

## Appendix 3: Notes and Definitions

### Population Data

All population figures refer to estimates or projections as at the 30 June of the year in question. Ages relate to age at last birthday at the date shown.

### Natural Change

Natural change is equal to total births minus total deaths.

### Migration

Following international guidelines migration statistics relate only to long-term migrants (i.e. someone who changes their place of residence for a year or more (Recommendations on Statistics of International Migration, United Nations, 1998)). Migration estimates are characterised by the previous and current place of residence, with internal migration relating to moves within Northern Ireland, and international migration relating to moves to or from countries outside the United Kingdom.

### Marriages

Marriage rates relate to the number of marriages solemnised and not to the number of persons married. The number of marriages relates to those registered in Northern Ireland, thus it does not include Northern Ireland residents who get married outside Northern Ireland, but does include non Northern Ireland residents getting married in Northern Ireland.

### Divorces

Divorce statistics have been compiled from returns of 'Decrees made Absolute' supplied by the Northern Ireland Courts and Tribunals Service and include nullities of marriage.

Information on the number of 'Decree Nisi' is published by the Northern Ireland Courts and Tribunals Service. A Decree Nisi does not terminate the marriage; a couple are still married until the Decree Absolute has been granted.

### Date of Registration and Date of Occurrence

All the data presented on births, stillbirths, marriages, civil partnerships and deaths relate to the date of registration of the event and not to the date of occurrence. For events such as infant death or suicide, which are likely to be referred to the coroner, it can take some time for the event to be registered.

## Place of Occurrence

Births, stillbirths and deaths have been allocated to the area of usual residence if it is in Northern Ireland, otherwise they have been allocated to the area of occurrence. Marriage and civil partnership figures relate to the area of occurrence.

## Marital Status of Parents

The following terms are used throughout the report:

**Married parents:** refers to parents who are married to each other at time of registration of birth.

**Unmarried parents:** refers to parents who are unmarried or married but not to each other at time of registration of birth.

## Births

The births presented in this report (since 1981) do not include births to non Northern Ireland resident mothers unless otherwise stated.

## Stillbirths

The **Stillbirth (Definition) Act 1992** redefined a stillbirth, from 1 October 1992, as a child which had issued forth from its mother after the 24th week of pregnancy and which did not breathe or show any other sign of life. Prior to 1 October 1992 the statistics related to events occurring after the 28th week of pregnancy.

**A stillbirth rate** refers to the number of stillbirths per 1,000 live and still births.

The stillbirths presented in this report (since 1981) do not include stillbirths to non Northern Ireland resident mothers.

## Perinatal Deaths

Perinatal deaths refer to stillbirths and deaths in the first week of life.

**A perinatal death rate** refers to the number of perinatal deaths per 1,000 live and still births (including non Northern Ireland residents).

Perinatal deaths presented in this report include stillbirths and infant deaths to non Northern Ireland residents.

## Neonatal Deaths

Neonatal deaths refer to deaths in the first four weeks of life.

**A neonatal death rate** refers to the number of neonatal deaths per 1,000 live births (including non Northern Ireland residents).

## Postneonatal Deaths

Postneonatal deaths refer to deaths after the first four weeks but before the end of the first year.

A **postneonatal death rate** refers to the number of postneonatal deaths per 1,000 live births (including non Northern Ireland residents).

## Infant Deaths

Infant deaths refer to all deaths in the first year of life.

An **infant death rate** refers to the number of infant deaths per 1,000 live births (including non Northern Ireland residents).

## Deaths

The deaths represented in this report refer to all deaths which occurred in Northern Ireland. They include those which occurred in Northern Ireland to non Northern Ireland residents, but exclude those occurring to Northern Ireland residents outside Northern Ireland.

## Suicide, Self-Inflicted Injury and Events of Undetermined Intent

In the UK, in considering suicide events it is conventional to include cases where the cause of death is classified as either 'Suicide and self-inflicted injury' or 'Undetermined injury'. The ICD10 codes used for 'Suicide and self-inflicted injury' are X60-X84 and Y87.0, and the ICD10 codes used for 'Undetermined injury' are Y10-Y34 and Y87.2. (Also see note on registration and occurrence).

