Care for older people in Scotland: data from the 'Social care, Housing and Health Data Linking Project'

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Context

- Health and social care similar largely publicly funded in Great Britain

- NHS responsible for funding the delivery of health care

- Local authorities fund the delivery of social care

- Broadly similar proportions of older people in Scotland and rest of Great Britain

- How to improve the interface between local authorities and the NHS in a way that benefits older people, particularly those with chronic conditions?

- Developing a better understanding of the experience of older people in the use of these services.

Health Inequalities in Scotland

- Compared with many high-income countries, Scottish society is characterised by a high level of income (and health) inequality.
- Poverty rates and deprivation (however measured) are higher than in the other nations of the UK.
- There is a considerably variance in health, with the variance in life expectancy being larger than in most countries with comparable levels of socio-economic attainment.
- Reduction in health inequality a key priority of the Scottish Government
- There is also a commitment to focus on preventative spending, based on the premise that intervening early is better for the client and less costly on the public purse.

Life Expectancy and Healthy Life Expectancy by SIMD

Life expectancy (LE) and healthy life expectancy (HLE) at birth, by deprivation quintile in Scotland, MALES, mostly 2-year periods 1999-2000 to 2009-10
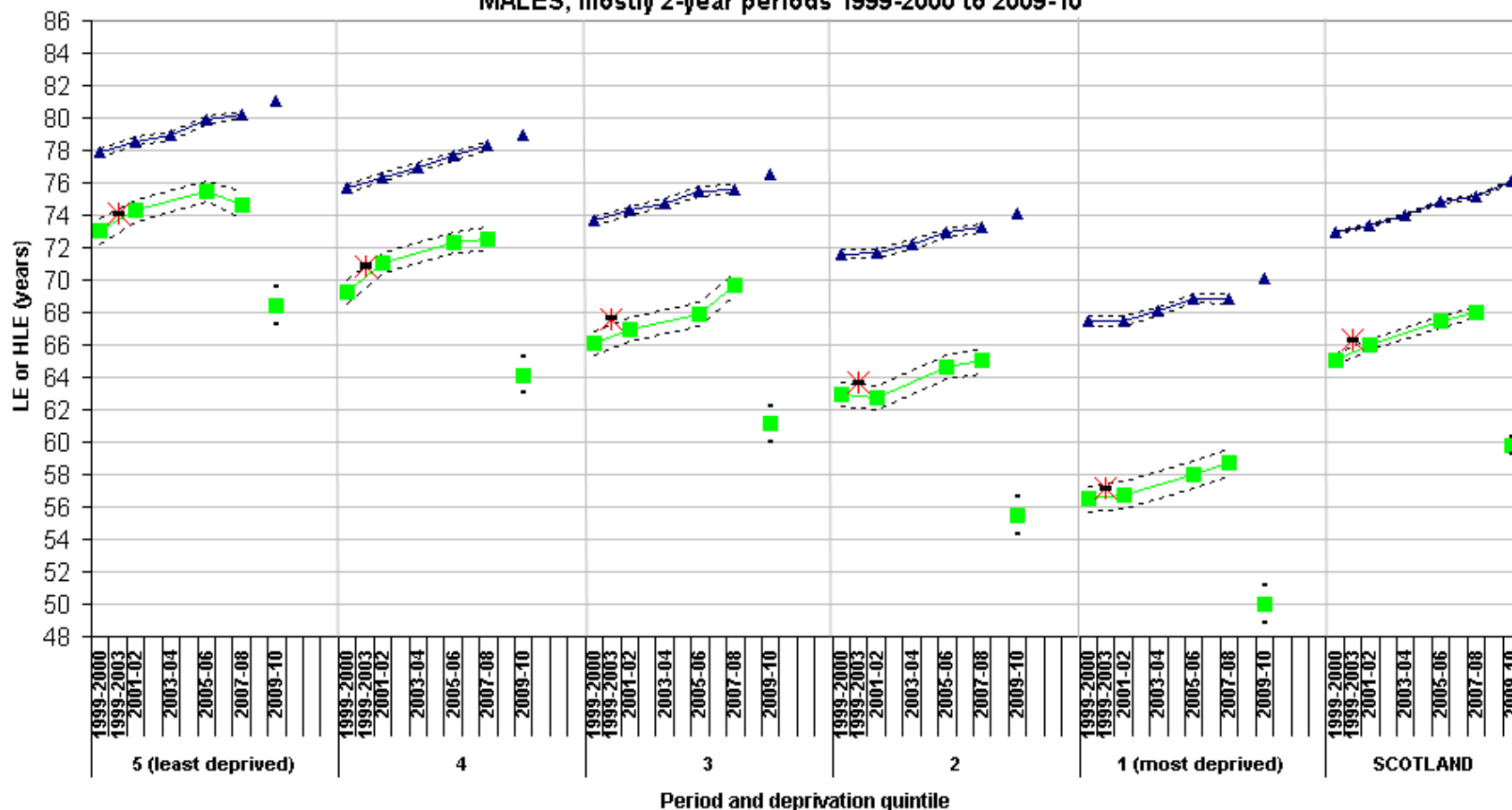
Background to Project

- University of Stirling project to examine the use of health and social care services by older people

- Analysing a unique dataset in collaboration with the Scottish Government's Health Analytical Services Division and the Information Services Division of NHS Scotland

- Facilitated by high quality data collected by ISD and new Social Care data collected by local authorities

- Funded by National Institute of Ageing in the US

Scottish Government: Linking Health, Social Care and Housing Data

The Scottish Government, in collaboration with Information Services Division (ISD) Scotland, Scottish health boards and Scottish local authorities are developing a project which involves the linking of specific social care, housing support and health data in order to produce improved analytical evidence to enhance the delivery of these services.

Further information about the project can be found here: http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/Datalinking.

