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Centre for Longitudinal Study Information & User Support

Introducing CeLSIUS and the ONS LS with ReNEWL and NEETS example studies

Dr Nicola Shelton, Director of CeLSIUS at UCL

UCL

Office for National Statistics

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

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Outline

- What's in the LS
- Data linkage
- Sample attrition
- How to access the data
- Research Network into Extended Working Lives
- NEETS in the LS

The ONS Longitudinal study

Individual and household level microdata

- → 1% sample

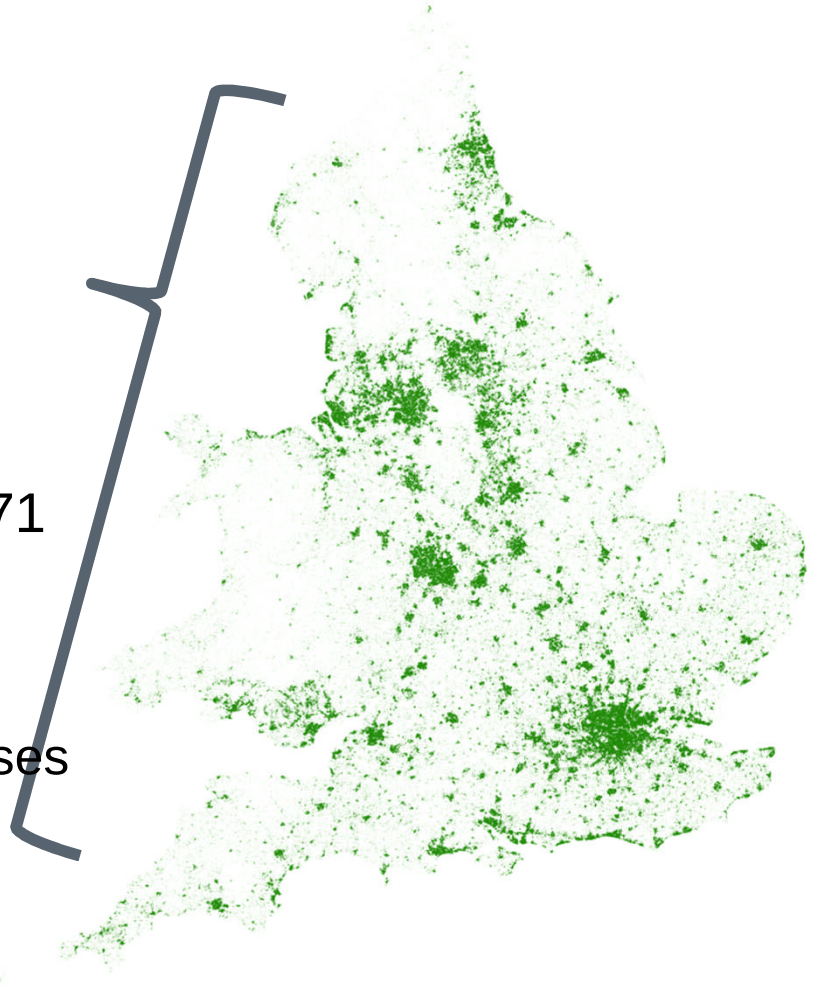
Random selection based on birthdays

Longitudinal follow-up since 1971

All Census topics available

Tailor-made datasets

Large sample → subgroup analyses



http://www.theguardian.com/news/datablog/interactive/2013/aug/01/every-person-in-england-wales-dot-map#7/52.929/-2.571

What's in the LS?

- Based on 4 birth dates in a calendar year
- Contains information from the last 5 censuses
- Contains information from civil registration and NHS registration systems
- A relational database that links records of LS sample members
- A dynamic sample with sample members entering and exiting
- Over 40 tables and 5,000 variables

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Longitudinal data: sequence of censuses

1971

1981

1991

2001

2011

2021

Census data

LS sample members

- Other household members
- Age, sex, marital status, country of birth
- Family, household (e.g. car access), communal establishment type
- Housing: tenure, rooms and amenities
- Qualifications, economic activity, occupation, industry and social class
- Ethnicity (1991 - 2011)
- Limiting long term illness (1991 - 2011) and Self-rated health (2001 & 2011)
- Care giving (2001 & 2011)
- Religion (2001 & 2011)
- National identity (2011)
- Passport held (2011)
- Short-term migration (2011)
- Year of arrival (2011)

Life event data

- Life events
- New births of LS sample members
- Births to sample mothers
- Deaths
- Widow(er)hoods
- Migration
- Cancer registrations

- More specifically…
- Occupational information on mother and father
- Birthweight, parity, multiple births
- Death, cause of death
- Infant mortality
- International migration
- Cancer, including site and type

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LS research topics

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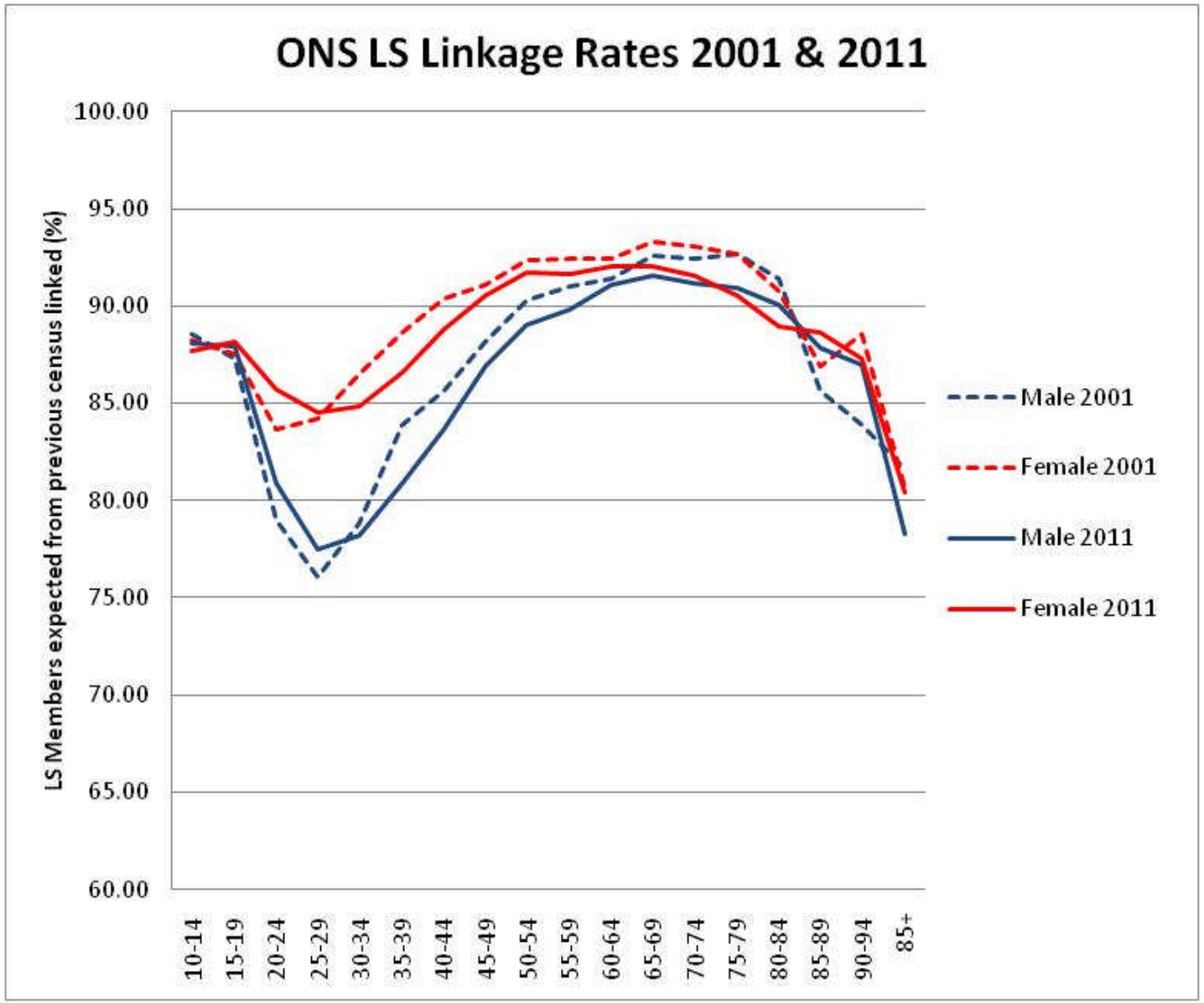

