NILS-RSU

Northern Ireland Longitudinal Study Research Support Unit

# Welcome, introduction and prospects

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E·S·R·C Economic & Social Research Council

# Structure of the day

- The NILS and the NILS-RSU
- The 2011 Census Link in outline and projects using the 2011 data
  - Four brief presentations, marriage, grief, health and housing, birth month and later outcomes
- The wider context for the 2011 Link and the future
  - Five brief presentations on the UK LS context, synthetic data, the NI-ADRC, historical data and the NILS, and the future of the NILS

# The NILS

- Longitudinal database of people and their major life events based on existing data sources
- Health card data linked to Census and administrative data
- Sample members selected based on birth date
- 104 birth dates
  - c.28% sample
  - c.500,000 people
- Two similar record linkage studies are available (ONS-LS, SLS) and the NILS works with these and CALLS
- NIMS 2011: 100% sample
  - Death data linked to Census data

# Funded by:

HSC Public Health Agency

Northern Ireland Statistics & Research Agency

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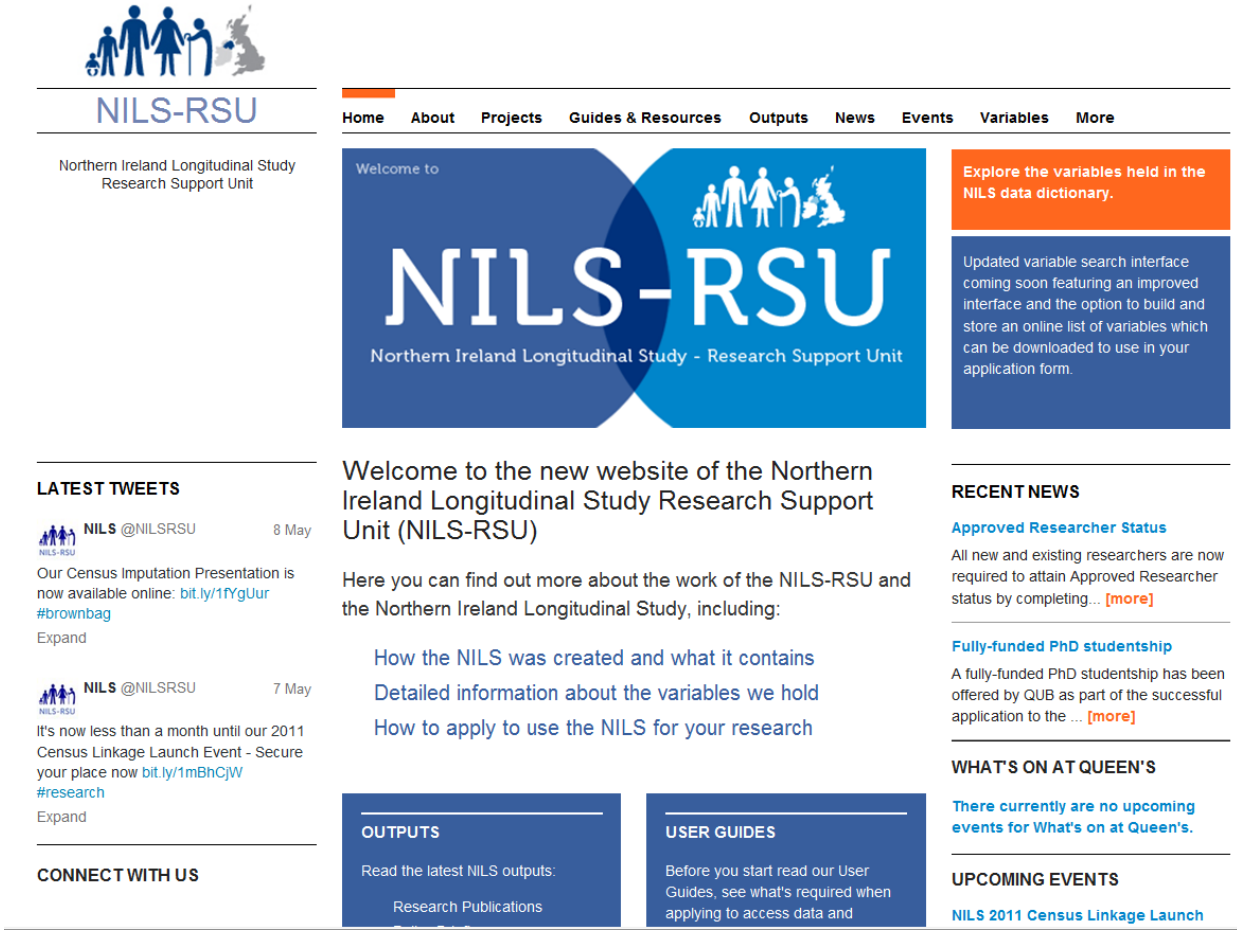


**The NILS-RSU** supports researchers by: supervising the safe environment; helping researchers make applications; promoting NILS-based research through seeking new users and policy engagement; building capacity

# Using the 2011 Link

- The NILS started with the 2001 Census and subsequent vital events and address changes
- The 2011 Census link means that it is now possible to look at the transitions of people and places between 2001 and 2011
- Themes that can be considered include
  - Labour market transitions (economic status, occupation)
  - Housing transitions (tenure change and health)
  - Demographic transitions (health status, religion, marital status)

# Using the 2011 Link

- Other themes that can be researched include
  - Fertility
  - Mortality (NIMS)
  - Migration – internal and moves into and out of NI
- The utility of the NILS will increase further by 2015 as by then the 1981 and 1991 Censuses will be linked to the NILS – 4 Censuses and 30 years of data
- These will mean that long-term social and demographic change can be described and analysed

# Using the 2011 Link

- Thus a major research resource which has taken time and money to develop
- Challenge is therefore to capitalise on this to influence academic debates, policy debates and the public inside and outside Northern Ireland
- Value will increase further if, as seems likely, there is a 2021 Census
- Now…more on the 2011 Link and research that has already been done using it…

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# The 2011 Link

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# Overview

- Development of the Census 2011 Link
- UK Longitudinal Studies
- NILS Datasets
- NILS Samples for Analysis
- NILS 2011 Linkage
- Supporting Documentation
- New Questions in the 2011 Census

# Development of the Census 2011 Link (1)

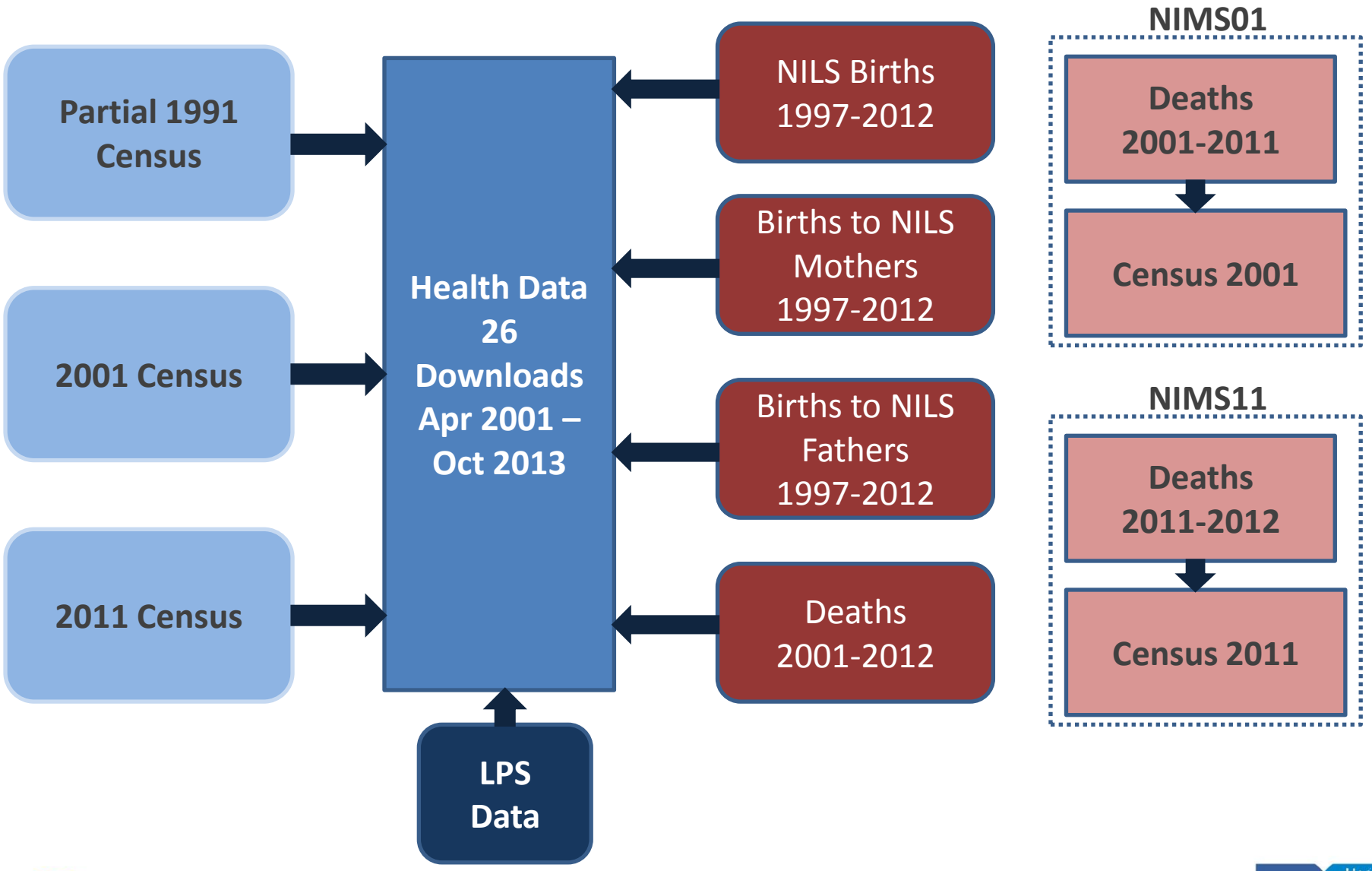
- Business Case Started 2010
- Approved by NILS Steering Group 2011
- Funded by Census Office
- Development Started Summer 2011
- Assistance to Census Office

# Development of the Census 2011 Link (2)

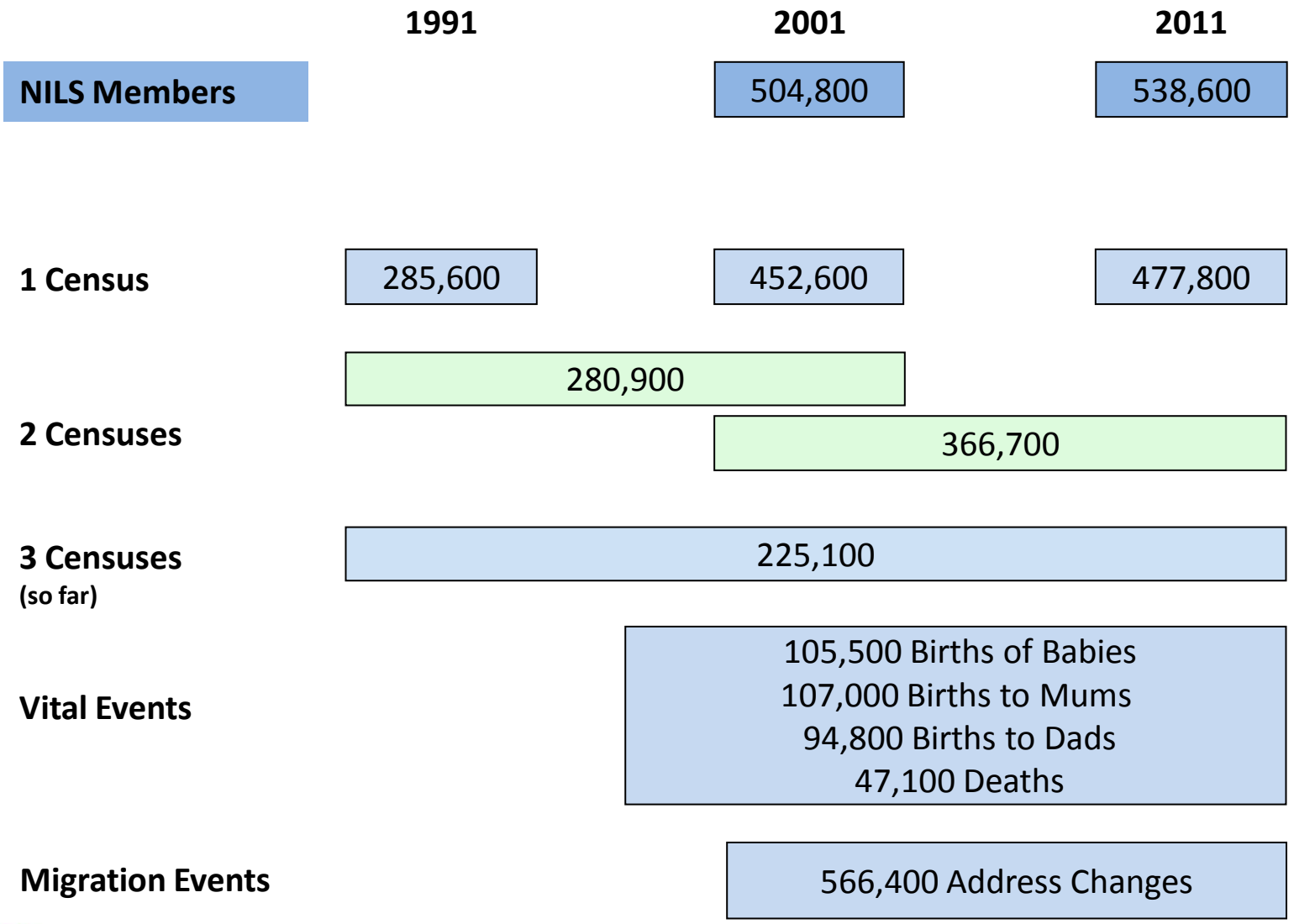
- Alpha-Testing Phase Summer 2013
- Beta-Testing Phase September 2013
- Soft Launch 9th December 2013
- First Projects Approved January 2014
- UK Launch Event 6th March 2014

| | ONS Longitudinal Study | Scottish Longitudinal Study | Northern Ireland Longitudinal Study |
|---|---|---|---|
| **Study sample** | 1% of the population of England & Wales | 5% of the population of Scotland | 28% of the population of Northern Ireland |
| **Records from 2001 Census** | 540,000 | 260,000 | 452,600 |
| **Records from 2011 Census** | >950,000 | N/A | 477,800 |
| **Censuses in the study** | 1971, 1981, 1991, 2001, 2011 | 1991, 2001 | 1991, 2001, 2011 |
| **Academic user support** | Centre for Longitudinal Study Information & User Support, UCL | Scottish Longitudinal Study Development & Support Unit, University of St. Andrews | Northern Ireland Longitudinal Study Research Support Unit, QUB |
| **Census data available** | Complete census data for study members and for people living in the same household as a study member | Complete census data for study members and for people living in the same household as a study member | Complete census data for study members and for people living in the same household as a study member |
| **Event data available** | **Civil registration system**<br>• Births of sample members<br>• Births to sample mothers<br>• Stillbirths / Infant deaths<br>• Deaths of sample members<br>• Widow(er)hoods<br>**NHS Central Register**<br>• Immigration<br>• Emigration<br>• Minor events<br>**Cancer registries**<br>• Cancer data | **Civil registration system**<br>• Births of sample members<br>• Births to sample mothers<br>• Births to sample fathers<br>• Stillbirths / Infant deaths<br>• Marriages<br>• Deaths of sample members<br>• Widow(er)hoods<br>**NHS Central Register**<br>• Immigration<br>• Emigration<br>**Scottish Govt. Education Directorate**<br>• School level education data including attendance, exclusions, attainment and qualifications<br>**Other data available, subject to approval**<br>• Hospital episodes<br>• Maternity data<br>• Cancer data | **Civil registration system**<br>• Births of sample members<br>• Births to sample mothers<br>• Births to sample fathers<br>• Deaths of sample members<br>**Health card registration system**<br>• Immigration<br>• Emigration<br>• Internal migration<br>**Land & Property Services**<br>• Housing data<br>**Health & Social Care**<br>• Health data linked in one-off distinct linkage projects (e.g. prescription data, dental treatments) subject to approval |

# NILS Datasets



# NILS Samples for Analysis



# NILS 2011 Linkage

- Link Health Registration data to Census data

  - List Inflation Rate

  - Person Imputation

- High match rate 96.7%

- Consistent with 2001 rate

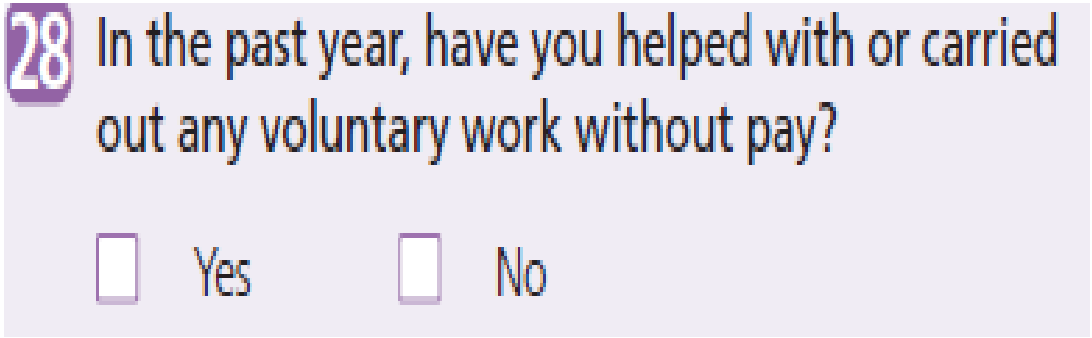
- Forward and Backward rates consistent with ONS LS and SLS

# Supporting Documentation

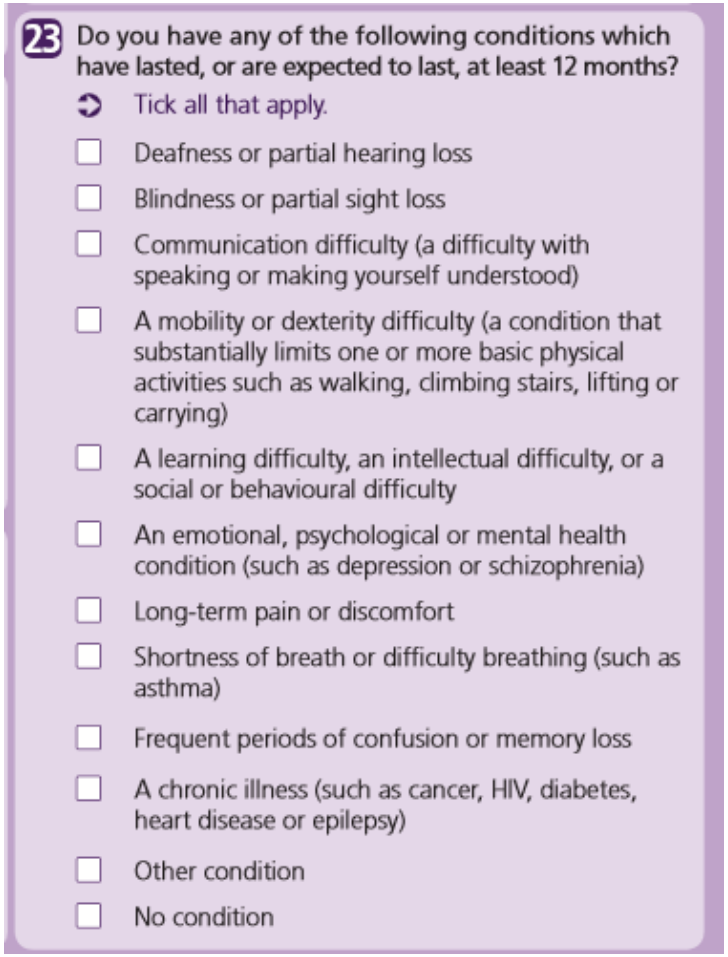
- NILS Data Dictionary
- Metadata Document
- Searchable Data Dictionary
- Census 2011 Variables Overview
- Working Papers
- Imputation Rates Paper

# New Questions in the 2011 Census

# Voluntary Work



# Nature of Health Conditions



23 Do you have any of the following conditions which have lasted, or are expected to last, at least 12 months?

Tick all that apply.

- ☐ Deafness or partial hearing loss
- ☐ Blindness or partial sight loss
- ☐ Communication difficulty (a difficulty with speaking or making yourself understood)
- ☐ A mobility or dexterity difficulty (a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, lifting or carrying)
- ☐ A learning difficulty, an intellectual difficulty, or a social or behavioural difficulty
- ☐ An emotional, psychological or mental health condition (such as depression or schizophrenia)
- ☐ Long-term pain or discomfort
- ☐ Shortness of breath or difficulty breathing (such as asthma)
- ☐ Frequent periods of confusion or memory loss
- ☐ A chronic illness (such as cancer, HIV, diabetes, heart disease or epilepsy)
- ☐ Other condition
- ☐ No condition

# Passports Held and National Identity


14 What passports do you hold?

Tick all that apply.

- [ ] United Kingdom
- [ ] Ireland
- [ ] Other, write in
- [ ] None


15 How would you describe your national identity?

Tick all that apply.

- [ ] British
- [ ] Irish
- [ ] Northern Irish
- [ ] English
- [ ] Scottish
- [ ] Welsh
- [ ] Other, write in

# New Questions in the 2011 Census

- Housing Adaptations
- Intention to stay in the UK
- Lived outside Northern Ireland
- Last country lived in
- Date of most recent arrival in Northern Ireland
- Main Language
- English Proficiency
- Knowledge of Ulster-Scots
- Type of Central Heating

# Contact Details

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# Does exogamy (mixed marriage by religion) increase the risk of marital dissolution in Northern Ireland?

