NHS MATERNITY SURVEY 2017
SAMPLING ERRORS REPORT

THE CO-ORDINATION CENTRE FOR THE NHS PATIENT SURVEY PROGRAMME

1 Introduction

Sample files for all 130 trusts participating in the 2017 NHS Maternity Survey were submitted to the Co-ordination Centre for final quality control checks before mailings could begin. In addition, all trusts were asked to submit a separate antenatal and postnatal attribution file directly to the Co-ordination Centre.

This document describes:

a) The types of errors found in sample files submitted to the Co-ordination Centre for checking. Sample errors are divided into major errors (i.e. those requiring the sample to be re-drawn, or patients to be replaced or added) and minor errors (i.e. those which could be corrected using the same sample). It is important to note that this document only reports errors found by the Co-ordination Centre; many samples would have contained additional errors which would have been identified and corrected during contractor checks.

b) The types of historical sample errors revealed while checking the 2017 samples against those from 2015 and 2013.

c) Section 251 breaches committed by trusts.

d) The types of errors found in attribution data files submitted to the Co-ordination Centre for checking.

This document should be used by trusts and contractors to become familiar with past errors so as to prevent them from recurring. If further assistance is required, please contact the Co-ordination Centre at maternity@surveycoordination.com or on 01865 208 127.

2 Frequency of errors

As shown in Table 1, in 2017 there were 7 major errors and 40 minor errors found in samples submitted to the Co-ordination Centre, and a further 30 historical errors were identified during the sample checking process.

Five trusts breached the Section 251 requirements of the survey.

In total, 126 of 130 trusts submitted attribution files to the Co-ordination Centre, and 30 errors were identified in these files.

Table 1 – Frequency of errors

Error	2017
Major errors	7
Minor errors	40
Historical errors	30
Section 251 breaches	5
Attribution errors	30

3 Major errors

Errors are classified as major if they require the trust to re-draw their sample, add patients or replace patients. If major errors are not corrected they can invalidate a trust's participation in the survey, preventing the trust's survey data from being used by the Care Quality Commission (CQC) for regulatory and assessment activities.

Seven major errors were identified during sample checking in 2017. All of these errors were later corrected and the samples approved for mailing. Table 2 outlines the types of major errors that occurred in 2017. More detail about each of these errors is provided below.

Table 2 – Frequency of major errors by type of major error

Major error	2017
Excluded home births	4
Did not sample all February deliveries	1
Sampled by discharge date	1
Excluded non-consenting patients	1
Total	**7**

Excluded home births

One of the sample variables for the Maternity Survey is Actual Delivery Place (ADP), where a code of '1' indicates that the patient delivered at home. If there are no home births in a sample, or the number of home births is considerably lower than in previous survey year(s), the Co-ordination Centre checks with the trust/contractor to ensure that all eligible home births have been included.

Four trusts incorrectly excluded some or all eligible home births from their sample and were asked to re-submit or provide their contractor with the additional records so that they could be added to the sample.

Did not sample all February deliveries

Trusts are required to sample all eligible women who gave birth in February. Where this totals fewer than 300 women, trusts are required to sample consecutively from January 31st backwards until they have either included 300 patients in total (including the February births), or have reached January 1st. Therefore, if a trust has to include January births, their maximum sample size will be 300, whereas if they had more than 300 eligible deliveries in February, all of these patients should be included in the sample. This distinction occasionally leads to sampling errors, for example when a trust only draws a sample of 300 from February, or samples more than 300 patients from January and February combined.

In 2017, one trust only sampled the last three weeks of February. They were instructed to re-draw their sample, including all eligible February deliveries.

Sampled by discharge date

The Co-ordination Centre checks the number of deliveries that occurred on each day of the sampled period. If deliveries are not roughly evenly distributed between days, this could indicate a sampling error.

One trust's sample showed a significantly smaller number of deliveries on the last three days of February. After querying this the Co-ordination Centre discovered that the trust had sampled by discharge date rather than date of delivery. Therefore, several women who delivered at the end of February but who were discharged in a later month had not been included in the sample. The trust was required to re-draw their sample according to delivery date.

Excluded non-consenting patients

In line with the survey's Section 251 requirements, trusts are required to exclude any patients who have explicitly requested that their details are not to be used for any purpose other than their clinical care.

One trust's sample declaration form indicated that a large number of patients had been excluded from their sample due to dissent. The Co-ordination Centre asked the trust to provide the exact text they use to ask patients about data sharing. As this text asked patients whether they consented to sharing their personal information, the Co-ordination Centre judged that not agreeing with this statement would be classified as non-consent, which does not equate to dissent for the purposes of this survey. Furthermore, the statement only referenced sharing of data with bodies providing maternity services, which is not relevant to the Maternity Survey. The trust was therefore instructed to add the non-consenting patients to their sample.

4 Minor errors

Forty minor errors were identified during sample checking. Errors are considered to be minor if they can be corrected without the need for the sample to be re-drawn or for patients to be added or replaced.

Table 3 below details the types of minor errors found in the 2017 samples. More detail about each of these errors is provided below.

