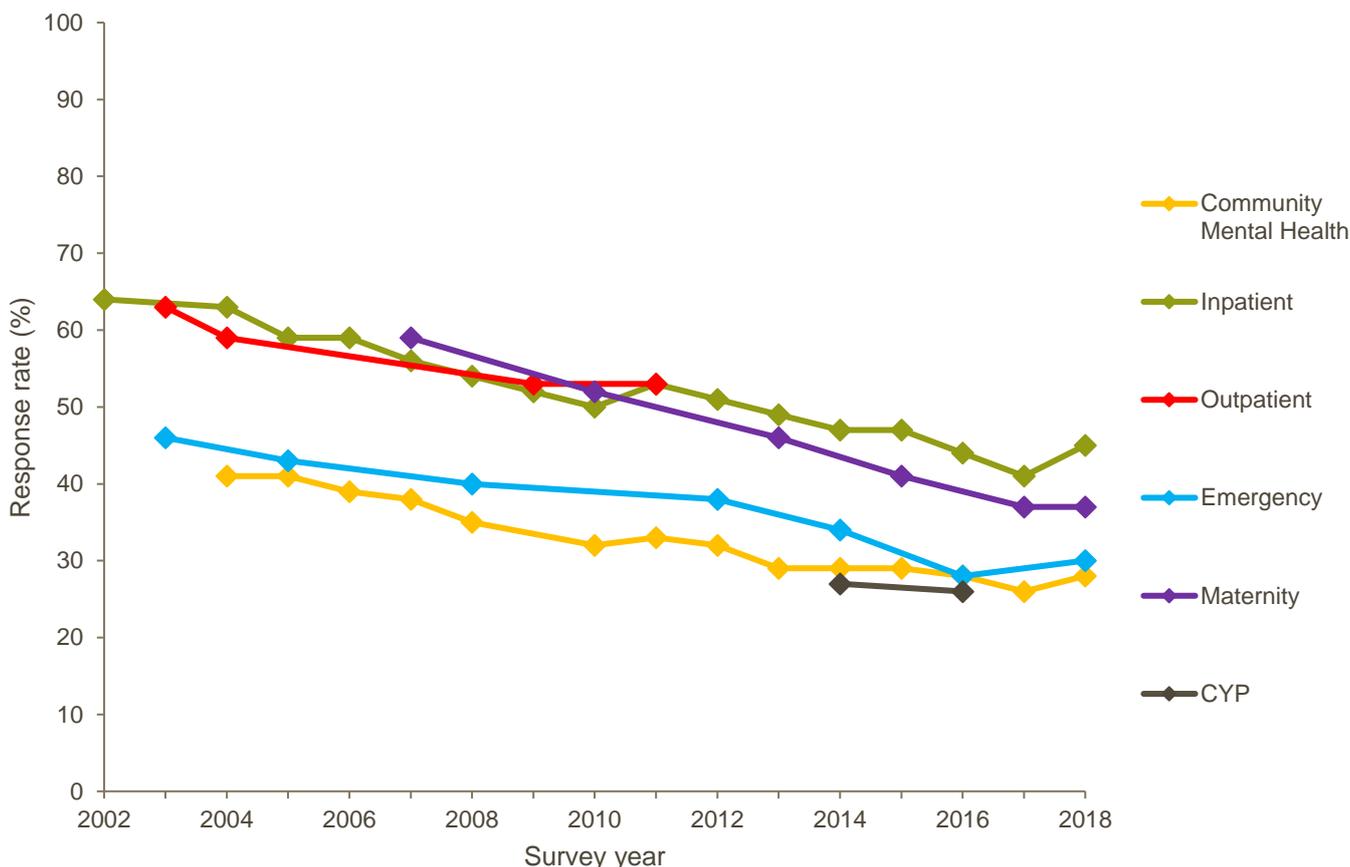
Response rates for the survey have dropped since it was first launched, and this is consistent with both other surveys in the NHS Patient Survey Programme and social and market research more generally.

[Figure 3](#) illustrates response rate trends for the more established surveys in the NHS Patient Survey Programme. The figure shows a clear downwards trend across all surveys. However, the 2018 Adult Inpatient, Community Mental Health Surveys and Urgent and Emergency Care survey indicate a positive change with an increase of 4, 2 and 2 percentage points, respectively.

Please note that the total response rate for UEC18 shown in the graph below is 30%. This is an average of the response rates from the two surveys: the type 1 survey had a response rate of 30%, up from 28% in 2016, while type 3 had a response rate of 29%, up from 25% in 2016.