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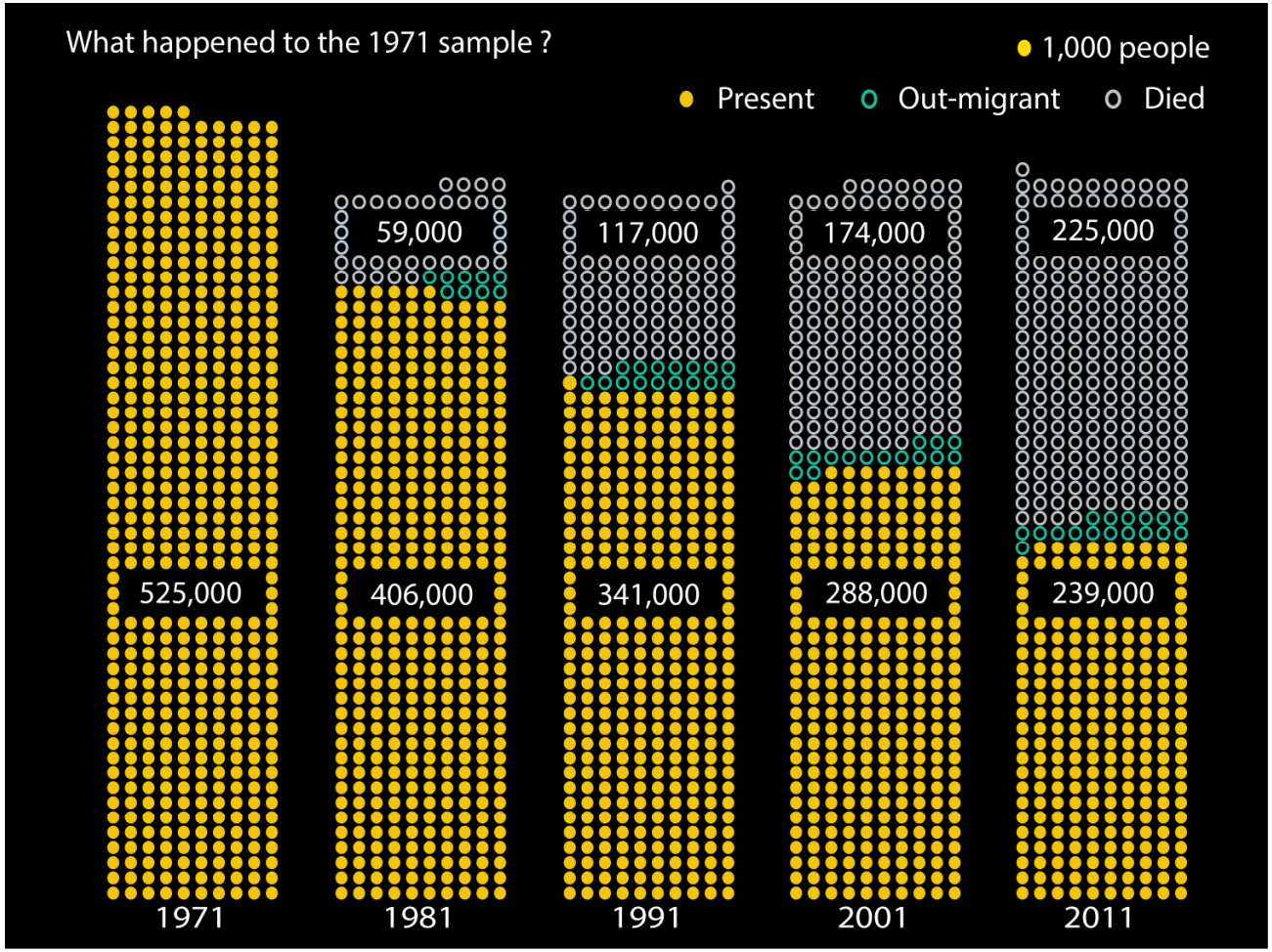
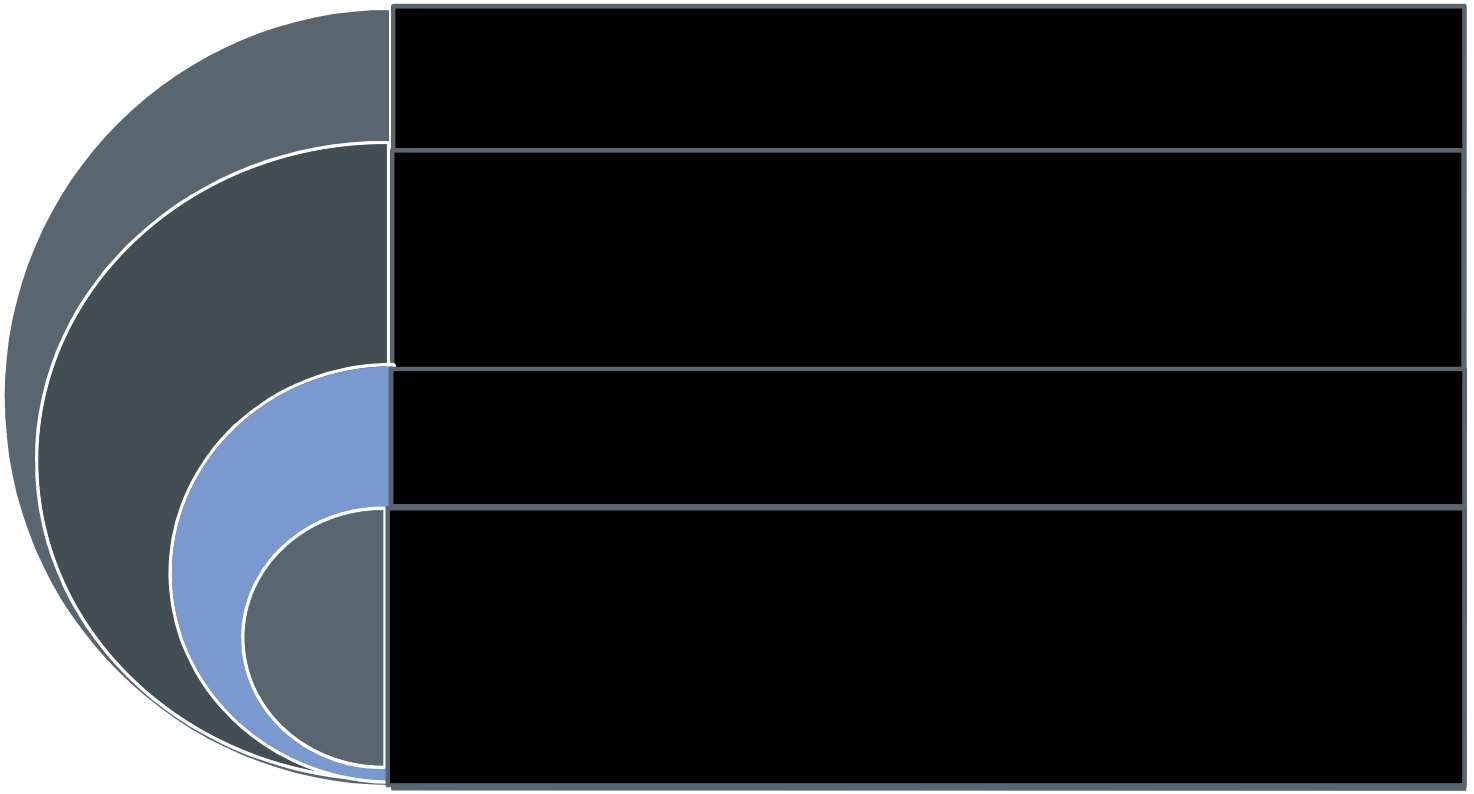


