

Working with linked health and social care data and HAGIS

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Two-part talk

- Exemplar of administrative data linkage
 - Burgeoning area
 - Lessons from one study

- HAGIS
 - Where we are
 - Where we are trying to get

Administrative Data - Background

- Analysis of a unique dataset in collaboration with the Scottish Government's Health Analytical Services Division and the Information Services Division of NHS Scotland
- Funded by National Institute of Aging in the US

Data Structure

Health Data: Health episode data for 2010/11 from SMR01 and SMR04

Social Care Data: 4 separate datasets containing Home care and Direct Payments data for 2010 and 2011

Prescribing Data: Dataset containing counts of items dispensed in 2010/11

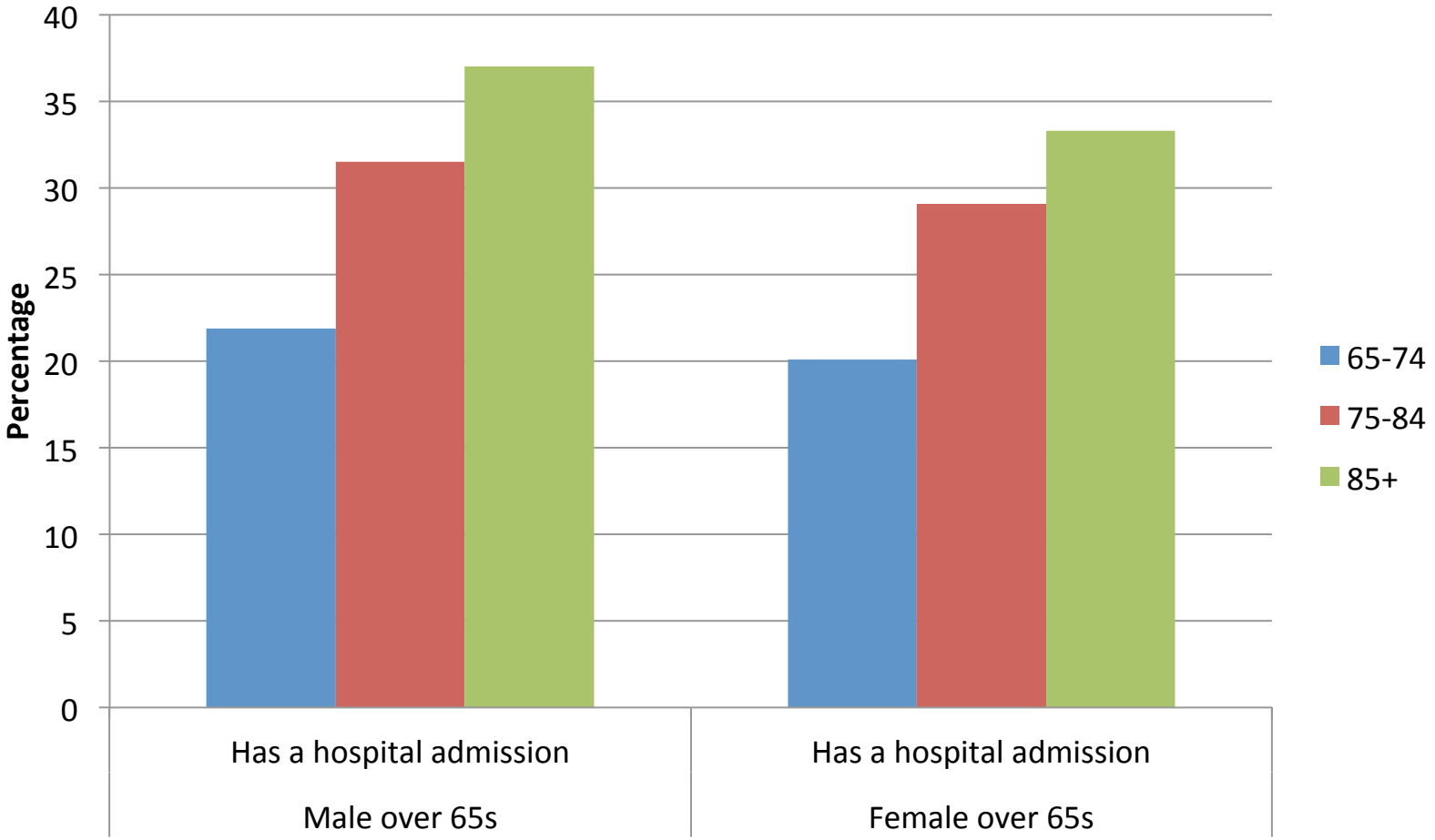
Project ID
allows data to
be linked
across all
datasets



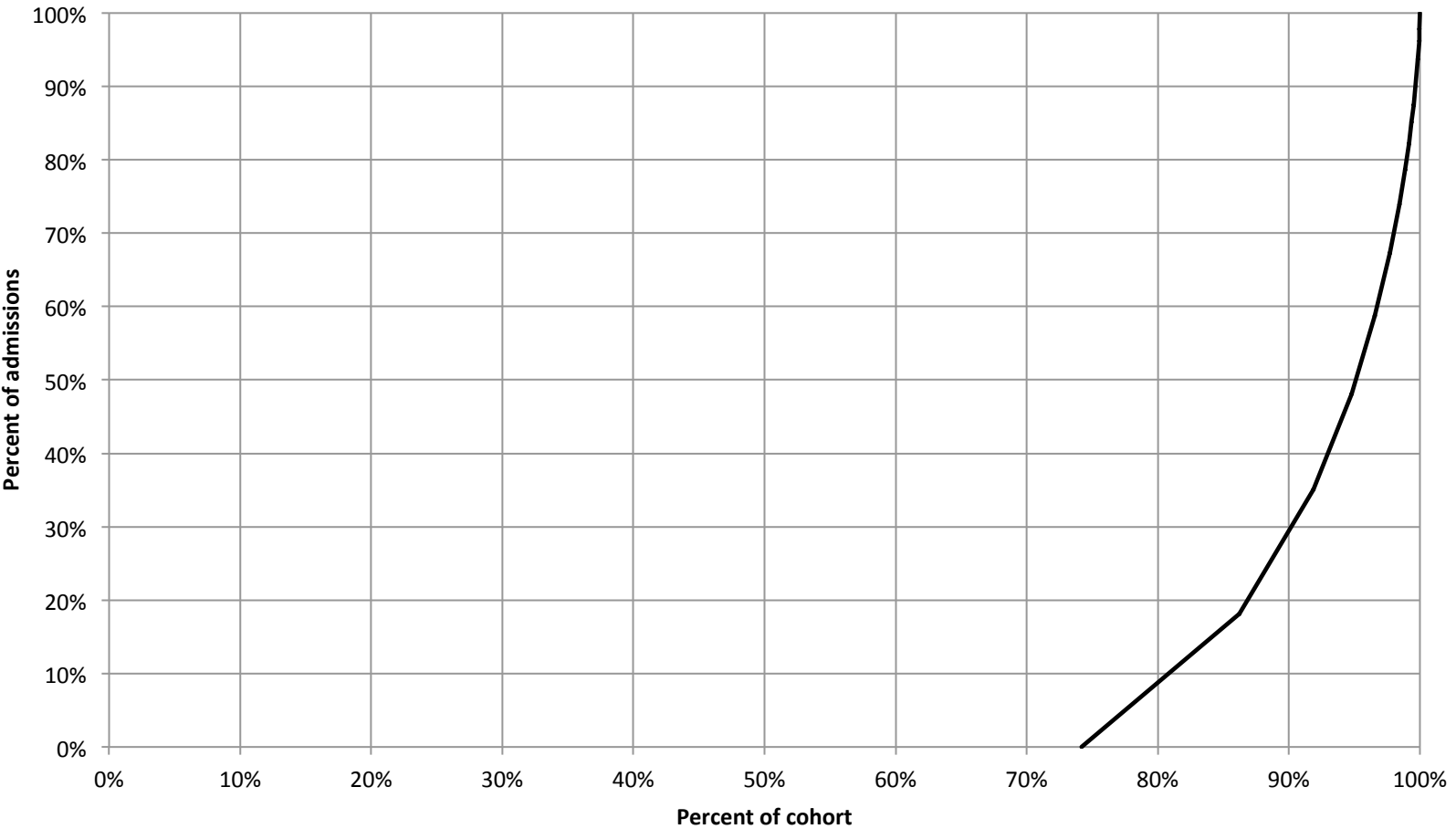
Information on Social Care Census available from 5 Local Authorities

