CENTRE FOR POPULATION CHANGE
And other related studies

Paul Boyle
The Scottish Longitudinal Study
Welcome

The Longitudinal Studies Centre - Scotland (LSCS) is responsible for the establishment and maintenance of the Scottish Longitudinal Study (SLS). This dataset includes a large sample of the Scottish population and links together various demographic, socio-economic and health data about these individuals. The data are available to academics and support is provided free of charge by a team of researchers.

Training courses introducing the dataset are run regularly and information about these is made available on this website. In addition, the LSCS provides training in longitudinal data handling, analysis and modelling. It also hosts events designed to encourage the use of longitudinal data and to identify state-of-the-art research in the field. The LSCS involves staff from a variety of backgrounds, providing an inter-disciplinary team who are also engaged in longitudinal research themselves.

The LSCS is funded by the:

- Scottish Higher Education Funding Council (SHEFC)
- Chief Scientist Office (CSO)
- General Register Office for Scotland (GROS)
- Economic and Social Research Council (ESRC)
- The Scottish Executive (SE)
An inherently inter-disciplinary project

Linked data from the Scottish Census and administrative records

Sampling based on 20 ‘semi-random’ birthdays (5.3% of the Scottish population)

Sample drawn from the 1991 Census (265,321) and 2001 Census (193,717)
- Anonymous database – names not held

- Birthdates are not released

- A third party (NHSCR) is used to undertake the linkage between different datasets (Chinese wall approach)
- Raw, individual-level data are not released

- Combination of remote access and safe setting analysis

- Database managed in the General Register Office for Scotland, abiding by strict security controls
Data sources

- **Census**
  - 1991 Census, 2001 Census
  - Including data on occupation, economic activity, social class, housing, ethnicity, age, sex, marital status, household composition, health, education, country of birth, migration, workplace, religion etc.
  - Information on SLS member and other household members

- **Vital statistics**
  - Births (SLS birthdate)
  - Births (to sample members)
  - Stillbirths
  - Infant mortality
  - Deaths
  - Widow(er)hoods
  - Divorces
  - Marriages

- **Population data**
  - Immigration
  - Emigration

- **Health data**
  - Cancer registrations
  - Hospital episodes
Proportion with LLTI in both 1991 and 2001, Scotland vs Glasgow

Age Group

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Example Event History of a Female SLS Member aged 21 at 1991 Census

- Entry at 1991 Census
- Hospital Admission Appendicitis
- Birth of 1st child
- Re-entry to Scotland
- Hospital Admission Myocardial Infarction
- 2001 Census Data
- Lung Cancer
- Marriage
- Birth of 2nd child
- Emigration
- Stillbirth
- Birth of 3rd child
- Death
Can we beat the 'Scottish effect'?

Over 250,000 residents could reveal why Scots are even more unhealthy than they should be, says IAN JOHNSTON

The lives of more than a quarter of a million Scots are to be scrutinised in an enormous study to examine the health of the nation.

Today the mystery of why Scotland's health is so poor compared to that of its neighbours is to be revealed in full.

The Scottish Longitudinal Study (SLS) will examine health service records, census details and death and marriage information for about 260,000 people and will influence how they change over time.

Professor Paul Bock, director of the Longitudinal Facility Centre for Scotland, says by combining such a large range of data, it will be possible to study the causes of illness and see what works and what doesn't.

"We are looking at the health of 250,000 people in Scotland, and we will be able to see what is influencing their health," he says.

