

TTP DATA QUALITY REPORT

DATA SOURCE

DATA SUPPLIER:	General Register Office (GRO)
DESCRIPTION:	All registered births which have occurred in Northern Ireland from 1997
COVERAGE:	Northern Ireland
NUMBER OF RECORDS:	Approximately 25,000 births each year http://www.nisra.gov.uk/archive/demography/vital/births/live_births1887-2014.xls

DATA BACKGROUND

Registration of births in Northern Ireland is a legal requirement under the Registration of Births and Death (Ireland) Act 1863. All information recorded at registration, which is normally provided by one or more parents of a baby, is collected by a District Registrar in a District Registration Office. During registration, information is entered onto an electronic system called the Registration and Certificate Modernisation System (RCMS). There are some validation checks built in to RCMS to help the Registrar with this process.

Published figures relate only to births to resident mothers and do not include births to women usually resident in Northern Ireland who give birth abroad. They do include births that women whose usual residence is outside Northern Ireland where the birth occurred in Northern Ireland. Such numbers are relatively small and are not considered to adversely affect the inferences that can be drawn from the published results. Information supplied at birth registration is generally believed to be correct since wilfully supplying false information may render the informant liable to prosecution for perjury. Additional Quality assurance checks are carried out by statisticians within NISRA.

In view of the legal requirement to register all births, the coverage of data is complete for the population of Northern Ireland. The content of the information collected reflects what is possible legally and the ongoing needs of users.

Further information on the quality and background of birth registration data is available on the NISRA website at: http://www.nisra.gov.uk/archive/demography/publications/Northern_Ireland_Birth_Statistics_Quality_Assessment.pdf

DEMOGRAPHIC INFORMATION

Information available to the TTP for linkage purposes -

- Name information of the child, mother and father (were available). This includes Forename, Midname, Surname, Maiden name of the mother and Surname at marriage of the mother;
- Address information of the mother and father (were available);
- Gender of the child;
- Date of birth of the child, mother and father (were available);
- UPRN of the child, mother and father (were available);
- Health and Care number of the child.

Name and address information is also held for the individual(s) that registered the birth (informants), however, it is not standardised or of the same level of quality as the information relating to the mother and father. UPRN, DOB and Gender are not recorded for the informants. It should be noted that in 93% of cases the informant is the mother and/or father of the child.

DATA QUALITY & PRE-PROCESSING

Record linkage is highly dependent on the quality of the data being linked. Many key variables can be presented quite differently between datasets as the information has been collected and recorded using different methods. This can greatly complicate record linkage unless understood ahead of time. Pre-processing can be used to standardise these variables into a consistent format prior to linkage.

NAME INFORMATION- Name information for the mother and child is required in order to register a birth, therefore, Forename and Surname for both individuals is available for all records. Midname, Maiden Name and Surname at Marriage are populated where applicable.

Name information for the father is available for approximately 92.5% of records. It should be noted that an average of 9% of the total live births are registered by the mother only (Registrar General Northern Ireland Annual Report 2014).

- In some instances multiple names will be recorded as the Forename of the child. This can be edited to leave the first name that appears as the Forename and any additional names as the Midname;
- Punctuation and characters which do not appear in the English alphabet (e.g. Á, %, \$...) can also appear in the name information for all 3 individuals. A function can be used to replace these with usable characters;

ADDRESS INFORMATION OF MOTHER- Some records are missing information for the following-

- Address : <0.01% of records incomplete
- Postcode : <0.5% of records incomplete

- Postcode information is standardised prior to linkage.

ADDRESS INFORMATION OF FATHER- Address and postcode coverage is lower for fathers. Of the birth records containing name information for the father, there is address and postcode coverage of 77.1% and 60.4% respectively.

- In instances where no information is available for the address of the father, the address information of the mother is used instead;
- Postcode information is standardised prior to linkage.

ADDRESS INFORMATION OF CHILD- Address and Postcode information is not available for the child, however, it is assumed that the child will reside at the same address as the mother and therefore the address and postcode of the mother is used.

GENDER- All records contain the gender of the child.

- Gender information should be standardised prior to linkage.

DATE OF BIRTH- All records have date of birth information for the child. In respect of mothers there are <0.001% of records where the date of birth is incomplete. In respect of fathers, where name information is held, there are <1% of records where the date of birth is incomplete.

- Date of birth is provided in date-time format. It can be parsed into its constituent parts (day, month and year) prior to linkage

UPRN¹- The UPRN of the child and mother is available from 1997-2008 for an average of 90% of the records. The UPRN of the father is available from 1997-2006 for an average of 69% of the records which contain the father's name information.

HEALTH AND CARE NUMBER- The Health and Care Number of the child has been recorded from 2007 onwards for an average of 97% of the total birth records registered in those years.

1. UPRN (Unique property reference number) is the NI Government's definitive address register's unique number.

MATCHING METHODS

Using the demographic information provided the following matching can be undertaken-

- Person matching of the child, mother and father;
- Address matching of the child, mother and father;
- Associative matching of family members residing in the same household

There is also limited potential to perform matching using the informant name and address, however, as the information is not standardised and key variables are unavailable, the resulting match rates may be lower than expected. The informant information could be used to verify matches made using the methods listed above.

It should be noted that depending on the dataset that we are trying to link to births it may not be possible to obtain a 100% match rate. This is due to births which have occurred and been registered within Northern Ireland to mothers whose usual address is elsewhere and therefore they are unlikely to appear on any other Northern Ireland specific dataset.

It should also be noted that the presence of Health and Care number of the child does not provide a means of easily linking to health information. The HCN has been collected since December 2012 during the birth registration process, however, prior to this, Business Services Organisation completed an exercise to assign the HCN to the remaining births registered from 2007 onwards. GRO do not validate this information and therefore we cannot comment on the accuracy of the information.

PREVIOUS LINKAGE MATCH RATES

The birth information provided by GRO has previously been matched to health data as part of the Northern Ireland Longitudinal Study (NILS). This involved matching the child, mother and father details to health data separately.

This typically produces a match rate of approximately 95%. More information can be found on the [NILS Metadata](#).

EVALUATION

The births data provided by GRO is of good quality and can be used for record linkage easily and without extensive pre-processing. The typical match rates produced when using this data is considered high.

However, it should be noted that for a small number of records it will not be possible to match to another Northern Ireland dataset. These records will relate to births which occurred and were registered in Northern Ireland to parents whose usual address is not within Northern Ireland. It will also not be possible to match individuals from Northern Ireland where the birth occurred elsewhere as these births would not be registered in Northern Ireland.