National
Records of
Scotland

Use of NHS Central Register Data in the Production of Population and Migration Estimates Report on privacy safeguards

A report by National Records of Scotland

Published on 29 October 2013

Preserving the past | Recording the present | Informing the future

Contents

1. Overview

Population Estimates are produced by updating figures from the most recent census with information from other sources, one of which is the NHS Central Register (NHSCR).

Data from NHSCR is used in the following population estimates publications:

- Mid-Year Population Estimates

- Special Area Population Estimates

- Estimates of Special Populations

The NHSCR Governance Board commissioned National Records of Scotland (NRS) to prepare a report, in line with guidance from the Information Commissioner's Office (ICO) and Caldicott Guidance on Health Care Confidentiality which addresses:

- privacy issues in relation to the transfer and use of data from the NHSCR in generating Population and Migration Estimates; and

- safeguards in place to protect personal information.

This is a summary of the full report. It is not possible to publish the full report as it contains potentially disclosive material.

2. Population and Migration Estimates – The Process

Background

The data and steps to obtain population and migration estimates are summarised in the following steps:

1. start with the previous year's population
2. subtract the previous year's armed forces stationed in Scotland
3. subtract the previous year's prison population
4. age-on the population by one year
5. add in the current year's armed forces stationed in Scotland
6. add in the current year's prison population
7. add births
8. subtract deaths
9. adjust for migration*
10. estimated population for current year.

*Add net migration which includes in-migrants from England and Wales, N. Ireland and overseas and out-migrants to England and Wales, N. Ireland and overseas. This also includes movements to and from the armed forces (including dependants) by the civilian population, rounding adjustments and estimates of asylum seekers

The estimated population from the 2001 Census is the starting point for the current series of mid-year population estimates. Note that both census and mid-year population estimates define the estimated population as follows:

> "The estimated population of an area includes all those usually resident there, whatever their nationality. Students are treated as being resident at their term-time address. Members of UK and non-UK armed forces stationed in Scotland are included; UK forces stationed outside Scotland are excluded. Short-term international migrants, who stay for less than 12 months, are excluded."

Note that both the mid-year population estimates and the census count long-term migrants in their place of residence. Long-term international migrants are defined as people that change their country of residence for 12 months or more.

Data Sources

Both data on **births** and **deaths** are obtained from the compulsory civil registration systems. The Population and Migration Statistics team receives data on live births by sex for the period from 1 July of the previous year to 30 June of the current year. The data refer to the date of the event rather than the date of registration.

Births are added to the population at age zero and are allocated to the area of usual residence of the mother.

Deaths are subtracted from the mid-year population by age and sex at the area of usual residence of the deceased. In order for this to work correctly, the age at death is calculated to be the age that the deceased person would have been on 30 June. No adjustments are made for non-resident deaths.

Migration is the most difficult component of population change to estimate, as there is no comprehensive system which registers migration in the UK, either moves to or from the rest of the world, or moves within the UK. Migration estimates are derived from three key sources of data:

- The National Health Service Central Register (NHSCR), to calculate moves between NHS Board areas within the UK.
- Migration at Council area and below are estimated using anonymised data from the Community Health Index (CHI).
- The International Passenger Survey (IPS) provides information on moves into and out of Scotland with an origin or destination outside UK.

The Population and Migration Branch of NRS receive:
- Monthly extracts of patients moving between NHS Board areas from NHSCR Dumfries.
- Quarterly total number of people migrating to England and Wales from Scotland and raw data extracted from NHSCR Southport from ONS.
- Quarterly total number of people migrating to Northern Ireland from Scotland from the Northern Ireland Health and Social Care (NIHSC) agency.

Statutory Requirements, Privacy Issues, Retention and Dissemination

Information about the use of NHSCR data in the production of Population and Migration Statistics is provided to data subjects on the NHSCR section of the NRS website.

Subjects consent in using the data is not sought for two reasons:
- the scale of the data collection; and
- the pursuit of explicit consent may result in incomplete datasets and bias.

The resulting statistics are published at an aggregate level only and so there are no adverse effects on individual data subjects from the use of this data. Transmission, storage and access to data comply with the Data Protection Act 1998, which covers data confidentiality.

The subset of NHSCR demographic extracts and other NHSCR data files are kept for as long as required (which is permitted by the Data Protection Act 1998 because population estimates comply with the requirements of the research exemption).

A strict Statistical Disclosure Control Policy is in place to safeguard the individual's privacy in all of our statistical publications. This policy was developed in consultation with the Office of Chief Statistician and the Office for National Statistics (ONS).

The main method of dissemination is through the internet. None of the published outputs contains personal identifying information.

3. Security

All staff employed in National Records of Scotland:

- Undergo strict security pre-employment checks (Baseline Personnel Security Standard outlined in the Her Majesty's Government (HMG) Security Policy Framework).
- Are continuously trained and reminded about security, data handling and disclosure issues.
- Are bound to:
  - The Civil Service Code.
  - Census legislation.
  - The Computer Misuse Act; Freedom of Information (Scotland) Act; and the Copyright, Design and Patents Act.
  - Staff using information processing facilities are also subject to the IT Code of Conduct.
- Must comply with NRS Information Security, which is approved by the Registrar General and is reviewed on an annual basis each June.

Access Control Policies (ACPs) control the access to information. They apply to any area or system where sensitive or protectively marked data is stored. ACPs apply to all staff.

Access to IT equipment and systems is strictly controlled and all NRS Buildings are secured in accordance with the guidance in the HMG Security Policy Framework.

NRS removable media are encrypted to the HMG approved standard.

NRS has a strict incident management and vulnerability policy for which any security or data misuse must be documented and communicated to Senior Management.

Policies, Documentation and Structure

Information Security and Information Assurance in NRS are in line with the:
- HMG Security Policy Framework,
- Communications Electronic Security Group Information Assurance (CESG IA) Standards and Good Practice Guides.

These standards are closely aligned to ISO 27001.

The organisational structure to protect data privacy and security in each project is based on the Information Asset Owners. They are senior individuals involved in the running of each project that control and grant access to data only to those that need it. They must report to the Senior Information Risk Owner any security issue or privacy concern, who in turn must report to the Accounting Officer, one of the senior officials in NRS.

In NRS, documents and systems are assessed to decide if they must be labelled as protected information. Protectively marked information are subject to internal policies, which are audited on a regular basis, that takes confidentiality, integrity and availability into account and provide a detailed understanding of the risks associated with each system so that individuals can make informed decisions on whether they are suitable for storing data. Those policies are audited on a regular basis.

NRS comply with the Data Protection Act and are registered with the Information Commissioner Office's Data Protection Public Register under registration number Z2886501.

Frequent audits of systems and processes are carried out to ensure compliance with the security policies and procedures.

Finally, to counteract interruptions to business activities and to protect critical business processes from the effects of major failures of information systems or disasters, NRS have defined business continuity plans, procedures, roles and responsibilities.