Aims of the Study

- Develop understanding of the practicalities and challenges in working with linked health and social care data

- Understand the interaction of health and social care services using population administrative data

- Provide learning for English Longitudinal Study of Ageing (ELSA) and the Scottish Longitudinal Study of Ageing (SLSA)

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

**Demographics Data:** demographics & death data for all clients

Client Data

**Flags Data:** Service contacts for all clients 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)

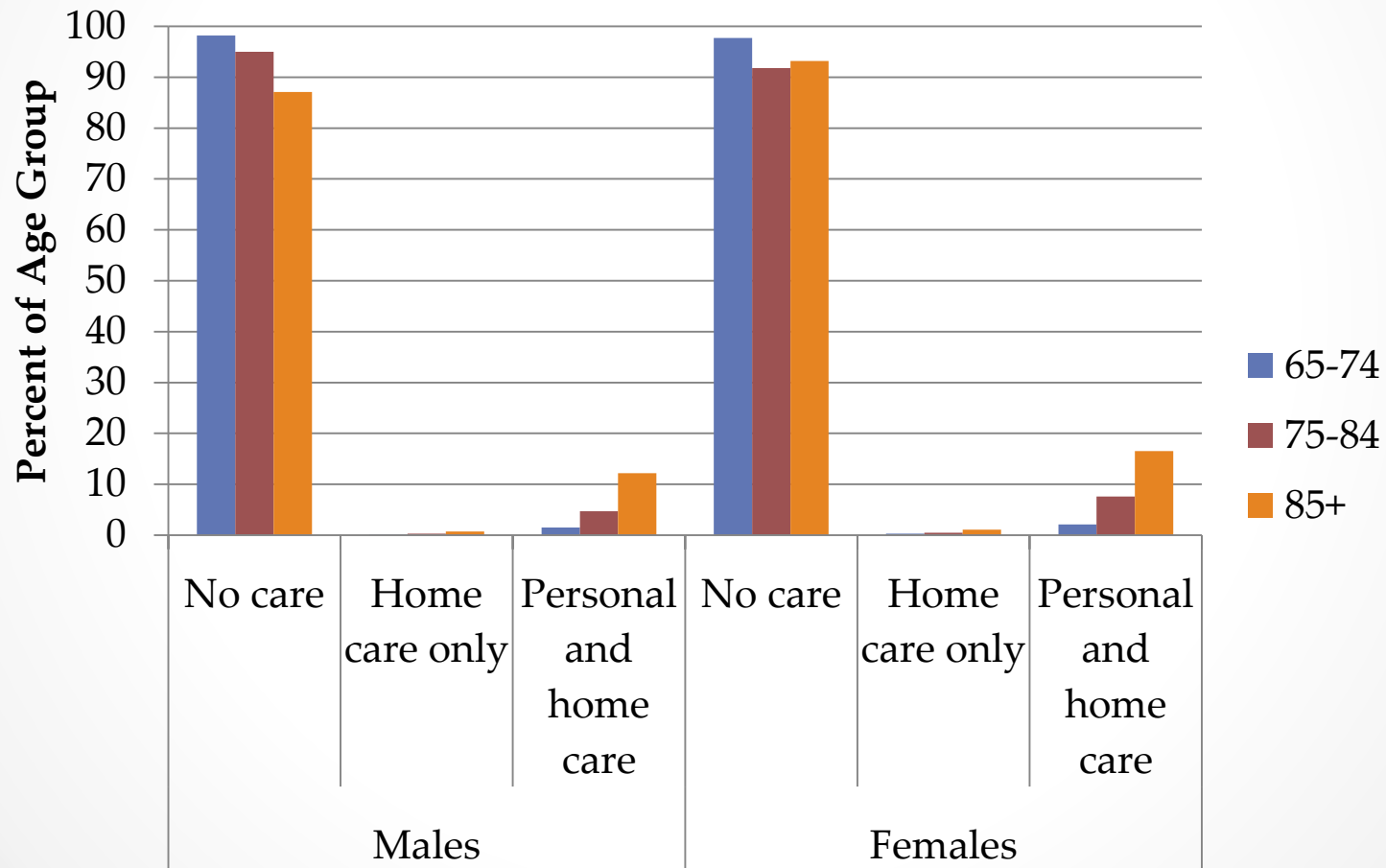- Mixture of rural/urban and deprived/non-deprived

