

# NHS ADULT INPATIENT SURVEY 2018: SAMPLING ERRORS REPORT

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## Updates

Before using this document, please check that you have the latest version, as small amendments are made from time to time (the date of the last update is on the front page). In the unlikely event that there are any major changes, we will email all trust contacts and contractors directly to inform them of the change.

This document is available from the Survey Coordination Centre [website](#).

## Questions and comments

If you have any questions or concerns regarding this document, please contact the [Survey Coordination Centre](#).

## Introduction

Sample files for all 145 trusts participating in the 2018 Adult Inpatient Survey (IP18) were submitted to the Survey Coordination Centre for final quality control checks before mailing could begin. Sample data inspections of this kind were first introduced by the Survey Coordination Centre for the 2006 Inpatient Survey, and were found to aid trusts in avoiding common errors prior to fieldwork commencing. Such mistakes may lead to delays in the survey process and/or poor data quality.

This report gives a summary of mistakes made and errors found during the course of the Survey Coordination Centre's checks of trust sample data. It is important to note that this report only gives details of the errors found by the Survey Coordination Centre; many samples may have contained further errors which would have been identified and corrected during checks by their approved contractor.

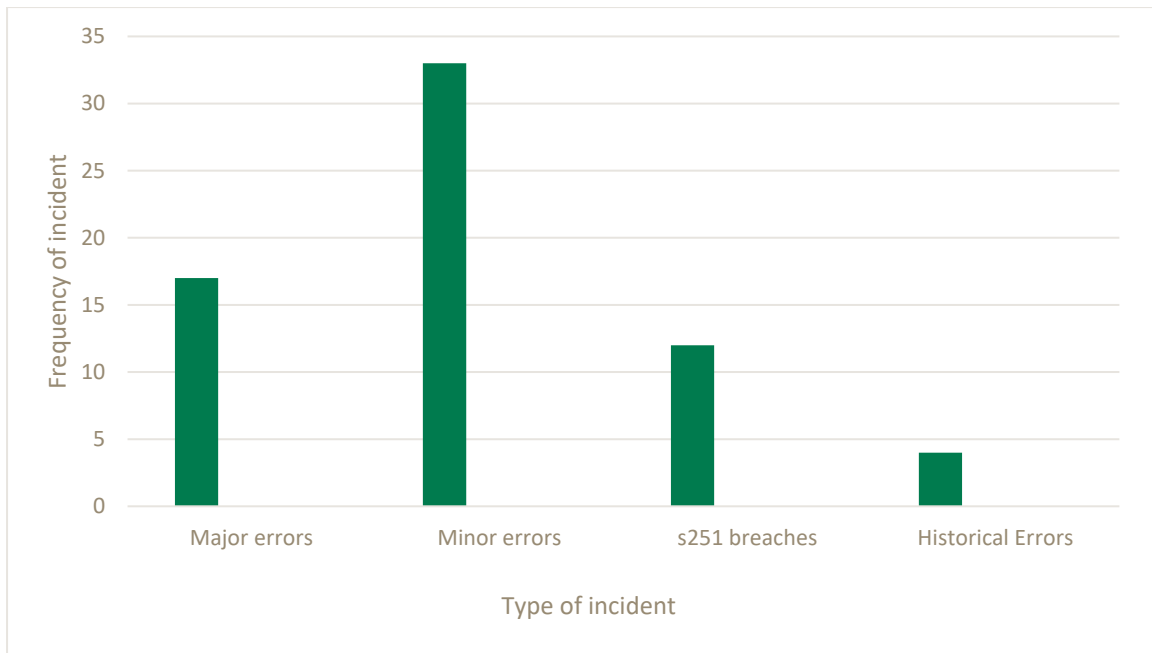
This document outlines the following types of errors:

- **Major errors** – errors that require the sample to be redrawn, commonly where ineligible patients have been included or eligible patients have been excluded.
- **Minor errors** – errors that do not require the sample to be redrawn, but instead require amendments to be made to the sample data;
- **Section 251 breaches** – these are failures to adhere to the stated processes which give the survey approval for the common law duty of confidentiality to be put aside;
- **Historical errors** – errors relating to a trust's previous survey sample; these errors might come to light during checks of their 2018 sample and therefore cannot be corrected.