- Edinburgh
 - Stirling
 - Clackmannanshire
 - South Ayrshire
 - South Lanarkshire
-
- Around 170,000 persons aged 65 and over (2011 census)
 - Mixture of rural/urban and deprived/non-deprived

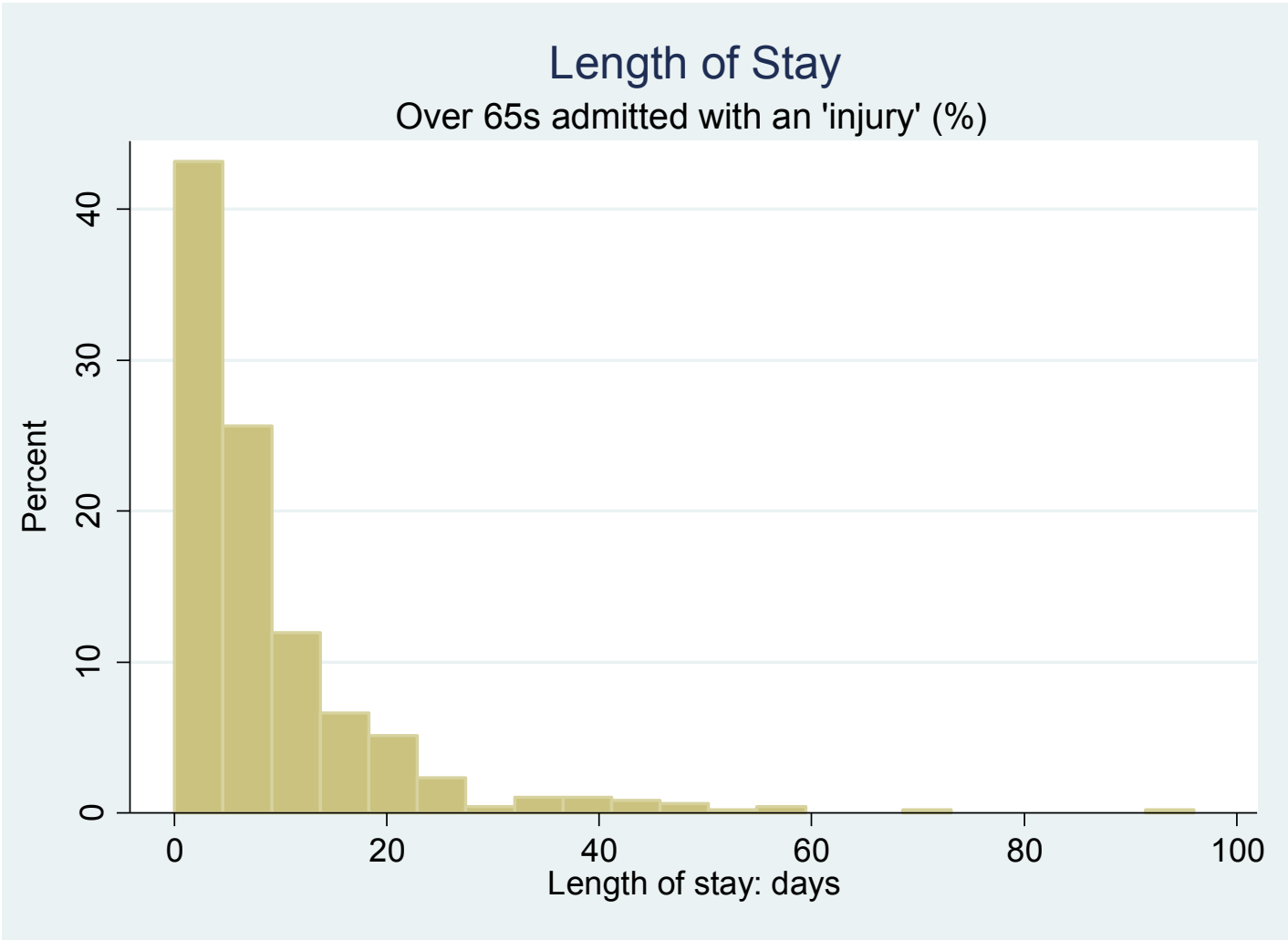
Hospital admissions by age and sex between 1st April 2010- 31st March 2011 (%)



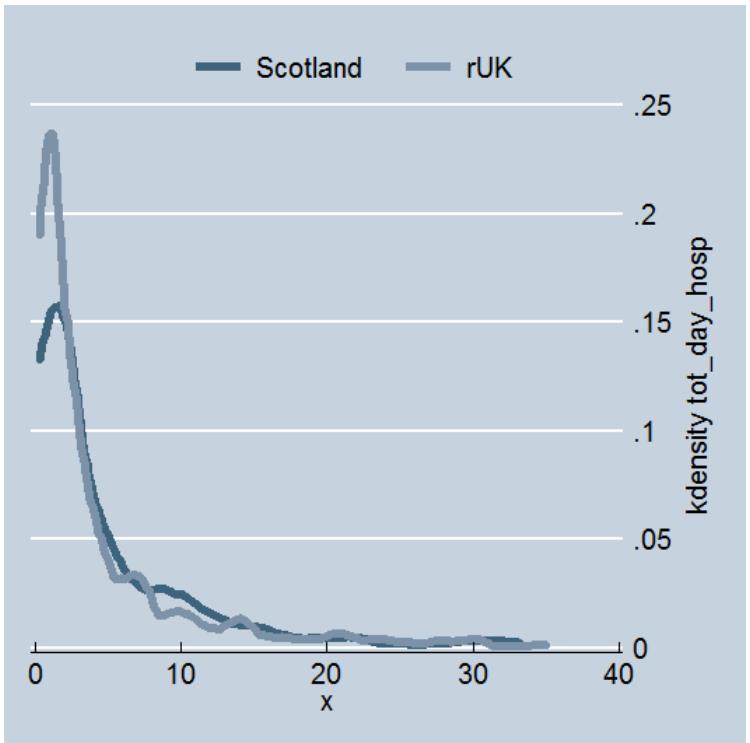
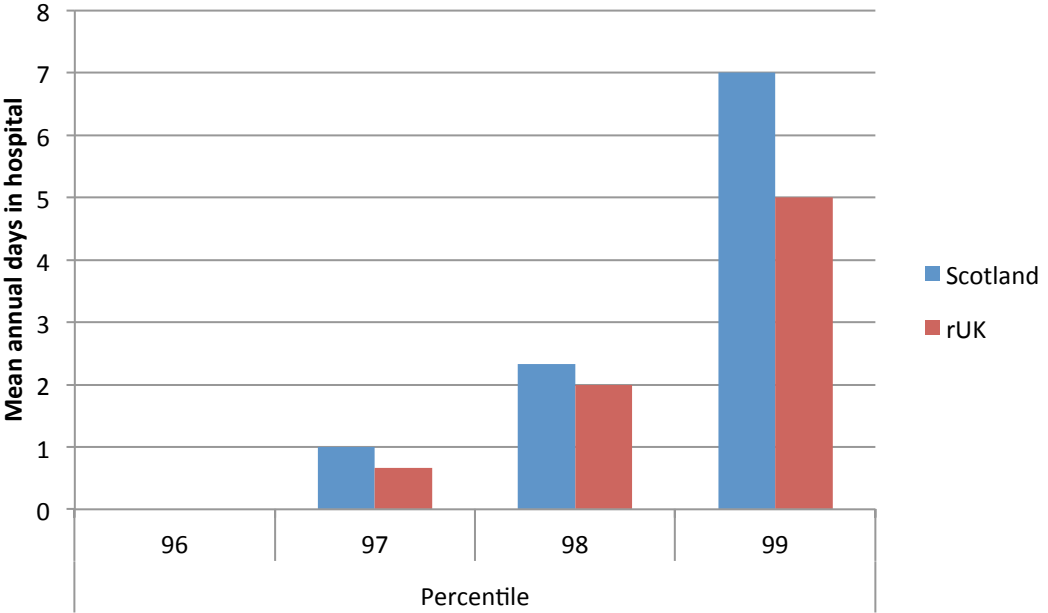
Distribution of hospital admissions among those aged 65+