Distribution of hospital admissions among those aged 65+
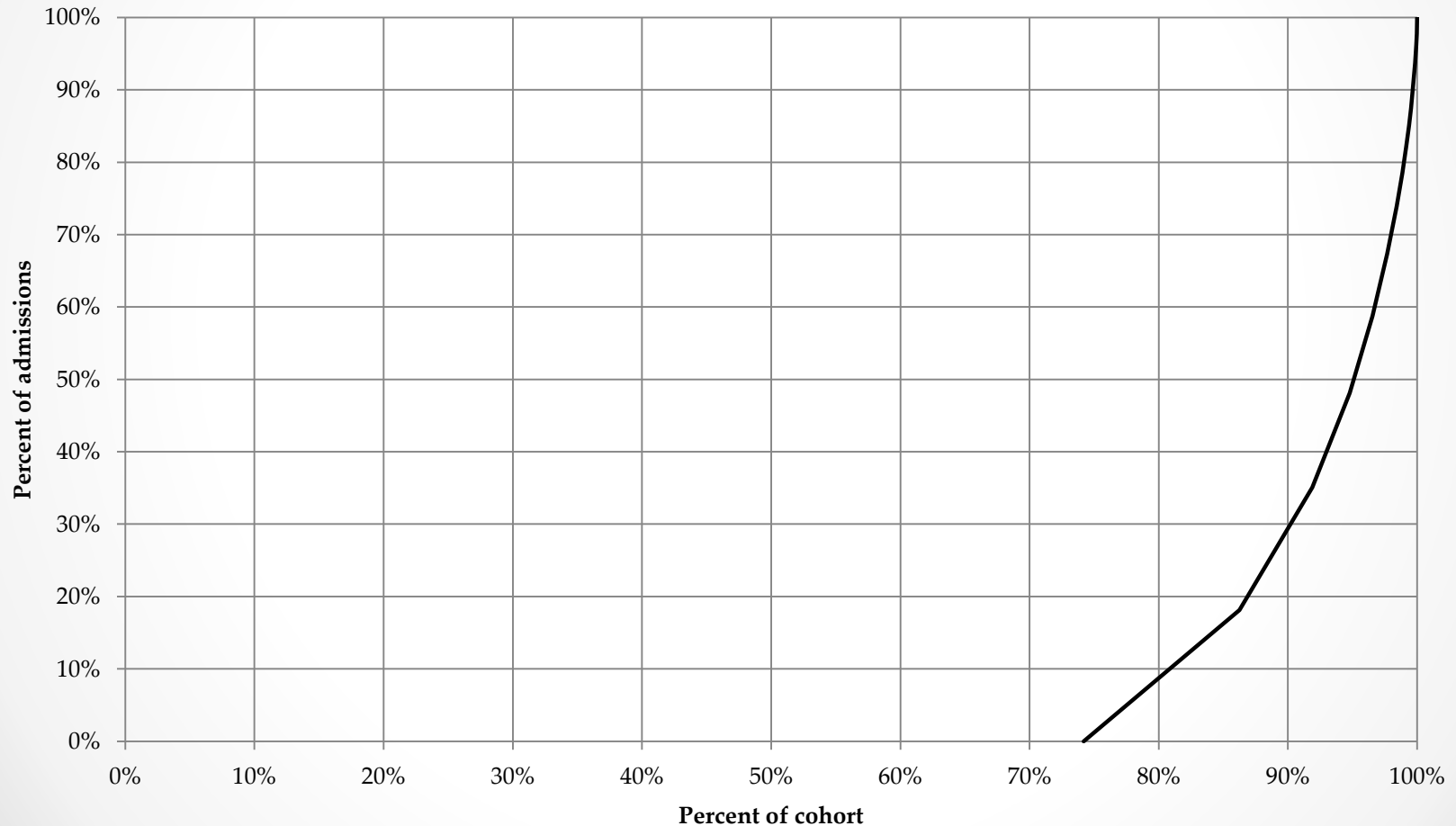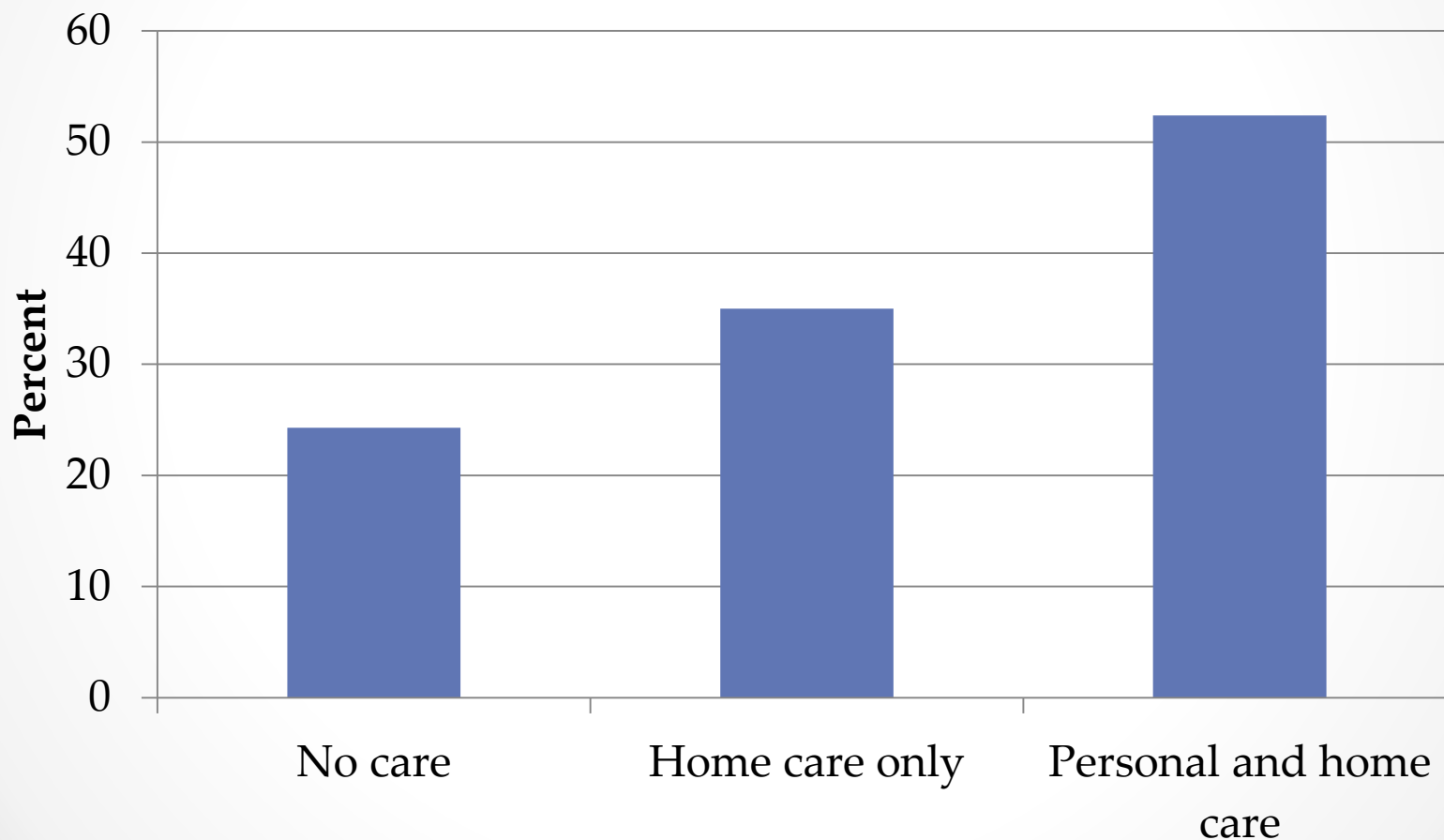
Hospital admissions by age and sex between 1st April 2010- 31st March 2011 (%)
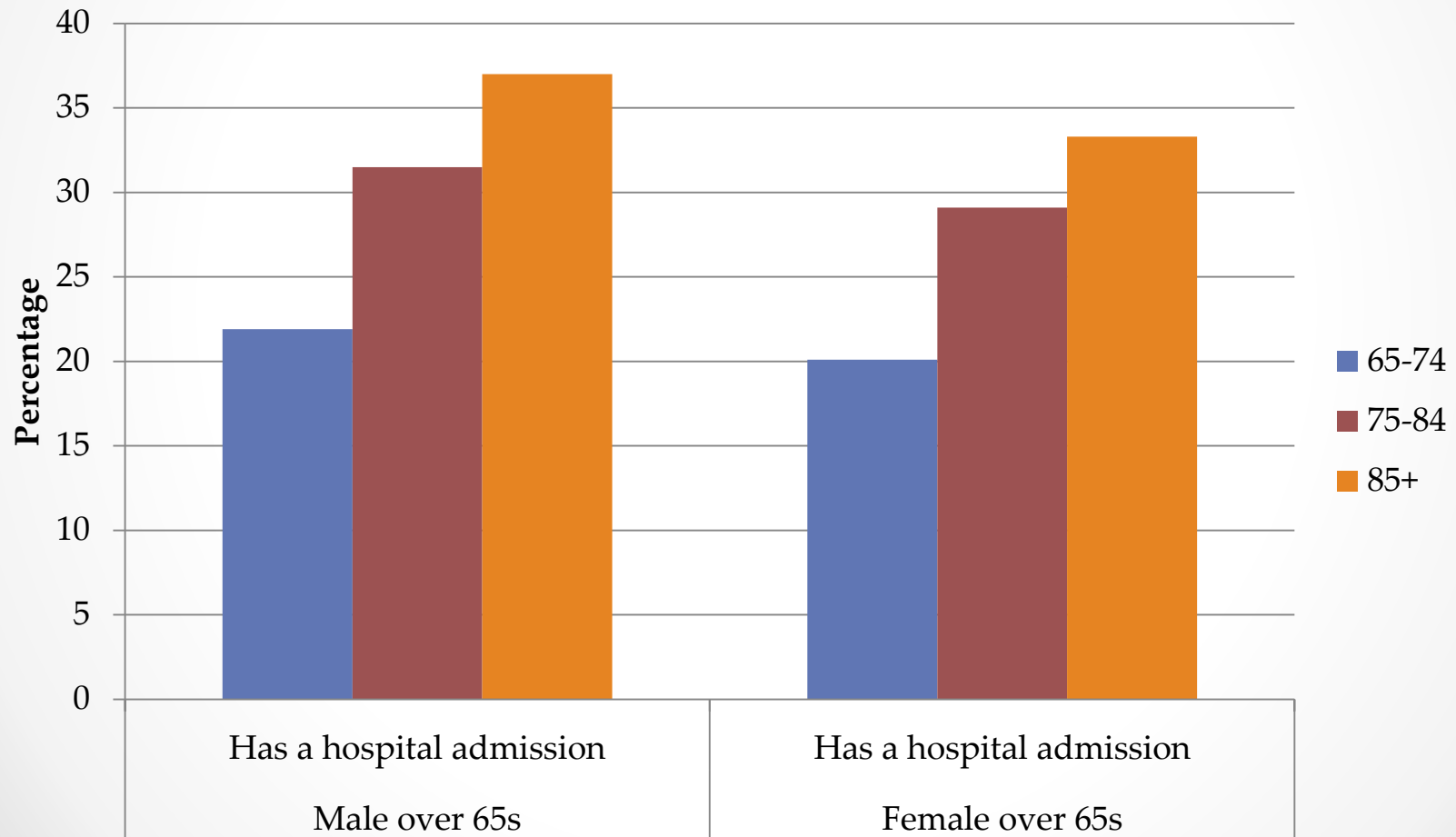
Social Care in 2011 by age category and sex (%)