We expect the increase in response rate for the UEC survey to be due to methodological changes, such as the redesigned cover letter and faster first reminder, and questionnaire improvements as summarised elsewhere in this report and detailed in full in the [survey development report](#).

**Figure 3: Response rates for established surveys in the NHS Patient Survey Programme.**



Please note that not all surveys are conducted on an annual basis

### 6.4. Non-response Bias

Non-response, the result of certain individuals in the sample not responding to the survey, is one of the main issues that can affect survey results. It is a concerning issue in that there can be bias resulting from individuals who do not respond being systematically different from those who do e.g. if young people are less likely to respond, do they share similar views on experiences that we will not hear about.

This issue is exacerbated by a number of factors. Firstly, the split between those who did not receive a questionnaire (for example, because they were no longer at the address held in the trust records and could not respond) versus those who chose not to respond cannot always be known. Out of all of the questionnaires posted,

2.3% were 'returned undelivered' for Type 1 and 2.1% were 'returned undelivered' for Type 3. This is similar to the Community Mental Health survey which also had 2.1% 'returned undelivered) but higher than other surveys of acute trusts such as Inpatients and Maternity, which were both 1.4%.

Research, carried out as part of the NPSP, has shown that certain groups are consistently less likely to respond, including young people, black and minority ethnic groups (BME), people from deprived areas, those with a mental health condition or poor literacy<sup>17 18 19</sup>

It can be seen from table 3 and table 4, below, that there is a clear non-response bias for this survey, with young people in particular less likely to respond. Table 3 shows the demographic profile for respondents and for the sample as a whole (everyone selected for inclusion in the survey) while table 4 shows the demographics for responders and non-responders. It can be seen that older patients are more likely to respond compared with other age groups, and to a lesser extent, patients who identify as white are more likely to respond than those from other ethnic groups. When interpreting these tables please bear in mind that it is likely that there are also inter-relationships between these groups.

Please note that tables 3 and 4 are based on information from trust sample files<sup>20</sup> only, and will therefore differ from response rates published elsewhere; which are a combination of responses to the demographic questions, or sample file information if the response is missing. Respondent-provided information cannot be used to calculate response rates, as the corresponding information is unavailable for non-responders. The response rate is based on the adjusted response, which means that deceased patients and anyone for whom the questionnaire was undeliverable were removed from the sample.

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<sup>17</sup> [www.nhssurveys.org/Filestore/documents/Increasing\\_response\\_rates\\_literature\\_review.pdf](http://www.nhssurveys.org/Filestore/documents/Increasing_response_rates_literature_review.pdf)

<sup>18</sup> [www.nhssurveys.org/Filestore/documents/Review\\_BMEcoverage\\_HCC\\_surveys.pdf](http://www.nhssurveys.org/Filestore/documents/Review_BMEcoverage_HCC_surveys.pdf)

<sup>19</sup>

[www.nhssurveys.org/Filestore/documents/Increasing\\_response\\_rates\\_stakeholder\\_consultation\\_v6.pdf](http://www.nhssurveys.org/Filestore/documents/Increasing_response_rates_stakeholder_consultation_v6.pdf)

<sup>20</sup> Trust sample files contain all people selected to take part in the survey and includes information such as age, gender and ethnicity.

**Table 3: Sample and respondent profiles for the Urgent and Emergency Care survey 2018.**

| Demographics           | Type 1 Profile (%) |            | Type 3 Profile (%) |            |
|------------------------|--------------------|------------|--------------------|------------|
|                        | Sample             | Respondent | Sample             | Respondent |
| <b>Gender</b>          |                    |            |                    |            |
| Male                   | 48                 | 45         | 48                 | 42         |
| Female                 | 52                 | 55         | 52                 | 58         |
| <b>Age</b>             |                    |            |                    |            |
| 16-35                  | 33                 | 12         | 39                 | 14         |
| 36-50                  | 20                 | 13         | 23                 | 16         |
| 51-65                  | 19                 | 25         | 20                 | 29         |
| 66+                    | 28                 | 51         | 18                 | 40         |
| <b>Ethnicity</b>       |                    |            |                    |            |
| White                  | 78                 | 82         | 79                 | 83         |
| Mixed                  | 1                  | 1          | 1                  | 1          |
| Asian or Asian British | 5                  | 4          | 4                  | 2          |
| Black or Black British | 3                  | 2          | 3                  | 2          |
| Chinese or other       | 3                  | 2          | 2                  | 1          |
| Not stated or missing  | 11                 | 10         | 12                 | 11         |

Please note that, due to rounding, the figures in this table may not always sum to 100%.