Hospital stays

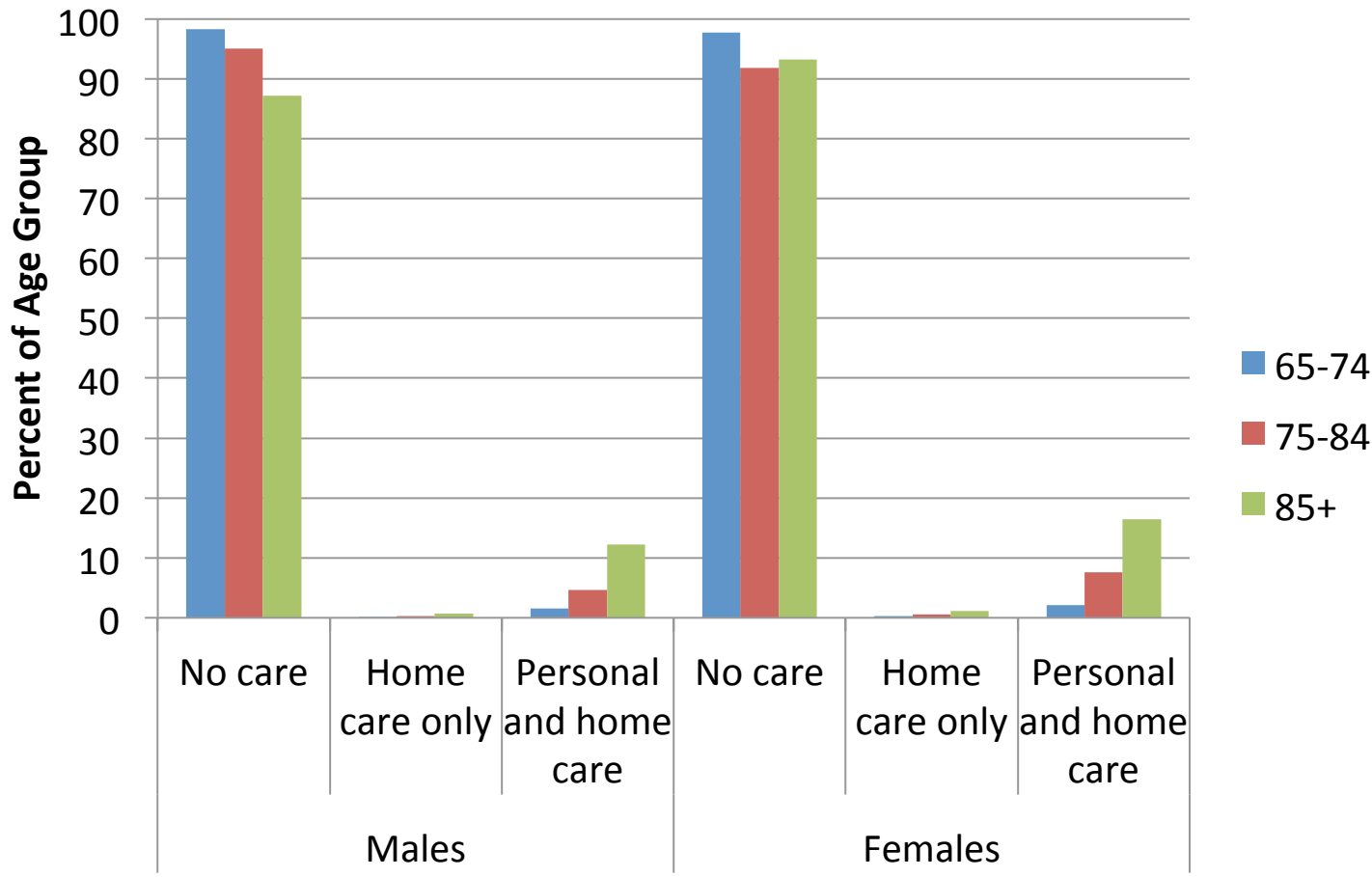


Understanding Society estimates of hospitalisation

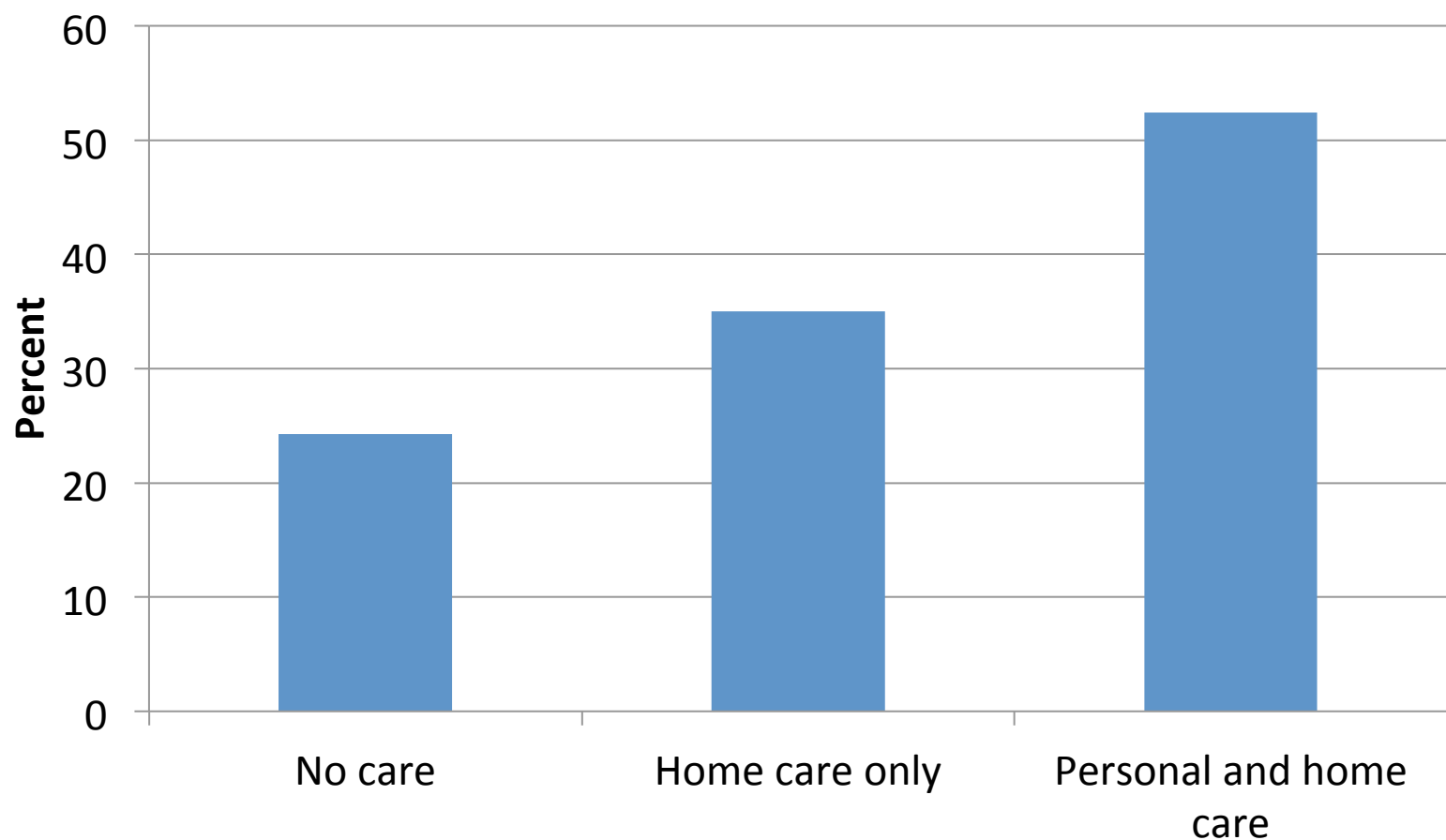


Source: Understanding Society