Table 3 – Frequency of minor errors by type of minor error

Minor error	**2017**
Actual Delivery Place coded incorrectly	27
Site codes inappropriate for delivery place	3
Included patients who delivered at another trust	2
Record numbers formatted incorrectly	2
Sampled >300 patients from Jan and Feb combined	2
Incorrect site codes submitted	2
Postcode sector formatted incorrectly	1
CCG codes missing or incorrect	1
Total	**40**

Actual Delivery Place coded incorrectly

Actual Delivery Place (ADP) denotes the type of location where a patient gave birth, such as at a domestic address (for home births), or at one of the four general types of delivery ward (midwife-led, consultant-led, GP-led, or a ward led by a combination of these professionals). In the sample file, ADP should be coded according to the specifications in the NHS Data Dictionary. The Co-ordination Centre queries the trust/contractor whenever the proportions of ADP codes are

significantly different from previous years' samples, when there are new or missing code categories compared to the previous year, or when any of the following codes are present: '6' (other hospital or institution), '7' (other type of ward), '8' (none of the above), and '9' (not known).

Incorrectly coded ADP was by far the most common minor error in 2017, occurring 27 times in total. This error arose in a number of ways, including:

- Trusts coding ADP according to the type of professional present at the birth rather than the type of ward in which the birth occurred.
- ADP codes incorrect on the trust's electronic system (or inconsistent with the NHS Data Dictionary definitions).
- Inappropriate use of '6', '7', '8' or '9' codes.

Where ADP coding errors are detected, the Co-ordination Centre requests that the trust/contractor corrects the codes.

Site codes inappropriate for delivery place

A site code should not be entered for any records with an ADP of '1' (domestic address), '8' (none of the above) or '9' (not known), as none of these delivery places relate to a specific NHS site. The only exception to this is when a patient's ADP is '9' and the trust knows which site the delivery took place in, but not the type of ward.

There were three samples in which site codes had been incorrectly entered for patients with the above ADP codes. The Co-ordination Centre instructed contractors to remove the site codes for these records.

Included patients who delivered at another trust

Trusts are instructed to exclude patients from the sample if they delivered in a unit not managed by the trust. ADP codes of '6' (other hospital or institution) should therefore not be present in the sample. The Co-ordination Centre checks for and queries any '6' codes in a sample.

Two trusts submitted a sample where one or more patients had an ADP code of '6' and were confirmed by the trust to have delivered in a unit managed by a different provider. These patients were subsequently removed from the samples.

Record numbers formatted incorrectly

Trusts are directed to create a record number for each patient in the sample, formatted as follows: survey code followed by trust code and a unique 4-digit ID number (e.g. MAT17RGN0001).

One trust included 'MAT15' instead of 'MAT17' in their record numbers. Another trust included five digits instead of four in their unique ID numbers. The contractor for these trusts was asked to amend these formatting errors.

Sampled >300 patients from Jan and Feb combined

As noted in Section 3 above, when a trust has to sample back into January their maximum sample size must be 300.

Two trusts submitted sample files to the Co-ordination Centre which contained January births but included more than 300 patients. These trusts were instructed to remove the oldest births until their sample size was exactly 300, and then re-submit their file.

Incorrect site codes submitted

Site codes denote the specific NHS site (typically a hospital) at which each woman gave birth. Site codes in the sample are cross-referenced against the most up-to-date site information from the NHS Organisation Data Service (ODS). The Co-ordination Centre queries the trust/contractor

when site code proportions are significantly different from the previous year's sample, when there are new or missing sites compared to the previous year, when a site code is missing for a patient who should have one, or when a site code does not exist according to ODS information.

Two trusts submitted sample files which contained incorrect site codes. The contractors for these trusts were asked to correct these site codes.

Postcode sector formatted incorrectly

One of the variables required in the sample file is the postcode sector of patients' residential address. A postcode sector is comprised of the first part of the full postcode (the district) plus the first digit of the second part of the postcode (the sector).

In one of the samples several postcodes were missing the sector digit. The Co-ordination Centre requested that the trust's contractor amend this.

CCG codes missing or incorrect

CCG (Clinical Commissioning Group) codes identify which CCG was billed for the care of each woman in the sample. As with site codes, CCG codes in a sample are cross-referenced against the most up-to-date information from the ODS. The Co-ordination Centre contacts a trust/contractor when CCG codes in their sample are invalid or missing.

In one sample received by the Co-ordination Centre, the CCG code was missing for several patients because it was not available at the time the sample was drawn. The trust was advised that they would need to provide these codes to their contractor prior to final data submission.

5 Historical errors

Part of the sample checking process involves comparing a trust's sample data to their previous submissions for the survey and investigating any discrepancies. This can sometimes reveal errors in previous years' samples. If these are classified as major errors, historical comparisons between the current year and previous years may not be possible. The historical data may also be excluded from all other uses including national statistics and CQC's monitoring tool.