**Table 4: Respondents and non-respondents to the Urgent and Emergency Care survey 2018 by key demographics.**

| Demographics           | Type 1 Responded (%) |    | Type 3 Responded (%) |    |
|------------------------|----------------------|----|----------------------|----|
|                        | Yes                  | No | Yes                  | No |
| <b>Gender</b>          |                      |    |                      |    |
| Male                   | 27                   | 73 | 25                   | 75 |
| Female                 | 31                   | 69 | 31                   | 69 |
| <b>Age</b>             |                      |    |                      |    |
| 16-35                  | 10                   | 90 | 10                   | 90 |
| 36-50                  | 19                   | 81 | 20                   | 80 |
| 51-65                  | 38                   | 62 | 42                   | 58 |
| 66+                    | 53                   | 47 | 63                   | 37 |
| <b>Ethnicity</b>       |                      |    |                      |    |
| White                  | 31                   | 69 | 29                   | 71 |
| Mixed                  | 15                   | 85 | 15                   | 85 |
| Asian or Asian British | 20                   | 80 | 18                   | 82 |
| Black or Black British | 19                   | 81 | 16                   | 84 |
| Chinese or other       | 21                   | 79 | 19                   | 81 |
| Not stated or missing  | 28                   | 72 | 28                   | 72 |

Please note that, due to rounding, the figures in this table may not always sum to 100%.

## 6.5. Addressing Non-response Bias in the Survey Results

Non-response weighting is currently applied to the England-level data, but not the trust-level data. In the consideration of whether to weight for non-response and whether this should be in accordance with either the sample or population data, we need to factor in the primary aim of why the survey data are being collected.

For the majority of social research studies, in particular those that are concerned with a cross sectional or general population, non-response is weighted for against the population demographics. This is normally achieved by weighting for key characteristics such as age, gender, marital status, socio-economic status, and if these variables exist either on the sampling frame or are collected at the time of interview. For example, in face-to-face survey interviewing, interviewers are able to collect observations about non-responding sample units by assessing the characteristics of the dwelling or neighbourhood<sup>21</sup>. Alternatively, if a national dataset exists for these key characteristics, such as the Census, then this can be used in deriving the weighting approach. The reason why weighting back to the population is key for these studies is that they are looking to make generalisations about a population as a whole rather than individual cases or sampling units within it.

## 6.6. Trust-level Benchmark Analysis

For the NHS Patient Survey Programme, the data collected are used for measuring and comparing the performance of individual NHS trusts. Therefore it is important that we are able to distinguish between the characteristics of different trusts (i.e. the variation between them) to identify those trusts that are doing better or worse than the 'average' trust. As demographic characteristics such as age and gender are known to be related to responses, we therefore standardise different organisations to a common average case-mix when calculating organisational results. This removes demographic differences as a source of variation and provides a 'level playing field' for comparing providers. Weighting for non-response to either a national population dataset or back to the sample data for a trust would not achieve this.

The potential non-response bias is partly addressed via statistical standardisation by age and sex in the trust level results<sup>22</sup>. Standardising by ethnicity would in theory help address this non-response, however the ability to do this is hindered by a number of limitations detailed below.

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<sup>21</sup> Lynn, P. (1996) '[Weighting for Non-response](#)' in Banks, R., Fairgrieve, J., Gerrard, L., Orchard, T., Payne, C., & Westlake, A. (eds.) *Survey and Statistical Computing: Proceedings of the Second ASC International Conference*, pg. 205-214, Essex, UK: Association for Survey Computing.

<sup>22</sup> For more information on the methodology for the trust level results, please see the technical document which is referenced in 'Further Information' at the end of this document.

Where the response rates for different groups vary, we have considered whether we could additionally weight by groups that are less likely to respond. However, there are a number of drawbacks to this approach, which is why it has not been implemented:

- As more variables are included in the standardisation, the analysis not only becomes more complex, but it also greatly increases the risk of very small groups with large weights.
- In order to weight data by age, gender and ethnicity, and include this in the trust data, information on each of these variables is required. If a respondent has not answered the corresponding questions that provide this information, then it is acquired from the sample file provided by the trust in a bid to maximise the amount of available data. However, while data for age and gender tends to be of very good quality, ethnicity is often quite poor. The survey analysis relies solely on respondent-provided information for ethnicity and, as a result, standardisation by ethnicity would often result in the removal of records from the analysis. This is not desirable, particularly in a survey already suffering from low response rates.
- Due to some trusts having very low proportions of individuals from particular ethnic groups, weights are capped<sup>23</sup> so as to avoid heavy weighting; which should be avoided as far as possible when standardising data as it limits the comparisons that can be made fairly.