"The study will allow us to see what is influencing the health of the population, and whether there are differences between men and women, and the elderly."
The Centre for Population Change
Key attributes

- ESRC-funded inter-disciplinary centre
- A collaboration between the University of Southampton and a consortium of Scottish Universities in partnership with ONS and GROS
- Based in the University of Southampton and GROS
- 17 Research projects and 6 PhD studentships
The **Southampton team**, led by Professors Falkingham, Evandrou and Heath, includes:

<table>
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<tr>
<th>Demography</th>
<th>Ann Berrington, Jane Falkingham, Máire Ni Bhrolcháin, James Raymer</th>
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<td>Xavier Mateos-Planas, Robert Sauer, Christian Schluter, Alice Schoonbroodt, Jackie Wahba</td>
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<td>Geography</td>
<td>Alessandra Faggian, Graham Moon</td>
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<td>Gerontology</td>
<td>Maria Evandrou, Elisabeth Schröder-Butterfill</td>
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<td>Sociology</td>
<td>Sue Heath, Derek McGhee</td>
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<td>Social Policy</td>
<td>Paul Bridgen, Traute Meyer</td>
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<td>Statistics</td>
<td>Gabriele Durrant, Jon Forster, Peter W Smith,</td>
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The **Scottish consortium**, led by Professor Paul Boyle includes:

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<tr>
<th>St Andrews, Geography</th>
<th>Paul Boyle, Robin Flowerdew, Elspeth Graham, Maarten van Ham</th>
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<td>Edinburgh, CRFR, Sociology</td>
<td>Sarah Cunningham-Burley, Lynn Jamieson, Sarah Morton</td>
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<td>Dundee, Geography</td>
<td>Allan Findlay</td>
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<td>Stirling, Sociology and Economics</td>
<td>David Bell, Alison Bowes, Vernon Gayle</td>
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<td>Strathclyde, Economics</td>
<td>Robert Wright</td>
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Four research themes…

- Dynamics of fertility and family formation
- Household change and living arrangements across the life course
- The demographic and socio-economic implications of national and transnational migration
- Modelling population growth and enhancing the evidence base for policy
In the context of...

- Low fertility
- The emergence of 'new' forms of intergenerational relationships and living arrangements
- Increasing levels of migration both internally and between countries
- Individual and population ageing
With a particular focus on…

- The dynamic *interconnections* between these demographic processes
- The implications for *policy* and the community
- Understanding in the context of an *ageing society*
Understanding pathways into institutional care (Evandrou and Falkingham)

- ONS population projections expect a growth in the very old from 1.1 million in 2006 to 1.8 million in 2021 - a rise of 63%

- An unknown proportion will end up living in care

- Examine the factors associated with a move into institutional care using the BHPS and UKHLS
Rural ageing, migration and care (Bell, Bowes)

- Demographic change will increase the proportion of older people in rural areas sharply in 20 years

- Very large increase in the demand for social care in rural areas substantially exceeding urban areas

- Care provision, its linkage to patterns of rural migration and its interaction with local housing markets
Free movement, pension costs: the projected pension outcomes of European Union migrants to Britain (Bridgen, Meyer)

- Migration across the EU has increased substantially raising the question of the mobility of social rights, and particularly pension rights.
- Existing European law is limited both with regard to the type of migrants and pension schemes it covers.
- Assess the projected future pension income of workers, who started their employment career in an accession state, and who have moved to Britain.
Estimating the likely demand for social care in later life and the supply of informal carers (Evandrou, Channon, Falkingham, Raymer)

- A dynamic population model including main components of population change with various transitions (residences, employment, marriage, health)

- Likely demand for social care in later life and the supply of informal carers across the regions
The Administrative Data Liaison Service (ADLS)
“The proposed service's objectives will be to provide knowledge about, technical assistance for and organisational help with access to some of the major administrative data resources available in the UK”
Help researchers understand and comply with stringent legal and ethical frameworks required to gain access to and link with administrative data sources.

Collect, develop and help disseminate information about the variety and quality of administrative data resources potentially available for research in the social sciences and related disciplines.
Work closely with the departments/agencies responsible for the guardianship of administrative data resources, to explore the potential that such data have to inform research in the social sciences and related disciplines.