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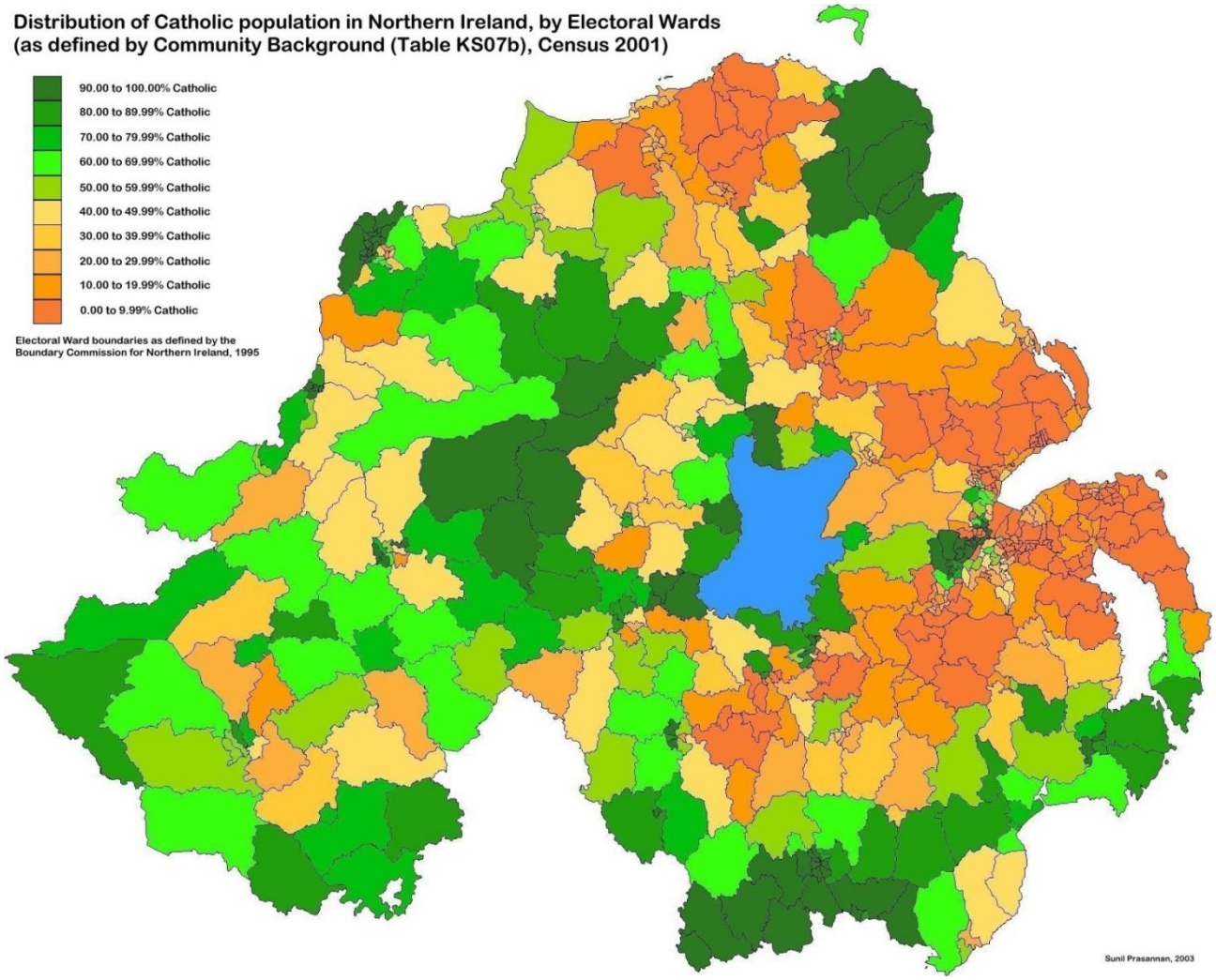
# Marital dissolution

- Profound impacts on societal and individual wellbeing
- Family history and values, age at marriage, children
- Socioeconomic factors: employment status, education
- Partner dissimilarity (e.g. by age, ethnicity, religion)

# Marital dissolution in Northern Ireland

- Is there variation in dissolution risk among religious groups?
- Are mixed marriages at increased risk, especially those crossing the Catholic-Protestant boundary?
- Does residential segregation affect dissolution risk for mixed marriages?

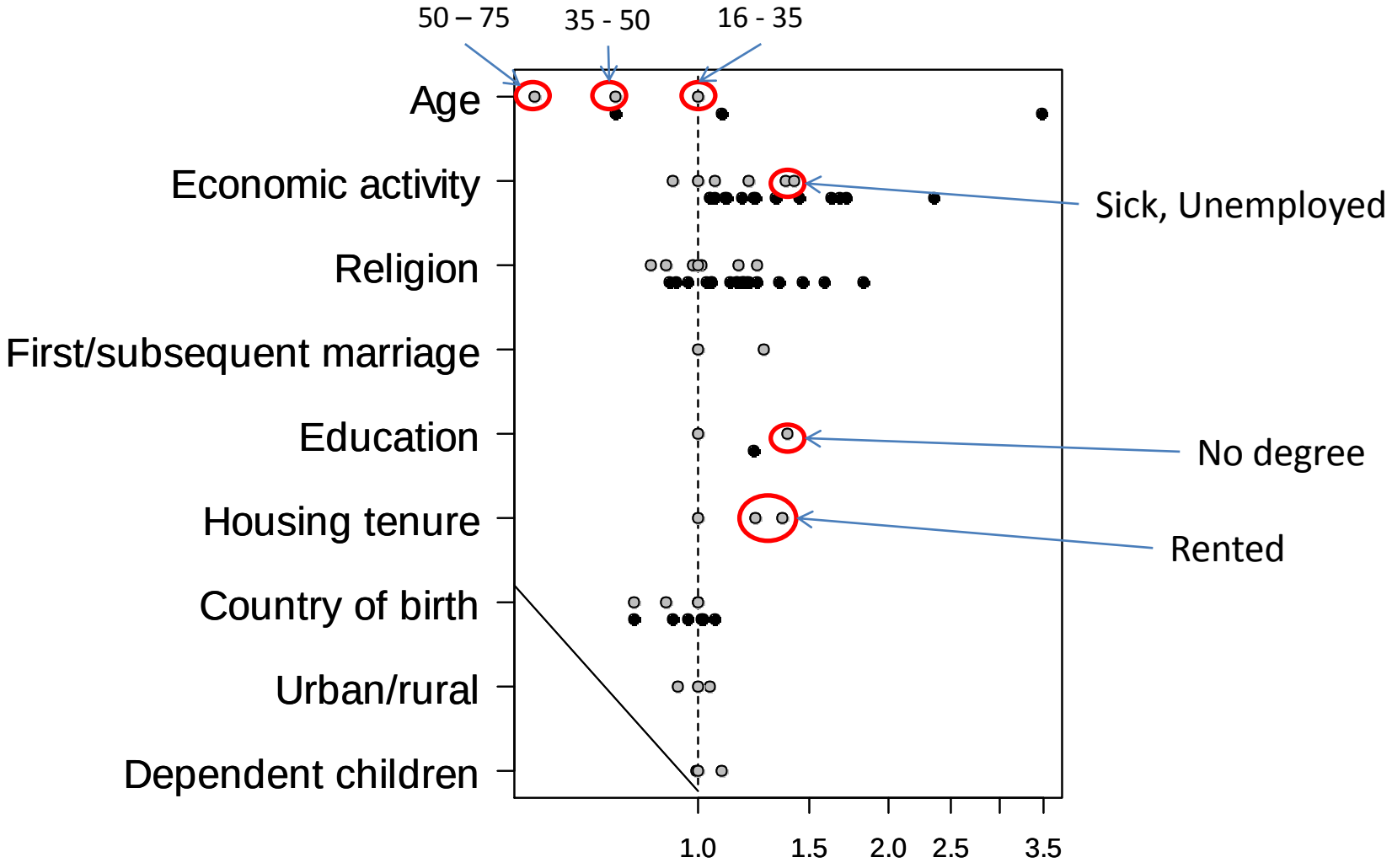
# Residential segregation by religion



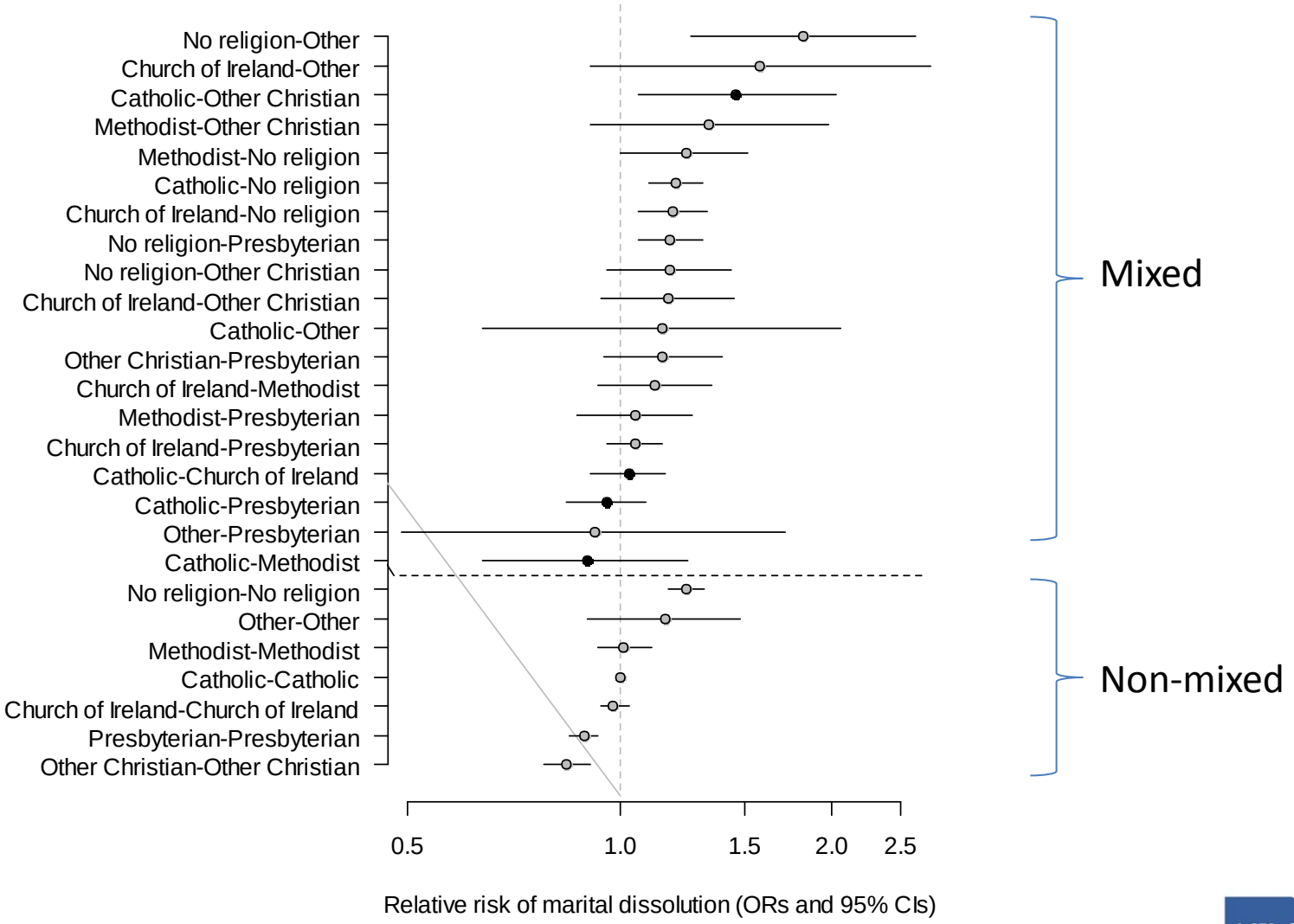
# Northern Ireland Longitudinal Study – 2001- 2011 Census link

- Married couples at the 2001 Census
  - Aged 16 – 74
  - At least one NILS member
  - Both survived to 2011 Census
- 115,465 couples, 23,803 dissolutions
- Marital dissolution: no longer co-resident in 2011
- Logistic regression

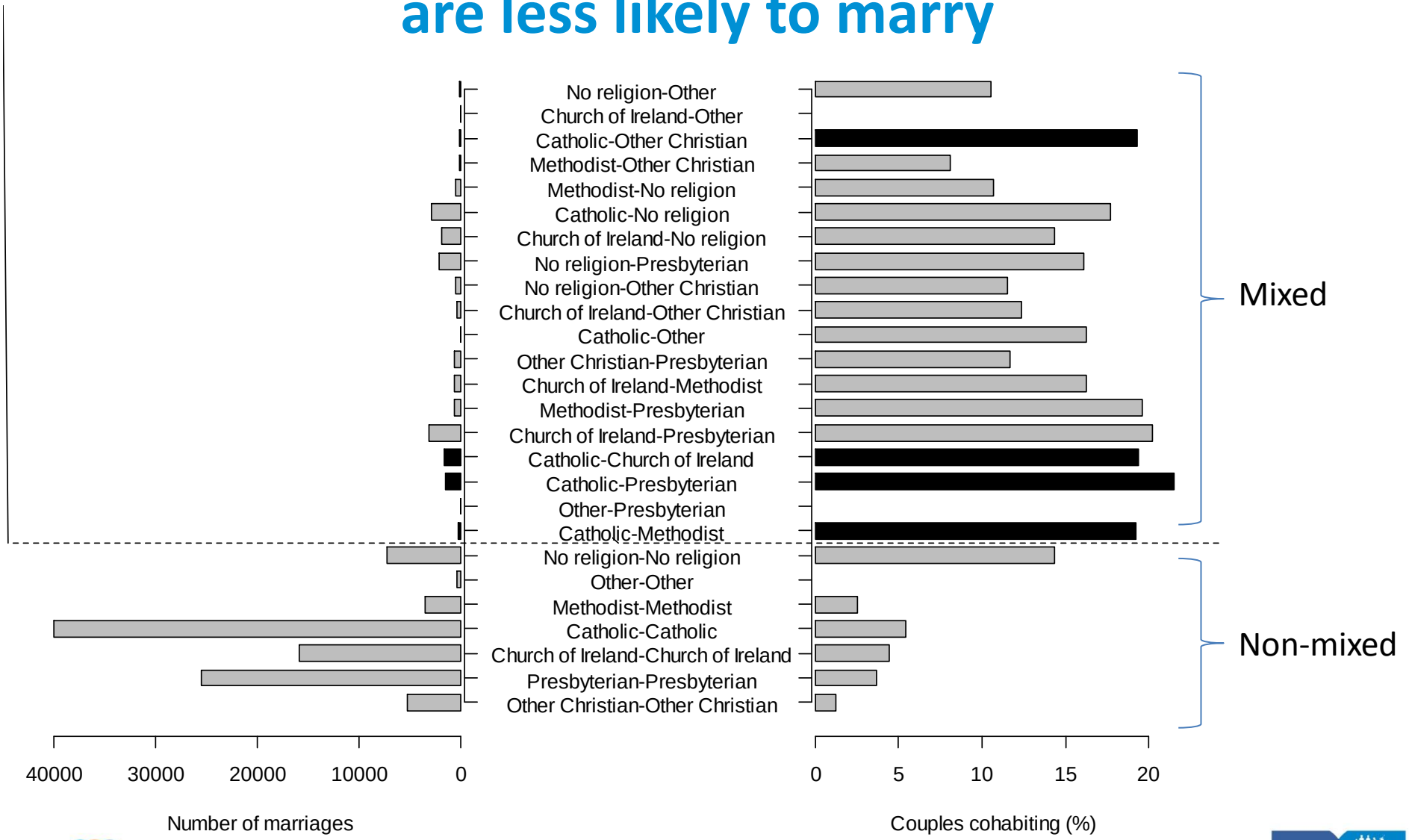
# Dissolution risk higher among younger and dissimilar couples



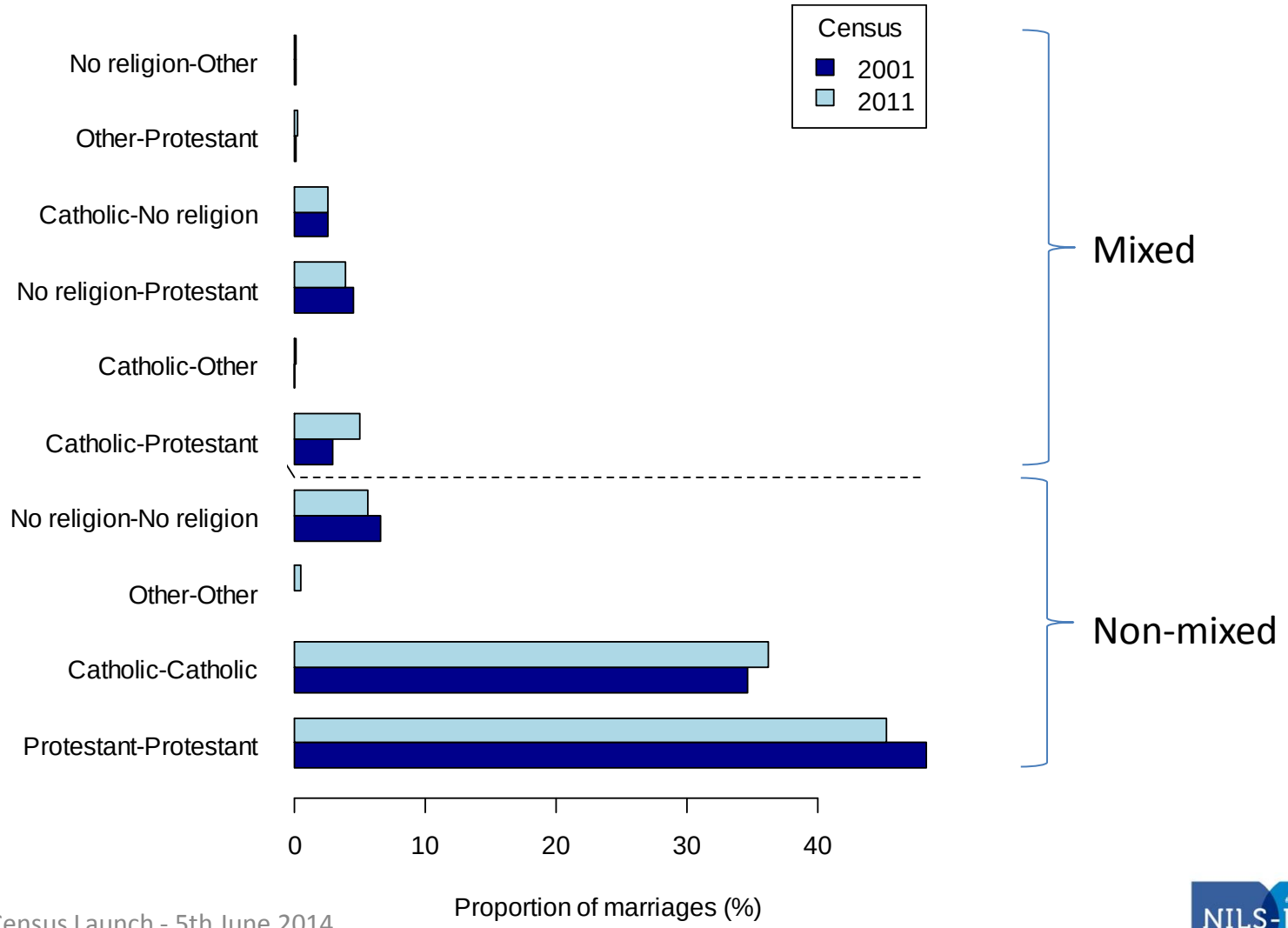
# Variation among religious groups in risk of marital dissolution



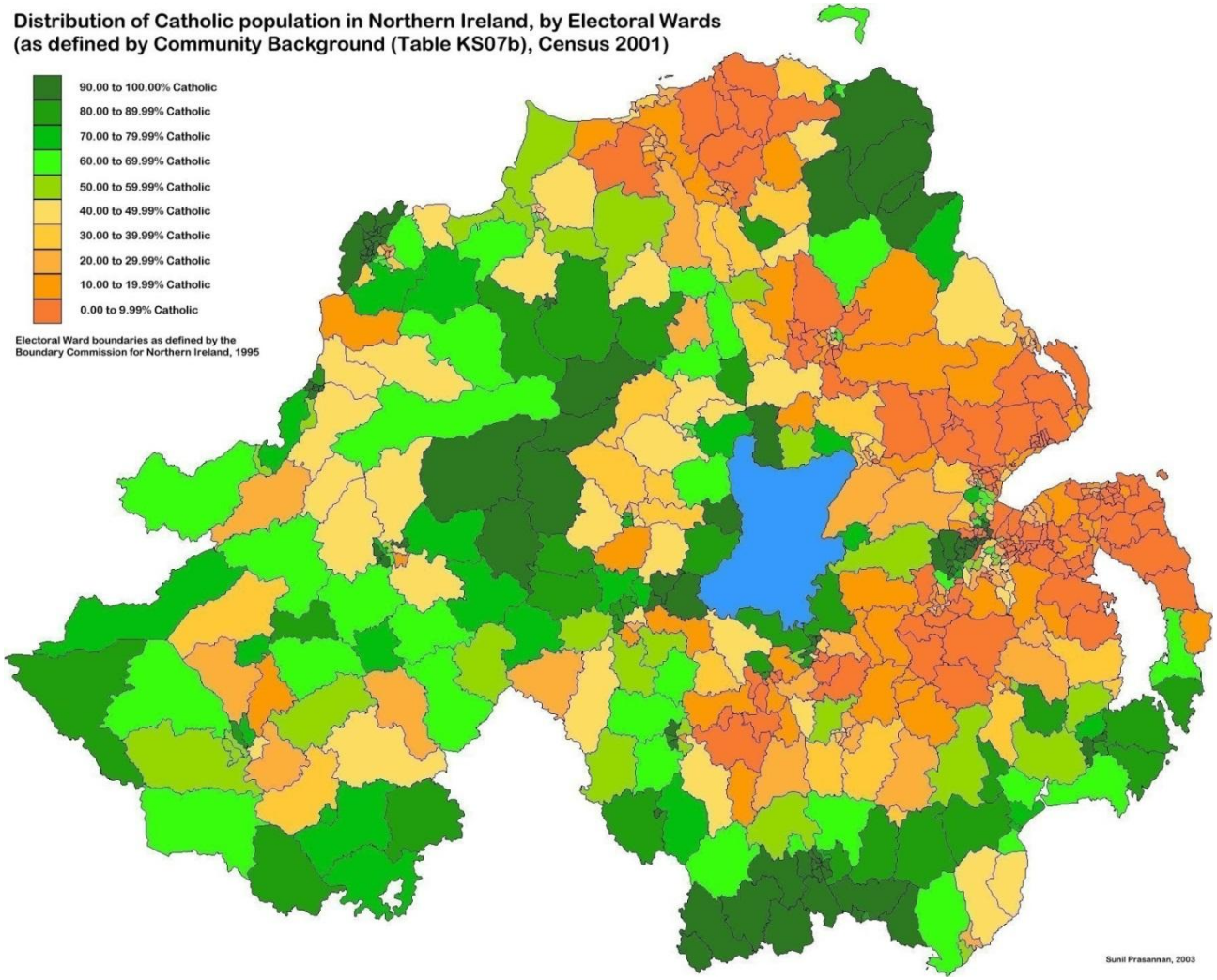
# Mixed marriages are rare and mixed couples are less likely to marry



# Increase in proportion of Catholic-Protestant marriages



# Risk of marital dissolution unrelated to residential segregation by religion



# Summary

- Increased risk of marital dissolution among less religious groups.
- Mixed marriages had slightly higher risks of dissolution than non-mixed marriages.
- Catholic-Protestant unions:
  - at no greater risk than other types of mixed marriage
  - rare
  - couples were more likely to cohabit
  - younger cohort
  - dissolution risk unrelated to residential segregation
- Significant barriers to cross-community relationships remain but indications of increased mixing among the young.