The Co-ordination Centre checked each trust's 2017 Maternity Survey sample against their 2015 sample (and sometimes their 2013 sample). In total, 30 historical errors were identified, as summarised below:

- 20 trusts used incorrect Actual Delivery Place codes in their 2015 and/or 2013 samples. As these errors were minor, no further action was taken by the Co-ordination Centre.
- 4 trusts used incorrect site codes in their 2015 and/or 2013 samples. As these errors were minor, no further action was taken by the Co-ordination Centre.
- 6 trusts incorrectly excluded eligible patients from their 2015 and/or 2013 samples:
    - Two trusts excluded all home births from their 2015 sample. One of these trusts also excluded all patients from one of their hospital sites in 2015.
    - One trust excluded several patients in 2015 who were flagged for safeguarding on their system, but who should only have been excluded from the survey if receiving a questionnaire posed a significant risk of harm.
    - The three remaining trusts excluded several eligible patients from their 2015 and/or 2013 samples due to data quality or technical issues.

  As the exclusion of eligible patients is classified as a major error, the Co-ordination Centre will not produce historical comparisons between 2017 and the survey year(s) in which the major error occurred for the above six trusts.

In addition, the data for these trusts may need to be removed from the national dataset(s) for the survey year(s) in which the error occurred.

6 Section 251 breaches

The 2017 Maternity Survey was granted Section 251 approval under the NHS Act of 2006. Any breaches of the Section 251 requirements for the survey are communicated to CQC, who in turn notify the Confidentiality Advisory Group (CAG).

Five trusts committed Section 251 breaches, as described below:

- Two trusts submitted their sample file to their contractor via email. All trusts must password-protect their sample file and submit it via their contractor's secure FTP server (or the Co-ordination Centre's FTP for trusts conducting the survey in-house).
- One trust submitted their attribution file to the Co-ordination Centre via email. All trusts must password-protect their attribution file and submit it directly to the Co-ordination Centre's FTP, separately from their sample data. The attribution file should not contain any patient identifiable information, except for postcode sectors.
- One trust did not display dissent posters during the sampling period. All trusts must display the standard Maternity Survey dissent poster in relevant areas at their trust throughout February (and January if necessary). Trusts should insert a contact number on the poster for patients to call if they wish to opt out of the survey.
- One trust did not distribute information leaflets to young mothers. All trusts must provide young mothers aged 16 and 17 with the standard Maternity Survey leaflet which contains information about the survey. Staff should discuss the leaflet with young mothers and ensure they understand their right to opt out.

7 Attribution errors

In addition to submitting a sample file, trusts are also asked to submit a separate antenatal and postnatal attribution file directly to the Co-ordination Centre. This file provides information on whether or not each woman in the trust's sample received her antenatal and/or postnatal care from the trust. This allows the Co-ordination Centre to determine whether each woman's responses to the antenatal and postnatal sections of the questionnaire can be attributed to the trust. Submission of the file is not a mandatory requirement of the survey, but antenatal and postnatal reports will only be produced for trusts which submit an attribution file.

To compile attribution data, trusts must first enter their anonymised sample data into the file. If the trust has electronic records of whether they provided women's antenatal and postnatal care, these should be used to complete the attribution file. If the trust does not have such electronic records, the postcode boundary method should be used to complete the file. This involves entering a list of postcode sectors which the trust provides maternity services to, which are then matched against the patients' residential postcode sectors to determine whether they are likely to have received their antenatal and/or postnatal care from the trust.

The Co-ordination Centre merges the sample and attribution files during data analysis, and hence the records in the two files must match exactly in order to be sure that the antenatal and postnatal information is being attributed to the correct patients. Trusts should therefore use the finalised version of their sample data when creating their attribution file, and should contact their contractor to ensure they have this, as sample data is often amended during or after sample checking.

In total, 126 of 130 trusts submitted an attribution file in 2017, and 30 errors were detected. Table 4 details the types of errors found in the 2017 attribution files. More detail about each of these errors is provided below.

Table 4 – Frequency of attribution errors by type of attribution error

Attribution error	2017
Missing records	10
Additional records	10
Missing antenatal and/or postnatal data	4
Incorrect antenatal and/or postnatal data	4
Switched records	2
Total	**30**

Missing records

Ten files had missing records. The Co-ordination Centre added these records back in using sample data and contacted the trusts to determine which antenatal and postnatal codes should be entered for these patients.

Additional records

Ten files had additional records, indicating that these trusts used an outdated version of their sample file to create the attribution file. The Co-ordination Centre removed the excess records or contacted the trust in cases where it was impossible to determine which records to remove.

Missing antenatal and/or postnatal data

In four files the antenatal and/or postnatal columns had not been filled out. These trusts were asked to complete the columns and re-submit their files.

Incorrect antenatal and/or postnatal data

Four files contained incorrect antenatal and/or postnatal coding and were asked to re-submit:

- One trust had entered ‘Yes’ and ‘No’ instead of the required numerical codes.
- Two trusts mistakenly did not include any ‘2’ codes (patient received some but not all antenatal/postnatal care from the trust).
- One trust mistakenly had a very high number of ‘2’ codes.

Switched records

In two files the data for two of the records had been switched. The Co-ordination Centre contacted the trusts to confirm that this was the case and then switched the data back.