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NHS Maternity Survey 2022

Sampling Errors Report



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Introduction

Sample files for all 121 Trusts participating in the 2022 Maternity Survey were submitted to the Coordination Centre for Mixed Methods (CCMM) at Ipsos for confirmation that samples had been drawn correctly before mailings could start. Sample data checks of this kind were first introduced in 2007 and were found to aid Trusts in avoiding common errors prior to fieldwork commencing. Such mistakes may lead to patients being incorrectly included or excluded from the sample, delays in the survey process and/or poor data quality. In addition to the sample file, all Trusts were asked to submit a separate antenatal and postnatal attribution data file directly to the CCMM.

The 2022 Maternity survey was coordinated by the CCMM at Ipsos. In accordance with the 2021 Maternity Survey, a sample upload portal was used, which flagged errors *before* the samples were submitted to the CCMM. For the 2022 survey a different upload portal was used so Trusts could submit their attribution data. This new portal aimed to simplify the submission process used for the 2021 Maternity Survey.

This report gives a summary of errors found during the course of the CCMM's checks of Trust sample and attribution data for the 2022 survey. It is important to note that this report only gives details of the errors found by the CCMM; sample data may have contained further errors which would have been identified and corrected during checks by approved contractors (where one was used).

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.
- **Attribution data errors** – errors specifically found in relation to the attribution data submitted by Trusts.

Trusts and contractors should use this document to become familiar with the errors found by the CCMM to minimise the chance of similar errors occurring in future survey years.

Frequency of Errors

During the 2022 sample checking period, the CCMM detected no major errors and ten minor errors. In total, 114 of the 121 Trusts submitted attribution data to the CCMM, and 14 errors were identified in these files.

Table 1.1 shows the frequency of errors by type of error.

Table 1.1: Frequency of errors/breaches in the 2022 Maternity survey by error type

Type of error	Frequency
Major errors	0
Minor errors	10
Attribution errors	14

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.

No major errors were identified in 2022.

Minor Errors

Errors are considered to be ‘minor’ if the Trust’s sample is comprised of eligible patients and if data can be corrected without the need for the sample to be redrawn. In total, 10 minor errors were identified during the sample checking process by the CCMM.

Table 1.2 shows the types of minor errors found in the 2022 samples and the frequency in which these occurred.

Table 1.2: Frequency of minor errors in the 2022 Maternity survey by error type

Type of minor error	Frequency
Actual delivery place coded incorrectly	7
COVID-19 variables incorrect	1
Staff records included	1
Number of cases	1

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 sample upload portal automatically flagged samples where an ADP code was missing for any mother, and samples with any ‘5’ codes (private hospital) or ‘6’ codes (other hospital or institution) present, which would suggest that these mothers are ineligible.

The CCMM also checked the proportions of each code in the 2022 sample against that of 2021, raising queries with a Trust/contractor if considerable differences were noted for any of the codes. Seven Trusts confirmed that they had used certain ADP codes incorrectly – each Trust was asked to supply the correct codes to their contractor.

COVID-19 variables missing or incorrect

For the 2021 survey, Trusts were asked to provide two new variables relating to COVID-19: COVID-19 diagnosis and COVID-19 treatment. For the 2022 survey, the COVID-19 diagnosis variable was removed from the sample template provided to Trusts as there was no evidence of a relationship between section scores and a positive diagnosis of COVID-19.

The COVID-19 treatment variable was retained for 2022. This was derived from NHS Trusts’ locally held records and coded into three specified categories. The CCMM checked the variable and queried anything that seemed illogical.

Trusts were able to submit their COVID-19 treatment variable information in their main sample submission or within their final survey data.

As the COVID-19 pandemic continued to impact Trust services, different approaches to COVID-19 testing were taken. For example, one Trust stated that according to the HSCIC guidance for Clinical Coding only “lab confirmed” or “clinical opinion” results may be recorded by the Trusts. This caused a high number of “unknown” status patients (98.76%) in this Trust’s sample, who despite testing their patients with lateral flow tests, could not record the outcomes.

One other Trust misinterpreted the sampling guidance and initially submitted COVID-19 treatment variable information that was not in accordance with the coding guidance for some cases. These cases were all corrected and the data resubmitted.

Staff records included

Trusts are asked to send their mailing materials to a number of CCMM staff members before starting fieldwork so that the paper materials can be reviewed. One Trust left staff member details in the sample when submitting it. They were asked to remove the contacts from the sample and re-submit the data.

Number of cases

Trusts are asked to submit a sample declaration form prior to submitting a sample. It takes the form of a checklist and is used for audit purposes to ensure that the sample conforms to the instructions. One Trust submitted a sample with six more cases than were recorded on their sample declaration form. When queried, they confirmed the correct number was the initial number on the sample declaration form, amended the sample and resubmitted the data.