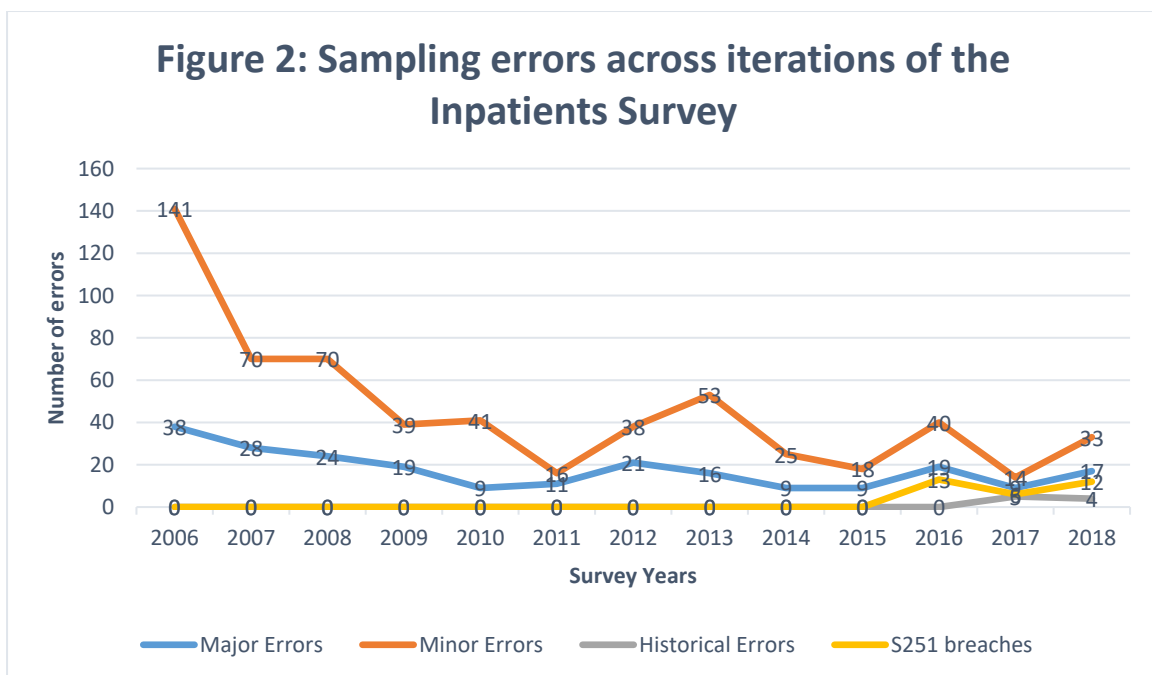
Trusts and contractors should use this document to become familiar with previous errors in order to prevent them from recurring in future survey years.

## Frequency of Errors

During the IP18 sample checking process, the Survey Coordination Centre detected 17 major errors, 33 minor errors, 4 historical errors and 12 Section 251 breaches (see figure 1). All have increased from the 2017 iteration of the survey (see figure 2) however this could be due to A) database issues in 2017 leading to lost information on sample checking and B) the introduction of a deadline in 2018 for submitting samples may have caused trusts to rush through the process.



**Figure 1:** Frequency of errors/breaches in the IP18 survey



**Figure 2:** Frequency of errors across each iteration of the Inpatient Survey

Please note:

- Only in-house trusts were checked by the Survey Coordination Centre in the 2011 survey.
- Historical errors were not included in the sampling errors report prior to the 2016 survey.
- Section 251 breaches were not recorded prior to the 2015 survey.