Initiate and undertake research into the scope for linkage between various administrative data sources and other personal records.
The Scottish Health Informatics Programme (SHIP)
**International Advisory Board**

**C2: Governance**  
**C3: Engaging Researchers**  
**C4: Engaging the Public**

**RP1: Clinical Trials**  
**RP2: National epidemiology**  
**RP3: Pharmacovigilance**  
**RP4: Demographic, socio-economic and environmental data linkage**

**C1: Provisioning datasets for research**

A hybrid model for provisioning datasets for research. SHIS acts as a centralised repository of Scottish datasets funded and quality assured by NHS Scotland. Other clinical and research datasets are federated and linked.
A Scottish Longitudinal Study of Ageing (SaLSA)
Scoping study for the Scottish Government

- Consider the case for establishing a SaLSA and to propose the most appropriate means of meeting any such need

- Involved consultative meetings of academic and policy-makers

- Interviews with key stakeholders

- Desk review of existing studies
Does Scotland need such a study?

- Widespread recognition that data on ageing is an issue of growing importance

- Significant interest from both the policy and academic communities in the richness of a longitudinal study

- Unique nature of Scotland’s demographic and policy situation requires Scotland-specific study
Employment

• More detailed information about labour market transitions and outcomes for older people

• How employment relates to other domains such as health, disability and pensions

• Value of data on changing attitudes and expectations in relation to working longer in Scotland

• Will people want to stay in Scotland as they grow older?
Care services

- Increasing need for data on older people to inform the planning and management of care services

- The limitations of existing administrative data highlighted

- Individual experiences of care, perceptions of the future, and how these change over time

- Data on changing household structure and arrangements would help in understanding caring roles
Health

- Much data already exists on health
- The health and health behaviours of people in care homes
- Existing national level longitudinal data sources have relatively small sample sizes
- Key issue is not the availability of health data *per se*, but the possibility of combining this with data on other life domains
Social inclusion and equalities

• The drivers of poverty and inequality in old age

• The impact of the changing economic climate

• Social participation

• Movement of older people between deprived settings

• Experiences of ageism and discrimination

• Travel and transport use

• Formal and informal learning
Existing models of data collection

- The English Longitudinal Study of Ageing (ELSA)
- The Survey of Health and Retirement in Europe (SHARE)
- The Irish Longitudinal Study of Ageing (TILDA)
- Hybrid model recommended
Design recommendations

- Ambitious initial sample size (min. 8000), to allow detailed sub-group analyses and to take account of the effects of attrition over time

- Funding commitment for at least ten years, or four waves of data collection

- Physical and biological measures required beyond those collected by a survey interviewer (nurse visit)
- Target population should at least match other similar studies (start at 50), or preferably be extended further downwards to 45

- Sampling frame based on an individual level database such as the Community Health Index (CHI)

- Consider improved representation of: care homes or institutional settings; those living in areas of greater deprivation; and those living in remote and rural areas
- An additional sample of older people’s relatives or carers?

- Incorporation of experimental designs (e.g. based on a health or other type of interventions)
Possible funding models

- Less complex design
  
  • Achieved sample of 10,000 at Wave 1, interviewer-only data collection, basic analysis and reporting – £1-2m per wave or £5.5-7.5m for four waves over ten years

- More complex design
  
  • Achieved sample of 10,000 at Wave 1, interviewer plus nurse data collection, more sophisticated analyses (including bloods, etc.) and reporting – £2-3m per wave or £8-12m for four waves over ten years
Possible funders

- The Scottish Government and other government departments
- ESRC, MRC, Wellcome Trust
- US National Institute on Aging
- European Commission
- Private/corporate sector (e.g. Scottish banks or insurance companies)
- Philanthropic or educational trusts (e.g. Carnegie, Atlantic Philanthropies)
Conclusion
- Close the gap between academics and policy makers

- Policy agenda and funding strong for children in Scotland, but less so for older people?

- Need for more joined-up administrative data across government departments
- Need to give serious thought to the collection of a dedicated longitudinal study of older people

- Scottish Government has agreed to fund a CPC ‘knowledge broker’ who will liaise between the CPC and all areas of the Scottish Government with a policy interest in demographic issues