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
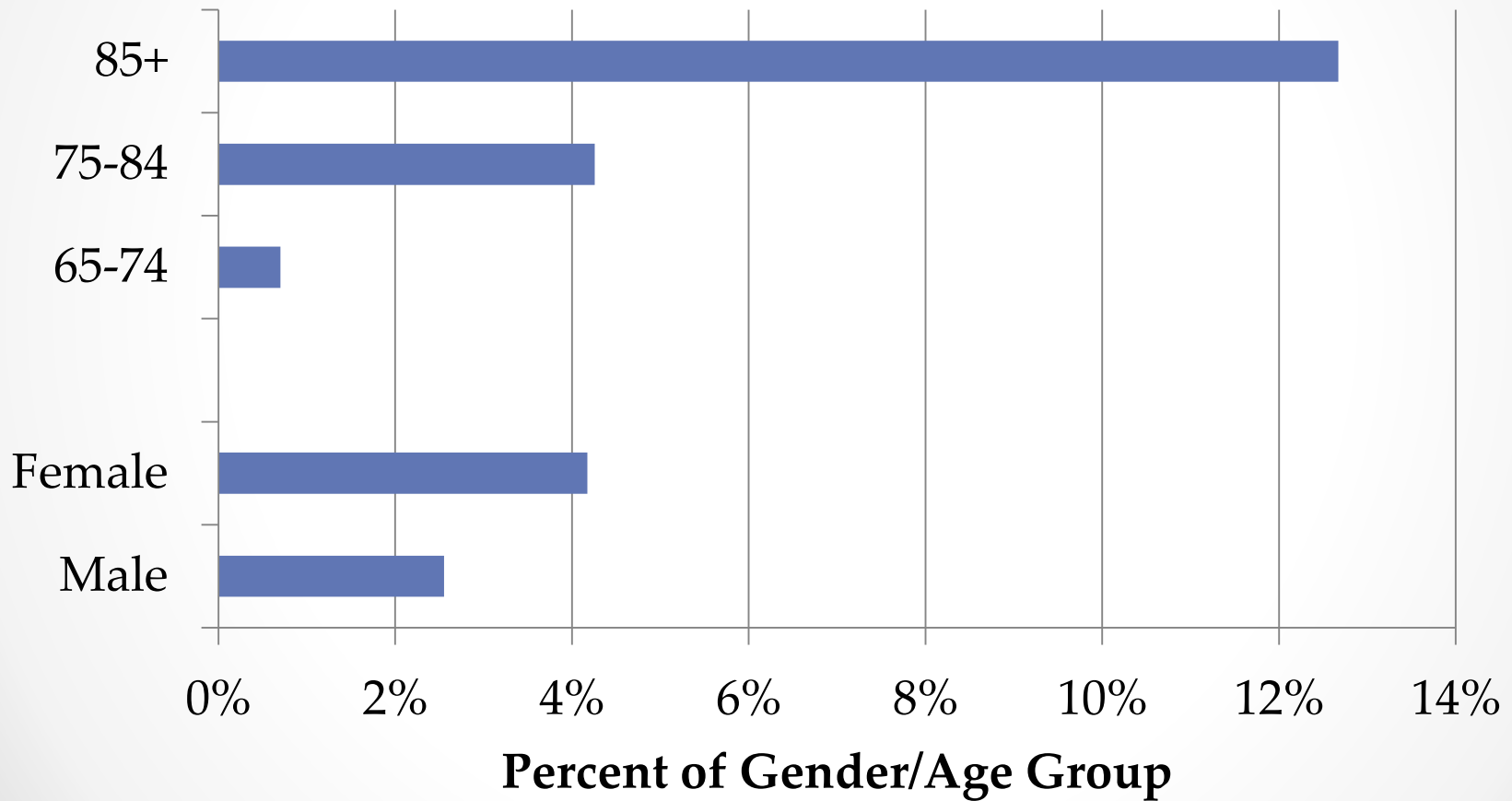
Interaction of Dementia Diagnosis and Health Care: Modelling Hospital Admission due to "Injury"