CeLSIUS and the team

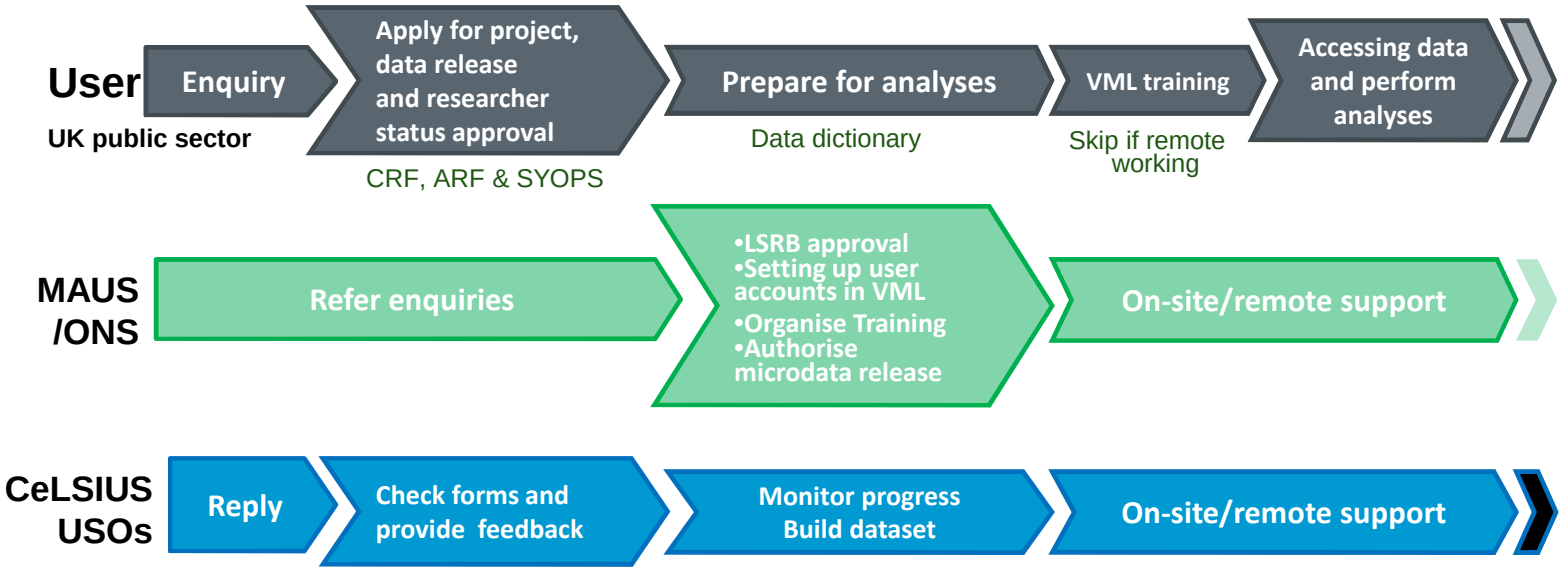
- CeLSIUS provides a user interface to the LS



Access to the ONS LS

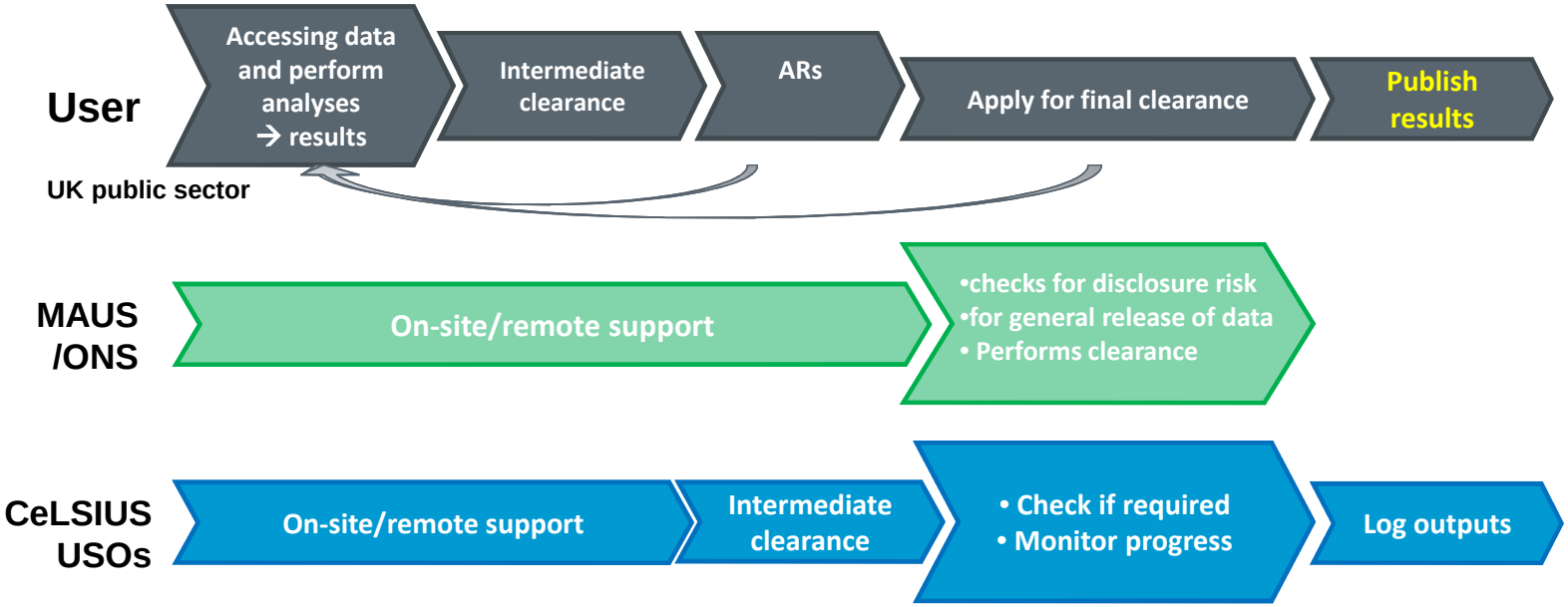
- Contact CeLSIUS at UCL to discuss potential research ideas celsius@ucl.ac.uk
- Read training materials on website www.ucl.ac.uk/celsius
- User support provided for each project, including the application process
- Analysis carried out through approved projects
- Work undertaken in secure environment (VML) or remotely
- Project outputs cleared and sent to you

Service flow - 1



Cont…

Service flow - 2



LS usage – increasing through synthetic data

- LSs are not as widely used as other UK census data – why?
  - Access restrictions – remote access or VML
  - Complex data (compared to other cross-sectional census data products though not to other longitudinal data
  - These are not ‘hands on’ data
  - Lack of exposure early in academic careers