# Acknowledgements

The help provided by the staff of the Northern Ireland Longitudinal Study (NILS) and the NILS Research Support Unit is acknowledged. The NILS is funded by the Health and Social Care Research and Development Division of the Public Health Agency (HSC R&D Division) and NISRA. The NILS-RSU is funded by the ESRC and the Northern Ireland Government. The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of NISRA/NILS.

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# The effect of social & economic transitions on children & young people

Dr Aideen Maguire, Dr Mark McCann & Dr John Moriarty
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# Children in Transition

- Importance of the early years
- Children and young people are in constant change
- All aspects of the environment are potential determinants of how children develop
- Family environment and affluence are two key candidate factors that determine development
- Gaining a better understanding of the effect that the social environment can have on children and young people is important for identifying ways to mitigate harmful influences

# Outcomes of interest

- 2011 Census questions on **educational attainment**

  - education a predictor of adult success
  - higher education = higher SES
  - increase social networks and opportunity

- 2011 Census questions on **mental health**

  - mental ill health leading cause of disability
  - largest contributing factor to days of work lost
  - decreases social networks and lack of opportunity

- Using two waves of NILS data from the 2001 and 2011 censuses, this project will assess how changes in affluence or family structure can influence educational and mental health outcomes for young people

# Beta Test Questions

- Do changes in household affluence affect children living in the household in terms of:
  - Academic achievement
  - Mental health

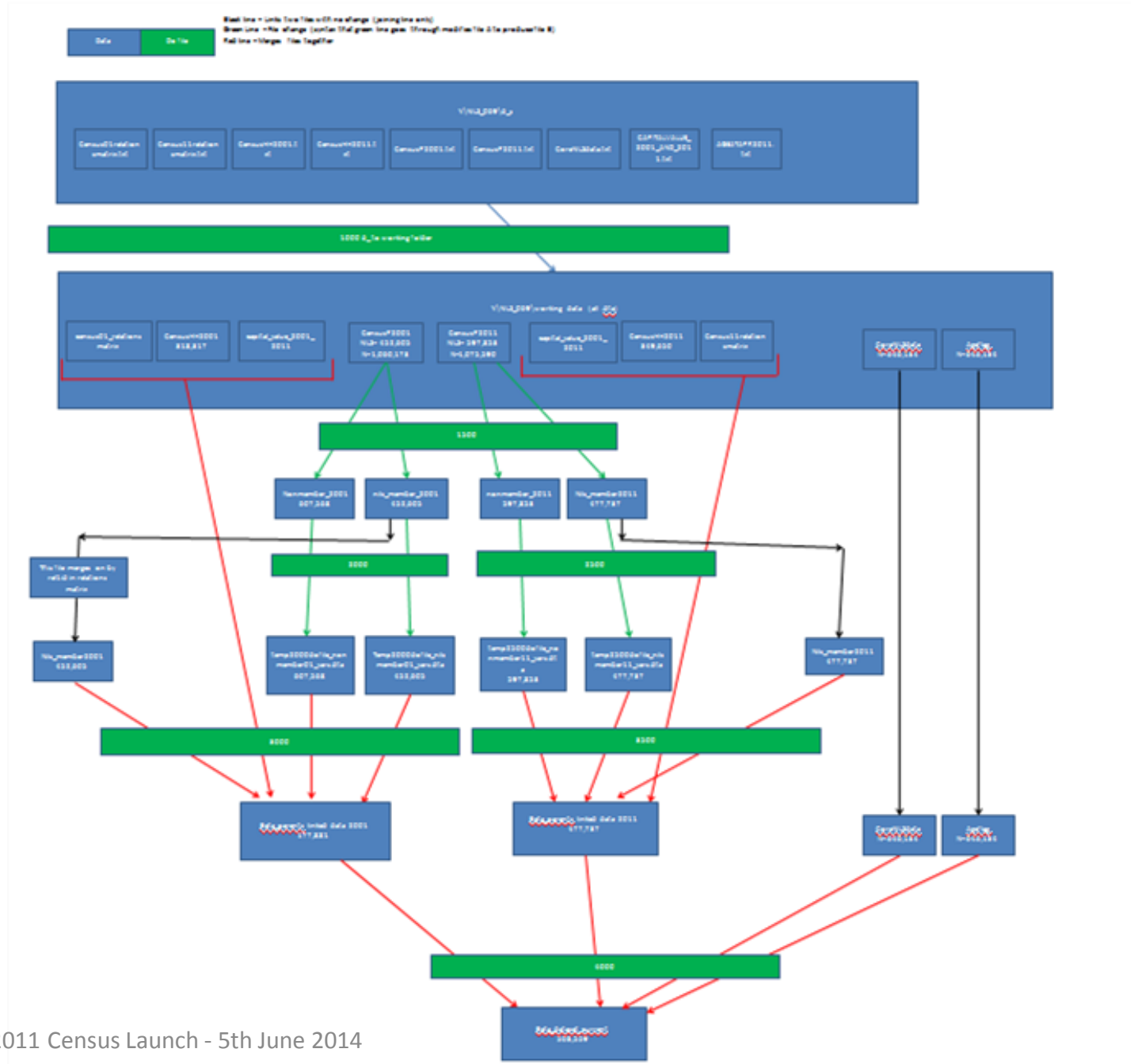
- Do changes in household structure affect children living in the household in terms of:
  - Academic achievement
  - Mental health

# Method

- Health card registration data
  - NILS members selected based on 104 dates of birth
  - Identifies individuals
  - Identifies home address
  - And change of address at 21 time points between 2001 & 2011
- NILS cohort comprises c.28% of NI population
- Cohort lives in c.50% of residential households in NI
  - Non cohort member Census returns provide household characteristics and characteristics of family structure

# Datasets to be linked

- **Land and property services**
  - The open market sale price of every property in Northern Ireland (as of 2005)
- **Census 2001**
  - Social/ private rented vs. owner occupier
  - Health & educational qualifications
- **Census 2011**
  - Social/ private rented vs. owner occupier
  - Health & Educational qualifications
- **Non-members 2001 & 2011**
  - Relationships within Census household/household structure



# Results

- 182,545 individuals, Under the age of 18 years & enumerated in both 2001 and 2011 Censuses
- Mental ill health: 3,349 (2%)
- No qualifications: 10,887 (13%)

# Percentage with no qualifications by economic transitions

| | | House Value 2011 | | | |
|---|---|---|---|---|---|
| | | **Renting** | **<75K** | **75-95K** | **95K+** |
| **House** | **Renting** | 25.9 | 17.5 | 16.7 | 14.2 |
| **Value** | **<75K** | 18.2 | 13.9 | 12 | 11.6 |
| **2001** | **75-95K** | 12.4 | 11.1 | 11.2 | 11.9 |
| | **95K+** | 6.2 | 5 | 5.3 | 8.6 |

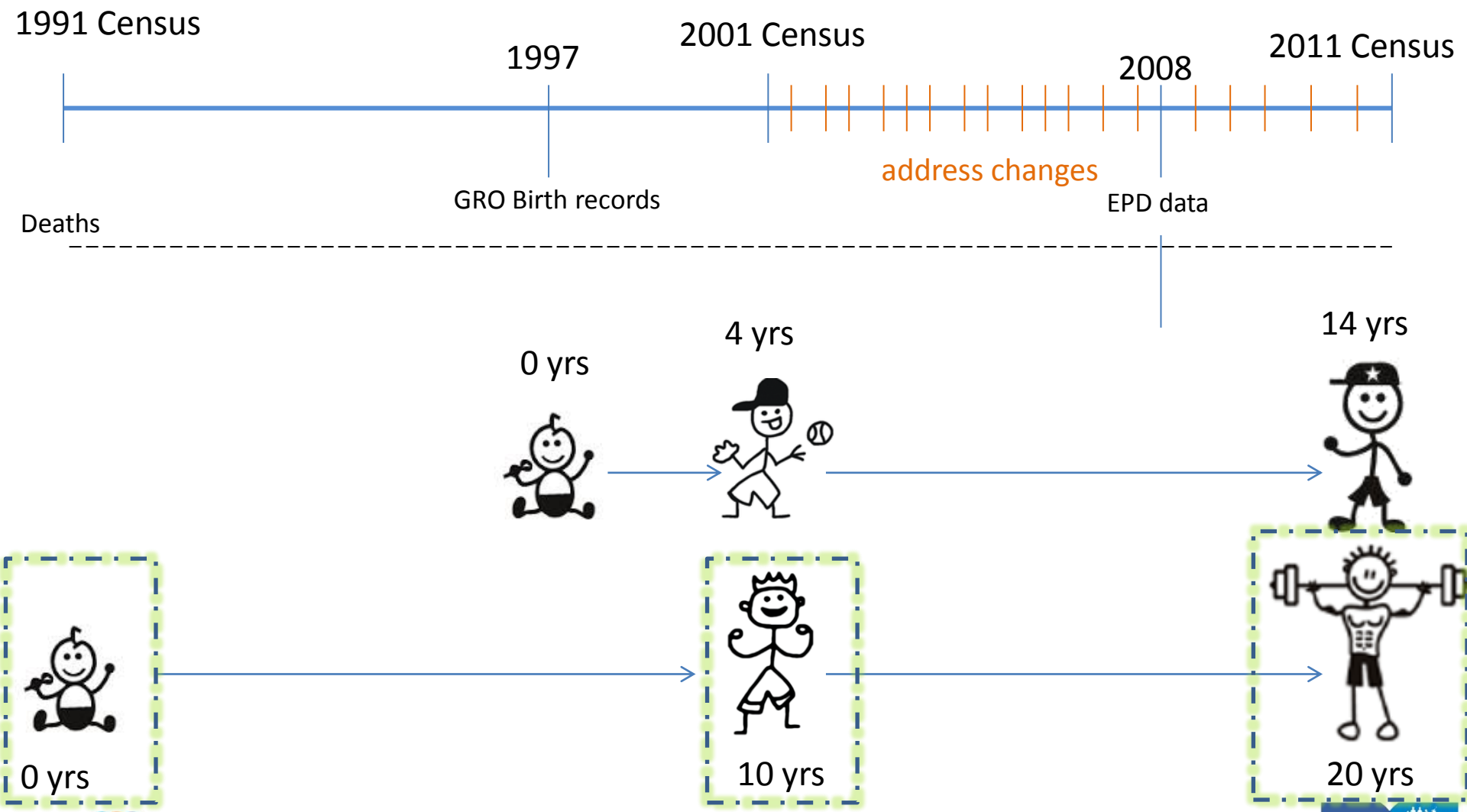
# Percentage in poor mental health by economic transitions

| | | House Value 2011 | | | |
|---|---|---|---|---|---|
| | | **Renting** | **<75K** | **75-95K** | **95K+** |
| **House** | **Renting** | 5.5 | 2.5 | 2 | 2.1 |
| **Value** | **<75K** | 6.5 | 1.7 | 2.2 | 1.8 |
| **2001** | **75-95K** | 5.6 | 3.2 | 1.3 | 1.2 |
| | **95K+** | 4.8 | 4.4 | 3.3 | 1.1 |

# Percentage in poor mental health by family transitions

| | | Living Arrangements 2011 | | | | |
|---|---|---|---|---|---|---|
| | | **2 parent** | **Single parent** | **Step family** | **other** | **Not with parents** |
| **Living** | **2 parent** | 1 | 2 | 1.4 | 1.9 | 5 |
| **Arrangements** | **Single parent** | 1.6 | 3.1 | 2.2 | 4.2 | 9.6 |
| **2001** | **Step family** | 1.7 | 3.7 | 3.5 | 5.1 | 10.3 |
| | **other** | 1.5 | 1.6 | 0.5 | 1.7 | 6.3 |

# Potential of New 1991 & 2011 link



# Potential of New 1991 & 2011 link

- Direction of effect
  - Does child health affect economic position or vice versa?
- Reason for transition
  - Parental separation, parent death, job loss
- Timing of transition
  - Critical developmental periods, economic downturn
- Reason for effect
  - Parental mental health, family conflict, financial resource
- Questions for SDAI Phase 2:
  - Families, Adolescents and Children in Transition

# Acknowledgements

“The help provided by the staff of the Northern Ireland Longitudinal Study/Northern Ireland Mortality Study (NILS/NIMS)and the NILS Research Support Unit is acknowledged. The NILS/NIMS is funded by the Health and Social Care Research and Development Division of the Public Health Agency (HSC R&D Division) and NISRA. The NILS-RSU is funded by the ESRC and the Northern Ireland Government. The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of NISRA/NILS.”

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# Health, housing tenure & entrapment 2001-2011: Does changing tenure and address improve health?

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# Structure

- Introduction
- Project 067 Aims
- Data & analytical approach
- Population bases
- Explorative results
  - 2001 health/2011 health transition
  - 2001 tenure/2011 tenure & 2001 health/2011 health
- Conclusions

# Introduction

- Political & policy debates about social-rented housing focus on low spatial mobility & reduced chances of upward social mobility
- Extensive literature on inter-relationships between: housing tenure, health, and wider dimensions of social wellbeing, and the measurement of these at both the individual and area level (e.g. Marmot, 2010; Macintyre et al, 2002)
- Smith & Easterlow (2005) consider concepts of housing entrapment & selective placement

# Project 067 Aims

- To explore relationships between *changing* health & *housing tenure* in Northern Ireland, 2001-2011
  - plus spatial mobility (i.e. change SOA geographical area)
- To determine whether different *tenure* ***trajectories*** are associated with changes in health status e.g. movements from social rented to owner occupied housing & changing health status
- To explore whether these trajectories are linked to different kinds of spatial move
  - moves between different types of place/area

***n.b. only consider first two today***

# Population Bases

- **Movers – changed tenure**
  - may/may not changed house/address, &/or changed SOA
  - theoretically possible to only change tenure
- All movers changed address OAs
  - Still to analyse this

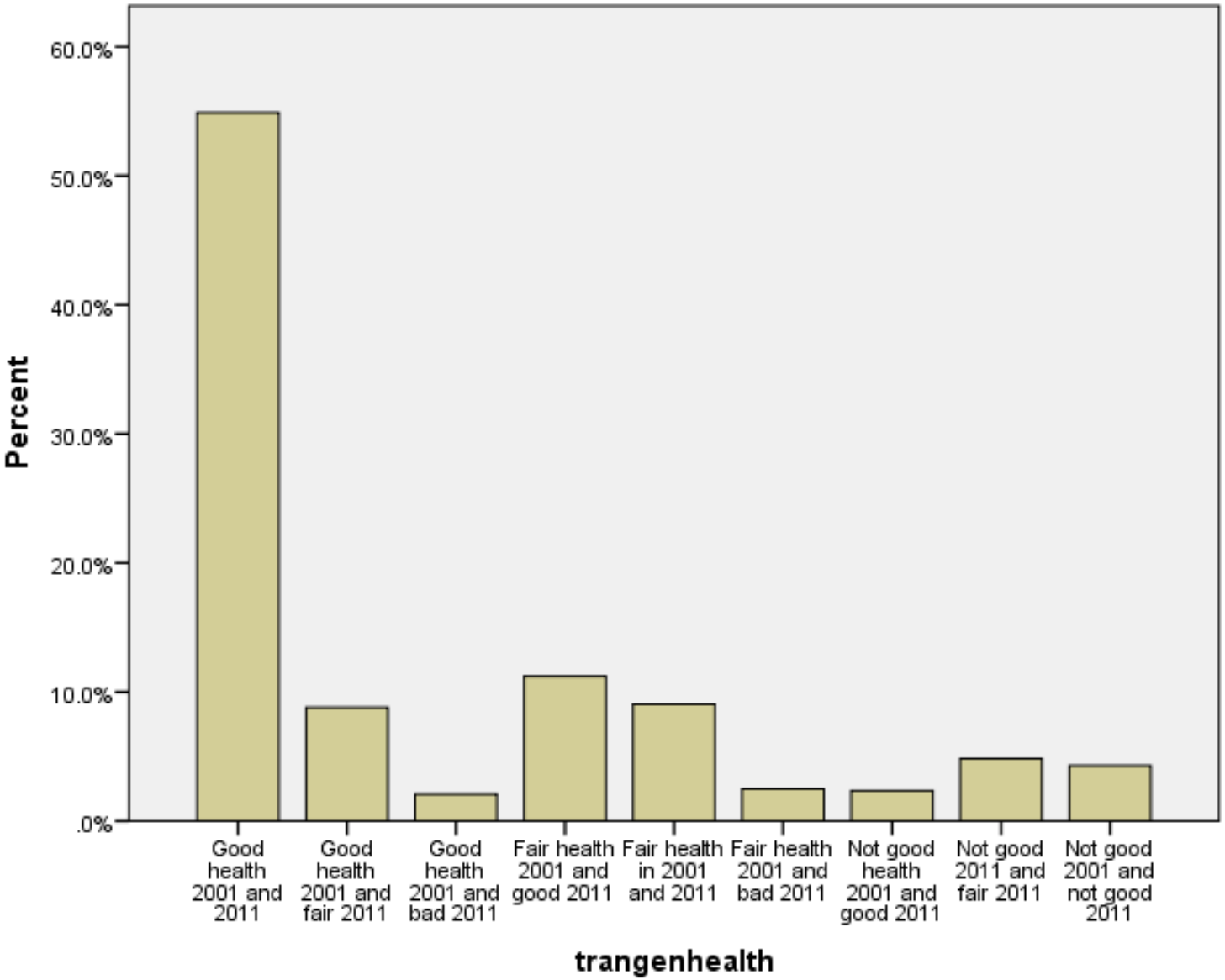
# Data and Analytical Approach

- Restricted set of variables for parsimony
- Descriptive analysis different kinds of tenure/health transition in the NILS
  - e.g. changes in individuals' limiting long-term illness and general health, 2001-2011
  - i.e. changes tenure type
- Multilevel statistical modelling (individuals nested in SOAs)

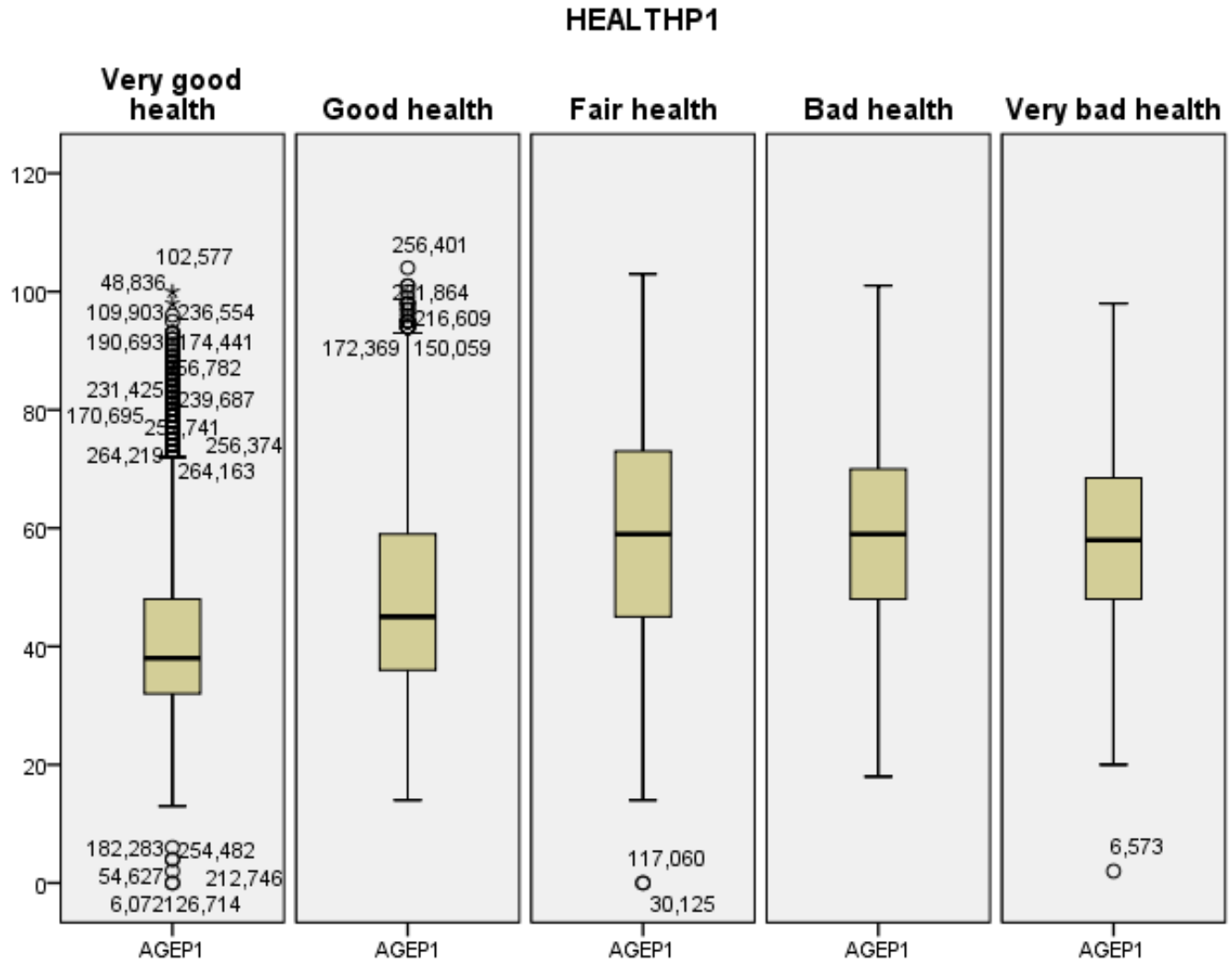
# Health change 2011 compared to 2001

| | | Health 2011 | | | |
|---|---|---|---|---|---|
| | | Good health | Fairly good health | Not good health | Total |
| Health 2001 | Good health | 143503 | 23012 | 5458 | 171973 |
| | | **83.4%** | **13.4%** | **3.2%** | 100.0% |
| | Fairly good health | 29323 | 23659 | 6528 | 59510 |
| | | **49.3%** | **39.8%** | **11.0%** | 100.0% |
| | Not good health | 6131 | 12632 | 11187 | 29950 |
| | | **20.5%** | **42.2%** | **37.4%** | 100.0% |
| | Total | 178957 | 59303 | 23173 | 261433 |
| | | 68.5% | 22.7% | 8.9% | 100.0% |