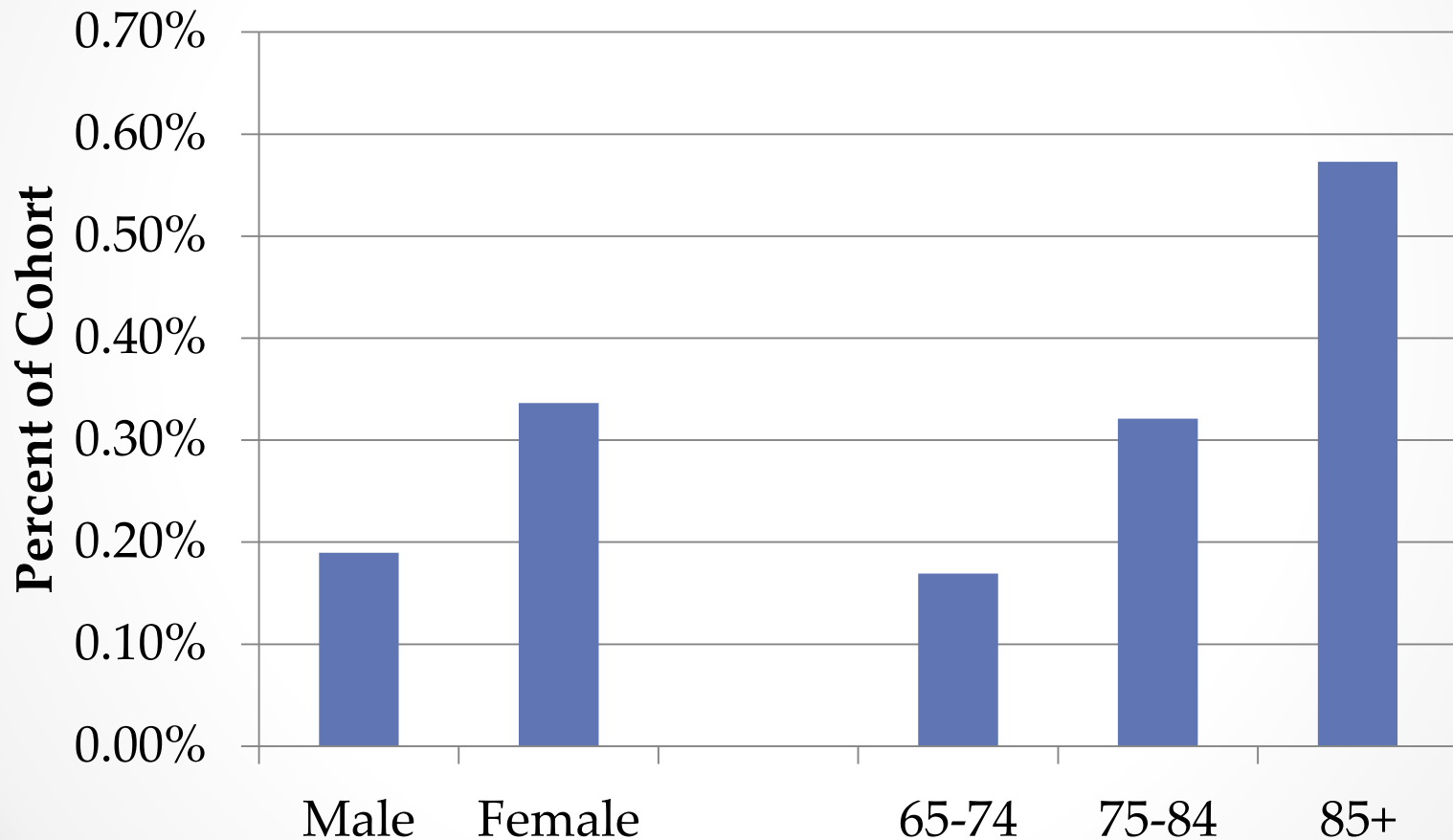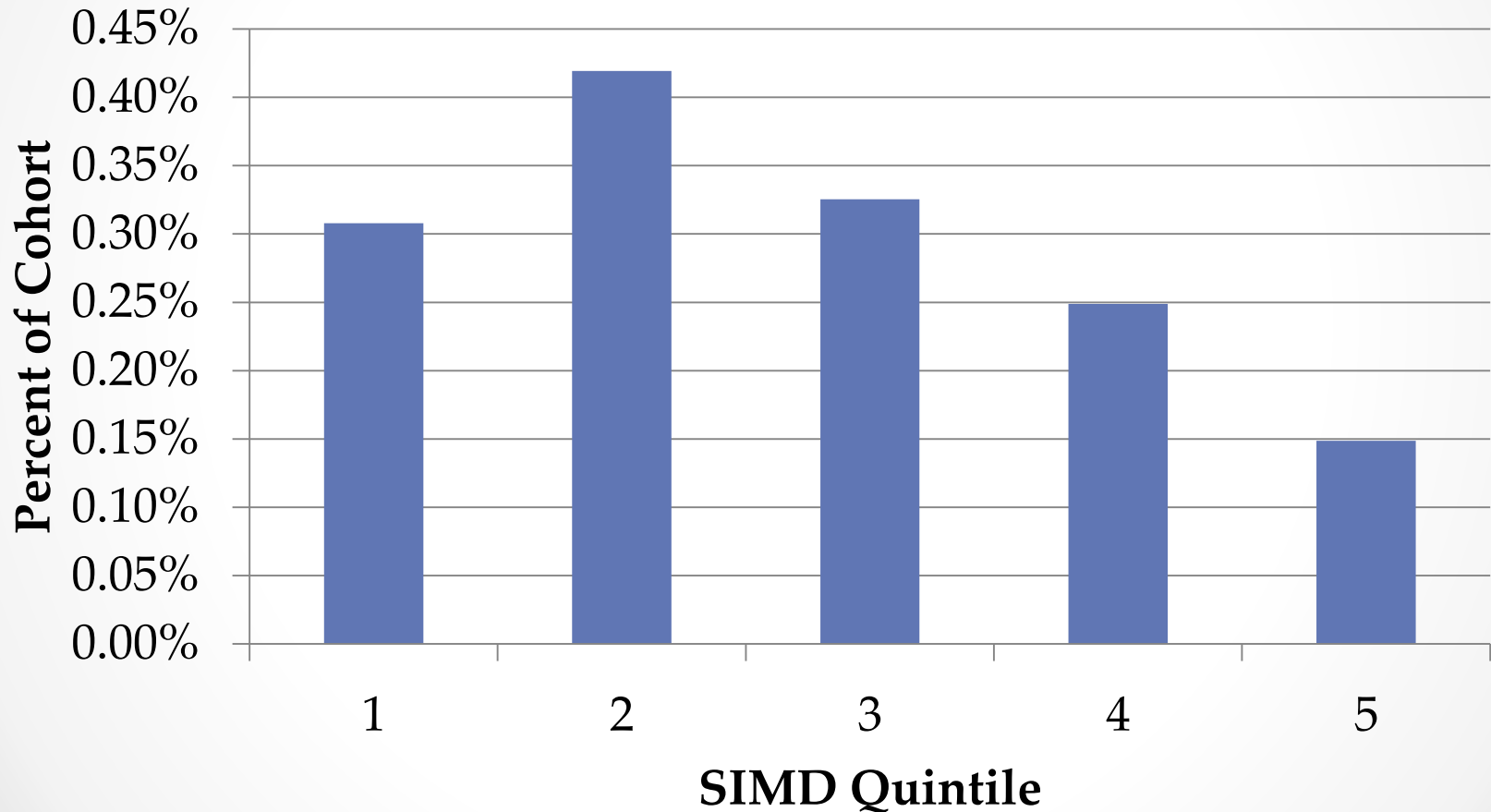# Share of those aged 65+ with hospital admission due to "injury"