Attribution Data errors

In addition to submitting a sample file, Trusts were also asked to submit a separate attribution file directly to the CCMM. This allowed the CCMM to determine whether each mother received her antenatal and/or postnatal care from the Trust, and therefore whether her responses to the antenatal and postnatal sections of the questionnaire could be attributed to the Trust. Submission of the file was not a mandatory requirement of the survey, but antenatal and postnatal benchmark reports can only be produced for Trusts who submit usable attribution data.

The CCMM merges the sample and attribution files during data analysis. The records in the two files must match exactly so the CCMM can be sure the antenatal and postnatal information is being matched to the correct mothers. Trusts were therefore requested to use the last version of their sample data when creating their attribution file. They were asked to contact their contractor to ensure they had this, as sample data can be amended during or after sample checking by the contractor. Using the last version of the sample data also avoided the CCMM needing to query erroneous changes that were flagged in the attribution file when that was compared against the final sample data.

For the Maternity Survey 2021 the sample upload portal automatically included an automated check to flag attribution file submissions where the number of cases or individual patient record numbers differed compared to the approved sample file. However, these automated checks caused a number of difficulties for Trusts when uploading their data which lead to a frustrating experience. In order to address this in 2022, the automated checks were removed from the portal, and checks were made by the CCMM team after attribution file submissions were made.

In total, 114 (94%) of 121 Trusts submitted an attribution data file in 2022. Table 1.3 shows the variables that were affected by errors in the 2022 attribution data files. More detail about each of the errors is provided below.

Table 1.3: Attribution variables affected by errors in the 2022 Maternity survey

Variable affected by errors	Frequency
Missing / extra PRNs	6
Antenatal check-up variable only	2
Postnatal care in the community variable only	2
Incorrect PRN format	2
Historical errors	2

Antenatal Check-up variable

The CCMM checked the distributions for the antenatal check-up variable in the 2022 sample against that of 2021 (where available), querying with a Trust if differences of 10% or more were noted.

The attribution submissions for six Trusts were queried for this reason. One Trust reviewed their data and updated, resulting in an increase in the proportion of cases coded as '1'¹.

Postnatal care in the community variable

The CCMM also checked the distributions for the postnatal care in the community variable in the 2022 sample against that of 2021 (where available), querying with a Trust if differences of 10% or more were noted.

The attribution submissions for 10 Trusts were queried for this reason. One Trust reviewed their data and updated. They stated that at the time of submission the data was correct, however, with time more records have been updated.

One Trust's submission was queried as values were missing in 13 consecutive rows. The Trust reviewed their data and updated it, resulting in an increase in the proportion of cases coded as '1'³.

The remaining eight Trusts quoted process changes as a reason for shifts in data, as well as changing to online method when compiling it. We agreed that these reasons justified shifts in data and did not require resubmissions from these Trusts.

Missing / extra Patient Record Numbers

Five Trusts' submissions were queried due to missing Patient Record Numbers (PRNs). All revised their data and resubmitted. The reasons for missed PRNs were varied, but mostly due to Trusts removing this information due to safeguarding concerns, following a DBS check.

One Trust was found to have included an extra PRN, which was subsequently deleted and the data reuploaded.

Incorrect PRN format

There is a specific way of formatting the PRNs that has to remain the same across all sample documents. Two Trusts did not format their PRNs in line with instructions. Both corrected the errors and re-submitted their attribution data.

Historical errors

When checking samples, the CCMM compared submitted attribution data for 2022 against the 2021 sample data for each Trust². Having this comparison is useful to show what is 'normal' for the Trust, assuming no major changes have taken place in the interim that could affect the Trust's maternity population (such as a merger). Occasionally, discrepancies will be noted, which suggest a historical error has been made (which was not able to be picked up at the time).

Two historical errors were identified during this year's attribution data checking. For one Trust, when a significant shift in the availability of postnatal data was queried, they realised that the previous year's attribution data included postcodes that should not have been included. They explained that when

¹ Code 1 = for maternity service users who did receive their antenatal check-ups from the Trust AND were booked in to deliver at the Trust before week 25 of their pregnancy.

² Where data are available. For Trusts that have merged since the last survey, this comparison was not carried out.

looking at the data from 2021 without the above postcodes, there is no significant shift in the postnatal data.

For another Trust, when a 10% shift in antenatal data was queried, it was discovered that the previous year's data was incorrect for nine patients, resulting in this apparent shift in data.

Missing values

Whilst missing values do not always signify an error, CCMM queried all instances of missing values to ensure correct processes have been followed. One Trust's submission was queried due to a missing antenatal value for one patient, which was subsequently corrected, and the data re-submitted.

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