# Health Transitions 2001-2011



# Health & Age (2001)

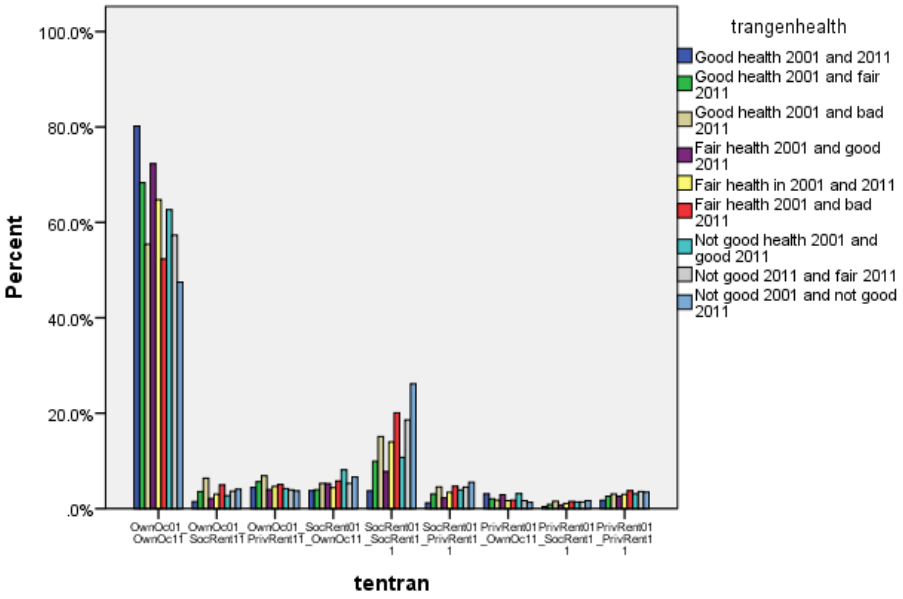


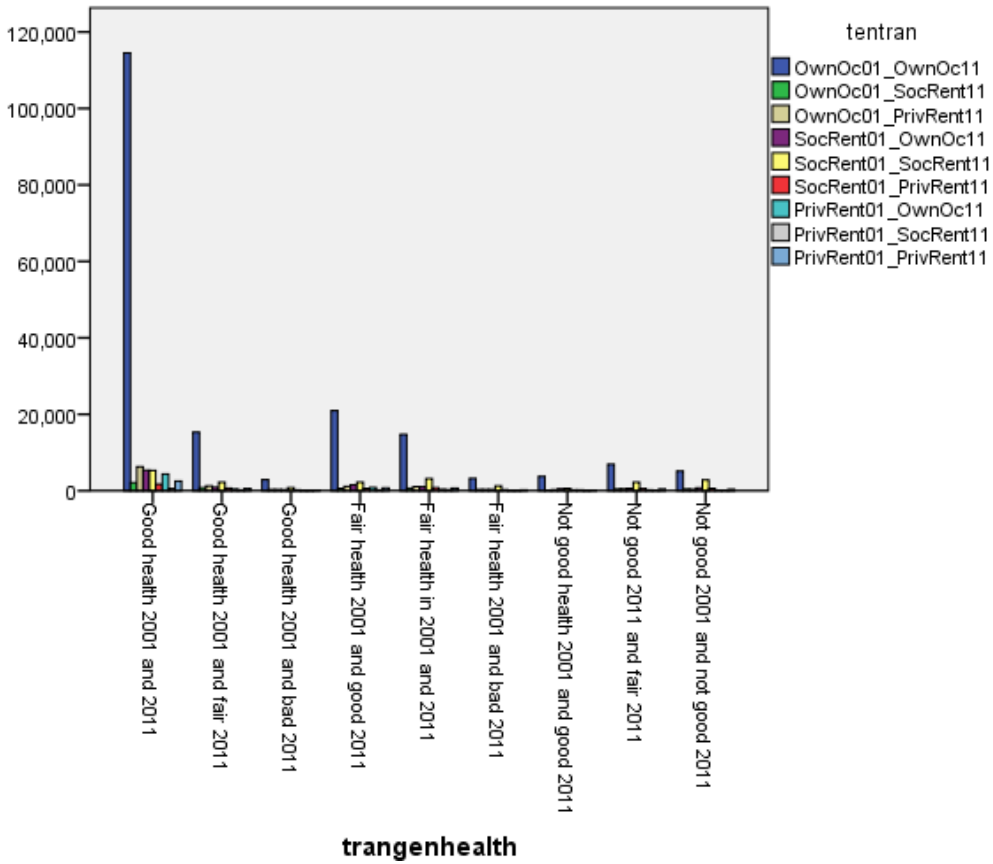

- Reminds us of obvious importance of taking account of age, doing this in our statistical modelling work

# Health & Tenure Transitions

| | Good health 2001 and 2011 | Good health 2001 and fair 2011 | Good health 2001 and bad 2011 | Fair health 2001 and good 2011 | Fair health in 2001 and 2011 | Fair health 2001 and bad 2011 | Not good health 2001 and good 2011 | Not good 2011 and fair 2011 | Not good 2001 and not good 2011 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Remains Own Occup | 113919 | 15224 | 2870 | 20803 | 14667 | 3202 | 3714 | 6912 | 5100 | 186411 |
| Own Occup > Soc Rent | 8117 | 1891 | 635 | 1682 | 1452 | 549 | 387 | 825 | 768 | 16306 |
| Own Occup > Priv Rent | 898 | 274 | 80 | 217 | 391 | 98 | 41 | 134 | 126 | 2259 |
| Soc Rent > Own Occup | 5289 | 884 | 273 | 1510 | 990 | 354 | 479 | 637 | 709 | 11125 |
| Remains Soc Rent | 6823 | 2718 | 940 | 2744 | 3608 | 1397 | 807 | 2543 | 3149 | 24729 |
| Soc Rent > Priv Rent | 286 | 198 | 88 | 168 | 368 | 136 | 71 | 267 | 298 | 1880 |
| Priv Rent > Own Occup | 4361 | 447 | 92 | 824 | 381 | 108 | 185 | 194 | 143 | 6735 |
| Priv Rent > Soc Rent | 2643 | 704 | 224 | 873 | 798 | 292 | 247 | 549 | 515 | 6845 |
| Remains Priv Rent | 492 | 88 | 18 | 109 | 132 | 36 | 25 | 63 | 40 | 1003 |
| Total | 142828 | 22428 | 5220 | 28930 | 22787 | 6172 | 5956 | 12124 | 10848 | 257293 |

# Health & Tenure Transitions



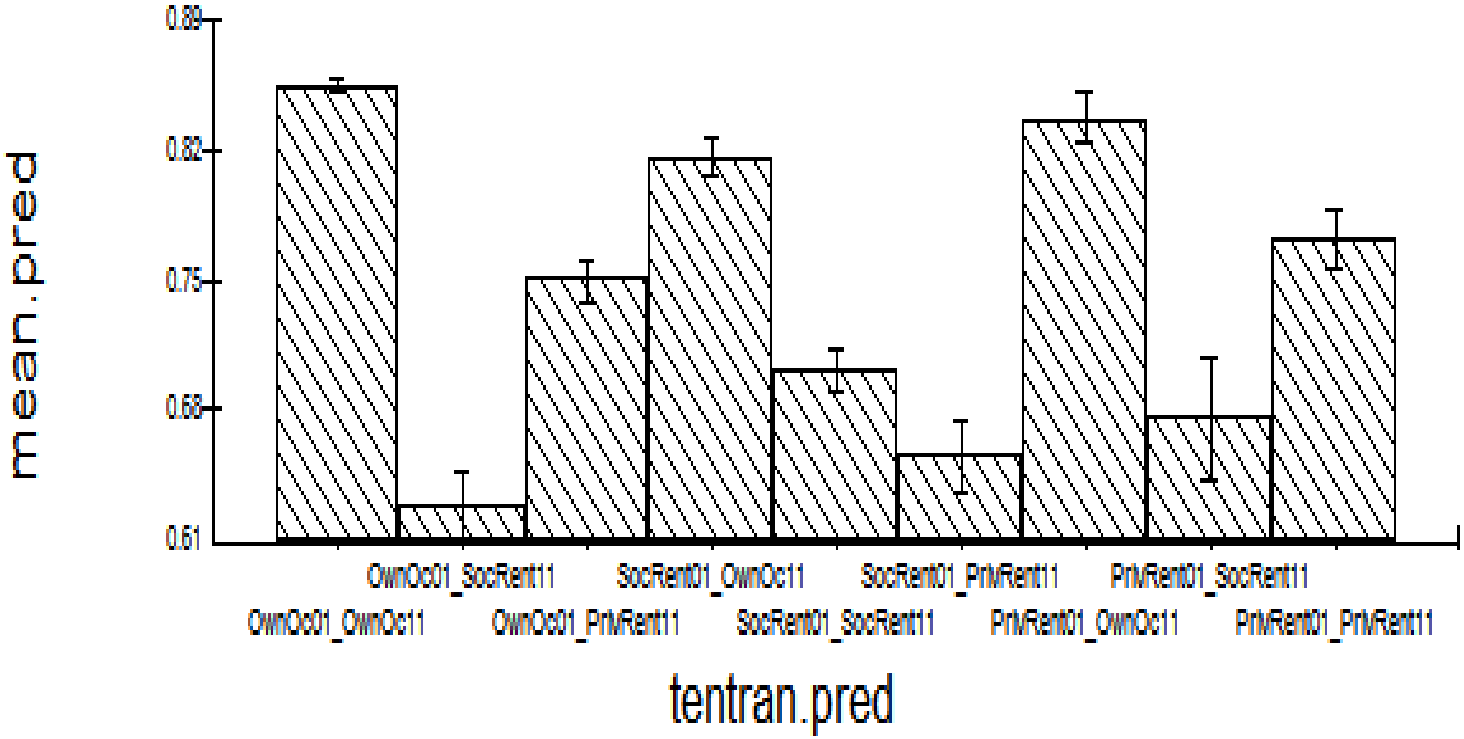
# Modelling Approach

- Restricted set of variables for parsimony
- Multilevel statistical modelling (individuals nested in SOAs)
  - Place difference having taken account socio-demographic characteristics [bit today]
  - Cross-level interactions (individual/household & area effects) – still to do
- An number of logistical regression models treating response as binary outcomes
  - Bad 2001 to Bad 2011; **V Good 2001 to V Good 2011**; Moderate 2001 to Moderate 2011; V Good 2001 to Moderate 2011; V Good 2001 to Bad 2011 etc (9 suites)
  - Also modelling V Good vs Fair/Poor (2011); V Good/Fair vs Poor (2011); with 2001 health as a predictor
  - Considering Multinomial (multivariate) response specification

# Health & Tenure Transitions (Model predictions)

**Example Model**

- Response : probability of transition from good health 2001 to good health 2011
- Having allowed for tenure change
- Also age, sex, education level, community background
- Plus allowed for rates to vary by SOA (small effect, but significant place differences)



# Conclusions

- Other model results reassuring (incl. inclusion of area effects; e.g. deprivation)
  - finding similar/consistent patterns with different specifications of Y-variable
- Seeking to model considerable complexity: transitional states, compositional & contextual, & cross-level
  - Possible because of large & rich variable detail of NILS
- Results are preliminary & analysis is ongoing (this week)
- Age decreases the probability of transiting from bad to good health, and of remaining in good health in 2001 and 2011
- Moves out of owner occupation are associated with transitions to poor self-reported health
- Remaining in social renting in 2001 and 2011 is associated with poorer self-reported general health in 2001 and 2011
- Implications; tenure and spatial mobility (or its lack) linked to social residualisation
- Very keen to share more results later with interested stakeholders

# Acknowledgement

The help provided by the staff of the Northern Ireland Longitudinal Study and the NILS Research Support Unit is acknowledged. The NILS is funded by the Health and Social Care Research and Development Division of the Public Health Agency (HSC R&D Division) and NISRA. The NILS-RSU is funded by the ESRC and the Northern Ireland Government. The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of NISRA/NILS.

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NILS-RSU

Northern Ireland Longitudinal Study Research Support Unit

# Does the Month of Birth affect Educational Success Later in Life?

## An analysis based on Northern Ireland Longitudinal Study (NILS)-Data.

Stefanie Doebler (QUB), Ian Shuttleworth (QUB), Myles Gould (University of Leeds)

Queen's University Belfast

Northern Ireland Statistics & Research Agency

E·S·R·C Economic & Social Research Council

# Background & Literature

There is an array of literature on the effects of the month of birth on educational and labour market outcomes in later life.

**Key Problem:** Because all children born before a certain cut-off date of a school-year are included in the same class, some children are almost a year younger than some of their classmates.

**Research Question:** Does the Month of Birth affect educational success later in life? Are students born closer before the cut-off date educationally disadvantaged?

# Background & Literature

For England and Wales, there is evidence that those born in July and August have poorer educational and labor market outcomes (Crawford, Dearden, and Meghir 2010; Crawford, Dearden, and Meghir 2007; Sprietsma 2010; Black, Devereux, and Salvanes 2010) than those born later in the year.

In England & Wales the school year starts on 1st September.

In Northern Ireland, children born before 30th June are included in the first class of a school year. The school year starts on 1st July.

In the USA it has been suggested that those with winter births experience poorer later outcomes (Buckles et al 2010).

# Motivation:

- The earlier start of the Northern Ireland school year permits a quasi-natural experiment in which Northern Ireland can be contrasted with England & Wales and the robustness of birth month effects to be assessed.

- The NILS, with its large sample size (N = c. 500,000) is an excellent data source to analyze even relatively small groups (pupils by birth-months).

- Also, the longitudinal design of the NILS allows to look at outcomes later in life.

# Caveats:

The school-starting age in Northern Ireland (4 years) differs from England and Wales (5 years). This impairs the comparability of our data with the English and Welsh data.

The literature on England and Wales, and also the majority of studies from the US use educational data (data on test-scores controlling for cognitive ability). Results based on the NILS are not directly comparable to these data.

Intervals between waves: ten years is a long interval. A lot can happen between 2001 and 2011 that we cannot account for.

But Strength: Educational success later in life ('having a degree') is comparable to the abovementioned studies. The NILS offers a large sample to examine this.

# Data & Methods

- **Data:** The Northern Ireland Longitudinal Study (NILS) with Census link for 2001 and 2011.
- **Sample:** all NILS-Members aged 12 to 18 in 2001, and 22 to 28 in 2011.
- Thus in 2001 the respondents are of school-age and living with their parents, and in 2011 can have obtained a degree.
- **N= 36,087**

- **Methods:** bivariate statistics, hierarchical linear & binary logistic Multilevel Modeling

- **Response:** 'Having a Degree in 2011' (binary logistic regression)

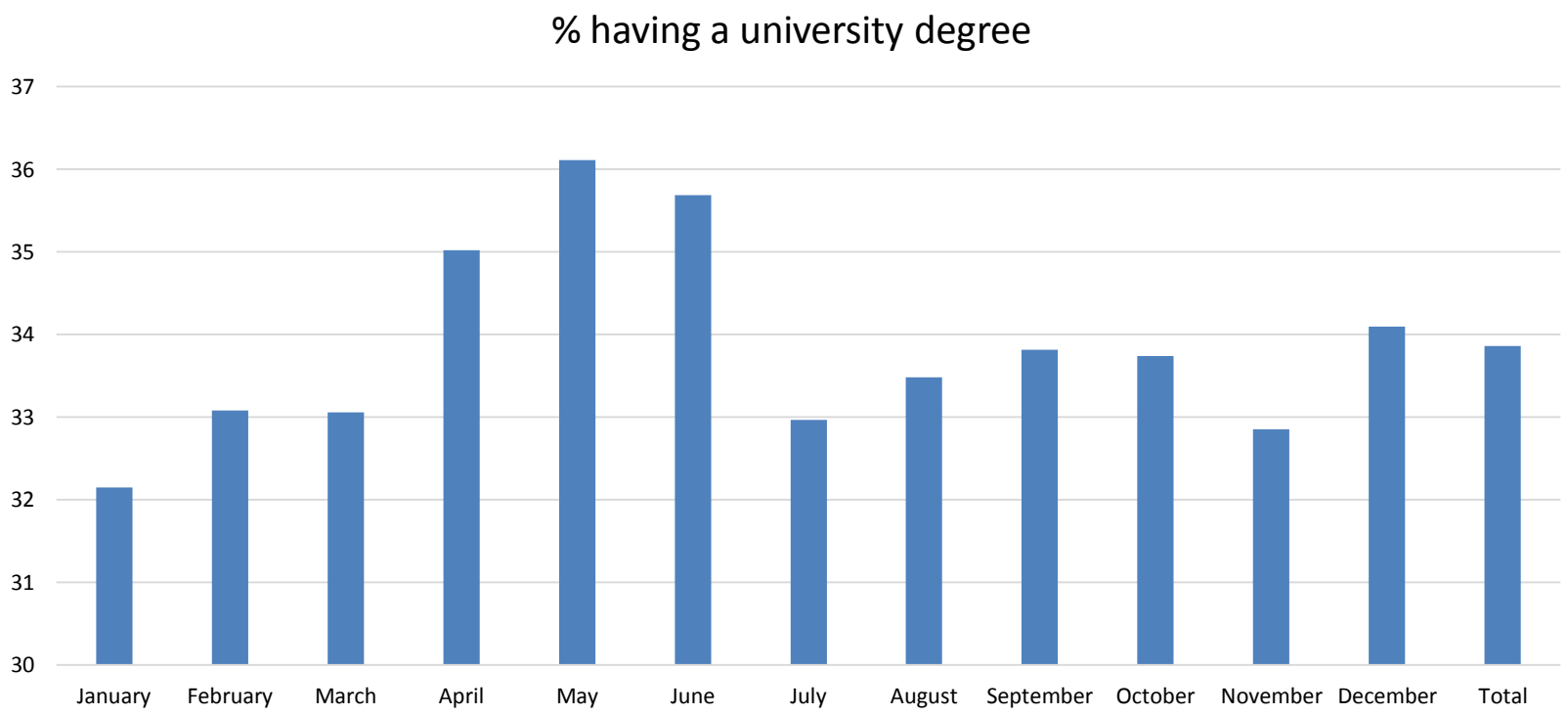
# Design and Strategy

1. Bivariate and Multivariate Analyses across the Sample (everybody aged 16 and older) as a whole in 2011
2. **NILS-Sub-Sample:** Everybody aged 12-18 in 2001 (still living with their parents), the same respondents in 2011, when they are aged 22-28 (and can have obtained at least a first University degree)
3. Response Variable: 'Having a Degree in 2011' (binary logistic multilevel model)

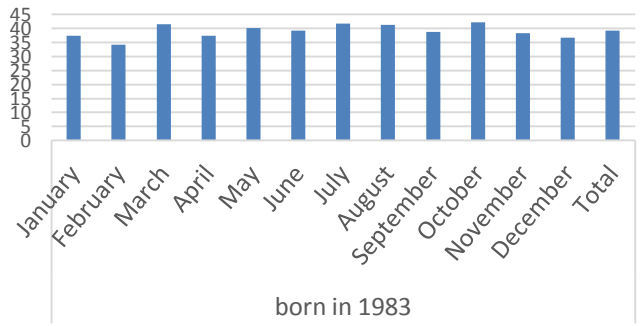
# The Sample:

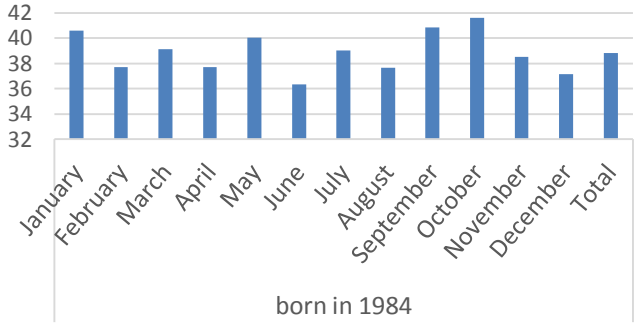
| Birthmonth | N | Percent |
|---|---|---|
| **January** | 3,117 | 8.64 |
| **February** | 2,754 | 7.63 |
| **March** | 3,249 | 9.00 |
| **April** | 2,810 | 7.79 |
| **May** | 3,221 | 8.93 |
| **June** | 3,306 | 9.16 |
| **July** | 2,875 | 7.97 |
| **August** | 3,250 | 9.01 |
| **September** | 3,170 | 8.78 |
| **October** | 2,999 | 8.31 |
| **November** | 2,679 | 7.42 |
| **December** | 2,657 | 7.36 |
| **Total** | 36,087 | 100 |

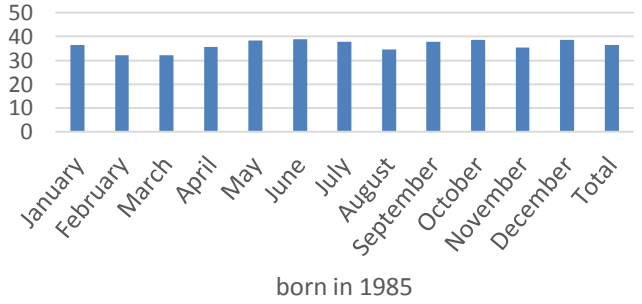
# Findings:

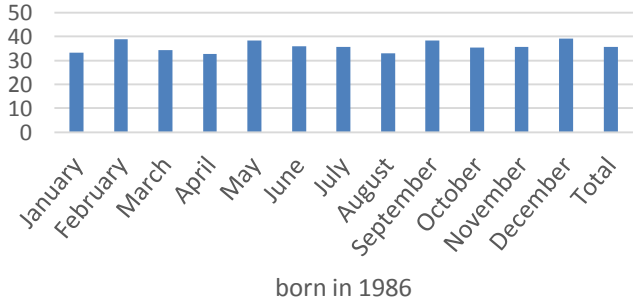

% having a university degree
37
36
35
34
33
32
31
30
January
February
March
April
May
June
July
August
September
October
November
December
Total

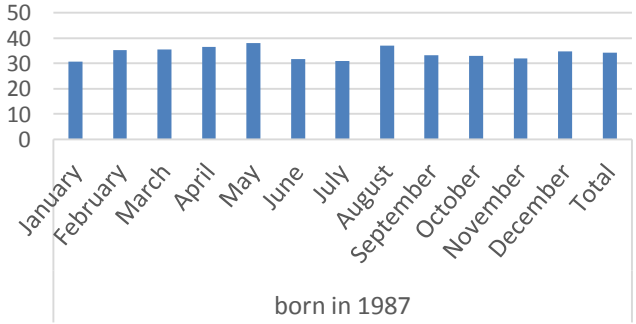
# Percent of Respondents Who have a University Degree by Birth-month and Year

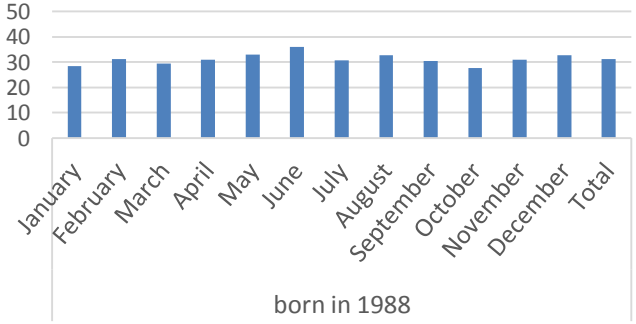


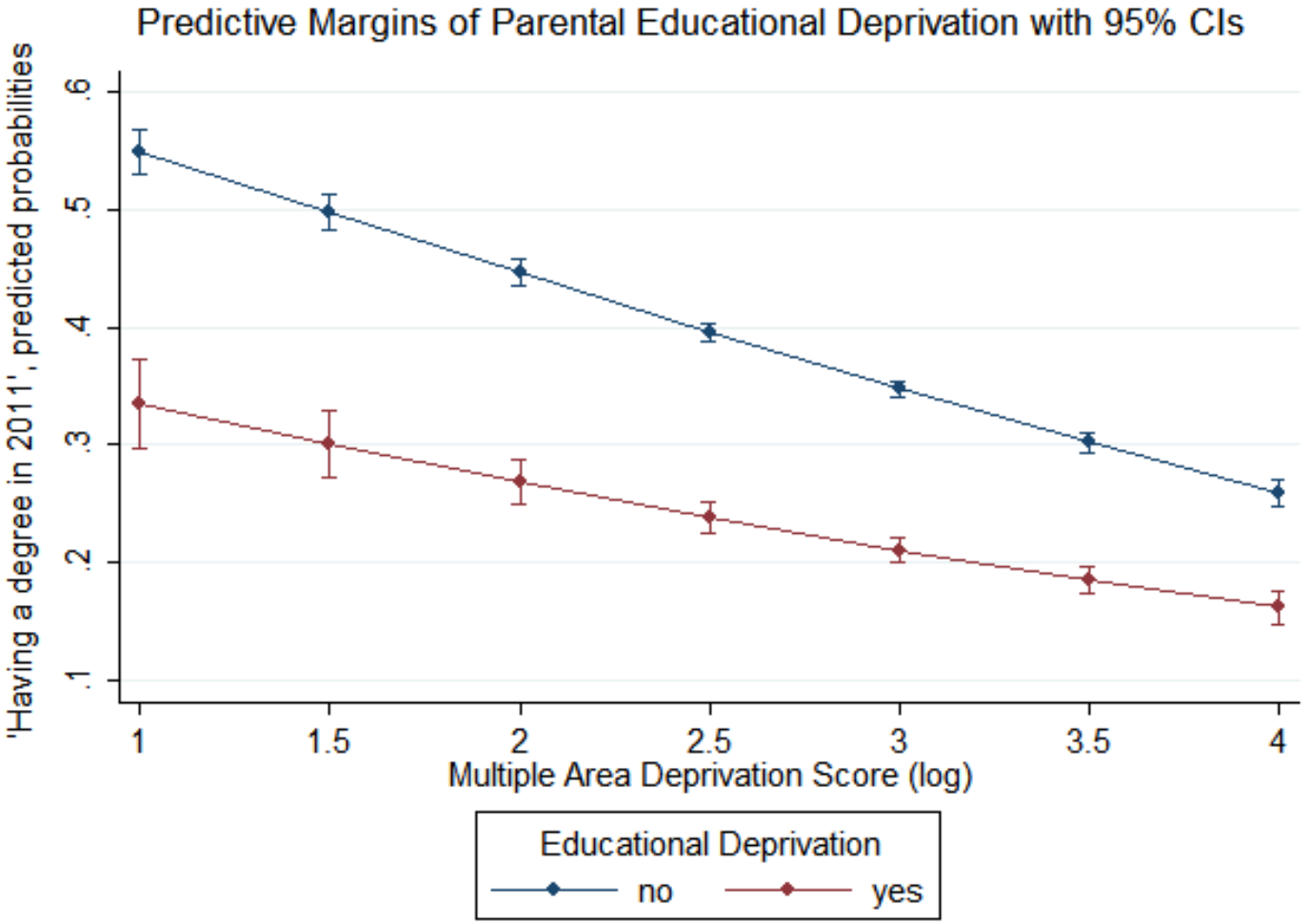



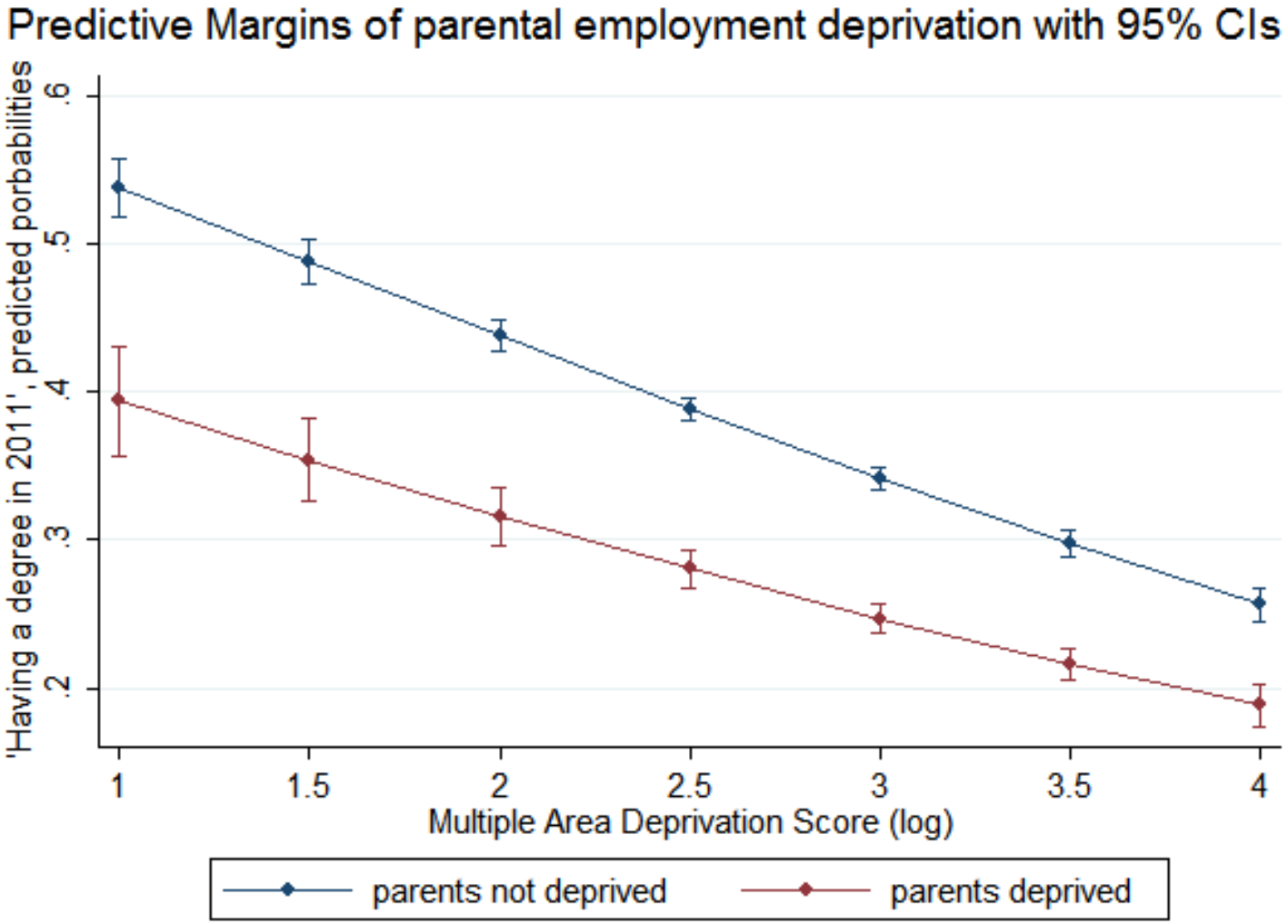
# Binary Logistic Multilevel Model: 'Having a Degree in 2011' on Month of Birth and Controls

| | M1 | | M4 | | M5 | |
|---|---|---|---|---|---|---|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| *Fixed Part* | | | | | | |
| January | -0.099 | 0.058 | -0.082 | 0.06 | -0.079 | 0.06 |
| February | -0.063 | 0.06 | -0.051 | 0.061 | -0.04 | 0.061 |
| March | -0.069 | 0.057 | -0.063 | 0.059 | -0.056 | 0.059 |
| April | 0.01 | 0.059 | 0.051 | 0.061 | 0.053 | 0.061 |
| May | 0.072 | 0.057 | 0.109 | 0.059 | 0.111 | 0.059 |
| June | 0.064 | 0.057 | 0.096 | 0.059 | 0.099 | 0.058 |
| July | -0.086 | 0.059 | -0.064 | 0.061 | -0.062 | 0.061 |
| August | -0.038 | 0.057 | -0.022 | 0.059 | -0.013 | 0.059 |
| September | -0.032 | 0.058 | -0.003 | 0.059 | -0.002 | 0.059 |
| October | -0.028 | 0.058 | 0.007 | 0.06 | 0.016 | 0.06 |
| November | -0.09 | 0.06 | -0.08 | 0.062 | -0.069 | 0.062 |
| Sex: female | | | 0.626*** | 0.024 | 0.631*** | 0.024 |
| Age | | | 0.090*** | 0.006 | 0.091*** | 0.006 |
| Parents divorced/separated | | | -0.613*** | 0.036 | -0.560*** | 0.036 |
| House-owner | | | 0.310*** | 0.031 | 0.312*** | 0.031 |
| Parental Deprivation: Education | | | -0.764*** | 0.034 | -0.729*** | 0.033 |
| Parental Deprivation: Employment | | | -0.557*** | 0.03 | -0.489*** | 0.030 |
| Area: Multiple Deprivation Score | | | | | -0.421*** | 0.021 |
| Constant | -0.677*** | 0.046 | -3.590*** | 0.169 | -2.466*** | 0.175 |
| Level2-Variance | 0.529*** | 0.046 | 0.403** | 0.047 | 0.266*** | 0.069 |
| N | 36087 | | 36087 | | 36087 | |

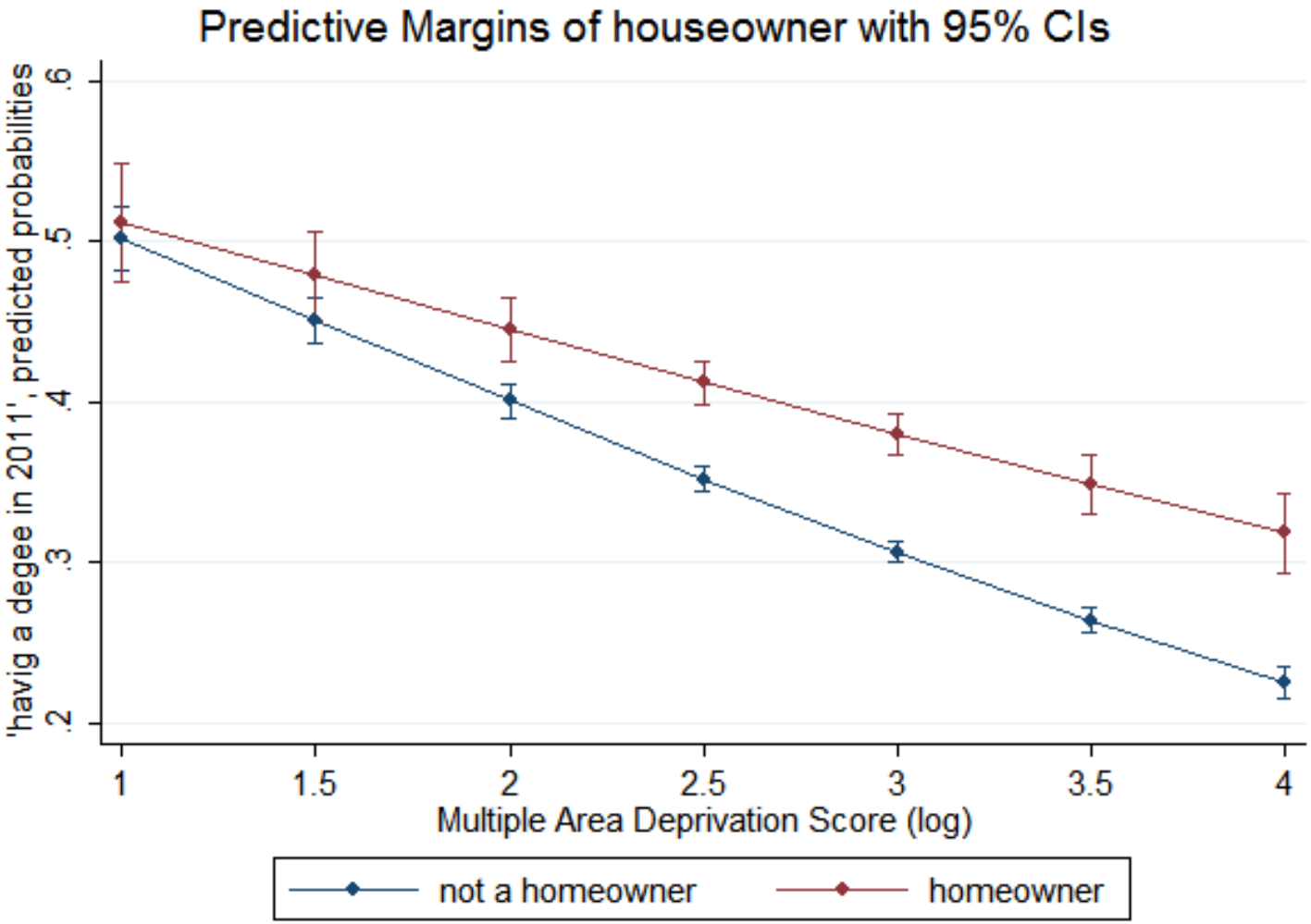
# Some Cross-Level Interactions:



# Some Cross-Level Interactions:



# Some Cross-Level Interactions:



# Conclusions

- In Northern Ireland the month of birth does not have a (substantially or statistically) significant effect on the likelihood of having obtained a degree later in life.
- Thus, our data do not confirm the hypothesis of a long-term educational disadvantage.

- The same analysis was carried out for 'having obtained A-levels', with the same result.

- What matters for tertiary educational outcomes are parental (material, educational and employment) deprivation, having separated/divorced parents, and area-deprivation.

- Future analyses should focus on these factors.

# Acknowledgement

The help provided by the staff of the Northern Ireland Longitudinal Study and the NILS Research Support Unit is acknowledged. The NILS is funded by the Health and Social Care Research and Development Division of the Public Health Agency (HSC R&D Division) and NISRA. The NILS-RSU is funded by the ESRC and the Northern Ireland Government. The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of NISRA/NILS.

**NILS-RSU Contact Details:**

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# References


Black, Sandra E., Paul J. Devereux, and Kjell G. Salvanes. 2010. “Too Young to Leave the Nest? The Effects of School Starting Age.” *Review of Economics and Statistics* 93 (2) (August 5): 455–467. doi:10.1162/REST_a_00081.

Crawford, Claire, Lorraine Dearden, and Costas Meghir. 2007. *When You Are Born Matters. The Impact of Date of Birth on Child Cognitive Outcomes in England*. London: Centre for the Economics of Education, London School of Economics.

———. 2010. “When You Are Born Matters: The Impact of Date of Birth on Educational Outcomes in England”. 10,06. IFS working papers. http://www.econstor.eu/handle/10419/47462.

Sprietsma, Maresa. 2010. “Effect of Relative Age in the First Grade of Primary School on Long-term Scholastic Results: International Comparative Evidence Using PISA 2003.” *Education Economics* 18 (1): 1–32. doi:10.1080/09645290802201961.