Prior to 2004 there were seven coroner's districts in Northern Ireland; following a review of the coroner's service the separate districts were amalgamated into one centralised coroner's service. This change may affect the timing of registration of deaths with statistics from 2004 onwards being more timely and consistent. For more information on the impact of time taken to investigate a death on official suicide death statistics see:

[http://www.nisra.gov.uk/archive/demography/publications/suicides/Impact\\_of\\_registration\\_delays\\_on\\_suicide\\_statistics\\_in\\_Northern\\_Ireland.pdf](http://www.nisra.gov.uk/archive/demography/publications/suicides/Impact_of_registration_delays_on_suicide_statistics_in_Northern_Ireland.pdf)

## Smoking Related Deaths

Information is not recorded on the death certificate on whether the deceased was a smoker. Estimates can however be made of the number of deaths attributable to smoking, by using information on the contribution of smoking to specific conditions such as lung cancer which are recorded at death.

Research has been undertaken by the Health Development Agency to derive attributable proportions of smoking related deaths based on published relative risk factors for mortality of current and ex-smokers from various diseases, counts of death by cause, and estimates of current and ex-smoking behaviour.

For further information on the causes of death and attributable proportions used to define smoking related deaths see:

[http://www.nice.org.uk/niceMedia/documents/smoking\\_epidemic.pdf](http://www.nice.org.uk/niceMedia/documents/smoking_epidemic.pdf)

## Alcohol Related Deaths

The figures in this report are based on the UK-wide harmonised definition of alcohol related deaths. The definition of alcohol related deaths includes those causes of death regarded as most directly due to alcohol consumption. It does not include other diseases where alcohol has been shown to have some causal relationship, such as cancers of the mouth, oesophagus and liver. The definition includes all deaths from chronic liver disease and cirrhosis (excluding biliary cirrhosis), even when alcohol is not specifically mentioned on the death certificate.

Apart from deaths due to poisoning with alcohol (accidental, intentional or undetermined), this definition excludes any other external causes of death, such as road traffic deaths and other accidents.

Further details on the UK definition and a list of the ICD9 and ICD10 codes used to code alcohol related deaths can be found at:

<http://www.ons.gov.uk/ons/publications/all-releases.html?definition=tcm%3A77-29395>

## Drug Related Deaths

A death is considered to be a drug related death if the underlying cause of death recorded on the death certificate is drug poisoning, drug abuse or drug dependence. These deaths can be identified solely through the International Classification of Diseases (ICD). The ICD9 and ICD10 codes used to define these deaths are listed in the table below

ICD10 Underlying Cause Code	ICD9 Underlying Cause Code	Description
F11-F16, F18-F19	292, 304, 305.2-305.9	Mental and behavioural disorders due to drug use (excluding alcohol and tobacco)
X40-X44	E850-E858	Accidental poisoning by drugs, medicaments and biological substances
X60-X64	E950.0-E950.5	Intentional self-poisoning by drugs, medicaments and biological substances
X85	E962.0	Assault by drugs, medicaments and biological substances
Y10-Y14	E980.0-E980.5	Poisoning by drugs, medicaments and biological substances, undetermined intent

## Asbestos Related Deaths

Asbestos exposure can result in a number of life threatening illnesses including asbestosis, a lung disease which restricts breathing, and also mesothelioma which is a cancer of the lung.

In this report, asbestos related deaths have been defined as those deaths where asbestosis and/or mesothelioma have been mentioned on the death certificate either as a primary or secondary cause.

Further details on the definition used for asbestos related deaths can be found on the Health and Safety Executive website at:

[http://www.hseni.gov.uk/index/information\\_and\\_guidance/general\\_hseniinfo/statistics.htm](http://www.hseni.gov.uk/index/information_and_guidance/general_hseniinfo/statistics.htm)

## Healthcare Associated Infections

In this report deaths related to healthcare associated infection solely relate to Methicillin resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile*. It is not possible to identify directly from the ICD codes all deaths where MRSA or *Clostridium difficile* contributed to a death. Data within this report has been collated by looking for all mentions of either MRSA or *Clostridium difficile* on the death certificate.

## Crude Birth and Death Rates

A **crude rate** refers to the number of occurrences of the event per 1,000 population.

## Age Standardisation

A straight comparison of crude death rates between areas may present a misleading picture because of differences in the sex and age structure of the respective populations. The technique of standardisation is used to remedy this. In general, standardisation involves a comparison of the actual number of events occurring in an area with the aggregate number expected if the age/sex specific rates in the standard population were applied to the age/sex groups of the observed population. The results are expressed either as standardised rates or as standardised mortality ratios (SMRs) where the standard ratio (for Northern Ireland) equals 100.