Social Care in 2011 by age category and sex (%)



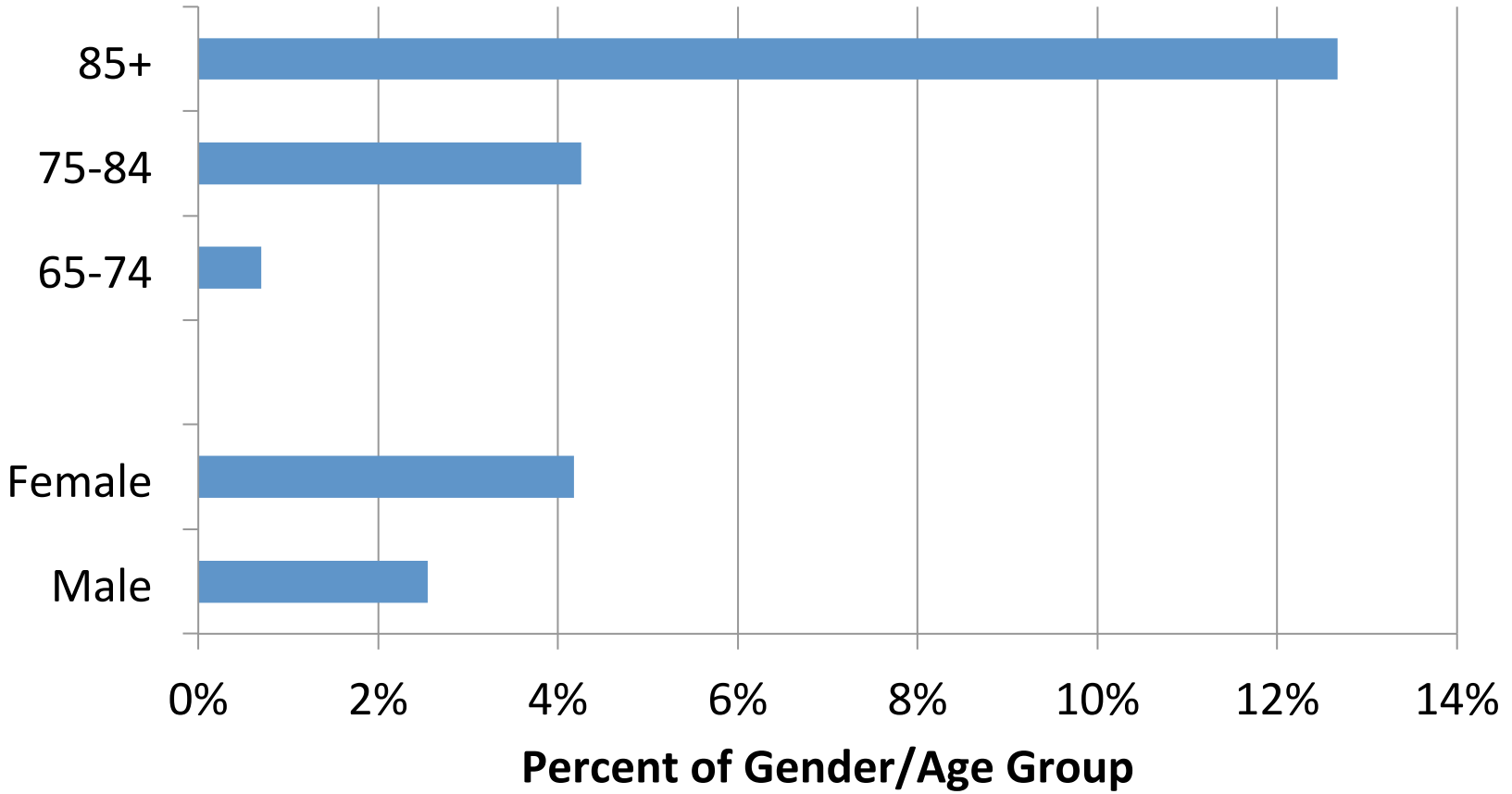
Share of those receiving social care also admitted to hospital during 12 month period