Input scripts to date
84
383
197
93
70
60

Resources developed

- SYLLS Spine
  - General use introductory and teaching data set
- Synthpop
  - Software package, written in R, to generate bespoke synthetic data tabulations, customised to individual researchers' needs

National Synthetic Data Spine

- The Data
  - Based on 2011 England and Wales Microdata Teaching File SARs (similar 1% sample to LS – some 569,741 individuals)*
  - Transitions General Health, Marital Status, Religion, Social Grade, Births and Deaths between 2001 and 2011 based on LS data

* Unknown overlap

National Synthetic Data Spine

- V2.0 UK Synthetic Spine almost complete:
  - Revised methodology and software
  - England and Wales dataset finished – download from http://calls.ac.uk/guides-resources/synthetic-ls-data/
  - Scotland complete (available soon)
  - NI aiming for completion by end of 2016

Synthpop (led by SLS-RSU)

- 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.

synthpop

- Synthpop produces fully synthetic datasets which closely resemble the real longitudinal microdata – version 2 of the R package now publicly available on CRAN

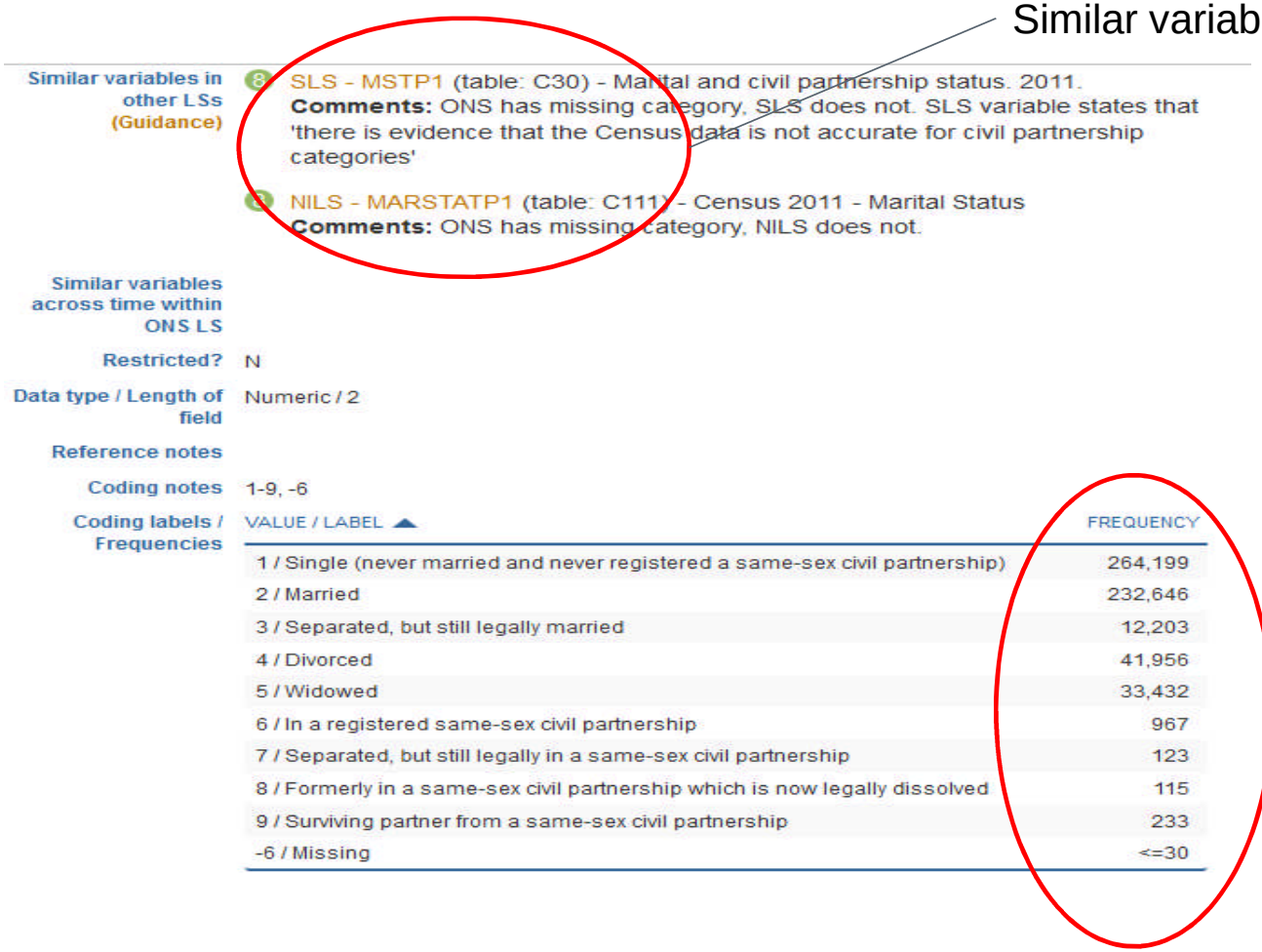
  http://cran.r-project.org/web/packages/synthpop/index.html

- Being trialled by NRS in Scotland, NISRA and ONS reviewing

CALLS UK LS Data dictionary

Similar variables

Variable frequencies

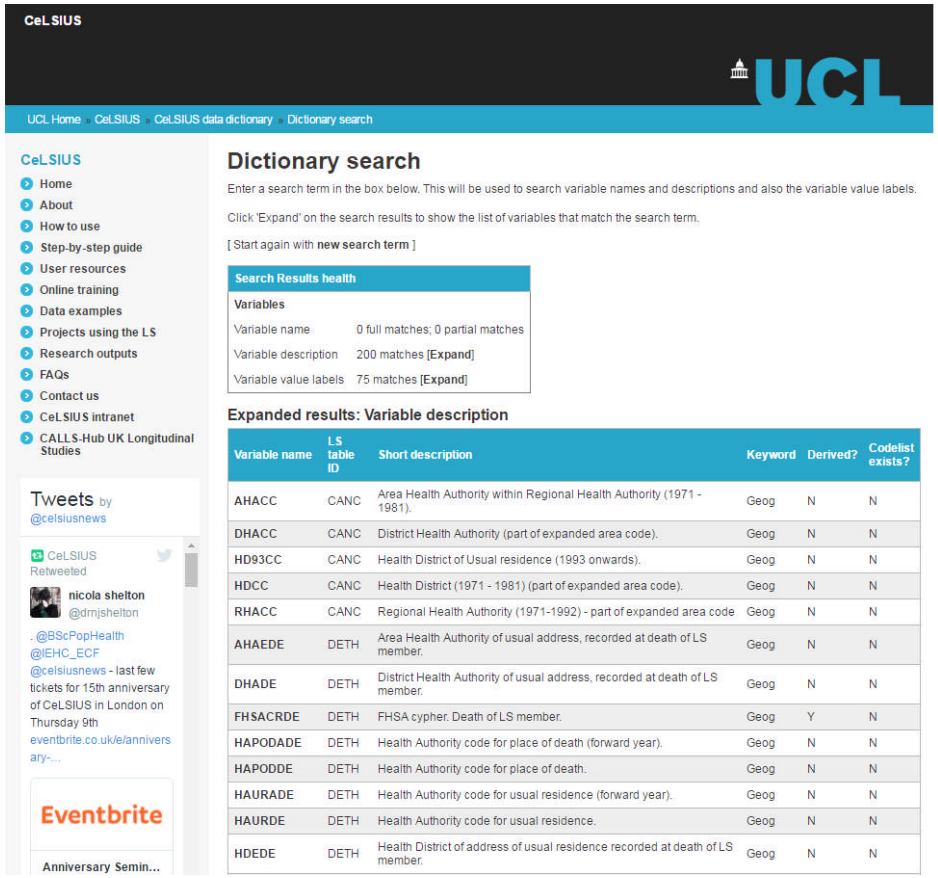


Similar variables in other LSs (Guidance)	SLS - MSTP1 (table: C30) - Marital and civil partnership status. 2011. **Comments:** ONS has missing category, SLS does not. SLS variable states that 'there is evidence that the Census data is not accurate for civil partnership categories'
	NILS - MARSTATP1 (table: C111) - Census 2011 - Marital Status **Comments:** ONS has missing category, NILS does not.
Similar variables across time within ONS LS	
Restricted?	N
Data type / Length of field	Numeric / 2
Reference notes	
Coding notes	1-9, -6