Furthermore, it should be noted that direct assessment of non-response bias upon survey data is difficult to measure due to the ethical implications of acquiring such data. This would require further contact with patients who do not wish to be contacted. A future possibility would be to collect additional sampling variables, such as postcode data, that could be linked to non-response. Rather than further adjusting the data, this issue is managed by adopting best-practice methodologies so as to maximise response rates from all groups, as discussed [section 2.1](#).

## 6.7. Result for England

Some trusts have a higher response rate than others and would therefore have a greater influence over the England average if a simple mean was calculated across all respondents. To avoid this, 'trust' weights were applied to the data. Doing so means that each trust has an equal influence over the England average for each question, regardless of differences in response rates between trusts.

Additional 'population' weights were also introduced in the 2016 survey, with the aim of reducing potential non-response bias by accommodating for differential age-sex response rates. The aim here was to weight the results for each individual trust to

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<sup>23</sup> To prevent the possibility of excessive weight being given to respondents in an extremely underrepresented group, the maximum value for any weight was set at five.

the trust's eligible population profile, with the intention of making each trust's results representative of their own population. This was done to address the fact that older patients are more likely to respond to the survey, as can be seen in table 4, and so population weights attempt to adjust for this known bias.

Assuming that responses were not missing at random, then weighting each trust's results to their eligible population in this way theoretically makes the trust's results more representative of their population, thus potentially yielding a more accurate experience of the average trust. However, it is not possible to check the extent to which this 'missing at random' assumption is satisfied.

The introduction of non-response weights to the England-level results is a 'design effect' that reduces the precision of statistics from the survey. This has been taken into account for year-to-year comparisons. The design effect can be estimated as the following, where  $w_i$  is the weight for respondent  $i$  and  $n_{total}$  is the total number of respondents:

$$DEFF = \frac{n_{total} * [\sum_i w_i^2]}{[\sum_i w_i]^2}$$

This is then used to adjust the alpha value for the tests of column proportions in national tables for England, using  $\alpha_{new} = 2$ -tailed probability for a result at least as extreme as  $|1.95996398454 \times \sqrt{DEFF}|$ .

This weighting has been applied to the England-level results for all except the demographic questions. These questions are presented without weights applied, as it is more appropriate to present unadjusted data that describes the demographic profile of respondents, rather than average figures.

## 7. Data Revisions

CQC publishes a [Revisions and Corrections Policy](#) relating to these statistics. The NPSP data are not subject to any scheduled revision due to the surveys capturing the views of patients about their experiences of care at a specific point in time. All new survey results are therefore published on the CQC website and NHS Surveys website, as appropriate, and published results for previous iterations of the survey are not revised. The Revisions and Corrections Policy sets out how CQC will respond if an error is identified within this and it becomes necessary to correct published data and/or reports.

## 8. Further Information

The England and trust level results for the 2018 survey are available on the CQC website.

[www.cqc.org.uk/uecsurvey](http://www.cqc.org.uk/uecsurvey)

Benchmark reports for each trust are available on the NHS surveys website:

<https://nhssurveys.org/all-files/03-urgent-emergency-care/05-benchmarks-reports/2018/>

The results for the 2016 survey can be found below. From here you can also access results for surveys carried out in 2003, 2004, 2008, 2012, 2014. However, please note that due to redevelopment work carried out ahead of the 2016 survey, **results from 2018 are only comparable with 2016.**

<https://nhssurveys.org/surveys/survey/03-urgent-emergency-care/year/2016/>

Full details of the methodology for the survey, including questionnaires, letters sent to patients, instructions on how to carry out the survey and the survey development report, are available at:

<https://nhssurveys.org/surveys/survey/03-urgent-emergency-care/>

More information on the patient survey programme, including results from other surveys and a programme of current and forthcoming surveys is available at:

[www.cqc.org.uk/surveys](http://www.cqc.org.uk/surveys)

More information about how CQC monitors hospitals is available on the CQC website at:

[www.cqc.org.uk/content/monitoring-nhs-acute-hospitals](http://www.cqc.org.uk/content/monitoring-nhs-acute-hospitals)

## 9. Feedback

We welcome all feedback on the survey findings and the approach we have used to reporting the results, particularly from people using services, their representatives, and those providing services. If you have any views, comments or suggestions on how this publication could be improved, please contact Tamatha Webster, Survey Manager, at [Patient.Survey@cqc.org.uk](mailto:Patient.Survey@cqc.org.uk).

CQC will review your feedback and use it, as appropriate, to improve the statistics that we publish across the NHS Patient Survey Programme.