# Major Errors

In total, there were 17 individual major errors made during sampling for IP18 that resulted in 8 trusts having to redraw their sample. These errors tended to take the form of trusts either misunderstanding the survey's sampling methods, including ineligible patients and excluding eligible patients.

| Major Error Type             | Total Frequency | Frequency from in-house trusts |
|------------------------------|-----------------|--------------------------------|
| Sampling methods             | 2               | 0                              |
| Included ineligible patients | 9               | 4                              |
| Excluded eligible patients   | 6               | 1                              |

Table 1. Frequency of major error types in total and by in-house trusts

## Sampling methods

It appears that one trust drew their sample incorrectly as their sample did not contain patients born before 1929 whereas in previous years, they had been included. The trust redrew their sample and in their second submission, there were patients present in the sample who were born prior to 1929.

Another trust had a large volume of queries around most of their variables in their first submission i.e. discharge dates, LOS, ICD-10 chapter codes, treatment centre admissions and admission method codes. Although the trust had no specific explanation as to what happened in drawing their initial sample, the trust felt the need to resample due to the magnitude of queries. Their second submission was in line with their 2017 sample and subsequently approved.

## Including ineligible patients

The Adult Inpatient Survey does not include obstetrics / maternity service users. This means excluding the following codes:

- Admission method code (AMC) of 31 (Admitted ante-partum)
- Admission method code (AMC) of 82 (Maternity-related)
- Treatment function code (TFC) of 501 (Obstetrics)
- TFC 502 (Gynaecology) if their inpatient stay was pregnancy related
- ICD-10 chapter code of XV (pregnancy, childbirth and the puerperium) if their inpatient stay was pregnancy related

This year, seven trusts incorrectly included ineligible obstetric and maternity patients in their initial sample with one trust repeating the same error twice, totalling eight occurrences of this type of major error. All trusts were asked to remove and replace these patients from their sample with the next eligible records from consecutive discharge.

- One trust had to resubmit due to other errors in their sample. Their second submission included 1 patient with an AMC of 31 so was asked to resubmit. On their third submission, there was still a patient with an AMC of 31 and therefore had to resubmit for a fourth time. This makes up two separate major errors.

- After a second check of patients with a TFC of 502, one trust realised 1 of the patients should have been excluded.
- Following queries from the Survey Coordination Centre regarding 1 patient with an ICD-10 chapter code of XV, the trust confirmed they should be excluded.
- One trust included 2 patients with an ICD-10 chapter code of XV that should have been excluded.
- One trust included 5 patients with an ICD-10 chapter code of XV and following queries from the Survey Coordination Centre, the trust confirmed they should have been excluded.
- One trust had 9 patients with an ICD-10 chapter code of XV that also had a TFC of 502 and should have been excluded.
- One trust submitted a sample with 2 patients coded with an ICD-10 chapter code of XV, 38 coded with a TFC of 501 and 1 patient with an AMC of 82 that all should have been excluded.

In addition to the maternity related errors mentioned above, one trust included 8 patients that stayed overnight at their step down service, but had not stayed overnight in the trusts main acute site. As part of the eligibility criteria for the survey, patient must have stayed overnight in an acute site of the trust to be included. These 8 patients were therefore ineligible for the survey and subsequently replaced.

## Excluded eligible patients

Six trusts submitted a sample that did not include all eligible patients of which all had to redraw and resubmit:

- One trust mentioned they had excluded patients discharged toward the end of July that had incomplete clinical coding following queries on the shift in earliest discharge date between their 2018 and 2017 samples. Trusts are instructed to include these patients but to ensure they do additional checks for removing ineligible patients (i.e. obstetric and maternity service users).
- Following several sample submissions from one trust to their contractor, the Survey Coordination Centre was involved to help. For a number of submissions, they were asked by their contractor to replace certain patients due to address issues however the replacements made had discharge dates after the earliest discharge date in their sample. As the sample is drawn consecutively starting back from 31<sup>st</sup> July, these replacement patients should have already been included in their initial sample.
- Following queries on the shift in earliest discharge dates between their 2018 and 2017 sample, one trust realised that the extraction code was written to exclude patients that did not have a procedure listed on their system. However, this is not part of the exclusion criteria which means they excluded eligible patients from their sample.
- After one sample was approved, the approved contractor reexamined the sample before mailing 1 and realised the trust excluded eligible patients by drawing an additional sample ('boost' sample) on the same days of the IP18 sample. Eligible patients included in their boost sample had been excluded from their IP18 sample. Approval was withdrawn and the trust was asked to redraw their sample