Coding labels / Frequencies

VALUE / LABEL ▲	FREQUENCY
1 / Single (never married and never registered a same-sex civil partnership)	264,199
2 / Married	232,646
3 / Separated, but still legally married	12,203
4 / Divorced	41,956
5 / Widowed	33,432
6 / In a registered same-sex civil partnership	967
7 / Separated, but still legally in a same-sex civil partnership	123
8 / Formerly in a same-sex civil partnership which is now legally dissolved	115
9 / Surviving partner from a same-sex civil partnership	233
-6 / Missing	<=30

CeLSIUS Data Dictionary (all years)



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Tweets by @celsiusnews

CeLSIUS Retweeted

nicola shelton @drnjshelton

. @BScPopHealth @IEHC_ECF @celsiusnews - last few tickets for 15th anniversary of CeLSIUS in London on Thursday 9th eventbrite.co.uk/e/anniversary-...

Eventbrite

Anniversary Semin...

Dictionary search

Enter a search term in the box below. This will be used to search variable names and descriptions and also the variable value labels.

Click 'Expand' on the search results to show the list of variables that match the search term.

[Start again with **new search term**]

Search Results health	
Variables	
Variable name	0 full matches; 0 partial matches
Variable description	200 matches **[Expand]**
Variable value labels	75 matches **[Expand]**

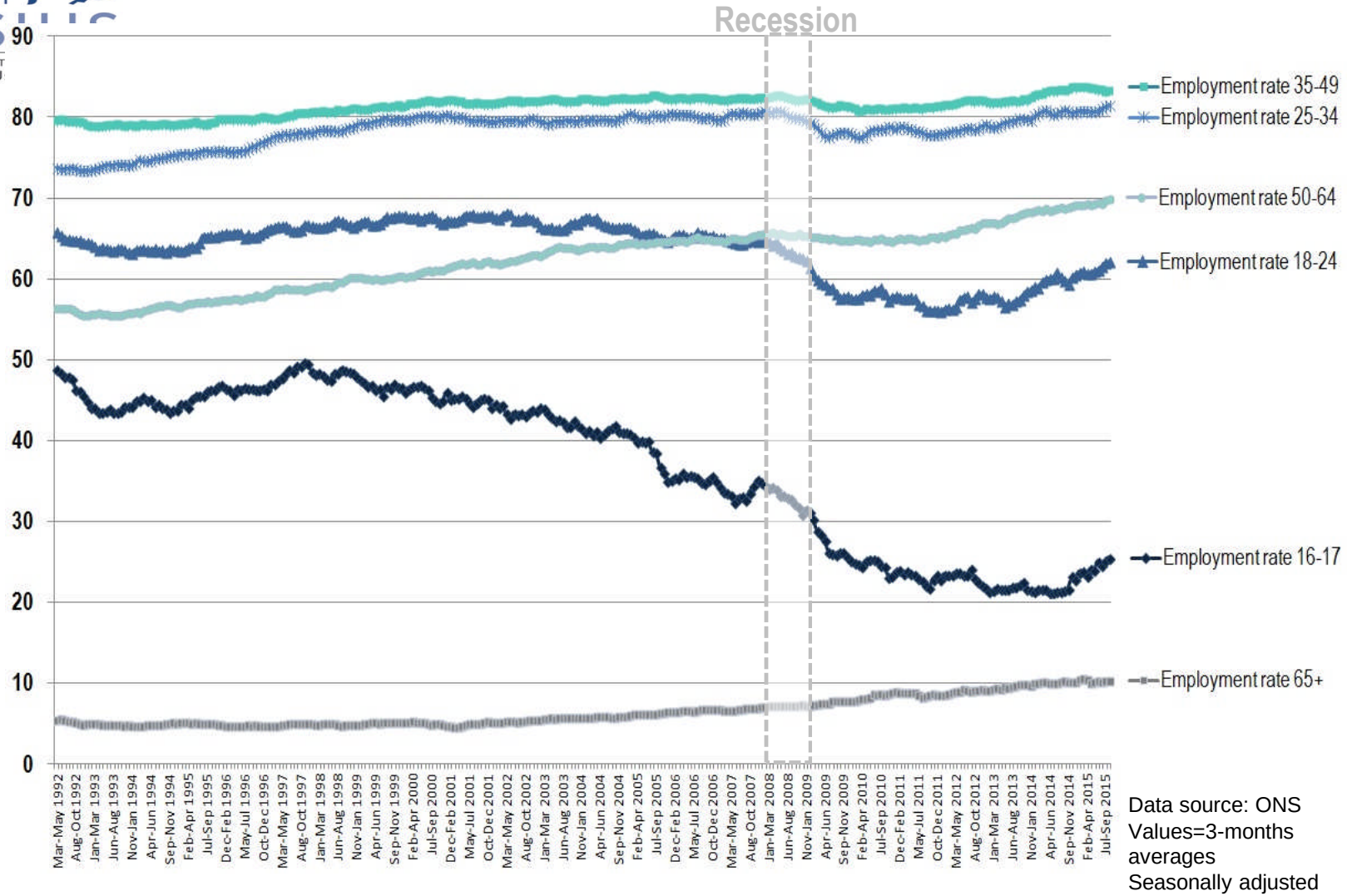
Expanded results: Variable description

Variable name	LS table ID	Short description	Keyword	Derived?	Codelist exists?
AHACC	CANC	Area Health Authority within Regional Health Authority (1971 - 1981).	Geog	N	N
DHACC	CANC	District Health Authority (part of expanded area code).	Geog	N	N
HD93CC	CANC	Health District of Usual residence (1993 onwards).	Geog	N	N
HDCC	CANC	Health District (1971 - 1981) (part of expanded area code).	Geog	N	N
RHACC	CANC	Regional Health Authority (1971-1992) - part of expanded area code	Geog	N	N
AHAEDE	DETH	Area Health Authority of usual address, recorded at death of LS member.	Geog	N	N
DHADE	DETH	District Health Authority of usual address, recorded at death of LS member.	Geog	N	N
FHSACRDE	DETH	FHSA cypher. Death of LS member.	Geog	Y	N
HAPODADE	DETH	Health Authority code for place of death (forward year).	Geog	N	N
HAPODDE	DETH	Health Authority code for place of death.	Geog	N	N
HAURADE	DETH	Health Authority code for usual residence (forward year).	Geog	N	N
HAURDE	DETH	Health Authority code for usual residence.	Geog	N	N
HDEDE	DETH	Health District of address of usual residence recorded at death of LS member.	Geog	N	N

Two cases studies

ReNEWL and NEETs

Employment in the UK by Age Group 1992-2015



Data source: ONS
Values=3-months averages
Seasonally adjusted

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Geographic Inequalities, Health and Exit from the Work force