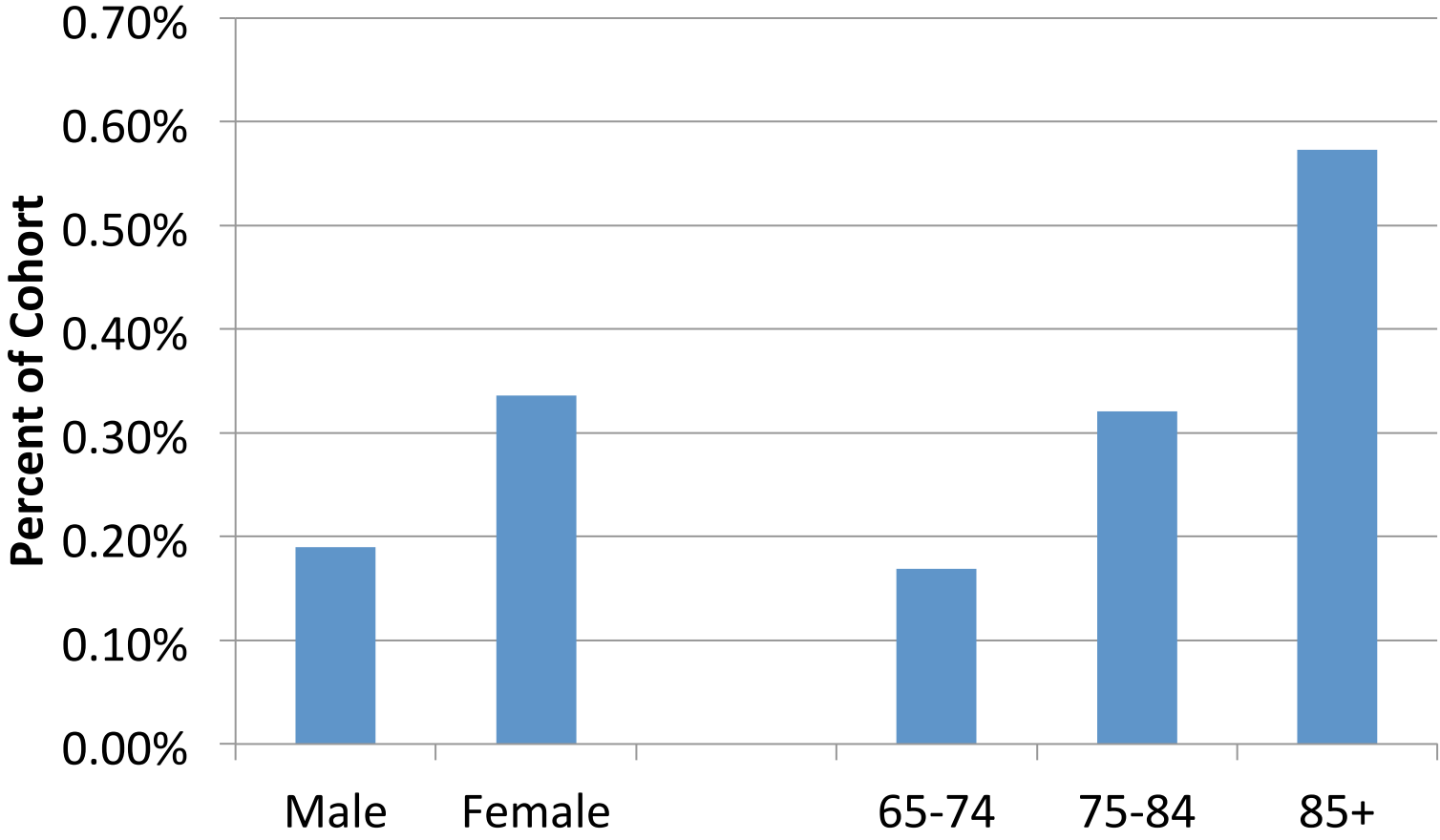
Dementia Cohort

- Dementia diagnoses are identified in three ways:
 - Hospital admission for dementia treatment
 - Prescription of dementia-only drugs
 - Social care record of dementia diagnoses
- Individuals with any one of the three indicators are included in the dementia cohort
- Allows us to explore differences in service-use patterns for individuals with dementia
- However: dementia is still likely under-diagnosed.

Share with Dementia Diagnosis



Share of cohort with hospital admission due to “injury”



Modelling probability of hospital admission due to injury

Impact of independent variables on Admission Reason 'Injury'

Independent variables	Logit Coefficient	Standard Error
Male	-0.46***	.10
75-84 ₁	0.61***	.11
85 and over	1.07***	.13
Receiving social care in 2010	0.45**	.15
Council Area ₂		
Edinburgh	3.84***	.35
South Ayrshire	2.54***	.35
South Lanarkshire	3.55***	.32
Stirling	3.83***	.33
SIMD 2 ₃	0.27	.15
SIMD 3	-0.01	.16
SIMD 4	-0.15	.17
SIMD 5	-0.12	.17
Dementia cohort	0.93***	.16
Constant	-9.25***	.35

Source: Scottish Health and Social Care Data Linkage Project

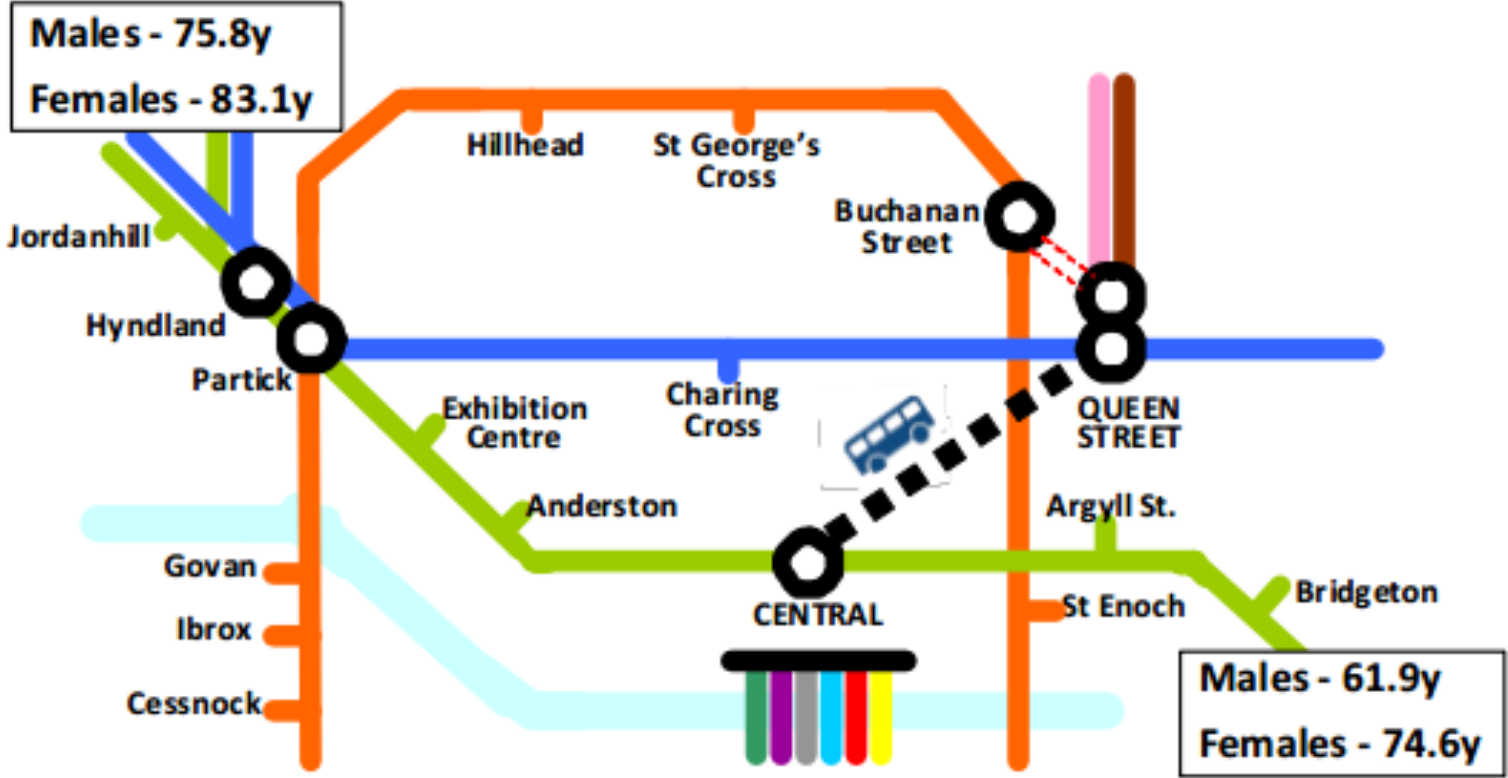
Reference categories: ₁65-74 ; ₂Largest Council area in sample ; ₃Most deprived

N=170700; Pseudo R²= .10; ***p<0.001 ** p<0.01 *p<0.05

Success in Linkage Research?