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Northern Ireland Longitudinal Study
Research Support Unit

# Tea/Coffee Break

Queen's University Belfast

Northern Ireland Statistics & Research Agency

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Northern Ireland Longitudinal Study
Research Support Unit

# CALLS Hub and the SPiNe

Professor Allan Findlay

University of St Andrews

Queen's University Belfast

Northern Ireland Statistics & Research Agency

E·S·R·C Economic & Social Research Council

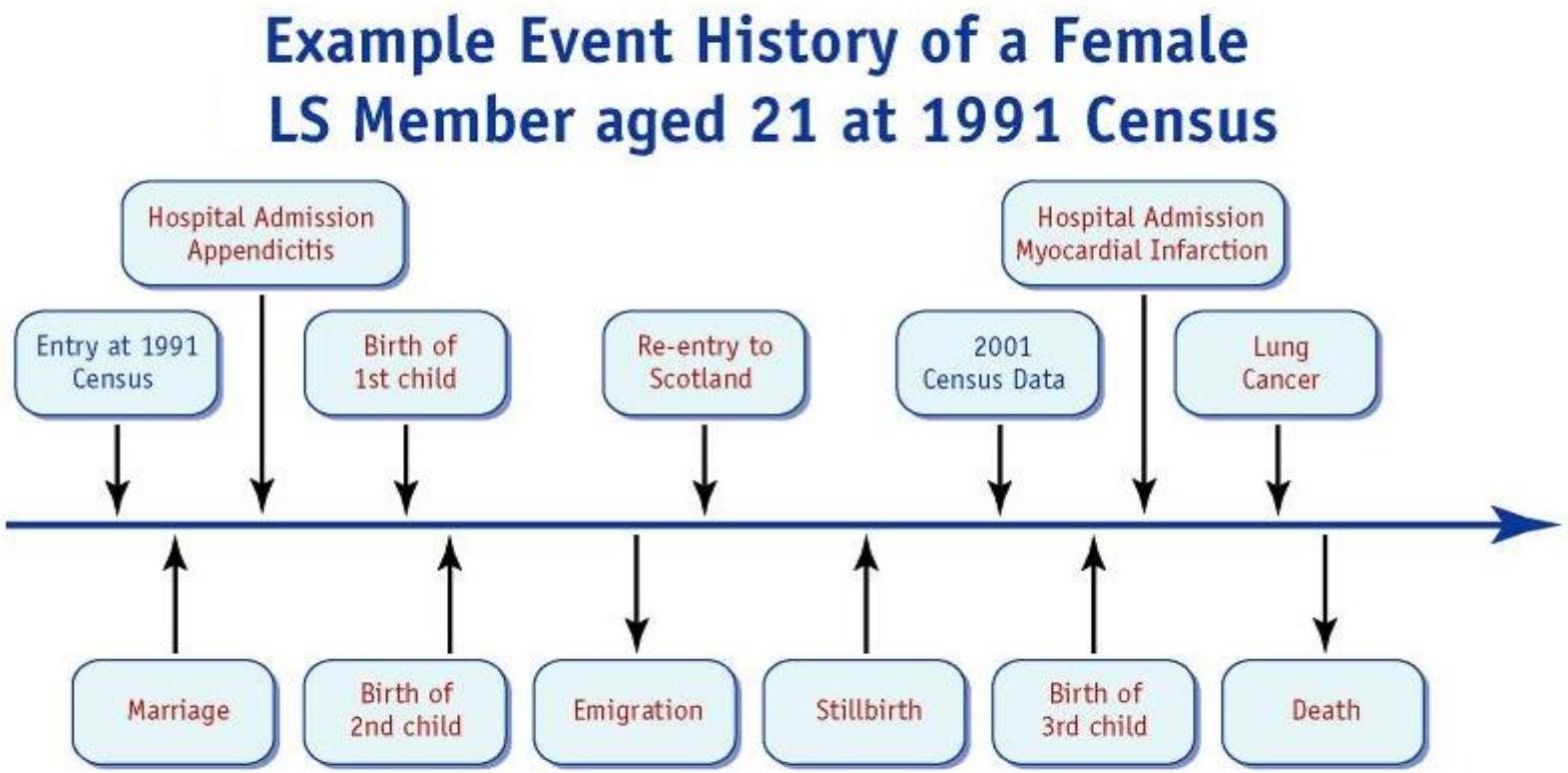
# Introduction

- Thinking longitudinally
- The purpose of CALLS Hub –

  (Census and Administrative Data LongitudinaL Studies Hub)
- Introduction to SPiNe

  (Science and Policy Network)

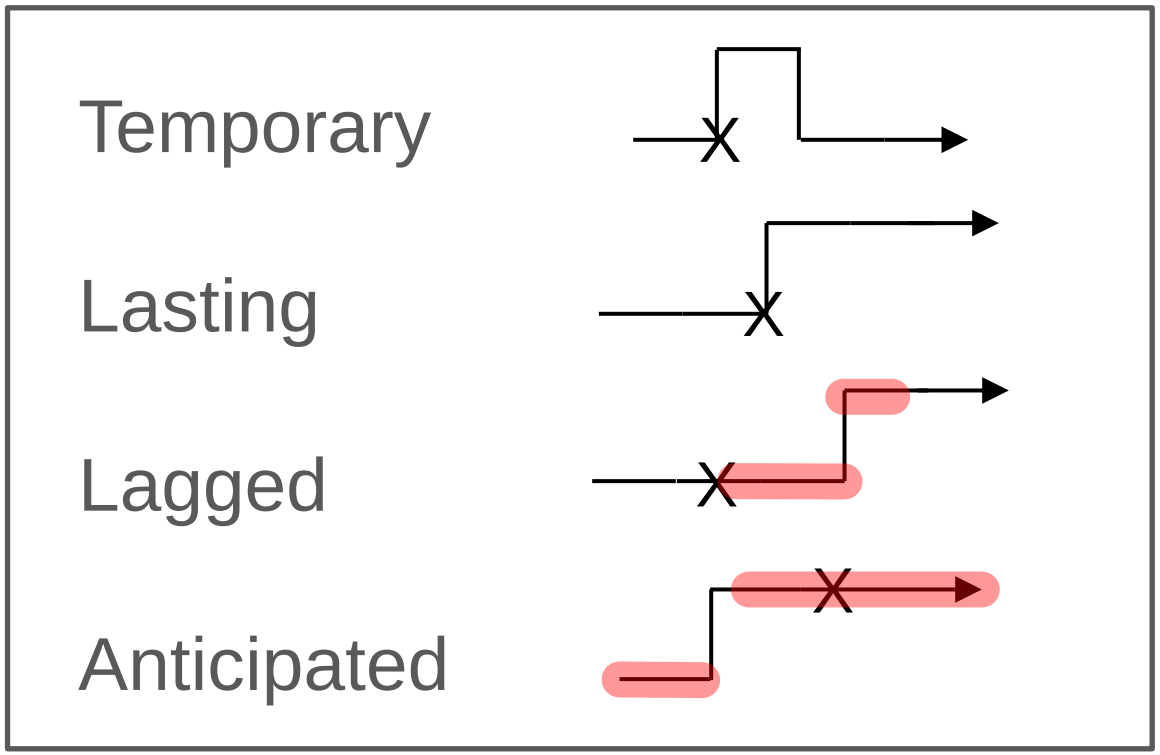
# Lives linked over time




The key feature of longitudinal studies is that one uses data for **the same individual for multiple points in time**. The events may be from different data sets. It is a good way to investigate features such as social change or health change over time.

# Longitudinal Effects

- Age
- Period
- Cohort



# Aims of Census and Administrative data Longitudinal Studies Hub – CALLS Hub

- One stop shop – information and advice
- Data dictionary
- Examples of uses of the LS's – impact
- Establish and engage with a Science and Policy Network
- Help with running UK level analysis

# Aims of Census and Administrative data Longitudinal Studies Hub – CALLS Hub

- Data dictionary – Harmonization of variables
- Help with running UK level analysis

# High impact Publications

**No. Citations**

THE LANCET

The Lancet, Volume 349, Issue 9066, Pages 1655 - 1659, 7 June 1997
doi:10.1016/S0140-6736(96)07226-1 Cite or Link Using DOI

< Previous Article | Next Article >

**Socioeconomic inequalities in morbidity and mortality in western Europe**

Prof Johan P Mackenbach PhD, Anton E Kunst MA, Adriënne EJM Cavelaars MSc, Feikje Groenhof MA, José JM Geurts MSc, EU Working Group on Socioeconomic Inequalities in Health

508

American Journal of PUBLIC HEALTH

A E Kunst and J P Mackenbach. The size of mortality differences associated with educational level in nine industrialized countries. American Journal of Public Health June 1994: Vol. 84, No. 6, pp. 932-937.
doi: 10.2105/AJPH.84.6.932

**The size of mortality differences associated with educational level in nine industrialized countries.**

**A E Kunst, and J P Mackenbach**

223

BMJ Helping doctors make better decisions

PAPER

**Higher mortality in deprived areas: community or personal disadvantage?**

*BMJ* 1994; 309 doi: http://dx.doi.org/10.1136/bmj.309.6967.1470 (Published 3 December 1994)
**Cite this as:** *BMJ* 1994;309:1470

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PAPER

**Occupational class and cause specific mortality in middle aged men in 11 European countries: comparison of population based studiesCommentary: Unequal inequalities across Europe**

*BMJ* 1998; 316 doi: http://dx.doi.org/10.1136/bmj.316.7145.1636 (Published 30 May 1998)
**Cite this as:** *BMJ* 1998;316:1636

207

Transactions OF THE INSTITUTE OF BRITISH GEOGRAPHERS Royal Geographical Society with IBG

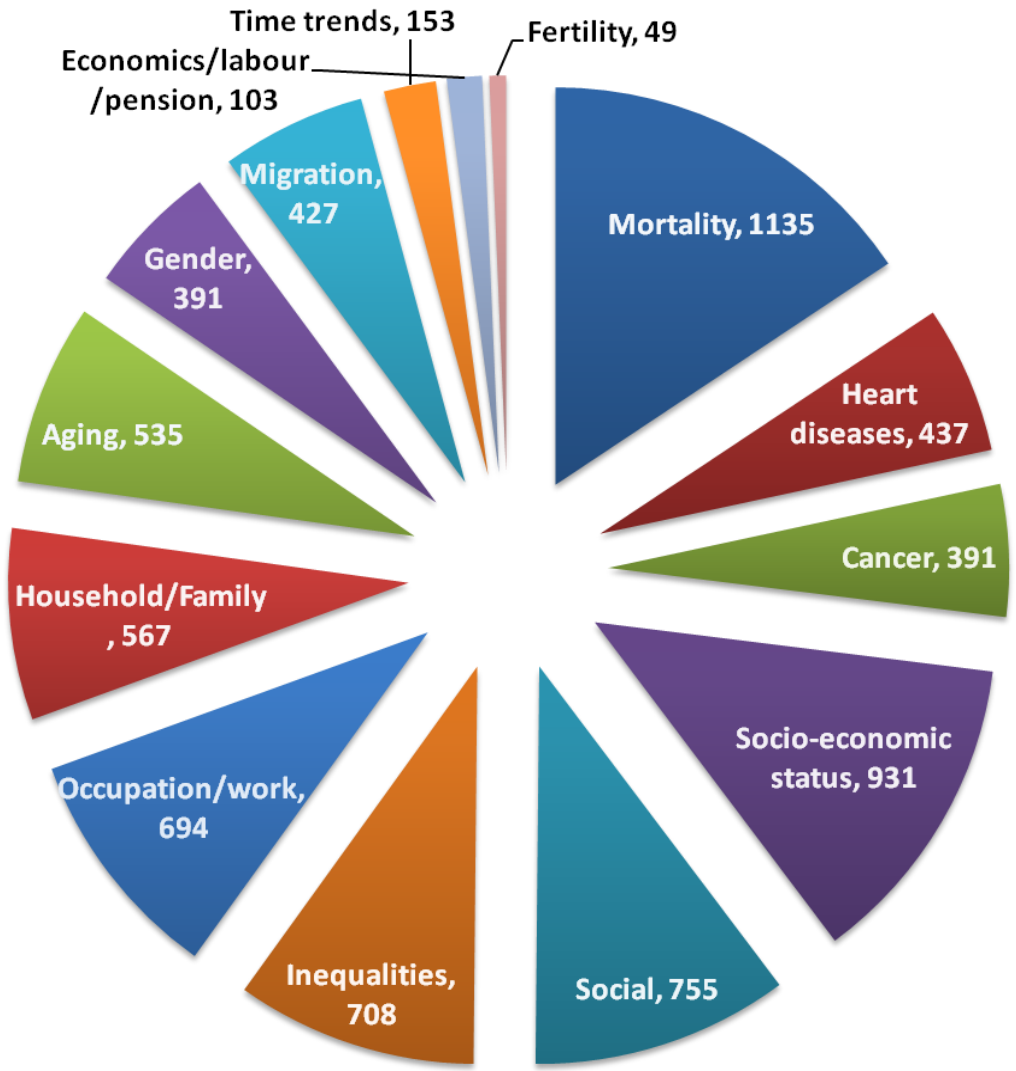
**Does Britain have ghettos?** Peach,
*C 1996 Volume: 21 Issue: 1 Page: 216 -235*

187



NILS-RSU

# Citations of ONS LS research



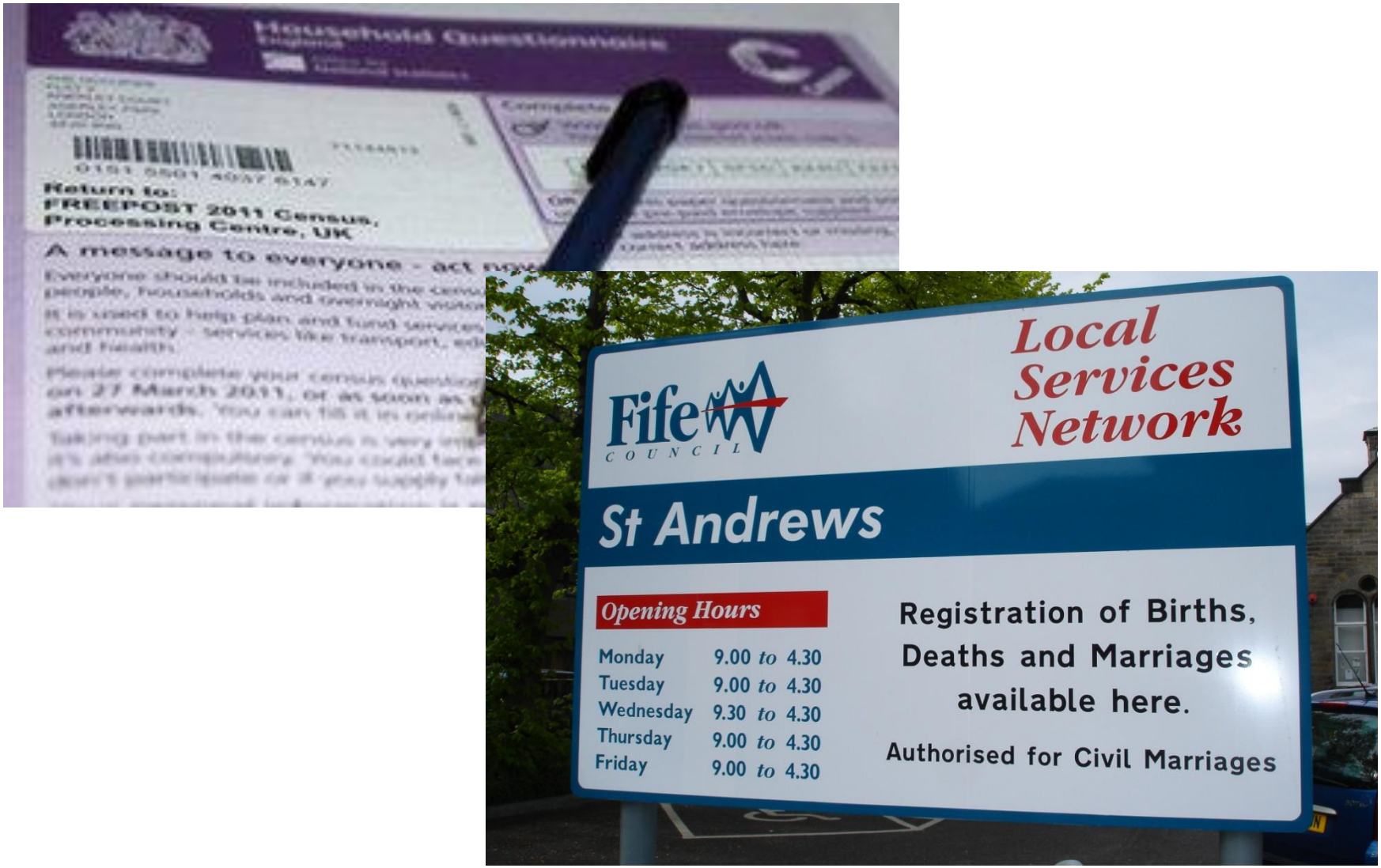
# Impact from the LSs – E&W LS

- Data from the ONS LS has a long history of use in Gov reviews and enquiries, e.g.:
  - Dilnot Commission (2011)
  - Marmot Review (2010)
  - Turner Commission (2005)
- DH and DWP: LS-based statistics are key to their work on pension projections

# Impact from the LSs – NILS

- O'Reilly, QUB with Director of Screening Services (NI Public Health Agency) - Breast Screening uptake project
  - PI invited to join the NI PHA Screening Planning and Review Group
- Shuttleworth, QUB work on internal migration, social deprivation and religion in Northern Ireland:
  - Led to advice to Community Relations Council, NI Assembly and NI Office

# Potential developments and data linkages in the LSs

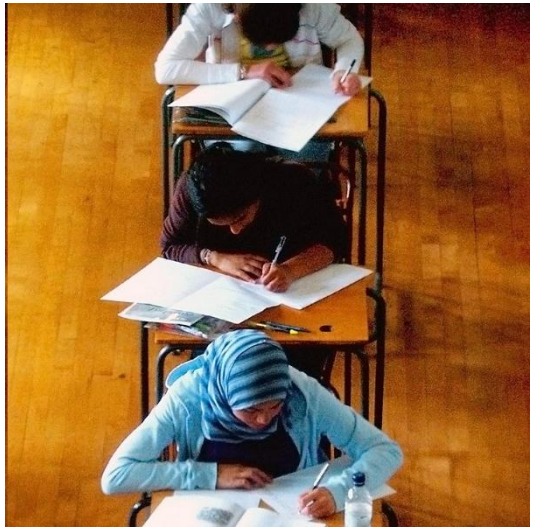

Household Questionnaire
Return to:
FREEPOST 2011 Census,
Processing Centre, UK
A message to everyone - act now
Fife
COUNCIL
Local
Services
Network
St Andrews
Opening Hours
Monday 9.00 to 4.30
Tuesday 9.00 to 4.30
Wednesday 9.30 to 4.30
Thursday 9.00 to 4.30
Friday 9.00 to 4.30
Registration of Births,
Deaths and Marriages
available here.
Authorised for Civil Marriages

# Hospital data

- In patient stays
- Mental health
- Violence – knife injury
- Drug misuse
- Child health surveillance systems
- Prescribing data

# Education data in Scotland

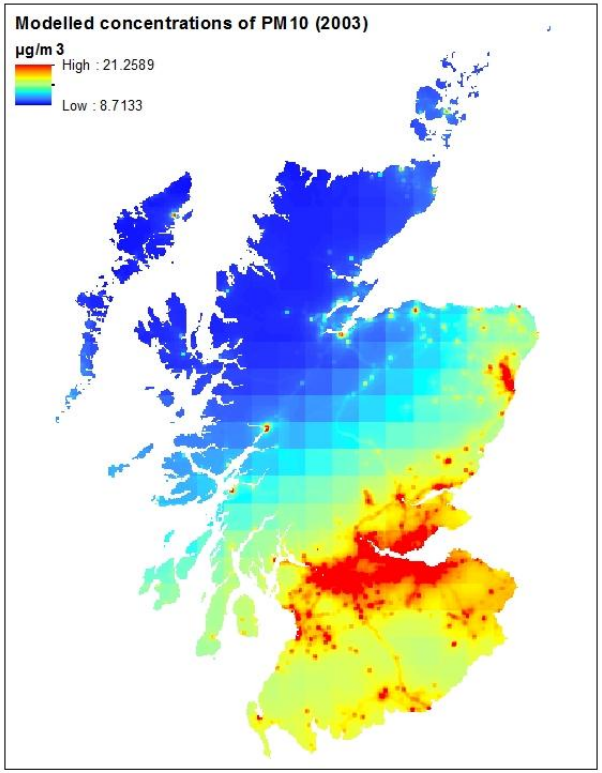
- Attendance/Absence
- Exclusions
- Attainment



- School census
  - Main difficulty in learning
  - Free school meals registered
  - Individual educational programme (IEP)
  - Records of needs (RON)
  - English as a second language

# Ecological data

- Pollution data
  - CO, NO, $SO_2$, $O_3$
  - Particulate matter
- Weather data
  - Temp, frost, sunshine, precipitation, clouds



# SPiNe

- CALLS Hub Science & Policy Network
- Aims
  - to expand the traditional body of LS data users, to include a wider range of interest groups
  - to expand the range of research themes being explored using LS data
  - to help guide future data developments

# SPiNe

- We aim to include
  - Existing and additional academic users
  - Local and national government users
  - Think tank analysts
  - Voluntary sector researchers
- We see mutual benefits
  - New users for LS RSUs
  - Advice and expertise to members

# SPiNe

- Research Working Groups
  - Clusters of researchers interested in particular issues
  - Support for data access
  - Production of impartial reports

# Thank you

For more information visit:

calls.ac.uk

NILS-RSU

Northern Ireland Longitudinal Study Research Support Unit

# **SY**nthetic data estimation for the UK **L**ongitudina**L** **S**tudies - **SYLLS**

Dr Adam Dennett

Queen's University Belfast

Northern Ireland Statistics & Research Agency

E·S·R·C Economic & Social Research Council

# Outline

- What is SYLLS and why is it important?
- Our approach
  - The National Synthetic Data Spine
  - Individual Bespoke Synthetic Data

# What is SYLLS?

- A project to generate synthetic versions of the national LSs which look and behave like the real thing, but are not subject to the same access restrictions

# Why do we need synthetic data?

- ONS LS, Scottish LS and Northern Ireland LS are an unparalleled resource for social science research in the UK
- But compared to other Census data products, we have a small user base (although larger teams than number of researchers)

| Census Data product | Unique users 2013 |
|---|---|
| ONS LS | 62 (open projects) 46 (active) |
| Flow data* | 616 |
| Aggregate data (Casweb)* | 5781 |
| Boundary data* | 2873 |
| *data from Q4 2012, Q3 2013 Census Support Service | |

# Why a relatively small user base?

| Route to accessing flow data | Route to accessing ONS LS data |
|---|---|
| 1. Formulate research question | 1. Formulate research question |
| 2. Turn on computer | 2. Turn on computer |
| 3. Go to cider.census.ac.uk | 3. Go to ucl.ac.uk/celsius |
| 4. Log on to WICID (now open access) | 3. Download customer request form, data access agreement and approved researcher form |
| 5. Choose your data | 4. Fill out forms and submit for approval |
| 6. Download to your own computer and analyse with preferred software | 5. Wait for approval from LS research board |
| 7. Repeat as necessary | 6. Attend safe researcher certification course |
| | 7. Ask research support officer to build your dataset from LS database |
| | 8. Hop on train to London, Newport or Titchfield to attend VML |
| | 9. Carry out analysis on VML terminal with old, slow software |
| | 10. Ask for intermediate outputs to be cleared |
| | 11. Seek final output clearance from LS research board |
| | 12. Repeat as necessary |

# Why such a small user base?

- Complex data (compared to other cross-sectional Census data products)
- Lack of exposure early in academic careers
- These are not ‘hands on’ data

# Why do we need synthetic data?

- Access LS-like data on own computer
  - Iteratively refine research ideas, update analysis code etc.
- Use data in teaching and expose social science students to longitudinal data early in their research careers
- A UK longitudinal study dataset
- Methodological innovation for UK Census microdata – beyond 2011 agenda

# Our approach

- Two project streams:
  - **National Synthetic LS Data Spine**
    - Adam Dennett, Belinda Wu, Nicola Shelton, Mike Batty and Rachel Stuchbury (UCL)
  - **Bespoke Synthetic Datasets**
    - Chris Dibben, Gillian Raab and Beata Nowok (Edinburgh)
- Ian Shuttleworth and Tony Gallagher also project partners (Queen's Belfast)

# National Synthetic Data Spine

- Aims:
  - To create a core ‘spine’ dataset which:
    - Contains the same number of individuals (E&W 500,000 people + Scot 274,000 people + NI 500,000 people) as are in the LSs across 1991 > 2001 Censuses
    - Has variable distributions which match those in the LS data for Age, Sex, Ethnicity, Limiting Long Term Illness, Marital Status, Births and Deaths
    - And has accurate spatial distributions of these individuals and their characteristics at the 1991 county district level
    - Has accurate state transitions of individuals from 1991 to 2001 at ‘91CD level