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1965 - 2015 50 E·S·R·C 50 YEARS SHAPING SOCIETY

Research on Extending Working Lives

www.ucl.ac.uk/renewl

Background

- Policy in the UK and many other industrialised countries is to extend working lives in response to the financial challenges of increasing life expectancy and population ageing.
- Employment rates of men and women aged 50 and over have been rising since the mid 1990s and into the 21st century.
- BUT retention of older persons in the work force not distributed equally across geography.
- Encouraging even higher employment rates among the over 50s will depend on incentivising and removing the barriers to participation

Previous research using LS and ELSA bivariate factors affecting labour withdrawal

- Age, Ethnicity, Marital status
- Highest qualification, Socio-economic classification
- Prior labour market status, Housing tenure
- S/R Health status
- Dependent child in HH, People with long term illness in HH, Economic activity status partner/spouse
- GOR

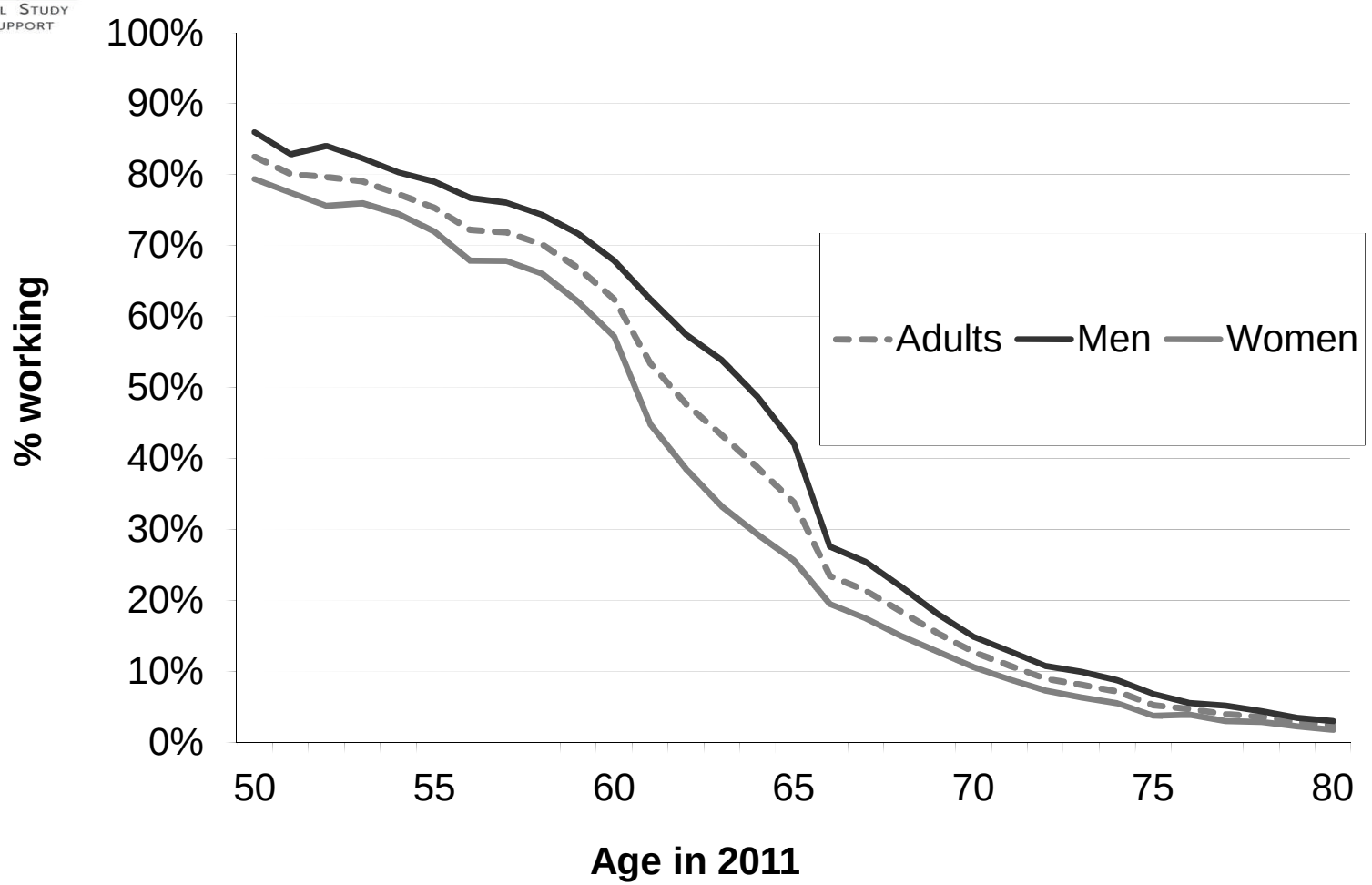
(ONS, 2010)

How important is region

- Previous analysis included just two regions
- South and East & Midlands (reference)
- Compared with North of England & Wales
- It was significant in the multivariate logistic regression models even after adjustment for individual characteristics

(ONS, 2010)

% working in 2011, if working in 2001, Age 50+



Logistic Regression Results

- Among those working in 2001
  - Outcomes in 2011: multinomial
  - Working in 2011
  - Not working in 2011(baseline)
  - Died between 2001 and 2011 census

Relative risk ratios for working in 2011, if working in 2001, adults aged 40+ in 2001

Working in 2011	RRR	P value	(95% CI)	
North East	1			
North West	1.09	0.030	1.01	1.19
York & Humber	1.10	0.025	1.01	1.20
East Midlands	1.19	<0.001	1.09	1.29
West Midlands	1.19	<0.001	1.10	1.30
East of England	1.33	<0.001	1.22	1.44
London	1.35	<0.001	1.24	1.46
South East	1.39	<0.001	1.29	1.50
South West	1.39	<0.001	1.27	1.51
Wales	1.18	0.001	1.07	1.30

Adjusted for age (years) and sex

Fully adjusted model

	RRR	P-value	(95% CI)	
North East	1			
North West	1.03	0.530	0.95	1.11
York & Humber	1.06	0.207	0.97	1.15
East Midlands	1.12	0.012	1.02	1.22
West Midlands	1.12	0.008	1.03	1.22
East of England	1.18	<0.001	1.08	1.28
London	1.27	<0.001	1.17	1.39
South East	1.21	<0.001	1.12	1.31
South West	1.22	<0.001	1.12	1.33
Wales	1.09	0.077	0.99	1.20

Direction of effect of other analysis variables

Age	Reduces
Sex	Female reduces
Caring	Reduces
LLTI	Reduces
Marital working status	Spouse increases
Ethnicity	Asian reduces; Black increases, cf white
Dependent children	Increases
Qualifications	Increases except degree cf none
Housing tenure	Private renting, rent free, mortgaged increases cf owned
Health	Good health increases
Number of cars	Increases

Considerations for further analysis

How accurate is year last worked?

Do we extend analysis to those not working in 2011 but had previously worked?

10% of those working in 2011 had worked between 1991-2001

1% of those working in 2011 last worked bwtween1981-1991

Cannot then include characteristics of workplace in 2001

Status /**environment change**

Worsening health, marital status change, caring

Occupations, industry type, **unemployment within regions**

Research Questions

1. Does **area unemployment** influence transitions out of work?
2. If area unemployment levels **change**, will work transition rates change?
3. Are persons in **poor vs good health** influenced by area unemployment equally?

Murray ET, Head J, Shelton N et al. (2016) . Local area unemployment, individual health and workforce exit: ONS Longitudinal Study.The European Journal of Public Health vol. 26, (3) 463-469.

Do local unemployment levels influence transitions out of work?

