SAMPLING ERRORS REPORT
NHS MATERNITY SURVEY 2018

THE COORDINATION CENTRE FOR THE NHS PATIENT SURVEY PROGRAMME

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1 Introduction

Sample files for all 129 trusts participating in the 2018 Maternity Survey were submitted to the Survey Coordination 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 Coordination Centre.

This document describes:

a) The types of errors found in sample files submitted to the Coordination 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 can be corrected using the same sample). It is important to note that this document only reports errors found by the Coordination 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 2018 samples against those from 2017, 2015 and 2013.

c) The types of Section 251 breaches committed by trusts during the 2018 sample checking period.

d) The types of errors found in attribution files submitted to the Coordination Centre for checking.

Trusts and contractors should use this document to become familiar with previous errors in order to prevent them from recurring in future survey years. If you have any queries, please contact the Coordination Centre at maternity@surveycoordination.com or on 01865 208 127.

2 Frequency of errors

During the 2018 sample checking period, 16 major errors and 13 minor errors were found in samples submitted to the Coordination Centre (see Table 1). In addition, 11 historical errors were identified and 5 Section 251 breaches occurred.

In total, 122 of 129 trusts submitted attribution files to the Coordination Centre, and 18 errors were identified in these files.

Table 1 – Frequency of errors

Error	Frequency
Major errors	16
Minor errors	13
Historical errors	11
Section 251 breaches	5
Attribution errors	18

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 data from being used by the Care Quality Commission (CQC) for regulatory and assessment activities.

Sixteen major errors were identified during sample checking in 2018. All of these errors were later corrected and the samples approved for mailing. Table 2 outlines the types of major errors that occurred in 2018. More detail about each of these errors is provided below.

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

Major error	Frequency
Excluded women with safeguarding flags	5
Excluded women with failed DBS traces	2
Excluded home births	1
Sampled by discharge date	1
Excluded women who indicated 'Express Dissent'	1
Excluded asylum seekers	1
Excluded women with missing data	1
Excluded women with transferred babies	1
Excluded women with mismatched addresses	1
Excluded women with previous unsuccessful pregnancies	1
Excluded woman mistaken for duplicate	1
Total	**16**

Excluded women with safeguarding flags

Women with safeguarding concerns should only be excluded if the delivery of a questionnaire is likely to increase the risk of harm to the individual. Normally this would only apply to a very small number of women (typically up to 3%) within a sample, if any.

Five trusts in 2018 excluded a higher than expected number of women for safeguarding reasons. Through Coordination Centre queries it was revealed that these trusts had excluded any women who had a safeguarding flag against their record. The safeguarding team at each trust was therefore asked to review the exclusions. Upon review the safeguarding teams decided that most of the women with a safeguarding flag would not be at risk of harm from receiving a questionnaire, and these women were subsequently added to the sample.

Excluded women with failed DBS traces

Trusts are required to complete a DBS (Demographics Batch Service) check before submitting their sample, and to exclude any women if they (or their baby) were found to be deceased. Due to the sensitivity of the Maternity Survey, trusts are also instructed to remove women from the sample if they or their baby could not be traced by DBS. Normally only a small number of records (typically up to 3%), if any, are returned untraced by DBS.

In 2018 two trusts excluded a larger than expected number of women due to failed DBS traces. The trusts were asked to reattempt their DBS check using the approach recommended in the Sampling Instructions. They were then able to cut down the number of untraceable records and add the successfully traced records to the sample.

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 woman delivered at home. If there are no home births in a sample, or the number of home births is considerably different from the previous survey year(s), the Coordination Centre checks with the trust/contractor to ensure that all eligible home births have been included and have been coded correctly.

One trust incorrectly excluded a home birth from their sample and was asked to provide their contractor with the additional record so that it could be added to the sample.

Sampled by discharge date

Trusts are instructed to sample every eligible woman who delivered at their trust in February (and January if the minimum sample size is not met with February deliveries alone). The Coordination 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 an unusually small number of deliveries on the last two days of February compared to the rest of February. After querying this the Coordination Centre discovered that the trust had sampled by discharge date. Therefore, the sample included women who were discharged in February rather than those who delivered in February. The trust was required to re-draw their sample according to delivery date.

