



**Survey
Coordination
Centre**

Sampling Errors Report

NHS Maternity Survey 2019

1 Introduction

Sample files for all 126 trusts participating in the 2019 Maternity Survey were submitted to the Survey Coordination Centre for Existing Methods (SCCEM) for final quality control checks before mailings could begin. Sample data inspections of this kind were first introduced by the SCCEM in 2007 and were found to aid trusts in avoiding common errors prior to fieldwork commencing. Such mistakes may lead to patients either being incorrectly included or excluded in the sample, compromising data quality. In addition, all trusts were asked to submit a separate antenatal and postnatal attribution file directly to the SCCEM.

This document describes:

- a) The types of errors found in sample files submitted to the SCCEM 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 SCCEM; many samples would have contained additional errors which would have been identified and corrected during contractor checks (if the trust used a contractor).
- b) The types of historical sample errors revealed whilst checking the 2019 samples against those from 2018 and 2017.
- c) The types of Section 251 breaches committed by trusts during the 2019 sample checking period.
- d) The types of errors found in attribution files submitted to the SCCEM for checking.

Trusts and contractors should use this document to become familiar with previous errors in order to prevent their recurrence in future surveys. If you have any queries, please contact the SCCEM at maternity@surveycoordination.com or on 01865 208 127.

2 Frequency of errors

During the 2019 sample checking period, eleven major errors and seventeen minor errors were found in samples submitted to the SCCEM (see Table 1). In addition, two historical errors were identified and three Section 251 breaches occurred.

In total, 118 of 126 trusts submitted attribution files to the SCCEM, and 22 errors were identified in these files.

Table 1 – Frequency of errors

Error	Frequency
Major errors	11
Minor errors	17
Historical errors	2
Section 251 breaches	3
Attribution errors	22

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.

Eleven major errors were identified during sample checking in 2019. All of these errors were later corrected and the samples approved for mailing. Table 2 outlines the types of major errors that occurred in 2019. 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 missing data	3
Excluded home births	2
Excluded women with safeguarding flags	1
Sampled incorrect period	1
Included duplicates	1
Excluded women discharged separately from their baby	1
Excluded women anonymised for the SUS	1
Excluded elective caesarean deliveries	1
Total	11

Excluded women with missing data

Three trusts incorrectly excluded several women due to having missing data on their systems (i.e. date of birth, CCG code and date/time of delivery). Each trust was able to later source the missing information and add the affected women to their sample, where eligible.

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 SCCEM checks with the trust/contractor to ensure that all eligible home births have been included and have been coded correctly.

Two trusts incorrectly missed out some of their home births, particularly in cases where the delivery took place before the arrival of a midwife. They were asked to provide their contractor with the additional records so that they could be added to their sample.

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.

One trust excluded a higher than expected number of women for safeguarding reasons. Through SCCEM queries it was revealed that this trust had excluded any women who had a safeguarding flag on their system. The safeguarding team at the trust was therefore asked to review the

exclusions. Upon review, the safeguarding team decided that most of the women with a safeguarding flag would not be at risk of harm from receiving a questionnaire. These women were subsequently added to the sample.

Sampled incorrect period

Trusts are instructed to sample every eligible woman who delivered at their trust in February. However, if a trust cannot meet the minimum sample size of 300 with February deliveries alone, they are instructed to sample back into January until they reach 300.

One trust's sample went back to a much earlier date in January than it did in previous years. Querying revealed that the trust had sorted the deliveries incorrectly when creating the sample. The trust was required to resample, which brought the date range in line with previous years.

Included duplicates

One trust mistakenly included duplicate records in their sample (i.e. women who had multiple births had been included more than once). They were asked to replace the duplicated cases with other eligible women.

Excluded women discharged separately from their baby

Women should be included in the sample as long as neither the mother nor the baby are inpatients at the time of drawing the sample. One trust excluded several eligible women who were discharged from hospital at a different time than their baby (but none of whom were still inpatients). The trust was therefore instructed to add these women to their sample.

Excluded women anonymised for the SUS

One trust pulled their sample from an anonymised system that they use to submit data to the Secondary Uses Service (SUS), and as such excluded several women who had been anonymised for this purpose. The trust was asked to obtain the non-anonymised data for these women and include them in the sample if eligible. This is because the survey has Section 251 and ethical approval to use patient-identifiable information, and is completely separate from the SUS.

Excluded elective caesarean deliveries

Women with all types of deliveries should be included in the sample. One trust inadvertently excluded 25 eligible elective caesarean deliveries due to a coding change on their system. They were asked to add these women to their sample.