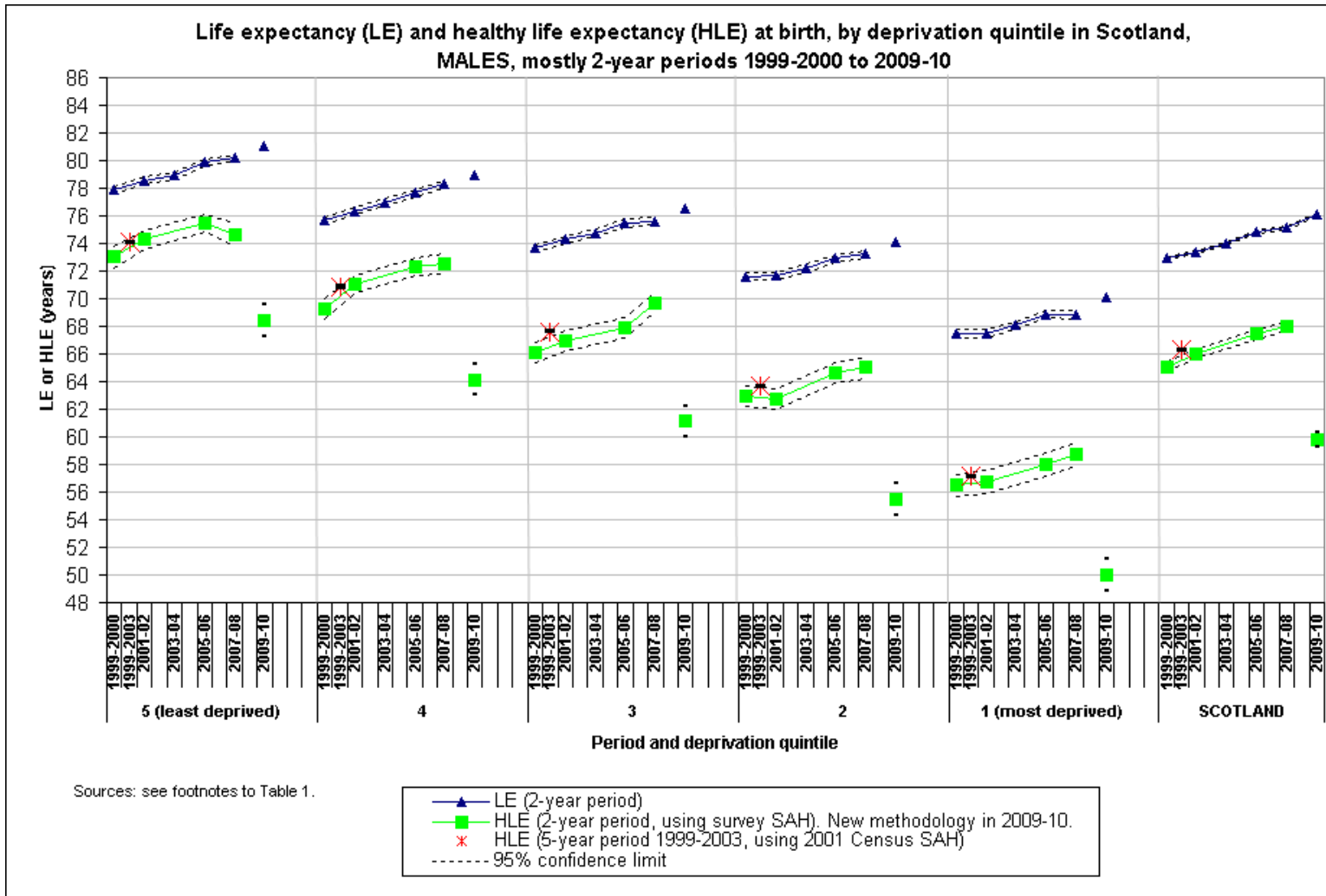
- Training in appropriate statistical methodology
- Statistical complexity – analysing pathways
- Cost linkage?
- Turnround?

Health Inequalities



Life expectancy data refers to 2001-05 and was extracted from the Glasgow Centre for Population Health community health and wellbeing profiles. Adapted from the Strathclyde Partnership for Transport travel map by Gerry McCartney.

Life Expectancy and Healthy Life Expectancy by SIMD

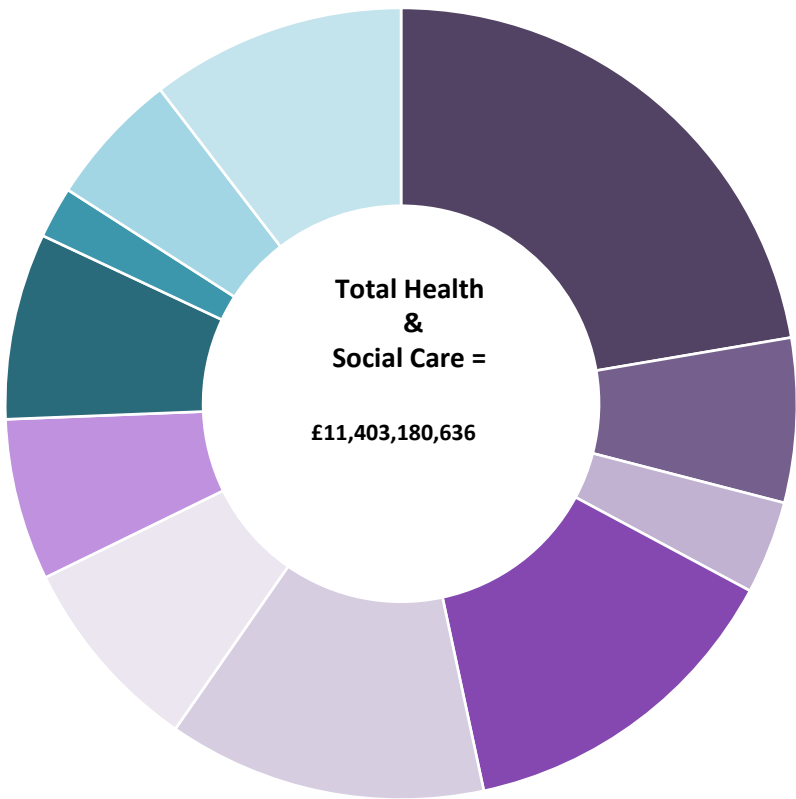


HAGIS - CONTEXT

- Genesis
 - Back in the mists of time ...
 - Richard Suzman, Jim Smith, David Weir, John Phillips
 - Steering group
- Funding
 - CPC, SIRE
 - NIA, Nuffield
- People
- Context - Scotland
 - Population = 5.4m, - aged over 50 = 2.1m
 - Life expectancy closer to USA than any OECD member country
 - Health worse than England, though socio-economic characteristics very similar.
 - High levels of income and health inequality
 - Different health/social care policies from England and most OECD countries.
 - Current policy initiative to integrate health and long-term care systems
 - Excellent data - particularly in health and social care.