Excluded 'Express Dissent' women

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 indicated that they excluded five women who had a marker of 'Express Dissent' on the Spine. 'Express Dissent' means that a patient has opted out (via their GP) of having a Summary Care Record created for them. This prevents their data being shared with other health professionals. However, as this dissent mechanism does not apply to the sharing of data with researchers, the trust was asked to add the five women to their sample.

Excluded asylum seekers

Trusts are instructed to exclude women if the questionnaire does not have a reasonable chance of being delivered to their UK postal address, or if the woman does not have a UK postal address at all.

One trust excluded several women who were asylum seekers and had a temporary or hostel address in the UK. As these women had a useable UK postal address (even though they might not still be residing there), the trust was asked to add them to the sample.

Excluded women with missing data

One trust excluded a large number of women because a technical problem with their electronic system meant that data was missing for these records. The trust was asked to manually review the paper records for these women and add them to the sample if eligible.

Excluded women with transferred babies

Women should be excluded from the sample if they (or their baby) are inpatients at the time of drawing the sample.

One trust excluded two women whose babies had been transferred out of their intensive care unit to another trust. As the trust were unable to confirm whether the babies were still inpatients, they were asked to add their mothers into the sample.

Excluded women with mismatched addresses

One trust excluded two women because their address did not match their babies' address and the trust therefore assumed that the babies had been taken into care. However, as the trust was not able to confirm that the babies had actually been taken into care they were asked to add the women to their sample.

Excluded women with previous unsuccessful pregnancies

Women should be excluded from the sample if they had one or more stillbirths.

One trust excluded women who had ever had an unsuccessful pregnancy previously (i.e. a stillbirth or termination). However as all of these women had live births during the 2018 sample month(s), the trust was asked to add these women to their sample.

Excluded woman mistaken for duplicate

One trust inadvertently excluded one eligible woman while manually removing a woman who was ineligible for the survey. This was because the two women had the same surname and the trust mistakenly mistook the second record as a duplicate. The trust added the eligible woman back into the sample.

4 Minor errors

Thirteen 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 2018 samples. More detail about each of these errors is provided below.

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

Minor error	Frequency
Actual Delivery Place coded incorrectly	4
CCG codes missing or incorrect	3
Site codes inappropriate for delivery place	2
Ethnicity coded incorrectly	2
Record numbers formatted incorrectly	1
Incorrect site codes submitted	1
Total	**13**

Actual Delivery Place coded incorrectly

Actual Delivery Place (ADP) denotes the type of location where a woman gave birth, such as at a domestic address (for home births), or at one of the four general types of delivery ward (e.g. a midwife-led ward). In the sample file, ADP should be coded according to the specifications in the NHS Data Dictionary. The Coordination Centre queries a trust/contractor whenever the number of home births are significantly different from previous years' samples, 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).

The Coordination Centre queried an unusually high number of '1', '8' or '9' codes for a number of trusts. Four of these trusts confirmed that they had used these codes inappropriately, and they were then asked to supply the correct codes to their contractor.

CCG codes missing or incorrect

CCG (Clinical Commissioning Group) codes identify which CCG was billed for the care of each woman. CCG codes in a sample are cross-referenced against the most up-to-date information from the NHS Organisation Data Service (ODS). The Coordination Centre contacts a trust/contractor when CCG codes in a sample are invalid or missing.

In two samples received by the Coordination Centre, CCG codes were missing for a handful of women. The trust was advised to provide these codes to their contractor. In another sample, the Coordination Centre noticed that all women had the same CCG code, whereas in previous years there were at least six different codes. The trust found that they had submitted incorrect CCG codes and were asked to supply updated codes to their contractor.

Site codes inappropriate for delivery place

Site codes denote the specific NHS site (typically a hospital) at which a woman gave birth. 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 at, but not the type of ward.

There were two samples in which site codes had been incorrectly entered for patients with the above ADP codes. The Coordination Centre asked the trust/contractor to remove the site codes for these records.

Ethnicity coded incorrectly

Trusts are instructed to specify the ethnicity of each woman in the sample, using the NHS Data Dictionary's categories. The Coordination Centre raises queries when invalid codes are present, when there is an unusually high proportion of blank or 'Z' (not stated) codes, and when the proportion of one or more codes has changed significantly since the last survey.

One sample contained a handful of invalid '99' codes in the ethnicity column. The trust confirmed that these should be blank and were asked to amend this accordingly. In another trust's sample, the proportion of 'C' codes ('white other') had increased since 2017, alongside a similar decline in 'G' codes ('mixed other'). The trust found that they had accidentally replaced 'G' codes with 'C', and the contractor was asked to amend this.