Share of those aged 65+ admitted to hospital due to "injury" by level of deprivation

Length of Stay

Over 65s admitted with an 'injury' (%)
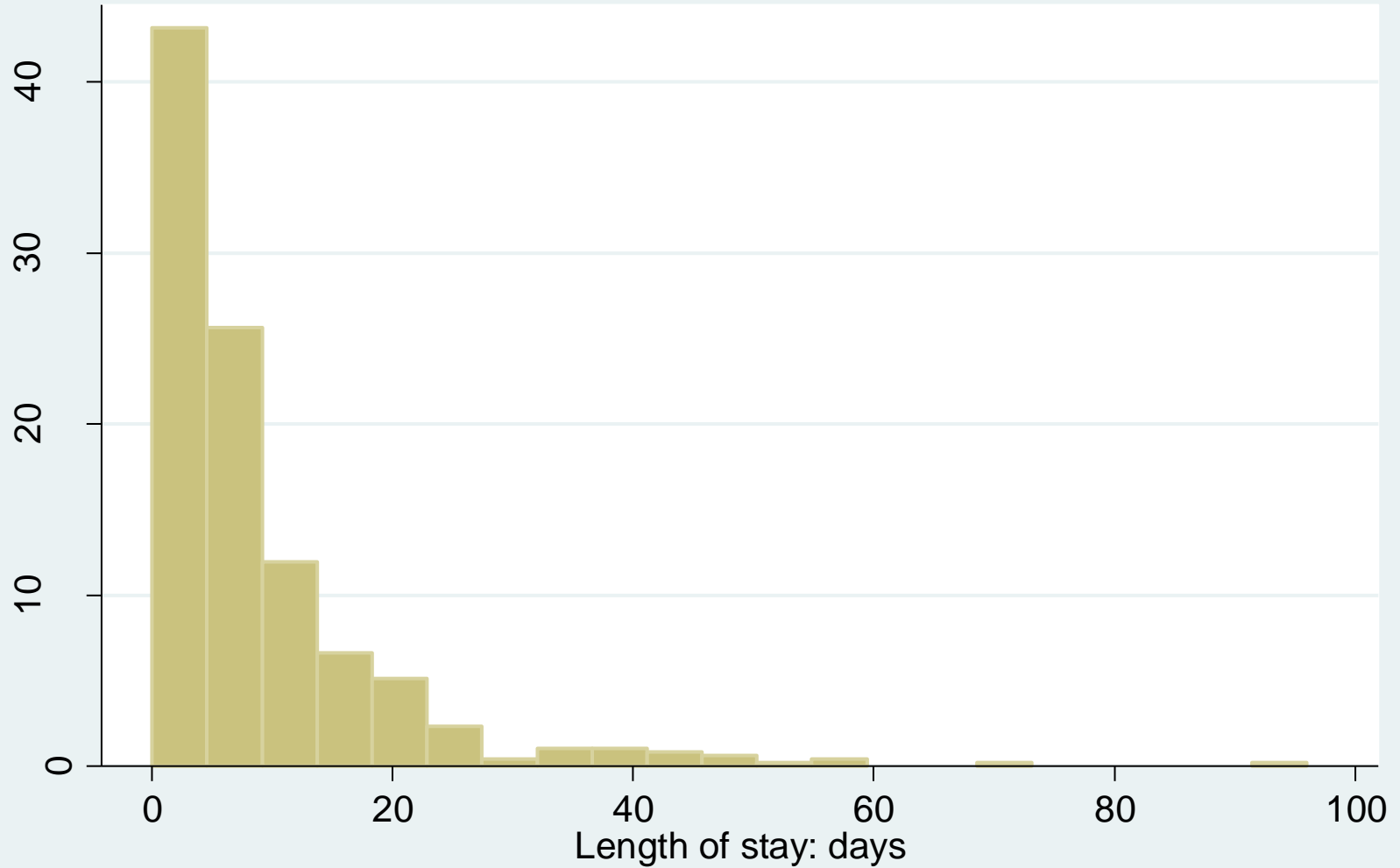
Modelling probability of hospital admission due to injury