# National Synthetic Data Spine

- Our method: Spatial Microsimulation

1. Take sample population from (publicly available) 1991 Individual SAR
2. Update values for SAR individuals according to LS distributions at county district level
3. Using transition probabilities from 1991 to 2001 (taken from LS data), age 1991 individuals on to 2001.
4. Finish with a full set of microdata records for all individuals in UK, with accurate transitions between 1991 and 2001 and accurate spatial distributions for 8 core variables

# Synthetic Spine Data

1991

| UID | AREAP | ETHGROUP | LTILL | MSTATUS | SEX | agegroup | age | death | birth |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 5 | 2 | 1 | 2 | 0 | 0 | 0 | -9 |
| 2 | 1 | 5 | 2 | 1 | 2 | 0 | 0 | 0 | -9 |
| 30 | 1 | 5 | 2 | 1 | 2 | 0 | 0 | 0 | -9 |
| 31 | 1 | 5 | 2 | 1 | 2 | 0 | 0 | 0 | -9 |
| 32 | 1 | 1 | 2 | 1 | | | | | |
| 33 | 1 | 1 | 2 | 1 | | | | | |
| 34 | 1 | 1 | 2 | 1 | | | | | |
| 1871 | 1 | 1 | 1 | 4 | | | | | |
| 1872 | 1 | 1 | 1 | 4 | | | | | |
| 1873 | 1 | 1 | 1 | 4 | | | | | |
| 1874 | 1 | 1 | 1 | 4 | | | | | |
| 1875 | 2 | 6 | 2 | 1 | | | | | |
| 1876 | 2 | 6 | 2 | 1 | | | | | |
| 1877 | 2 | 6 | 2 | 1 | | | | | |

2001

| UID | AREAP | ETHGROUP | LTILL | MSTATUS | SEX | agegroup | age | death | birth |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 5 | 2 | 1 | 2 | 1 | 0 | 0 | -9 |
| 2 | 1 | 5 | 2 | 1 | 2 | 1 | 0 | 0 | -9 |
| 30 | 1 | 5 | 2 | 1 | 2 | 1 | 0 | 0 | -9 |
| 31 | 1 | 5 | 2 | 1 | 2 | 1 | 0 | 0 | -9 |
| 32 | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 1 | -9 |
| 33 | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 1 | -9 |
| 34 | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 1 | -9 |
| 1871 | 1 | 1 | 1 | 4 | 2 | 10 | 92 | 0 | -9 |
| 1872 | 1 | 1 | 1 | 4 | 2 | 10 | 92 | 0 | -9 |
| 1873 | 1 | 1 | 1 | 4 | 2 | 10 | 92 | 0 | -9 |
| 1874 | 1 | 1 | 1 | 4 | 2 | 10 | 92 | 0 | -9 |
| 1875 | 2 | 6 | 2 | 1 | 1 | 1 | 0 | 0 | -9 |
| 1876 | 2 | 6 | 2 | 1 | 1 | 1 | 0 | 0 | -9 |
| 1877 | 2 | 6 | 2 | 1 | 1 | 1 | 0 | 0 | -9 |

# National Synthetic Data Spine

- National Synthetic Spine almost complete:
  - Bespoke Spatial Microsimulation Software finished
  - E&W 1991-2001 static data complete, longitudinal linkage almost there
  - Scotland 1991-2001 almost complete
  - NI in progress

# Synthetic Spine Release Plans

- Currently in conversation with ONS, NRS and NISRA, but plans are for:
  - Open Access
  - Available through CALLS Hub and national research support units

- Completed software means potential for 2011 linkage in the future

# Bespoke Synthetic Datasets

- Aims:
  - To develop a methodology and accompanying software which will allow the swift generation of statistically representative, but completely synthetic, versions of data requests submitted to the national LS Research Support Units
  - To make some bespoke synthetic datasets available for teaching, subject to disclosure control.

# Bespoke Synthetic Datasets

- Our method: Conditional Simulation Models

1. Take a data extract from one of the national LS datasets
2. Sequentially generate synthetic data from fitted conditional models
3. Final result is a completely synthetic representation of the joint distribution (if the models are true)

# synthpop

- synthpop package developed in R
- Structure is based on the ‘mice’ multiple imputation package
- Range of parametric and non-parametric (classification and regression trees) options for data synthesis
- Allows for data rules, e.g. no married children
- Models missing data to produce missing data patterns like the real data

# Synthetic Tabulation

| | sex | age | edu | marital | incomenm | ls | wkabint | wkabintdur |
|---|---|---|---|---|---|---|---|---|
| false data | MAN | 81 | PRIMARY/NO EDUCATION | MARRIED | 1500 | PLEASED | NO | MISS/NA |
| false data | MAN | 54 | VOCATIONAL/GRAMMAR | MARRIED | 1700 | PLEASED | NO | MISS/NA |
| false data | WOMAN | 32 | VOCATIONAL/GRAMMAR | DIVORCED | 870 | MIXED | NO | MISS/NA |
| false data | WOMAN | 61 | PRIMARY/NO EDUCATION | MARRIED | 800 | MOSTLY DISSATISFIED | NO | MISS/NA |
| false data | WOMAN | 50 | PRIMARY/NO EDUCATION | MARRIED | NA | MOSTLY SATISFIED | NO | MISS/NA |
| false data | WOMAN | 37 | VOCATIONAL/GRAMMAR | MARRIED | 158 | PLEASED | NO | MISS/NA |
| false data | MAN | 28 | VOCATIONAL/GRAMMAR | MISS/NA | 1500 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | WOMAN | 62 | PRIMARY/NO EDUCATION | MARRIED | 830 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | MAN | 78 | PRIMARY/NO EDUCATION | MARRIED | 1200 | PLEASED | NO | MISS/NA |
| false data | WOMAN | 29 | SECONDARY | MARRIED | 580 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | MAN | 59 | PRIMARY/NO EDUCATION | MARRIED | 1300 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | MAN | 41 | SECONDARY | UNMARRIED | 1500 | MIXED | NO | MISS/NA |
| false data | MAN | 58 | SECONDARY | MARRIED | -8 | PLEASED | NO | MISS/NA |
| false data | WOMAN | 73 | PRIMARY/NO EDUCATION | WIDOW(ER) | 1350 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | WOMAN | 70 | SECONDARY | WIDOW(ER) | 1313 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | MAN | 54 | VOCATIONAL/GRAMMAR | UNMARRIED | 800 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | WOMAN | 74 | PRIMARY/NO EDUCATION | MARRIED | 1300 | MOSTLY SATISFIED | NO | MISS/NA |
| false data | WOMAN | 48 | POST-SECONDARY AND HIGHER | MARRIED | 1500 | MOSTLY SATISFIED | NO | MISS/NA |

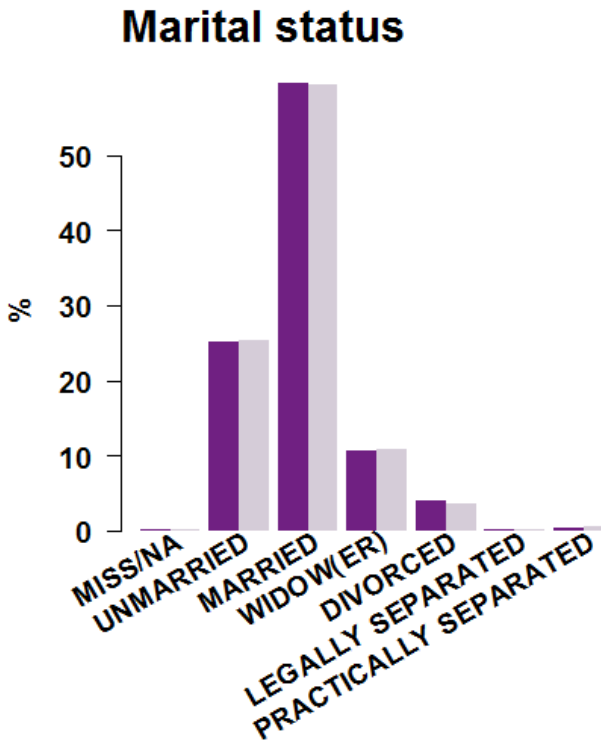
| sex | age | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| WOMAN | 57 | VO( | | | | | | |
| MAN | 20 | VO( | | | | | | |
| WOMAN | 18 | VO( | | | | | | |
| WOMAN | 78 | PRI | | | | | | |
| WOMAN | 54 | VO( | | | | | | |
| MAN | 20 | | | | | | | |
| WOMAN | 39 | | | | | | | |
| MAN | 39 | | | | | | | |
| WOMAN | 43 | | | | | | | |
| WOMAN | 63 | | | | | | | |
| WOMAN | 38 | VO( | | | | | | |
| WOMAN | 73 | VO( | | | | | | |
| WOMAN | 54 | | | | | | | |
| MAN | 30 | VO( | | | | | | |
| MAN | 68 | | | | | | | |
| MAN | 61 | PRIMARY/NO EDUCATION | MARRIED | -8 | MIXED | NO | MISS/NA | |
| MAN | 84 | PRIMARY/NO EDUCATION | UNMARRIED | 2000 | PLEASED | NO | MISS/NA | |
| WOMAN | 87 | SECONDARY | DIVORCED | 1400 | MIXED | NO | MISS/NA | |

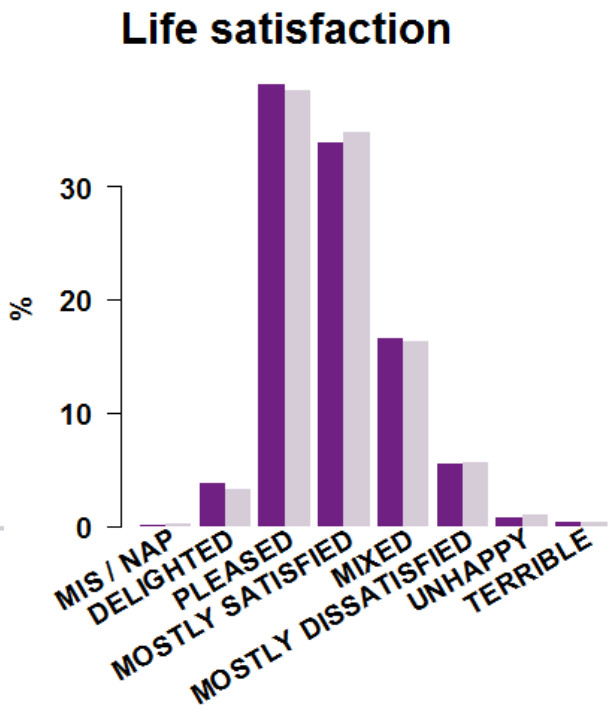
# synthpop

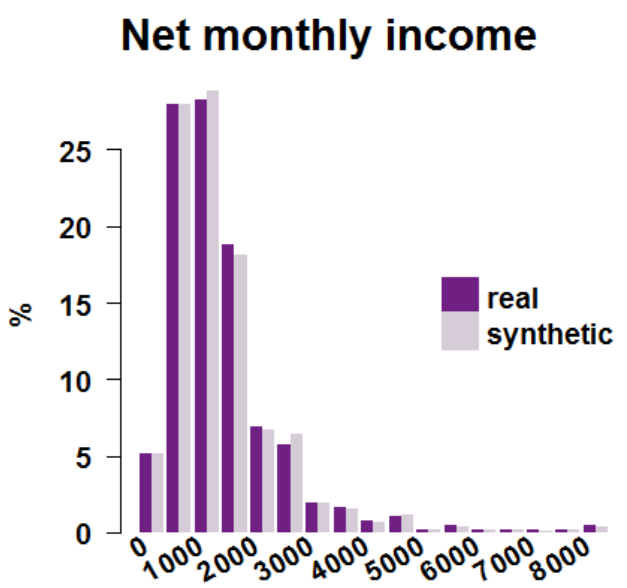
**R code to synthesise:** test <- syn(data)

**And compare to real data:** compare.synds(test, data)

**Produces the plots below**



# synthpop

**R code to synthesise:**

test <- syn(data, m=10)

**Fit to synthetic data:**

fit.test <- glm.synds(wkabint~ sex+age+edu+log(incomenm), object=test, family="binomial")

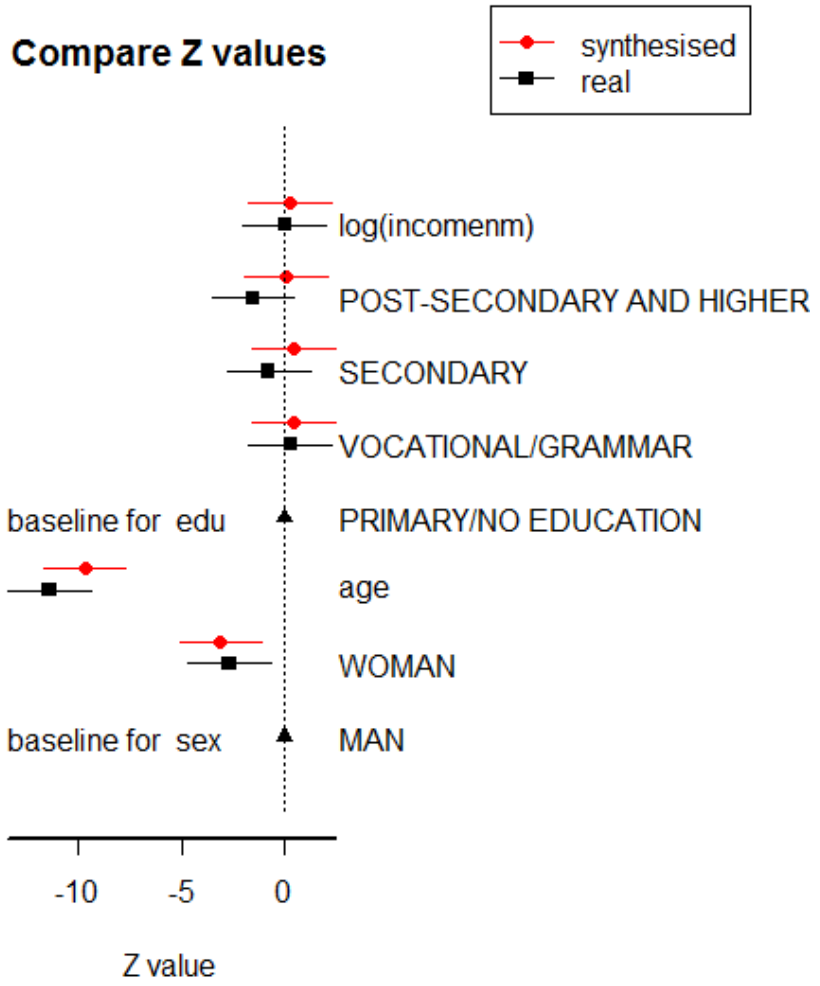
**And compare to fit for real data:**

compare.fit.syn(fit.test, data, plot="Z")

**Produces plot on RHS**

Young men more likely to intend to work abroad – other factors don't matter

Same conclusion from synthetic data



# synthpop

- synthpop produces fully synthetic datasets which closely resemble the real longitudinal microdata
- Users who submit project proposals will be able to request synthetic datasets for personal research purposes

# SYLLS

- When can we access SYLLS data?
  - Spine dataset(s) available soon (end of June) via CALLS and RSUs

CALLS-HUB

Census & Administrative data LongitudinaL Studies Hub

Home | About | Support Units | Outputs | Guides & Resources | News | Events | Blog | Variables | More

## Synthetic LS data

Guides & Resources
Using more than one LS for your research
Census forms
Synthetic LS data
Useful documents
Applying to use the LSs
FAQs

The England and Wales Longitudinal Study (ONS LS), Scottish Longitudinal Study (SLS) and Northern Ireland Longitudinal Study (NILS) are incredibly rich micro-datasets linking census and other health and administrative data (births, deaths, marriages, cancer registrations) for individuals and their immediate families across several decades. Whilst unique and valuable resources, the sensitive nature of the information they contain means that access to the microdata is restricted to approved researchers and LS support staff, who can only view and work with the data in safe settings controlled by the national statistical agencies. Consequently, compared to other census data products, the three longitudinal studies are used by a small number of researchers – a situation which limits their potential impact.

With other census data products such as the aggregate statistics or interaction data, potential users are able to download the data onto their own computers; explore it, test their ideas, and experiment with analyses. As a result, these resources are very widely used in social science research and teaching – a situation which unfortunately contrasts with that of the national longitudinal studies, whose user base is comparatively small. Given that confidentiality constraints mean that open access is not possible with the real microdata, alternative options are needed to allow academics and other users to carry out their research more freely. To address this the SYLLS project (Synthetic Data Estimation for UK Longitudinal Studies) has been set up. SYLLS is developing techniques to produce synthetic data which mimics the real data and preserves the relationships between variables and transitions of individuals over time, but is freely accessible without restriction.

This project, a collaboration between the three UK Longitudinal Study Research Support Units – CeLSIUS, LSCS and the NILS-RSU – will make use of two complementary methods for generating synthetic data products:

QUICK DATA DICTIONARY SEARCH
Keyword
SEARCH

RECENT NEWS
New email addresses – LSCS and SLS-DSU
Speakers announced for UK LS 2011 Census Linkage Launch

UPCOMING EVENTS
UK LS Census Linkage Launch Event – registration now open
March 6, 2014 at Harvey Goodwin Suite, Church House, Westminster, SW1P 3NZ

LATEST TWEETS
NINIS @NISRANINIS 21 Feb
#ODNICVA free workshops available from NINIS providing training on how to access and visualise data

# SYLLS

- When can we access SYLLS data?
  - Users will shortly be able to request bespoke datasets from synthpop to accompany data requests **although a few software and disclosure control hurdles to jump first**


Thank you

Better Knowledge
Better Society

# Administrative Data Research Centre – Northern Ireland

Dermot O'Reilly

Administrative Data
Research Centre
Northern Ireland

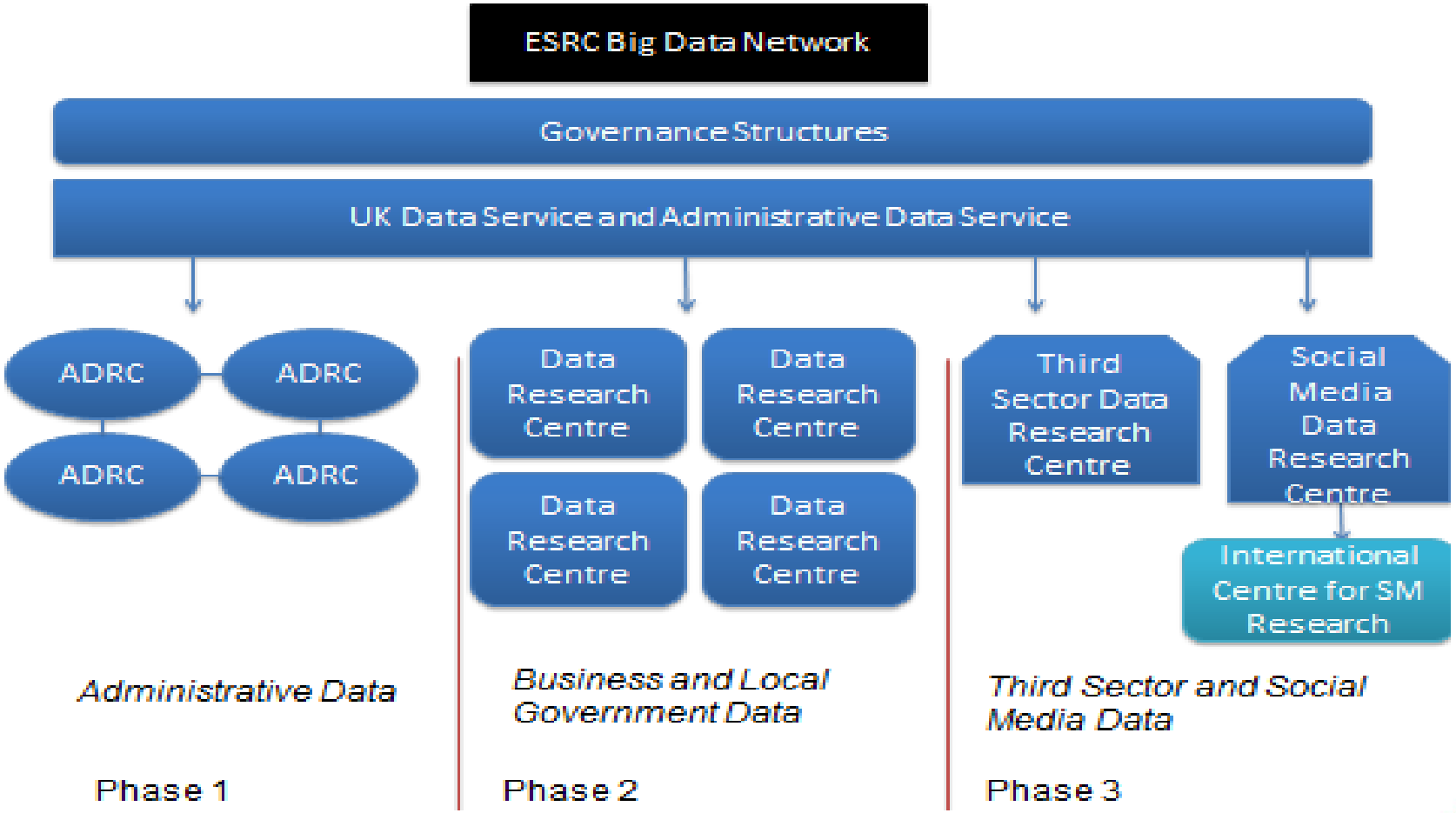
An ESRC Data
Investment


The UK Administrative Data Research Network:
Improving Access for Research and Policy
Report from the Administrative Data Taskforce
December 2012

# The key recommendations from the BIS report are:

- A UK Administrative Data Research Network (ADRN) will be responsible for linking data between government departments. The proposed network will provide a single governance structure that will allow for consistent and robust decision-making.
- An Administrative Data Research Centre (ADRC) should be established in each of the four countries in the UK.
- Legislation should be enacted to facilitate research access to administrative data and to allow linkage between departments to take place more efficiently.
- A single UK-wide researcher accreditation process, built on national and international best practice should be established.
- A strategy for engaging with the public should be instituted.
- Sufficient funds should be put in place to support improved research access to and linkage between administrative data.