Persons aged 40-69 years in 2001

In work in 2001

Compared odds of transitioning out of work due to sickness/disability or retirement (2001-2011):

By area unemployment in 2001

Adjusted for sex, age group, social class, ethnic group and housing tenure

LS members age 40-69, in paid work 2001

Status 2011	
In work	64.9%
Retired	24.7%
Sick/disabled	3.0%
Other (student/home)	3.2%
TOTAL	**98,756**

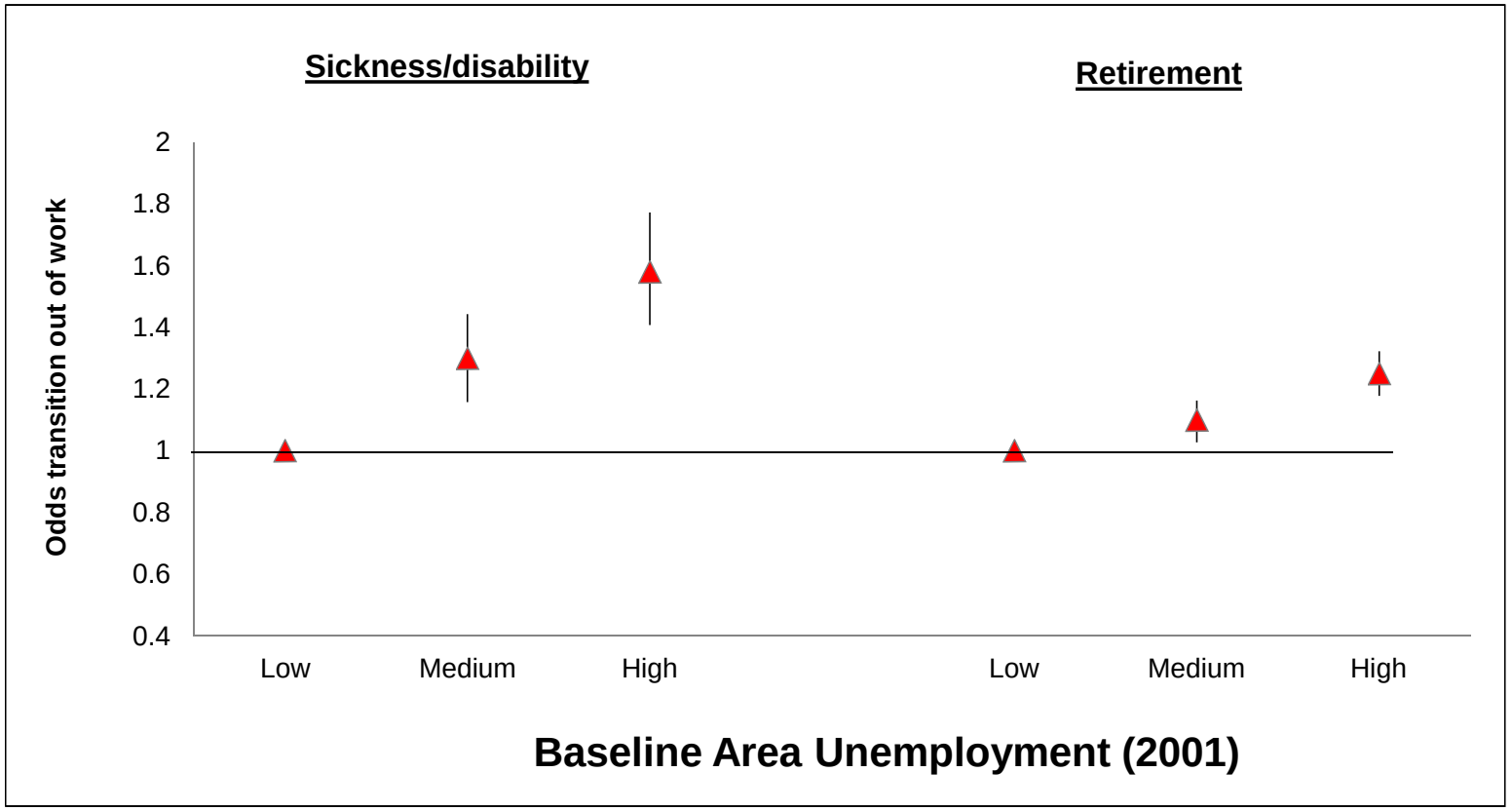
Source: ONS Longitudinal Study

Area unemployment level 2001

Low (<=3.56)	32,705 (33.1)
Medium (3.56-5.25)	32,803 (33.2)
High (<=5.25)	32,298 (33.7)
Total	98,756

Source: ONS Longitudinal Study

Do local unemployment levels influence transitions out of work?



Adjusted for age, sex, social class, ethnicity, housing tenure.

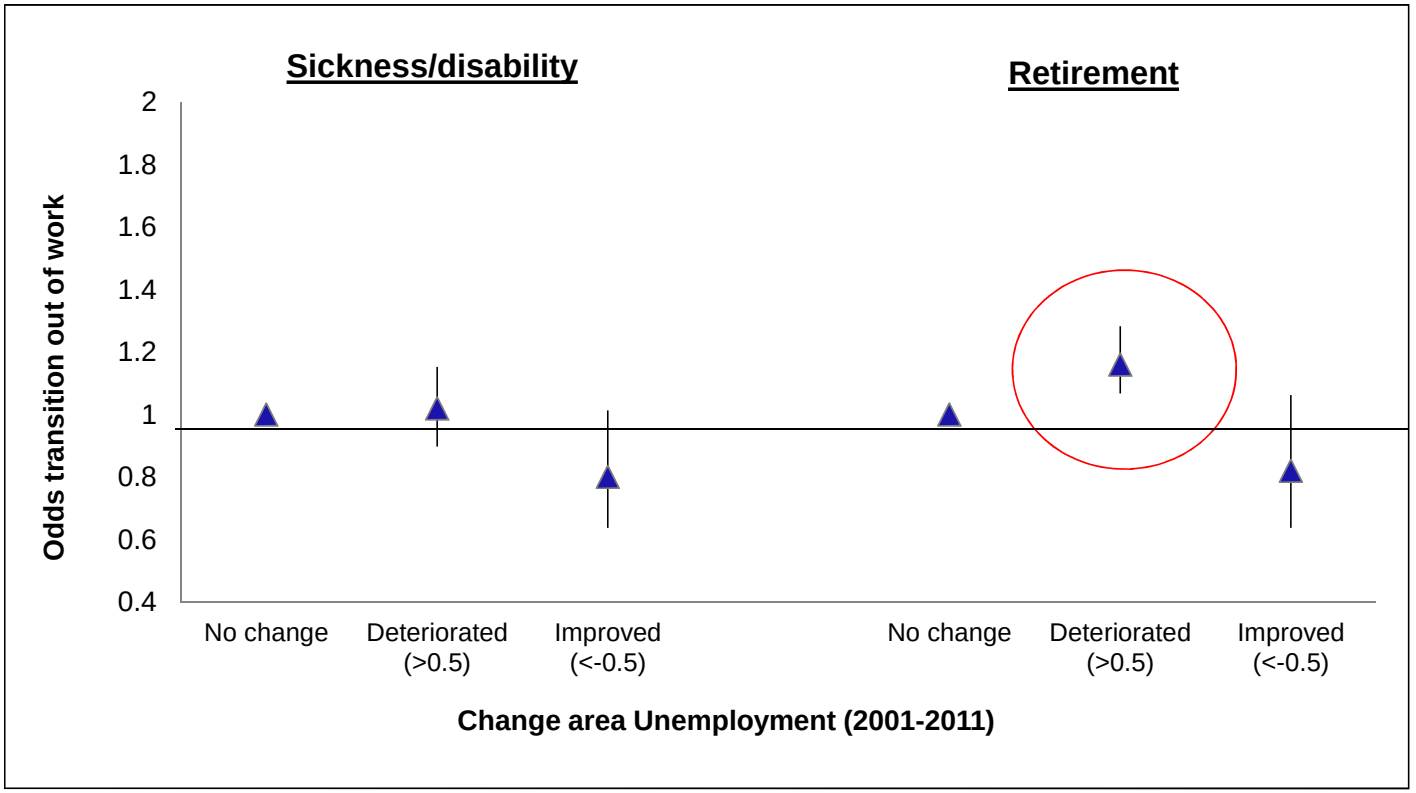
Source: ONS Longitudinal Study

Area unemployment change 2001-2011

None (-0.5 to 0.5%)	11,159 (11.3)
Deteriorated (>0.5%)	84,338 (85.4)
Improved (<-0.5%)	3,259 (3.3)
Total	98,756