Impact of independent variables on Admission Reason 'Injury'

Independent variables	Logit Coefficient	Standard Error
Male	-0.46***	.10
$75\text{-}84_1$	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: $_1$65-74 ; $_2$Largest Council area in sample ; $_3$Most deprived

N=170700; Pseudo R^2= .10; ***p<0.001 ** p<0.01 *p<0.05

Modelling Receipt of Social Care

Timing of Data

Hospital admissions
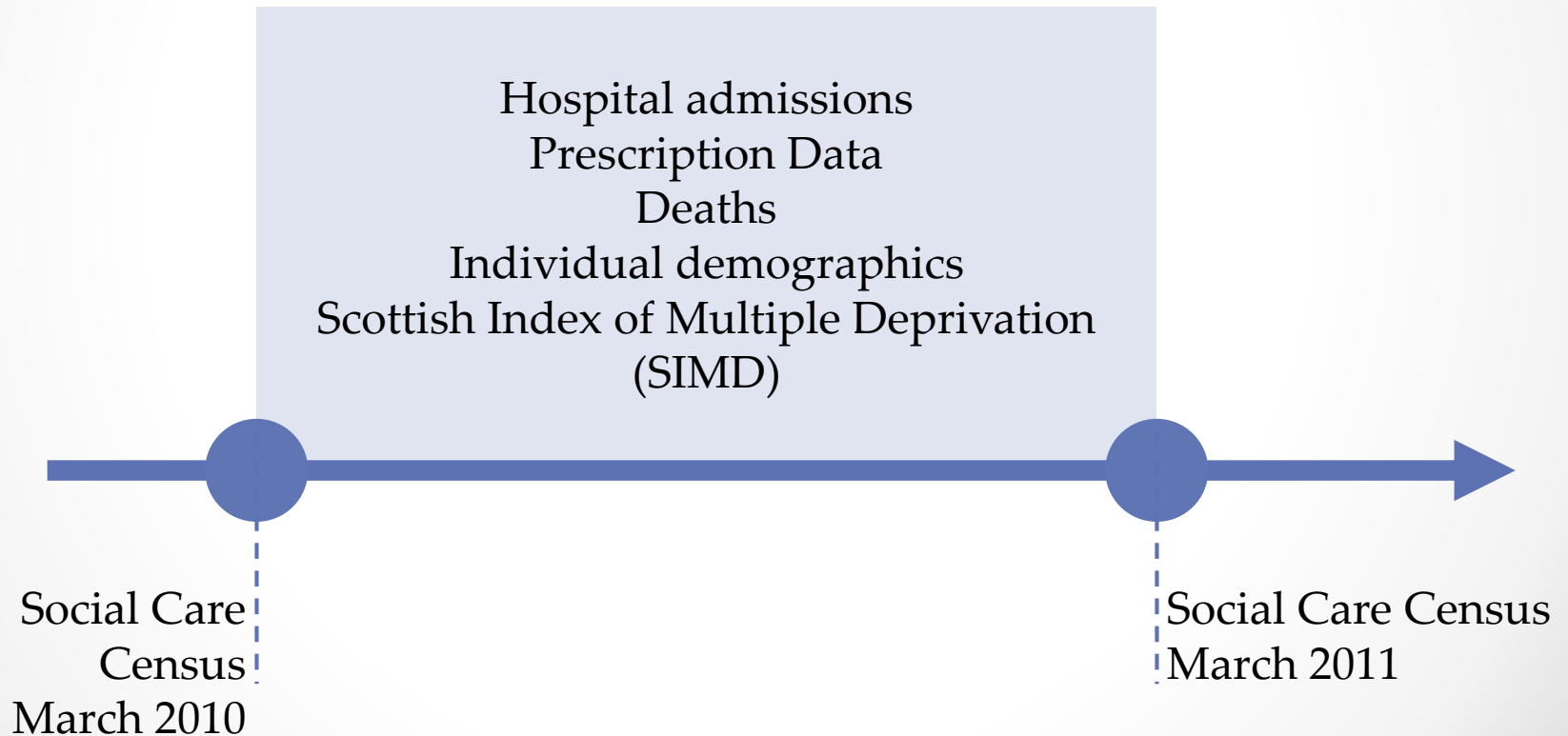Prescription Data
Deaths
Individual demographics
Scottish Index of Multiple Deprivation
(SIMD)

Social Care
Census
March 2010

Social Care Census
March 2011

Multivariate logit predicting the receipt of Social Care in 2011 (continued)

	Mlogit Coefficient	Standard Error
<u>No care</u>	(base outcome)	
<u>Personal & home care</u>		
Admission reason: Injury	0.69***	0.19
Male	-0.31***	0.03
75-84[1]	0.94***	0.04
85 and over	1.35***	0.04
Social care in 2010	4.36***	0.03
Council Area[2]		
Clackmannanshire	1.36***	0.05
South Ayrshire	0.31***	0.04
South Lanarkshire	-0.02	0.04
Stirling	-0.09	0.06
SIMD 2[3]	-0.10*	0.05
SIMD 3	-0.16**	0.05
SIMD 4	-0.36***	0.05
SIMD 5- least deprived	-0.47***	0.05
Dementia cohort	-0.43***	0.05
Constant	-4.30***	0.05

Source: Scottish Health and Social Care Data Linkage Project
Reference categories: [1]65-74 ; [2]Edinburgh ; [3]Most deprived
N=170700; Pseudo R^2= .42; ***$p<0.001$ ** $p<0.01$ *$p<0.05$

Predictors of social and personal care support

- Being in care the previous year

- Hospitalisation due to injury

- Which local authority the individual is resident in

- Whether individual lives in a deprived area

- Dementia (negative)