In some areas the presentation of standardised rates for only one year's deaths may not provide a full picture of the underlying standardised death rates. It is therefore advisable to use the 3 years rates provided.

## Significance of SMRs

The estimation of SMRs by LGD and Health and Social Care Trust invites the question of whether such SMRs are different from the Northern Ireland average (100). The statistical significance of the SMRs has been examined by estimating the probability that the difference between an observed SMR and 100 might have resulted from chance variation; where this probability is less than 0.05 (one in 20) the particular SMR has been classified as statistically significantly ( $p < 0.05$ ) different from 100.

## Total Period Fertility Rate (TPFR)

The TPFR is the average number of children that would be born to a cohort of women who experienced, throughout their childbearing years, the fertility rates of the calendar year in question.

## TPFR Replacement Level

In western countries a TPFR of about 2.1 is required to maintain long-term population levels, assuming no migration.

## General Fertility Rate

The general fertility rate is the number of live births per 1,000 women aged 15-44.

## The Gross Reproduction Rate

The gross reproduction rate is the average number of live daughters that would be born to a cohort of women who experienced, throughout their childbearing years, the fertility rates of the calendar year in question.

## The Net Reproduction Rate

With reference to the gross reproduction rate, the net reproduction rate is the average number of these live daughters that, subject to the mortality rates of the calendar year in question, would survive to their mother's age at the time of birth.

## Completed Family Size

Average completed family size is calculated by summing over time the succeeding age specific fertility rates of women born in a particular year. (Such an approximation assumes that the effects of mortality and migration are negligible). However this measure can only calculate a value for women who have reached the end of the main childbearing ages conventional 45 years of age, but there is some value in considering the historical data for cohorts that have reached this age and the partial series for those not yet 45.

## Maternities

Maternities refer to the number of pregnancies ending in stillbirths or live births with multiple births counting only once. The number of maternities presented in this report (since 1981) does not include births or stillbirths to non Northern Ireland residents.

## National Statistics Socio-economic Classification (NS-SeC)

This new social classification has replaced the previously published Registrar General's Social Class. It is principally based on the individual's occupation and employment status and has been introduced in order to reflect a modern view of social classification. It was introduced from 2001 onwards. Further information can be obtained from the Office for National Statistics at:

**<http://www.ons.gov.uk/ons/guide-method/classifications/archived-standard-classifications/soc-and-sec-archive/the-national-statistics-socio-economic-classification--origins--development-and-use.pdf>**

NS-SeC is determined according to a person's occupation; for children of parents who are married to each other, according to the occupation of the father as stated at birth registration; for children of parents who are not married to each other but who jointly registered the birth, according to the occupation of the father; and for sole registrations, according to the occupation of the mother. The occupations are grouped into the following classes:

NS-SeC I	Higher managerial & professional occupations
NS-SeC II	Lower managerial & professional occupations
NS-SeC III	Intermediate occupations
NS-SeC IV	Small employers & own account workers
NS-SeC V	Lower supervisory & technical occupations
NS-SeC VI	Semi-routine occupations
NS-SeC VII	Routine occupations
NS-SeC VIII	Never worked & long-term unemployed

## Cause of Death Coding – ICD10

All deaths and stillbirths registered from the 1 January 2001 have been coded in accordance with the International Statistical Classification of Diseases, Injuries and Causes of Death, (ICD) (Tenth Revision), which has been in operation by international agreement from 1 January 1999.

Classification of the underlying cause of death is done by reference to the death certificate and additional information from the certifying doctor.

In January 2011, the General Register Office (GRO) upgraded its software for coding the causes of death to take account of a number of updates that the World Health Organisation (WHO) had made to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). The main changes are amendments to the modification tables and selection rules, which are used to ascertain a causal sequence and consistently assign underlying cause of death from the conditions recorded on the death certificate. Overall, the impact of these changes is small although some cause groups are affected more than others, notably 'F' codes and 'G' codes relating to Alzheimer's disease and Dementia.

## Expectation of Life

Expectation of life statistics are produced by the Office for National Statistics (ONS). Expectations of life can be calculated in two ways: period life expectancy or cohort life expectancy.

**Period life expectancies** are worked out using the age-specific mortality rates for a given period (either a single year, or a run of years), with no allowance for any later actual or projected changes in mortality.