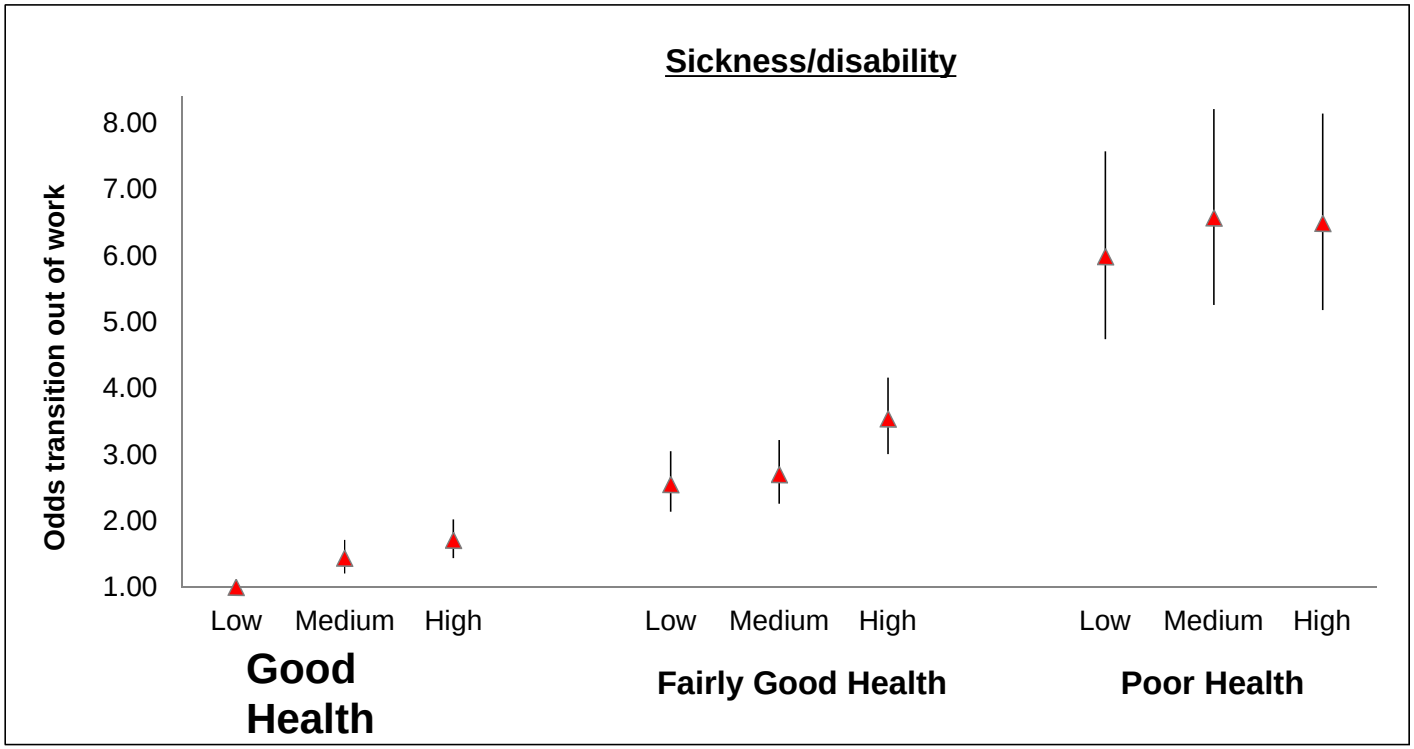
Source: ONS Longitudinal Study

If area unemployment levels change, will work transition rates change?



* Adjusted for age, sex, social class, ethnicity, housing tenure. Source: ONS Longitudinal Study

Are persons in poor vs good health influenced by area unemployment equally?



* Adjusted for age, sex, social class, ethnicity, housing tenure. Source: ONS Longitudinal Study

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1. Does **area unemployment** influence transitions out of work? **YES**
2. If area unemployment levels **change**, will work transition rates change? **YES**
3. Are persons in **poor vs good health** influenced by area unemployment equally? **NO**

Strategies to retain older workers more effective if:
Consider both health and labour market mechanisms. Target areas of high unemployment.

Long-term economic and health consequences of youth worklessness in England and Wales

Wei Xun, PhD Student UCL

Research Overview

- **STUDY 1**: to explore the **cross-sectional** demographic, household, intergenerational and area-level risk factors of worklessness in England and Wales

- **STUDY 2**: to investigate economic consequences of youth worklessness, and to construct **profiles through the life-course**

- **STUDY 3**: to investigate the relationships between youth worklessness and future health in terms of **Morbidity (LLTI)** and **mortality**, taking into account the accumulation of socio-economic disadvantage using a life-course framework

Effect modifiers such as **gender** and **period effects** due to changes in the economic environments will also be investigated

STUDY 1 Research Questions

- Which personal-, household- and area-level factors influence a young person's chances of being NEET in E&W?
- **How do the association differ by gender?**
- What effects do divergent macroeconomic environment have?
- **Using 2 cohorts:**
  - 1971 (boom) Vs 1991 (recession)

Definition of NEET in the LS

			Cohort 1 1971	Cohort 2 1991
		Economic Status	Detailed activity	Detailed activity
Adults aged 15/16 - 29	NEETs	Unemployed	Out of employment, sick and other	-Waiting to take up job -Unemployed
		Inactive & Sick	-Other inactive -Permanently sick	-Other inactive -Permanently sick -Looking after home and family
	Non-NEETs	Employed	-In employment	-FT employment -PT employment -Self-employed with employees -Self-employed without employees -On governmental scheme
		Student	-Student	-Student

Summary findings

- NEET predominantly women (less so in 1991)
- More young men becoming NEET in 1991
- Effects of area deprivation strengthened in the most deprived wards

Acknowledgment

- The permission of the Office for National Statistics to use the Longitudinal Study is gratefully acknowledged, as is the help provided by staff of the Centre for Longitudinal Study Information & User Support (CeLSIUS). CeLSIUS is supported by the ESRC Census of Population Programme under project ES/K000365/1. The authors alone are responsible for the interpretation of the data.
- This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates

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Welcome to CeLSIUS, the **Centre for Longitudinal Study Information and User Support**. We are an ESRC-funded support team for UK academic, statutory and voluntary sector users of the Office for National Statistics (ONS) Longitudinal Study (LS).

On 1st August 2012 the CeLSIUS service and most of the CeLSIUS team moved to University College London (UCL). The team at UCL will provide the service until 31st July 2017.

The continued aim is to provide high quality user support for the ONS LS in a timely fashion. This service is free to the user.

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Normal view | High contrast view