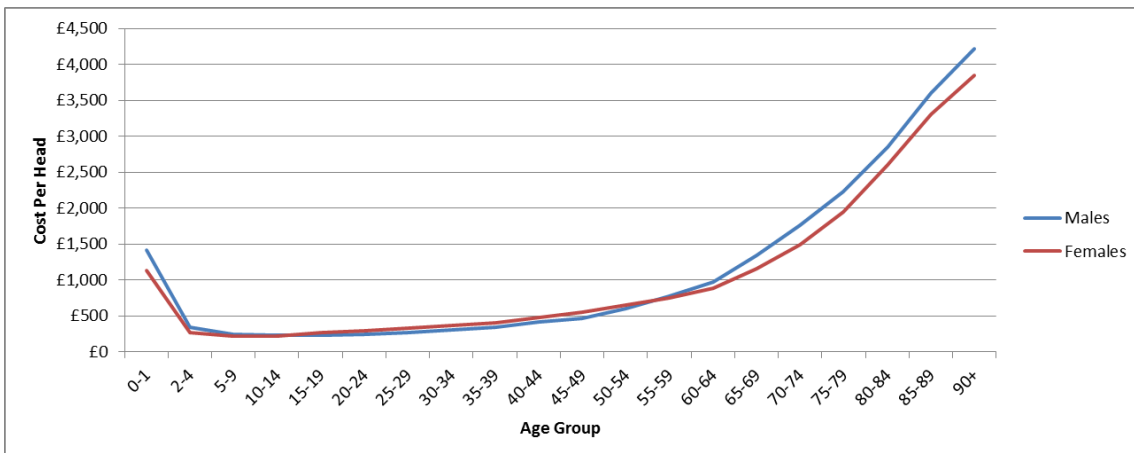
EXAMPLE OF COMBINED HEALTH/SOCIAL CARE DATA

HEALTH AND SOCIAL CARE COSTS 2012-13

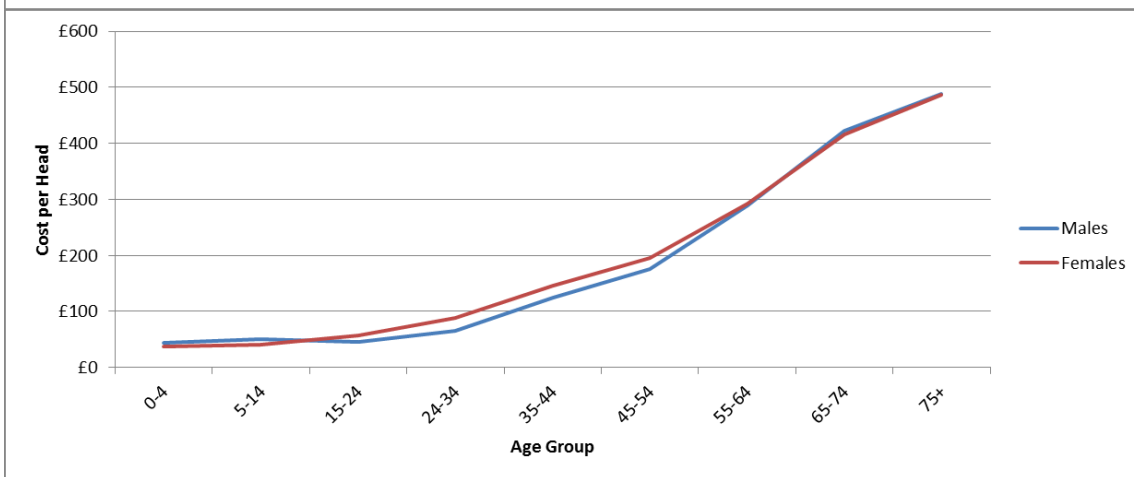


- Non Elective - Inpatients, 22.3%
- Elective - Inpatients, 6.7%
- Day case, 3.8%
- Other Hospital, 13.8%
- Community-based NHS, 13.0%
- GP Prescribing, 8.1%
- Other Family Health Service excl. GP Prescribing, 6.6%
- Care Homes, 7.6%
- Other Accommodation-based Social Care, 2.1%
- Home Care, 5.5%
- Other-Community-based Social Care, 10.4%

The Health Cost – Age Profile



Acute care



Prescribing

Source: Information Services Division

CURRENT POSITION RE HAGIS

- Tendering for contract with survey companies to pilot around 1000 respondents aged over 50
- Designing questionnaire
- Going through application for ethical approval

KEY FEATURES OF HAGIS PILOT

- **Sampling Frame:** Postcode Address File/Health Records
- **Innovation:** financial literacy, cognition
- **Data linkage:** health, social care, education

- Comparisons between sample and population regarding health measures

- No immediate plans for biomarker/genetics data. Would be part of full survey.

OTHER QUESTIONS?

- **Well-being**
 - Evaluative
 - Life satisfaction
 - Positive and negative affect
 - Domain Satisfaction
 - Eudaimonic
 - Self-acceptance
 - Quality of life
- **Attitudes to risk**
 - Simple scale rating across health, finance and social domains.
- **Loneliness**

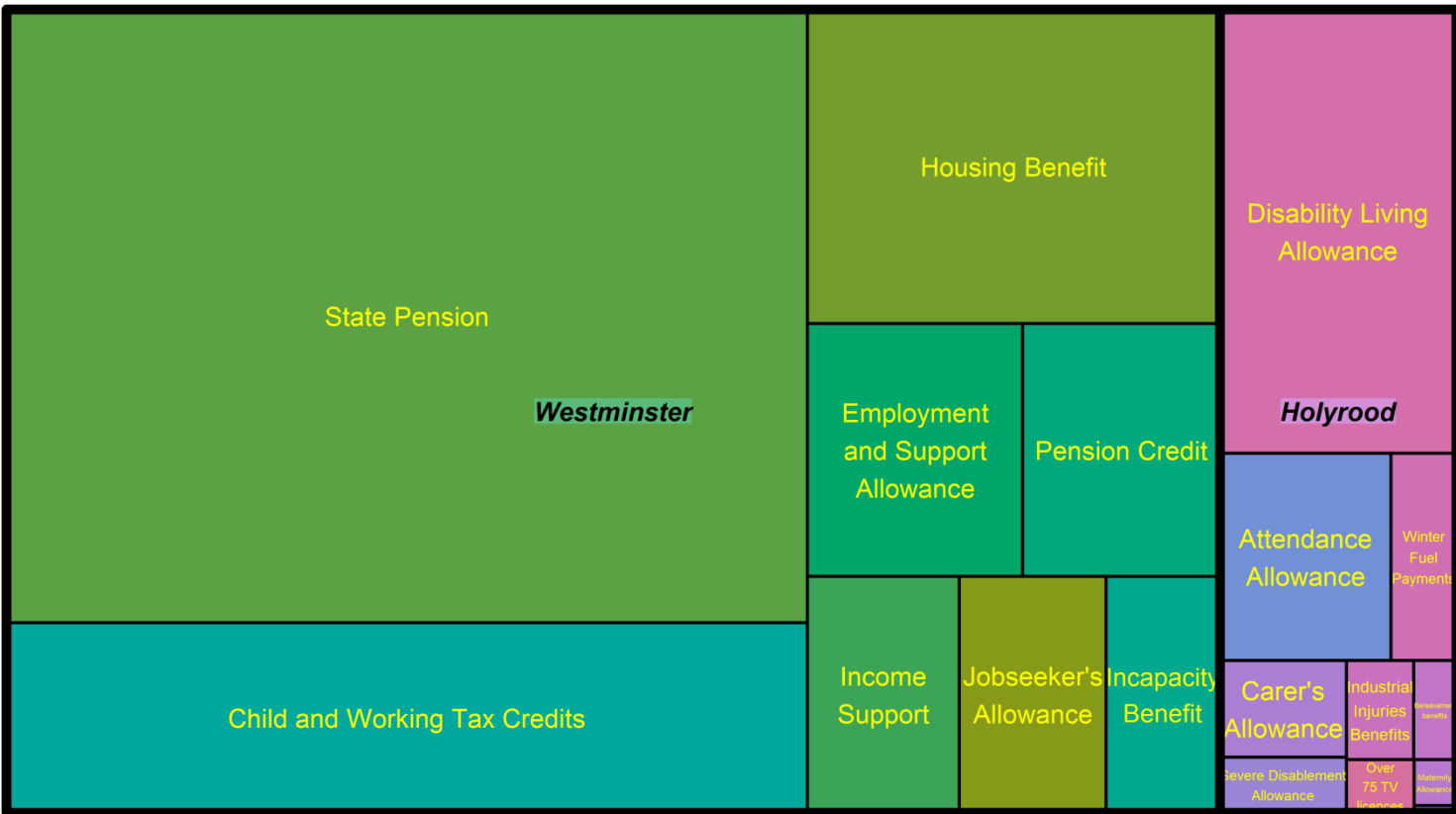
Disability and Long-Term Care in HAGIS

- Functional loss => need for care/assistance
- How is this need met?
- What effects does it have on parties involved?
 - caree
 - carer(s) – paid/unpaid
- Effects - financial/health/well-being
- Longitudinal study can track these as well as the trajectory of functional loss