**Cohort life expectancies** are worked out using age-specific mortality rates which allow for known or projected changes in mortality in later years.

All statistics for expectation of life are based on the period methodology and are produced for single year of age based on three year's deaths and population data with the exception of the cohort figures given in Table 1.2.

## Northern Ireland Population Projections

Northern Ireland population projections based on the 2014 mid-year estimates were published on 29 October 2015.

**Base population:** The projection was based on the Northern Ireland mid-2014 population estimate.

**Fertility:** The numbers of births for the projections are obtained by applying the appropriate fertility rate to the average number of women at each age during each year of the projection period. For Northern Ireland, long-term average completed family size is assumed to be 2.00 children per woman.

**Mortality:** The mortality rates for the first year of the projection, (i.e. year ending mid-2015), are based on the best estimates that could be made in September 2015 of the numbers of deaths at each age. Future improvements in mortality rates are based on the trend in mortality rates in the years up to 2014. In the long term rates of improvement in mortality rates are projected to be 1.2 per cent per annum.

**Migration:** It has been assumed that over the period mid-2014 to mid-2020 net international migration will reduce linearly from 3,000 inflows to the long-term assumption of 1,000 inflows. Beyond this migration will be in balance with the same number of people coming here to live as leaving each year. These assumptions are based on recent trends in migration and do not attempt to predict the impact of government policies on, for example, migration and student fees.

The Northern Ireland population projections are produced by the Office for National Statistics (ONS) at the request of the Registrar General for Northern Ireland. Further information on population projections can be obtained from:

National Population Projections and Life Tables Branch  
ONS Centre for Demography  
Office for National Statistics  
Room D3/05  
1 Drummond Gate  
LONDON  
SW1V 2QQ

Tel: 020 7533 5222

Email: [natpopproj@ons.gov.uk](mailto:natpopproj@ons.gov.uk)  
[lifetables@ons.gov.uk](mailto:lifetables@ons.gov.uk)

Website: <http://www.ons.gov.uk/ons/index.html>

## Geography Used for Data

Since the 2007 Registrar General Annual Report vital statistics by geography are defined using the Pointer address database. In Annual Reports prior to 2007 the geography for vital statistics was defined using the postcode from the address in conjunction with the Central Postcode Directory (CPD).

Pointer is an address database that has been developed by the Land and Property Services, Royal Mail and Local Councils. Pointer gives each address a unique property reference number and geo-spatial co-ordinates.

From 2009, the address for each registration is linked using the grid-reference of the Pointer unique property reference number to higher geographies. Under the previous CPD method only the postcode of the address was used to define the higher geography. Thus the new method is a more accurate method for allocating births and deaths by geography.

Where it has not been possible to assign a unique property reference number to an address using the Pointer database, the previous CPD method has been used to assign the geography.

## Change to Health Geographies

As a result of changes to the Health Service in Northern Ireland which were introduced from the 1 April 2009, the four Health and Social Service Boards have been replaced by five new Health and Social Care Trusts. The Northern, Southern and Western Trusts mirror the equivalent Boards in the old system while the former Eastern Board has been split into the Belfast Trust (Belfast and Castlereagh Local Government Districts) and the South Eastern Trust (Ards, Down, Lisburn and North Down Local Government Districts).

## UK Data

The Office for National Statistics (ONS) is responsible for producing a wide range of economic and social statistics. It also, for England and Wales, registers life events and holds the Census of Population. Contact details are as follows:

Customer Contact Centre  
Room 1.015  
Office for National Statistics  
Cardiff Road,  
NEWPORT  
NP10 8XG

Tel: 0845 601 3034

Fax: 0163 365 2747

Email: [info@statistics.gov.uk](mailto:info@statistics.gov.uk)

Website: <http://www.ons.gov.uk/ons/index.html>

The National Records of Scotland (NRS) is responsible for the registration of births, marriages, deaths, divorces and adoptions in Scotland. They are also responsible for the Census of Population in Scotland which, with other sources of information, is used to produce population statistics. Contact details are as follows:

**Customer Services**

Dissemination and Census Analysis Branch  
General Register Office for Scotland  
Ladywell House  
Ladywell Road  
EDINBURGH  
EH12 7TF

Tel: 0131 314 4243

Fax: 0131 314 4696

Email: [customer@gro-scotland.gov.uk](mailto:customer@gro-scotland.gov.uk)

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