# Big Data Network

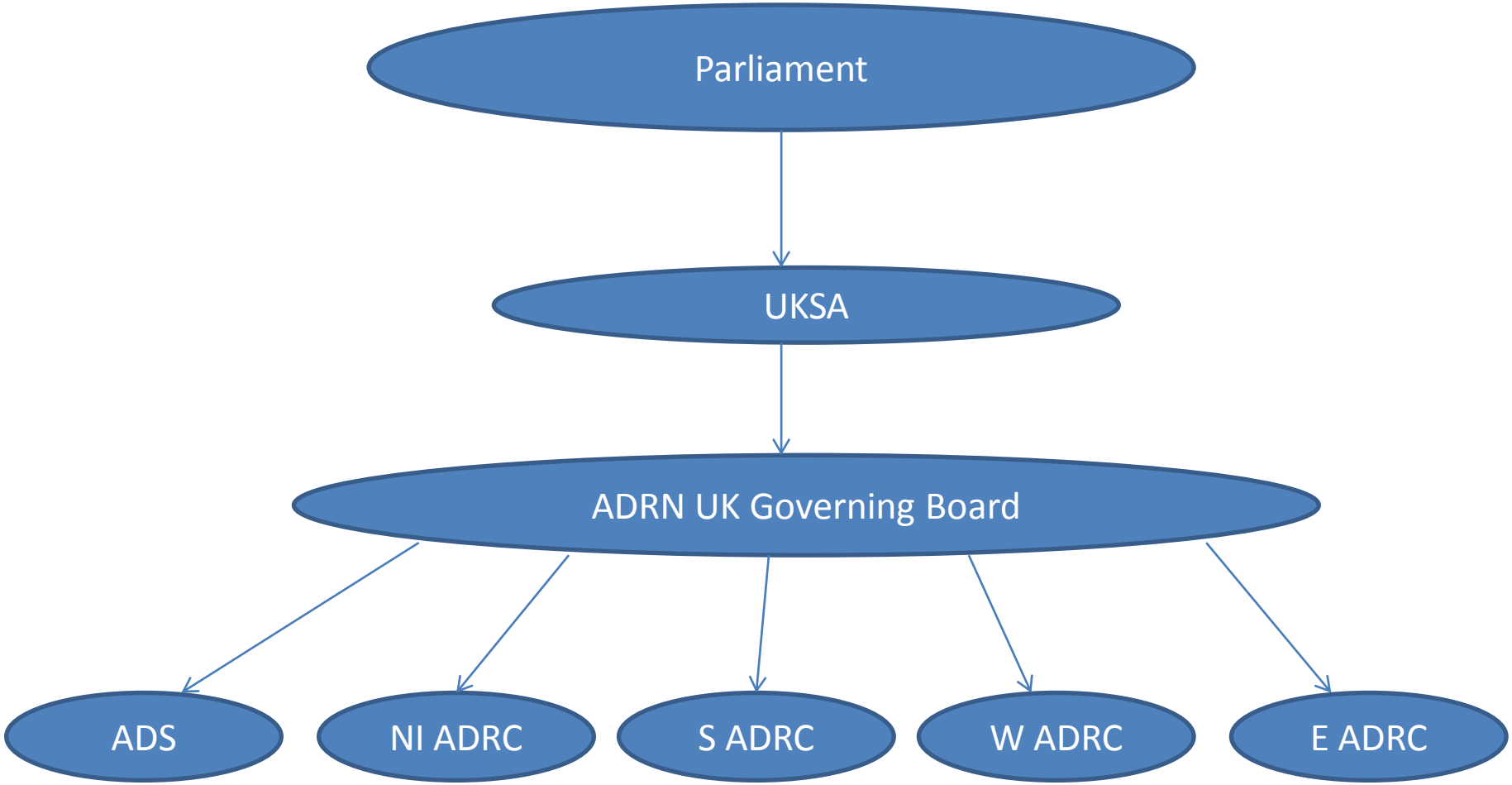


# Some benefits…

- Realising the opportunity to exploit the richness of administrative data for social and economic research and policy, and for better targeting of interventions.
- A step-change in procedures for access to, and linking between, such data across Government Departments
- Ensuring the UK remains at the forefront of research based on linked administrative data and is competitive on the international market
- Allowing cost effective re-use of existing data by avoiding the duplication of data collection and capitalising on past investments
- Enabling new methodologies and cutting-edge research
- Developing skills and capacity

# Farr Institute and ADRN


| The Farr institute | ADRN |
|---|---|
| • London | – Southampton |
| • Manchester | – Belfast |
| • Swansea | – Swansea |
| • Dundee | – Edinburgh |
| | – Essex (ADS) |


Parliament
UKSA
ADRN UK Governing Board
ADS
NI ADRC
S ADRC
W ADRC
E ADRC


Steering Committee
Support function
Operational Group
Administrative Data Forum
Data Sub-Group
Substantive Research Group
User Forum
Methodological Research Group
Public Engagement and Communications Group
Training and Capacity Building Group

# Lead roles and responsibilities

- Linkage service
- Safe setting
- Data acquisition

- Public engagement
- Training, cap' building
- Research

Research support

# 5 Safety Principles…

- Safe Projects (Valid research purpose)
- Safe People (Trusted Researchers)
- Safe Data (Anonymisation of data)
- Safe Setting (Security controls)
- Safe Outputs (Disclosure control of outputs)

=Safe use

# Data

**What:**

- De-identified
- Administrative (non-commercial)
- Linked and non-linked

**How accessed:**

- Secure setting
- Syntax
- Developmental: synthetic or remote access

# Public Engagement and Communications

- **Awareness-raising**
- **Consultation**
- **Empowerment**

# Training and capacity building

- Accredited researcher
- Training related to …
  - Data protection, disclosure control, etc
  - Record linkage
  - Administrative data
  - Statistical methods

# An ADRN Project - Definition

- The project is for non-commercial research purposes
- The project has evident potential public benefit
- There is a demonstrable value from using unit level administrative data to answer the research question.
- The project would not be more appropriately served by other existing services (e.g. FARR, UKDS Secure Lab, Longitudinal Studies, HMRC Data Lab, etc.)
- The project does not constitute normal operational functions undertaken by government departments or their agencies.

# An ADRN Project - Eligible people

- The researcher must be a ‘fit and proper person’ i.e.
  - They must be capable of carrying out the research either independently or under the direction of an appropriate supervisor or lead investigator;
  - They must have completed the ADRN Accreditation Training.
- The researcher must be from academia, the public sector or a research organisation on the Research Councils UK list of eligible independent research organisations (http://www.rcuk.ac.uk/funding/eligibilityforrcs/).

# Types of Projects

- Using micro-data
  - Unlinked
  - Linked
- Others ‘Branded’ as ADRC projects
  - Aggregated Data
  - Methodological
  - Others
- Geography
  - NI only
  - Inter country



NILS-RSU

Northern Ireland Longitudinal Study
Research Support Unit

# NILS Developments


**Andrew Kerr**

**Data Integration And Linkage Service**


Queen's University Belfast

Northern Ireland Statistics & Research Agency

E·S·R·C Economic & Social Research Council

# NILS Developments

- Current Data
- 1991 Project
- Other Developments

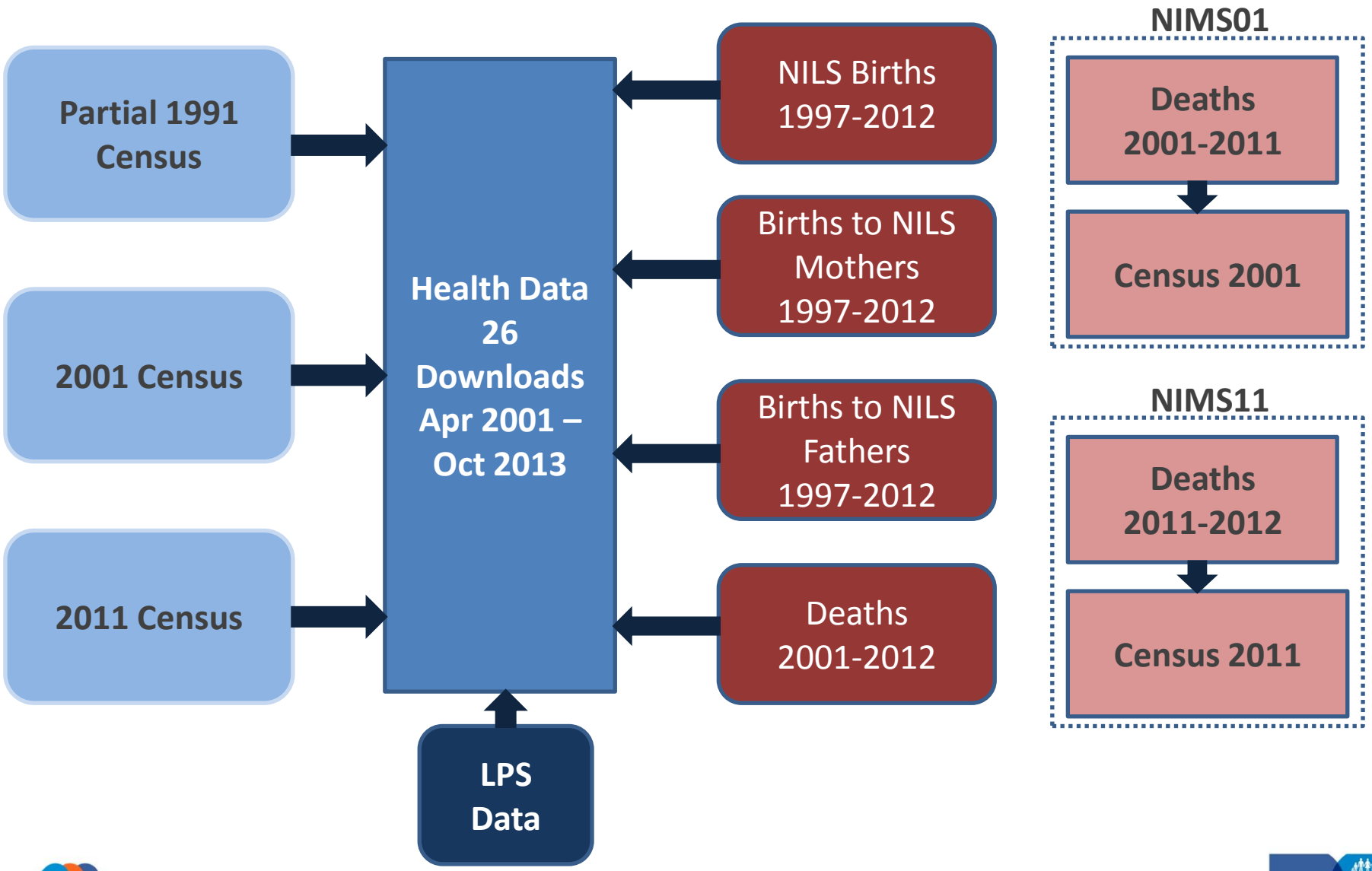
# NILS Developments – Current Data

- Routine Bi-Annual Updates

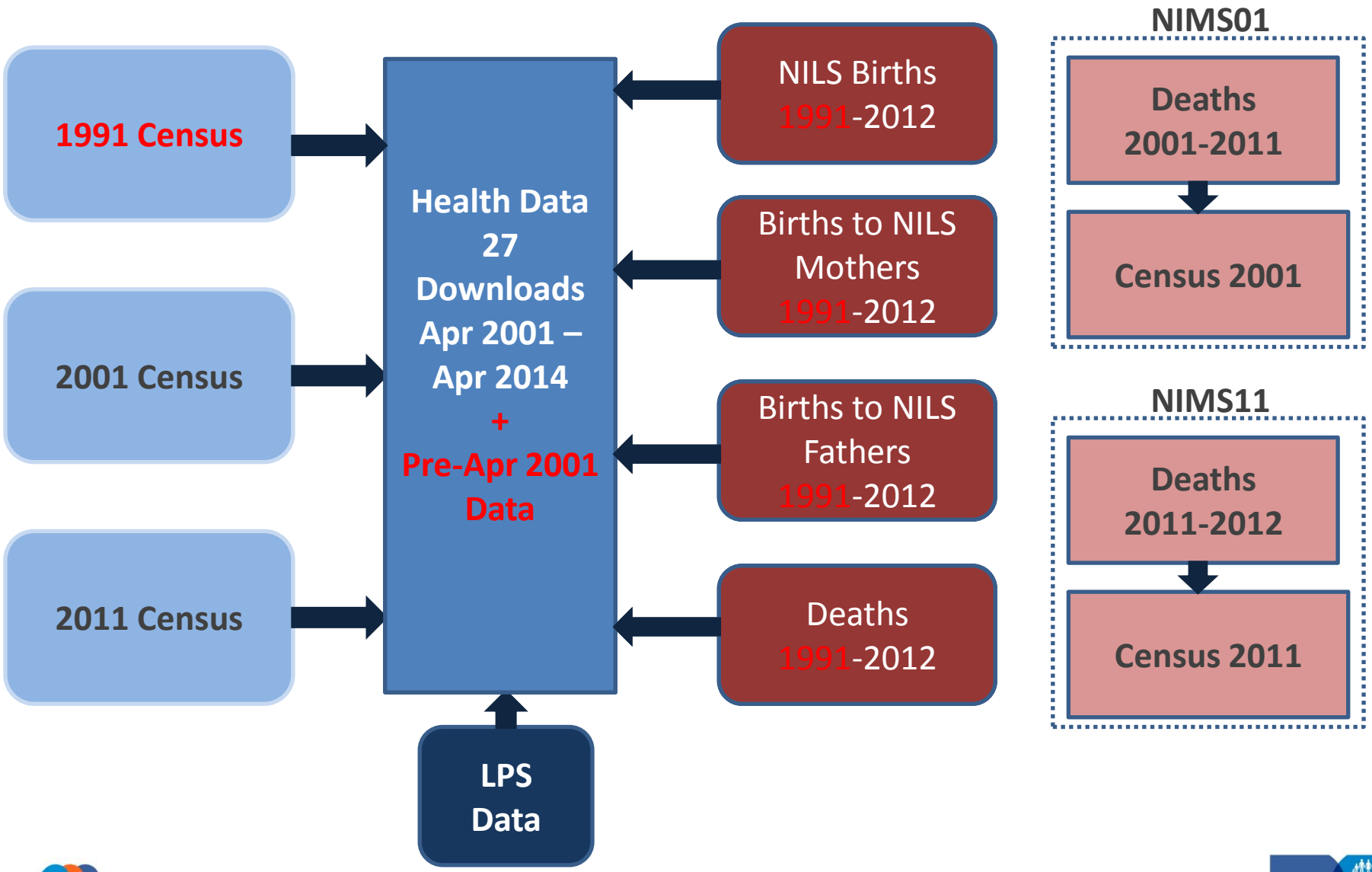
| January | June |
| --- | --- |
| Health (October Download) | Health (April Download) |
| GRO - Births | |
| GRO - Deaths | |
| NIMS11 Update | |

- NILS Metadata Update with each data release

# NILS Developments – June 2014 Data



# NILS Developments – 1991 Project

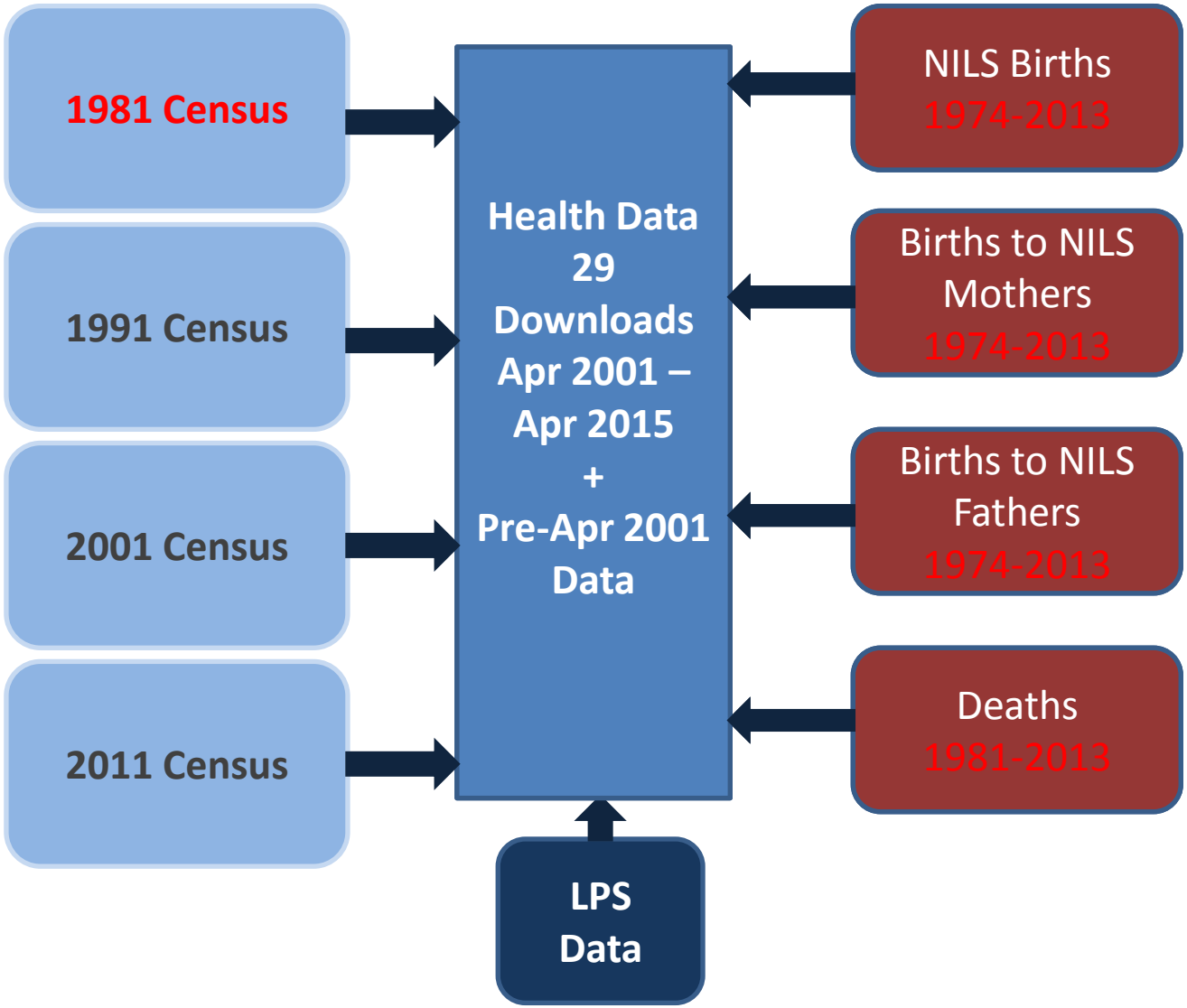


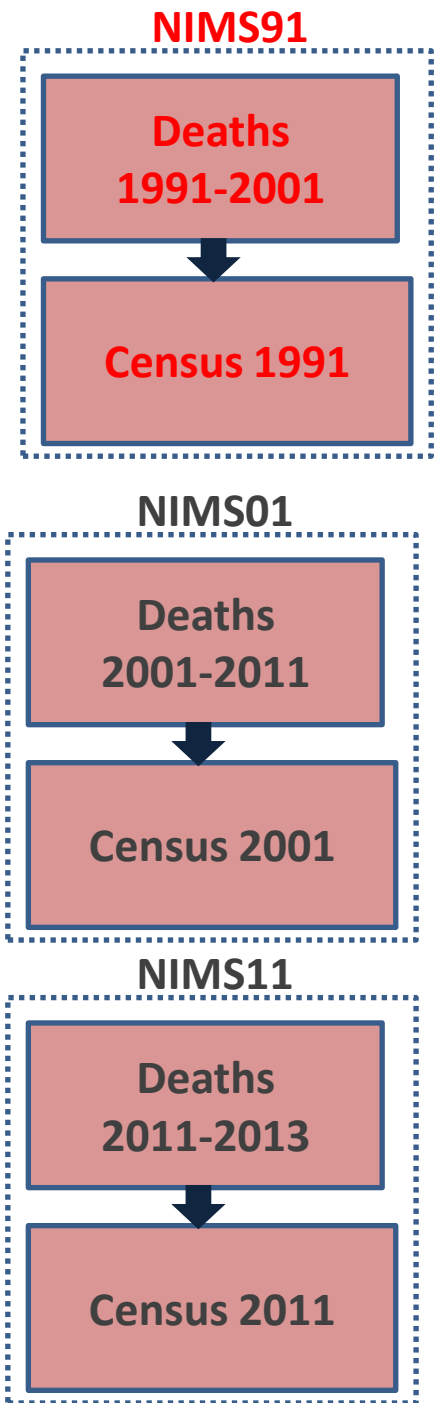
# NILS Developments – 1991 Project

Also:

- 2001 Census Occupations for NILS members and associated HRPs recoded to SOC90
- Release by end **September 2014**
- **Phase 2 -** Further enhancements due to efficiencies from original 1991 Census work plan
- Release by end **Spring 2015**

# NILS Developments – 1991 Project Phase 2



# NILS Developments – Other

- GRO Marriage Data – 2005 onwards
- Infant Mortality
- Widowerhoods
- Online Data Dictionary

NILS-RSU

Northern Ireland Longitudinal Study
Research Support Unit

# Beyond 2011: Future Population and Social Statistics

Dr David Marshall
NISRA

Queen's University Belfast

Northern Ireland Statistics & Research Agency

E·S·R·C Economic & Social Research Council

# Contact Details

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