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 four-digit ID number (e.g. MAT18RGN0001).

One trust only included three digits instead of four in their ID numbers and was asked to amend this.

Incorrect site codes submitted

The Coordination Centre queries a 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.

One trust commented that a new hospital had become part of their trust since the 2017 survey. However in the 2018 sample there were no new site codes. The trust indicated to their contractor

which women in the sample delivered at the new hospital, and the contractor amended the site codes for these women.

5 Historical errors

Part of the sample checking process involves comparing a trust's sample data to previous survey years and investigating any discrepancies. This can sometimes reveal errors in previous years' samples that were not able to be picked up at the time. 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 Coordination Centre checked each trust's 2018 Maternity sample against their 2017 and 2015 samples (and sometimes 2013). In total, 11 historical errors were identified, as summarised below:

- Two trusts used incorrect coding for the delivery place variable in previous year(s).
- One trust excluded home births from their 2017 sample.
- One trust excluded deliveries from one of their hospital sites in 2017.
- Four trusts made an unusually high number of exclusions in 2015 and/or 2017. The Coordination Centre compared the demographics of the historical samples to the 2018 sample for each trust and did not find any large differences.

For the above eight trusts, it was decided that the affected historical data would not be removed from the national dataset, and that trust-level historical comparisons would still be made. This is because the errors were classified as minor (1st bullet point), only involved a very small number of women (2nd and 3rd bullet points), or did not appear to impact the comparability of the samples across years (4th bullet point). The remaining three historical errors are summarised below:

- One trust excluded a large number of women from overseas (but who had a UK address) in 2017.
- One trust excluded a large number of women who had a missing or 'Z' (not stated) ethnic code in 2017.
- One trust excluded roughly half of their eligible population from their 2013 and 2015 samples.

The above three errors are classified as major, and for (at least) the first two, the excluded women all had something in common which may have influenced their responses to the survey. The Coordination Centre also compared sample demographics across years for the three trusts and found larger than normal changes in age and ethnicity. For each of these reasons, it was decided that the Coordination Centre will not produce historical comparisons between 2018 and the survey year(s) in which the major error occurred for these trusts. However, the trusts' historical data will still be included in the national dataset as its inclusion/exclusion is unlikely to have a major impact on national results due to the size of the national dataset.

6 Section 251 breaches

The 2018 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.

Four trusts committed Section 251 breaches (and one of these trusts breached twice), as described below:

- Three trusts emailed a woman's full date of birth to their contractor in response to a query about age at the time of delivery. Contractors (and the Coordination Centre) are not permitted to receive full date of birth from trusts, only year of birth. Furthermore, identifiable information such as year of birth must be transferred via a secure FTP server, not via email.
- One trust included women's full date of birth in their sample file. As outlined above, sample files must only contain women's year of birth.
- One trust submitted their sample via email. All trusts must submit their sample file via a secure FTP server, and the file must be password-protected.

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 Coordination 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 Coordination 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 benchmark reports can only be produced for trusts who submit a useable attribution file.

The Coordination 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 matched to the correct women. 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, 122 of 129 trusts submitted an attribution file in 2018, and 18 errors were detected. Table 4 details the types of errors found in the 2018 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	Frequency
Mismatched records	12
Incorrect antenatal and/or postnatal data	5
Missing antenatal and/or postnatal data	1
Total	**18**

Mismatched records

Twelve attribution files had missing records, additional records or duplicate records when compared to the associated sample file. This was either because trusts used an outdated version of their sample file to create the attribution file, or because trusts removed patients who were found to be deceased after the sample had been approved. After receiving clarification from the trusts, the Coordination Centre amended the records and added antenatal and postnatal codes if necessary.

Incorrect antenatal and/or postnatal data

The Coordination Centre checks the proportions of '1' codes in the antenatal and postnatal columns against the previous year's proportions for each trust, where '1' indicates that a woman received most/all of her antenatal/postnatal care from the trust. When the proportion of these

codes is considerably different between survey years, the Coordination Centre raises a query with the trust.

In 2018 five trusts whose antenatal and/or postnatal coding was significantly different to 2017 found that they had applied the coding incorrectly. These trusts were asked to re-submit their file.

Missing antenatal and/or postnatal data

In one file the antenatal and postnatal columns had not been filled out. The trust was asked to complete the columns and re-submit their file.