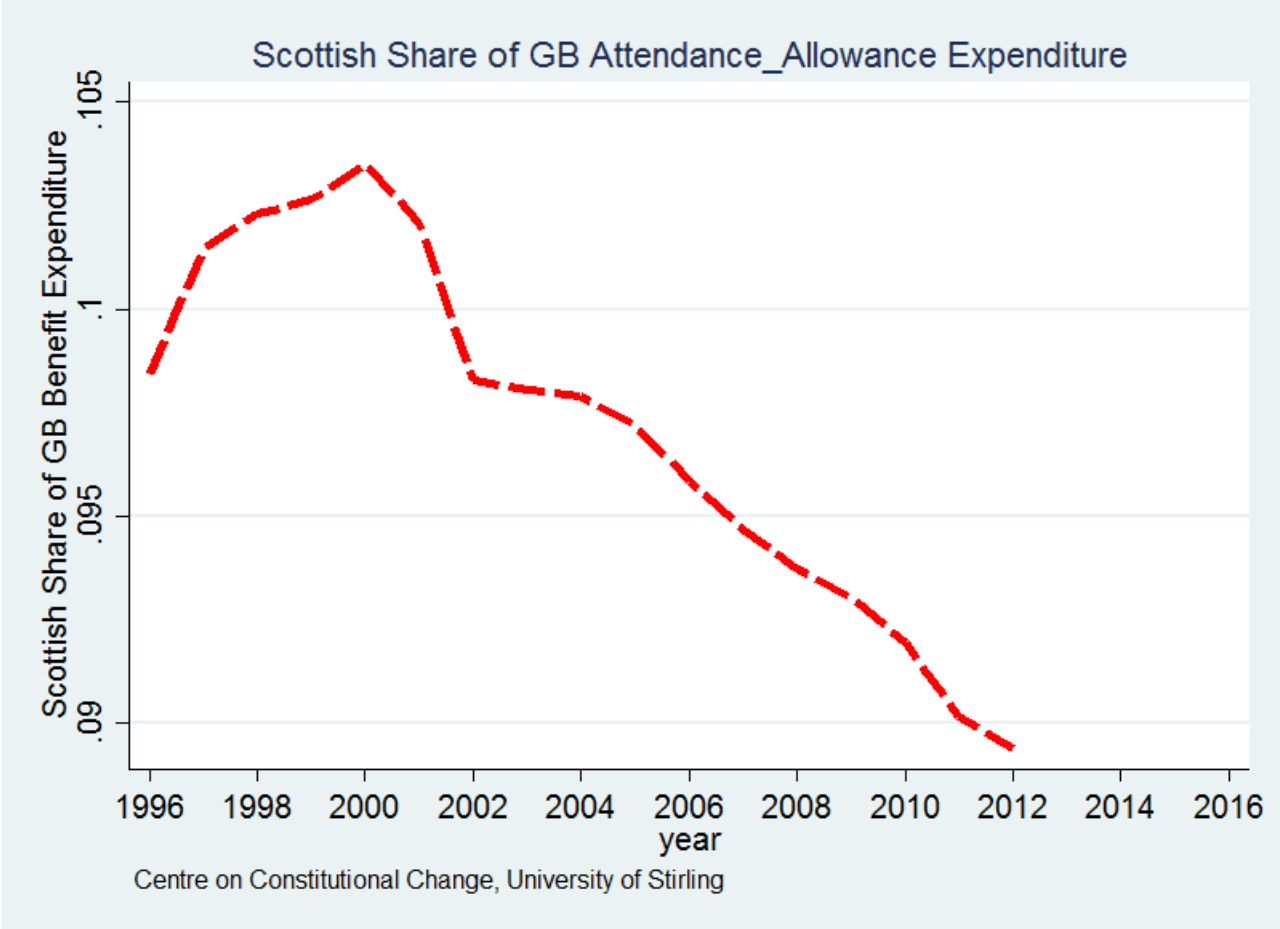
Chaotic Fiscal Decentralisation

- Killer argument for full-scale HAGIS

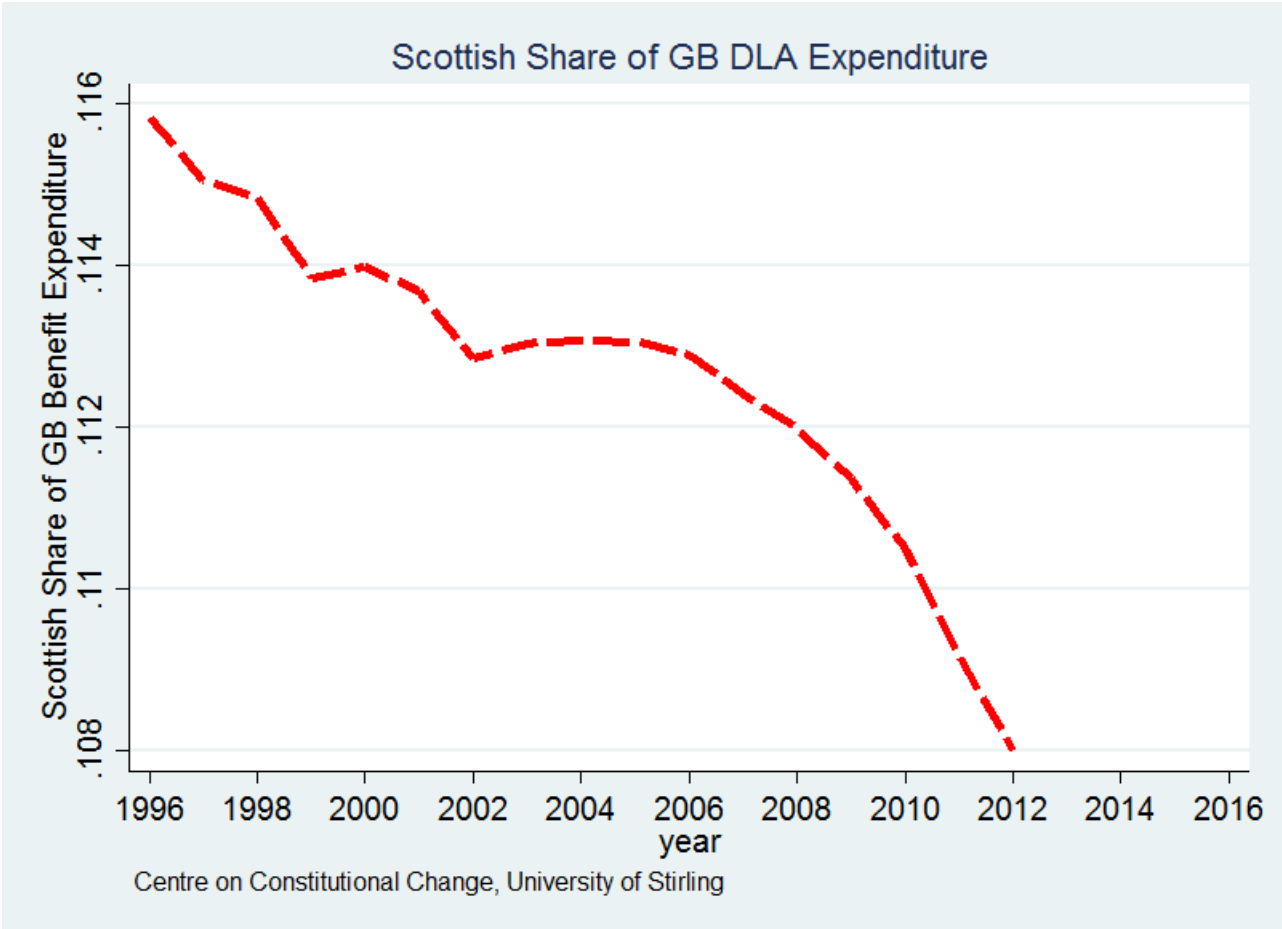
Scotland Bill 2015: Welfare Powers



Attendance Allowance Share



Disability Living Allowance



Key websites:

- <http://www.hagis.scot/>
- <https://www.g2aging.org/>
- <http://www.elsa-project.ac.uk/>
- <https://www.understandingsociety.ac.uk/>
- <http://tilda.tcd.ie/>
- <http://nicola.qub.ac.uk/>

- Twitter account: @HAGIS_SCOT