

## **QUALITY ASSURANCE OF ADMINISTRATIVE DATA - VITAL STATISTICS**



The Northern Ireland Statistics and Research Agency (NISRA) produce data on births, deaths, marriages, civil partnerships and adoptions from civil registration events which are registered with the General Register Office (GRO). Data is produced on a daily, weekly, monthly, quarterly and annual basis depending on user requirements.

Statistics which are produced from vital events registered in Northern Ireland are of a high quality and should have complete population coverage as it is a legal requirement to register any of these events that occur in Northern Ireland.

Data on vital events is normally provided to a Registrar in GRO by one or more informants, such as the parents of a baby or a close relative of the deceased. The information is entered on to an electronic system called the Northern Ireland Registration Office System (NIROS). There are many built-in checks within the system and if an inaccurate or invalid value is entered or a particular field is left blank a warning message will be given and the registration can not be completed until the relevant error is fixed.

In addition a provisional copy of the information is printed out before the registration is finalised and the informant is asked to check the information supplied (e.g. to check that all spellings are correct). Any further errors can be addressed at this stage.

The NIROS contains drop-down lists for registration items such as occupation, place of birth etc. In addition other common responses (e.g. places of death include a nursing home and a hospital list) are hard coded which cuts down the data entry that the Registrar is required to do and thus potential errors. The NIROS also automatically codes the occupation (SOC), social classification (NS-SeC) and country of birth. Cause of death text information from the death certificate is coded by the Office for National Statistics (ONS) using the World Health Organisation (WHO) ICD10 coding system.

Additional quality assurance checks are carried out by statisticians within NISRA using trend analysis, bounds checking, internal within- and across- record consistency and also visual analysis of data to further assess data quality. Statisticians liaise with staff in GRO over any anomalies found in the data.

Various quality checks are carried out on births and stillbirth data. Examples of births registration checks include:

- Mother's and father's age at time of birth is calculated along with age at marriage, where applicable, and extreme values or large differences in mother's and father's ages are manually checked with GRO by tracing the parents birth/marriage certificates to confirm the date of birth.
- Place of birth is checked against country of birth to ensure they correspond.
- If a birth is recorded as a multiple birth all other siblings are traced in the births and/or stillbirths to ensure figures are accurate.
- Check all stillbirths have a valid gestation period.
- Any large numbers of previous live and/or still births are queried and confirmed with GRO by rechecking the initial data provided by the informant or tracing previous sibling's birth certificates.

Examples of deaths registration checks include:

- If the deceased is 100 years or older the record is checked with GRO to trace the birth or marriage record where possible to confirm the deceased age.
- Place of birth is checked against country of birth to make sure they correspond.
- Certain causes of death are gender specific so these are checked, if an error is found the cause of death is rechecked from the original information provided.
- Particular causes of death are given extra scrutiny such as healthcare associated infections, influenza, swine flu, suicides and drug and alcohol related deaths.
- The World Health Organisation provide the latest list of International Classification of Diseases (ICD) codes that should be used when coding the cause of death and a check is run to make sure that ICD codes used in Northern Ireland are not obsolete.

Examples of marriage/civil partnership registration checks include:

- Check the period of notice given before the ceremony.
- Check both partners' ages to make sure they are the legal age to marry/form a civil partnership.
- Query any large differences in ages and get GRO to confirm dates of birth by tracing the birth certificates.
- Place of birth is checked against country of birth to make sure they correspond.
- Check the type of ceremony against the officiant.

## To allocate within Northern Ireland geography to civil registration events

An important part of the statistics produced from the civil registration system is the ability to compare areas across Northern Ireland. Thus the accurate geo-referencing of data is vital. This is achieved in many ways. The process is discussed below.

Addresses are entered by the Registrar for all vital events from information provided by the informant. The NIROS contains an Address Management System so, in the vast majority of cases, the informant only needs to provide a house number and postcode for the residence location of the event. The NIROS will automatically pick up the correct address from this data. If necessary the Registrar can also enter the address manually where this information is unavailable or inaccurate.

In addition statisticians in NISRA take extracts of the vital events address data and run all addresses through address geo-referencing software. This is done to allocate a Unique Property Reference Number to as many addresses as possible, as this will give the most accurate way to allocate small area geography. Any records that have a Unique Property Reference Number can be allocated a Census Output Area to the record which is the lowest level of geography used for statistical output. For some addresses (c10 per cent) a Unique Property Reference Number cannot be found; these records are allocated a Census Output Area using the postcode for the address. All higher level geographies are assigned from the Census Output Area.

**NISRA**

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