- In one trust's sample, the Survey Coordination Centre queried the zero patients with a year of birth from 1990 to 1999. The trust realised they had excluded patients aged 19 to 28 and subsequently redrew their sample.
- One trust had to redraw their sample as there was a 13 day gap in discharge dates from 30<sup>th</sup> June to 12<sup>th</sup> July indicating they drew their sample incorrectly by excluding eligible patients most recently discharged.

# Minor errors

Errors are considered to be minor if the trust's sample is comprised of eligible patients and can be corrected without the need for the sample to be redrawn.

In total, there were 33 minor errors that occurred during the sampling for IP18. These errors tended to take the form of incorrect coding being used in patient records; with the vast majority of these being in regards to the Clinical Commissioning Group (CCG) codes.

## CCG codes

Several CCGs recently merged and the new CCG codes went into effect on 1<sup>st</sup> April 2018.

Due to the changes in CCG, many trusts submitted sample files with the older CCGs instead of the new ones. In total, there were fourteen trusts that submitted a sample with incorrect CCG codes, making up the majority of minor errors.<sup>1</sup>

In addition to the above trusts, one trust submitted a sample with one invalid CCG code. Following queries, they provided the correct code for this patient and their sample was subsequently approved.

In all cases, incorrect/invalid CCG codes were amended in the Survey Coordination Centre's copy of the sample file, the copy that the contractors has and the trust was made aware that these changes were made.

## Admission Method Codes

One trust had two patients with an invalid Admission Method Code (AMC) of '99'. The trust confirmed the correct codes for these patients which were then amended in both the Survey Coordination Centre's and the contractor's copy of the file.

Similarly, the Survey Coordination Centre queried an AMC of 82 (birth of a baby) which should have been excluded from the sample. The trust confirmed this was the incorrect code for that patient and that they were eligible. The code was updated in their sample file.

## Patient Record Number (PRN)

One trust had not capitalised one of the letters of their trust code in all the PRNs in their sample. The trust corrected this and resubmitted.

Another trust had sent record numbers which were formatted to be IP17 as opposed to IP18. The trust amended the records accordingly and resubmitted their sample file.

One trust that was participating in the pilot study had gaps in the PRNs of their main sample due to a mix up in coding them in their pilot sample. The trust fixed the record numbers in both samples and resubmitted.

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<sup>1</sup> Please note the contractors did not have an up to date CCG reference list until about half way into the sample checking process, causing contractors to miss the invalid CCG's during their checks and resulting in the Survey Coordination Centre noticing them instead.



## Trust Code

One in-house trust had NHS site codes in place of their trust code in their sample. The trust resubmitted with the correct trust code in their file.

## Length of Stay

One in-house trust had 22 patients with the length of stay not calculated correctly in relation to their admission and discharge dates. The trust was asked to recalculate the length of stay and resubmit their sample file.

## Treatment Function Codes

Four trusts provided TFCs on admission instead of on discharge. These trusts were asked to resubmit their sample file using TFC's on discharge.

Two trusts had coding errors for several Treatment Function Codes (TFC's). They both corrected the issue and resubmitted.

## Admission / Discharge Dates

One trust had incorrect coding for 'Month of admission', 'Month of discharge' and 'Year of discharge.' In their sample file, full dates had been entered for these three variables instead of the individual month and year. The trust had to resubmit their sample after correcting.

## NHS Site Codes

One trust submitted a sample with 2 records missing an NHS site code at admission and 7 missing an NHS site code at discharge. The trust supplied the corresponding site codes and they were amended in all copies of their sample file.

## Mobile Phone Indicator

For the 2018 Adult Inpatient Survey, an additional variable was required from trusts to indicate whether patients had a mobile phone number listed on their system.