Care intensity also greater in poorer areas
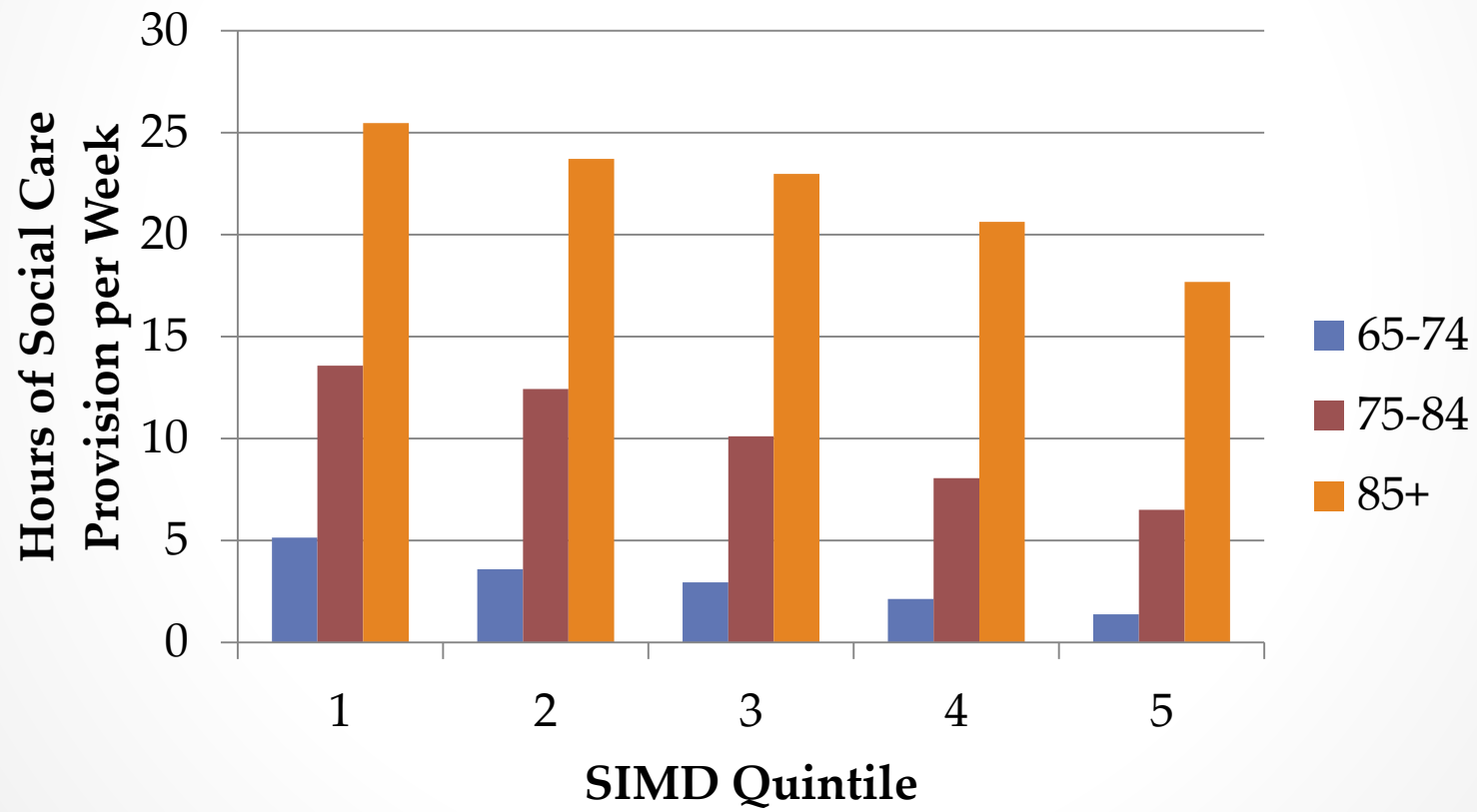
Discussion

- Differences between local authorities in social care provision – but no LA differences in injury admissions

- Differences in Dementia cohort e.g. less likely to be receiving social care – need to understand interaction with hospital care/care homes

- SIMD gradient in health and social care provision
  - lack of care networks?
  - inability to purchase care support privately?

Future Developments

- This pilot data just scratches the surface – there are more local authorities to be added;

- Care home flag data to be added

- Potential to work further with prescribing data

- More sophisticated modelling of service use and survival

- Use of data in the pilot Scottish Longitudinal Study of Ageing

Deaths in the sample period

Predictor of survival in sample period by individual characteristics

	Logit Coefficient	Standard Error
Home care only	1.04***	0.11
Home and Personal Care	1.24***	0.04
Male	0.41***	0.03
75-84[1]	0.85***	0.03
85 and over	1.44***	0.04
SIMD 2[2]	-0.10**	0.04
SIMD 3	-0.18***	0.04
SIMD 4	-0.34***	0.05
SIMD 5- least deprived	-0.44***	0.04
Council area[3]		
Clackmannanshire	0.09	0.07
South Ayrshire	0.02	0.04
South Lanarkshire	-0.01	0.03
Stirling	-0.01	0.05
Dementia cohort	1.64***	0.04
Admission reason: Injury	0.73***	0.16
Constant	-4.12***	0.05

Source: Scottish Health and Social Care Data Linkage Project
Reference categories: [1]65-74 ; [2]Edinburgh ; [3]Most deprived
N=170700; Pseudo R^2= .12; ***p<0.001 ** p<0.01 *p<0.05

IoRN Classifications

Activities of Daily Living (ADLs)
Eating - Transfers (bed to chair) - Toilet

LOW → **Personal care tasks**
Wash self /hair, bath, dress
Food and drink prep
Main meal, snack, hot drink

- LOW → **A**
- MEDIUM → **B**
- HIGH → **D**

MEDIUM → **Mental wellbeing and behaviour**
Agitation, disturbance, verbal aggression, resistance, relationships, risk

- LOW → **C**
- MEDIUM → **E**
- HIGH → **G**

HIGH → **Bowel management**
Assistance, guiding, prompting, supervision

- LOW → **Mental wellbeing and behaviour**
  - LOW → **F**
  - HIGH → **H**
- HIGH → **I**

LEVELS OF HELP REQUIRED DETERMINE IoRN CLASSIFICATION