4 Minor errors

Seventeen 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 2019 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	10
Inappropriate site codes for delivery place	2
Ethnicity codes missing	2
Record numbers formatted incorrectly	1
Site codes incorrect	1
Gender formatted incorrectly	1
Total	17

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 SCCEM queries a trust/contractor in the following cases:

- When no home births are present, or the number of home births is considerably different from previous years' samples.
- When there are any '5' codes (private hospital) or '6' codes (other hospital or institution) present, which would suggest that these women are ineligible.
- When there are a higher than usual number of the following codes: '7' (other type of ward), '8' (none of the above), and '9' (not known).
- When the trust has opened or closed a delivery ward since the previous survey but the ADP codes do not reflect this, or alternately, when there are new ward codes in the sample but no new wards have been opened.

The SCCEM queried several trusts where one or more of the above situations applied. Ten of these trusts confirmed that they had used certain ADP codes inappropriately. They were then asked to supply the correct codes to their contractor.

Inappropriate site codes 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 woman'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 women with ADP '8' codes. The SCCEM asked the contractor to remove the site codes for these records.

Ethnicity codes missing

Trusts are instructed to specify the ethnicity of each woman in the sample, using the [NHS Data Dictionary's](#) categories. The SCCEM 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 considerably since the last survey.

Two samples had a very large proportion of missing ethnic codes, unlike in their previous samples. Both trusts were later able to provide most of these missing codes to their contractor.

Record numbers formatted incorrectly

Trusts are directed to create a record number for each woman in the sample, formatted as follows: survey code followed by trust code and a unique four-digit ID number (e.g. MAT19RGN0001).

One trust used 'MAT18' instead of 'MAT19' in their record numbers and the contractor was asked to amend this.

Site codes incorrect

The SCCEM queries a trust/contractor when site code proportions are considerably 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 woman who should have one, or when a site code does not exist according to NHS Digital information.

One trust submitted invalid site codes and the contractor was asked to correct these.

Gender formatted incorrectly

The 2019 survey was the first time trusts were asked to submit gender information as part of the Maternity Survey. Codes should align with those specified in the [NHS Data Dictionary](#).

One trust's sample included a gender of 'F' for one of the records, instead of the correct numerical code of '2'. The trust's contractor was asked to amend this.

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 SCCEM checked each trust's 2019 Maternity sample against their 2018 and 2017 samples (and sometimes 2015). In total, 2 historical errors were identified, as summarised below.

One trust's distribution of ethnicity codes changed considerably between 2018 and 2019. The trust reported that this was due to a mapping error in the previous years' sample extraction scripts. As this is a minor error, the comparability of the trust's samples across years is not affected.

Another trust made an unusually high number of exclusions in 2018 for unknown reasons. The SCCEM compared the demographics of the 2018 and 2019 samples and based on this information, CQC decided that the trust would not receive historical comparisons in 2019.

6 Section 251 breaches

The 2019 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.

Three trusts committed Section 251 breaches, as described below:

- One trust emailed a baby's date of death to their contractor following a deceased check. Contractors (and the SCCEM) are not permitted to receive this type of patient information from trusts.
- Two trusts included women's full date of birth in their sample file. Sample files must only contain women's year of birth.

7 Attribution errors

In addition to submitting a sample file, trusts are also asked to submit a separate attribution file directly to the SCCEM. This allows the SCCEM to determine whether each woman received her antenatal and/or postnatal care from the trust, and therefore whether her 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 SCCEM merges the sample and attribution files during data analysis. The records in the two files must match exactly so that the SCCEM can be sure 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, 118 of 126 trusts submitted an attribution file in 2019, and 22 errors were detected. Table 4 details the types of errors found in the 2019 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	10
Incorrect antenatal and/or postnatal codes	6
Missing or incorrect record numbers	5
Missing antenatal and/or postnatal data	1
Total	22

Mismatched records

Ten attribution files had missing or additional 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 women who were found to be deceased after the sample had been approved. After receiving clarification from the trusts, the SCCEM amended the records and added antenatal and postnatal codes where appropriate.

Incorrect antenatal and/or postnatal codes

In previous years trusts were asked to enter three different codes (0, 1 and 2) into the antenatal and postnatal columns of the attribution spreadsheet, depending on how much (if any) care the woman had received from the trust (0 = no care; 1 = all care; 2 = some care). To simplify the process, in 2019 trusts were instructed to use code '0' for cases which would have previously been coded '2'. This is because '2' codes are recoded to '0' during the SCCEM's data analysis.

In 2019 five trusts used the obsolete '2' code in the antenatal and/or postnatal column. The SCCEM recoded these to '0'.

Another trust included one invalid code ('N/A') in the postnatal column. They were asked to provide the correct code, and the SCCEM amended it accordingly.

Missing or incorrect record numbers

Record numbers were missing from one attribution file. The trust was asked to fill these in and resubmit.

In three files, women's record numbers were in an incorrect format (i.e. included 'MAT18' instead of 'MAT19'). The SCCEM corrected this so that the attribution and sample data could be merged correctly.

In another file, two of the record numbers were numbered incorrectly and were subsequently amended after confirmation from the trust.

Missing antenatal and/or postnatal data

In one file the antenatal and postnatal columns had not been filled out. The trust advised how the columns should be filled out and the SCCEM amended accordingly.