One trust misinterpreted the instructions on how to code for the mobile phone indicator and had incorrectly coded 449 records as '9' (unknown) when they should have been coded as '0' (no mobile phone number). There was no need for the trust to send a revised dataset. The Survey Coordination Centre amended the file received and the contractor did the same for their copy of the file.

Another trust had 957 patients who were missing a coding for the mobile phone indicator variable. The trust had to resubmit with this variable fully coded.

## Treatment Centre Admission

One trust had coded 0% of their sample as being admitted to their Treatment Centre last year compared to 100% this year. When queried, the trust confirmed that this was due to a

coding error this year and it should have been 0% of their sample admitted through their Treatment Centre. The trust corrected this error and resubmitted their file.

# Section 251 breaches

Approval for IP18 was sought and gained under Section 251 of the NHS Act 2006. This approval allows the common law duty of confidentiality to be put aside in order to allow for the processing of patient identifiable data without active consent. Any breaches of the terms and conditions of Section 251 approval are immediately communicated to the CQC, who in turn, notify the Confidentiality Advisory Group (CAG) of the breach in question. Twelve such breaches occurred during sample checking for IP18.

- While sending a list of records to their approved contractor for removals following DBS checks, two trusts sent full dates of birth for patients needing to be removed. The contractor is only allowed to receive year of birth under their Section 251 approval.
- Similarly, one trust provided the dates of death along with the requested PRNs and year of birth for any deceased patients to be removed from future mailings. The contractor is not allowed to receive dates of death under their Section 251 approval.
- One trust sent a patient's full date of birth in response to their contractor query which wanted to confirm the patient was aged 16.
- Two in-house trusts sent the Survey Coordination Centre ICD-10 codes and not chapter codes. The Survey Coordination Centre does not have approval to receive this information.
- One of the above in-house trusts that sent ICD-10 codes made a further Section 251 breach by submitting extra patient records, totalling 1350 patients records as opposed to only 1250 records that the Survey Coordination Centre is approved to receive.
- Another in-house trust made two S251 breaches:
  - They sent full dates of birth for patients born in 2002 via email. This was to confirm the patients were age 16 at the time they drew the sample however they were instructed to only confirm this. The Survey Coordination Centre does not have approval to receive full birthdates.
  - They also sent their sample file via email to the Survey Coordination Centre though sample data must only be submitted once the file is encrypted and via the secure FTP.
- One trust supplied their contractor with incorrect addresses for most of their sample causing a potential 1247 mailings to be delivered to incorrect addresses with recent inpatient's names on them.
- During fieldwork, one trust realised they made an error in their DBS checks and resulting in deceased patients in their sample file. Forty-three mailings were sent addressed to a deceased patient. Mailings were held off until a full DBS check and a local check were completed for reassurance.
- During fieldwork, one trust supplied their contractor with the full name and address of a patient who wanted to opt-out of the survey as opposed to only the patient URN.

CQC was informed of all the above breaches and for all data breaches, letters were sent to all relevant contacts at the trusts including the Caldicott Guardians.

# Historical errors

The sample checking process carried out by the Survey Coordination Centre involves comparing the trust's current sample data to previous year's sample data. This is for two reasons: 1) to ensure the sample has been drawn correctly; and 2) to ensure historical comparisons can be made in the analyses. On occasion, these checks can uncover errors made during previous survey iterations that had gone unnoticed despite the checks completed in previous years. Four such errors were identified during the IP18 sample checking process. In all cases, trusts had excluded eligible patients in their 2017 sample.

## Excluded eligible patients

A trust excluded eligible patients in 2017 by not including patients discharged from their treatment centre. Since their treatment centre is treated as part of the acute hospital, then inpatients discharged from the centre are considered eligible for the survey.

Similarly, another trust in previous years had excluded patients from one of their smaller sites that should have been included.

A further trust had made an error in the algorithm in their previous year's extraction codes. This script had failed to include any patient in the time period that had a primary procedure of NULL which is not part of the exclusion criteria.

One trust realised that in the previous year, the sample was ordered by NHS Site code and then by 'Day of Discharge'. This resulted in the exclusion of two major sites in 2017 which had accounted for 55 percent of their 2018 sample.