Patterns, predictors and implications of multimorbidity: exploring the co-incidence of depression and other types of chronic ill health

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Aim of the research study

The research will:

- involve further analysis of the Sheffield Health and Illness Prevalence Survey (SHAIPS 2) dataset.
- focus on multimorbidity among survey respondents
  - particularly the coincidence of depression and chronic physical conditions.
- seek to identify both the predictors and implications of multimorbidity involving depression

Key research questions

- What are the levels and patterns of the co−incidence of depression and other chronic conditions among this sample of Sheffield residents?
- How are levels and patterns of multimorbidity involving depression related to measures of social support, health−related behaviour and socioeconomic characteristics (at individual and community level)?
- How is multimorbidity involving depression related to pathways of health and social care use? Do pathways of care (relating to both depression and physical conditions) differ between those with multimorbidity and those with single morbidities?

Why is this research important?

- the UK has an ageing population and a rising prevalence of long−term health conditions
  - 44% of men and 46% of women reported one or more long−standing illnesses (Joint Health Surveys Unit, 2004)
- a high proportion of people with long term conditions have multi− or co− morbidity
  - i.e. the presence of more than one long term condition

Current gap in the research literature/health & social care information

- rhetoric about treating the whole person
- most research findings and routine data sources focus on single health conditions in isolation
- providers of health and social care services struggle to meet the complex care needs of individuals with multiple health problems

Who will benefit from this research?

The findings may help to improve understanding of the complex interplay between physical and mental health and social and economic conditions. They will therefore be of relevance to:

- public policy makers in a range of areas, including commissioners
- providers of health and social care
- voluntary and community groups
- individual patients via improved services

SHEFFIELD HEALTH AND ILLNESS PREVALENCE SURVEY 2 (SHAIPS 2)

- a postal survey by the then Sheffield Health Authority in 2000
- determine the prevalence of common illnesses and other influences on health and wellbeing in Sheffield
  - results summarised in Coy, Reid, Skinner, and Stead (2002)
- a follow up to the 1994 SHAIPS I survey

SHAIPS 2 Sample

- 16,191 adults
- stratified by age, sex and electoral ward
- enables analysis at electoral ward level
- 66% response (10,185 cases) after 2 reminders

SHAIPS 2 Questions

Used validated questions in the following areas:-

- long term limiting illness, respiratory problems, angina, diabetes, stroke, and depression.
- informal carers, social isolation, access to a car, receipt of state benefits, the use of primary care and social and community services,
- smoking
- ethnicity (using the 2001 census question)
- EuroQol EQ-5D health status measure

Other key strengths of the SHAIPS 2 data set

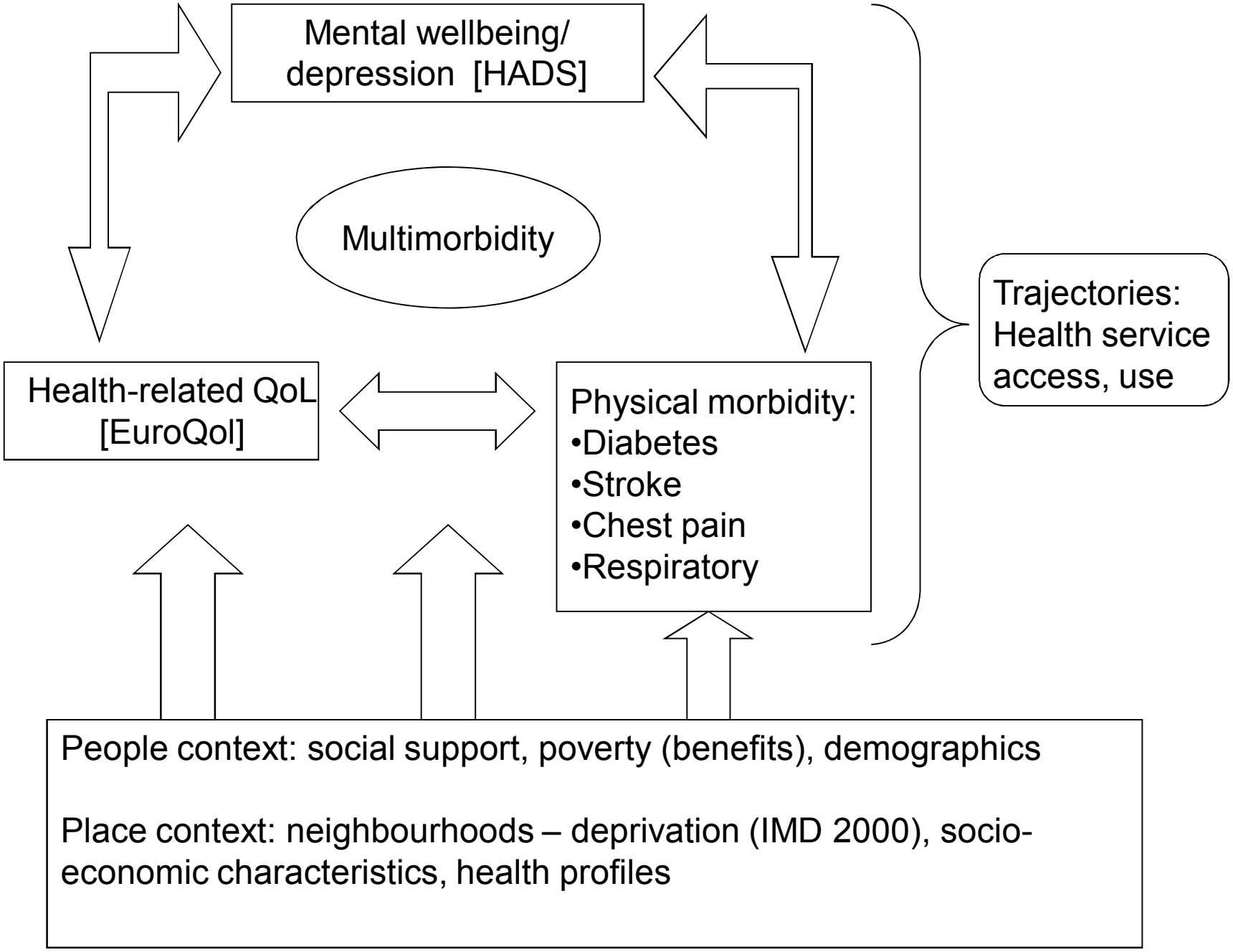
- ability to identify the prevalence of multimorbidity for individual respondents
- for some health conditions, ability to take account of disease severity
- ability to derive two proxy measures of socioeconomic status
- ability to link to other datasets

Weaknesses of the SHAIPS 2 dataset

- self-reported morbidity via self-completion questionnaire
  - not based on clinical assessment
- relatively old dataset
  - undertaken in 2000
  - though a strength in relation to linkage to subsequent service use/mortality data
- respondents' socioeconomic status based on a particular point in time
  - i.e. at the time of the survey

Planned Analyses

- further work to define multimorbidity
  - informed by literature review
- identify the prevalence of multimorbidity and depression in the SHAIPS 2 dataset
- data linkage to identify level of service use and mortality among respondents
- logistic regression modelling to explore the relationship between depression, multimorbidity, and other key variables


Mental wellbeing/
depression [HADS]
Multimorbidity
Health-related QoL
[EuroQol]
Physical morbidity:
•Diabetes
•Stroke
•Chest pain
•Respiratory
Trajectories:
Health service
access, use
People context: social support, poverty (benefits), demographics
Place context: neighbourhoods – deprivation (IMD 2000), socio-economic characteristics, health profiles

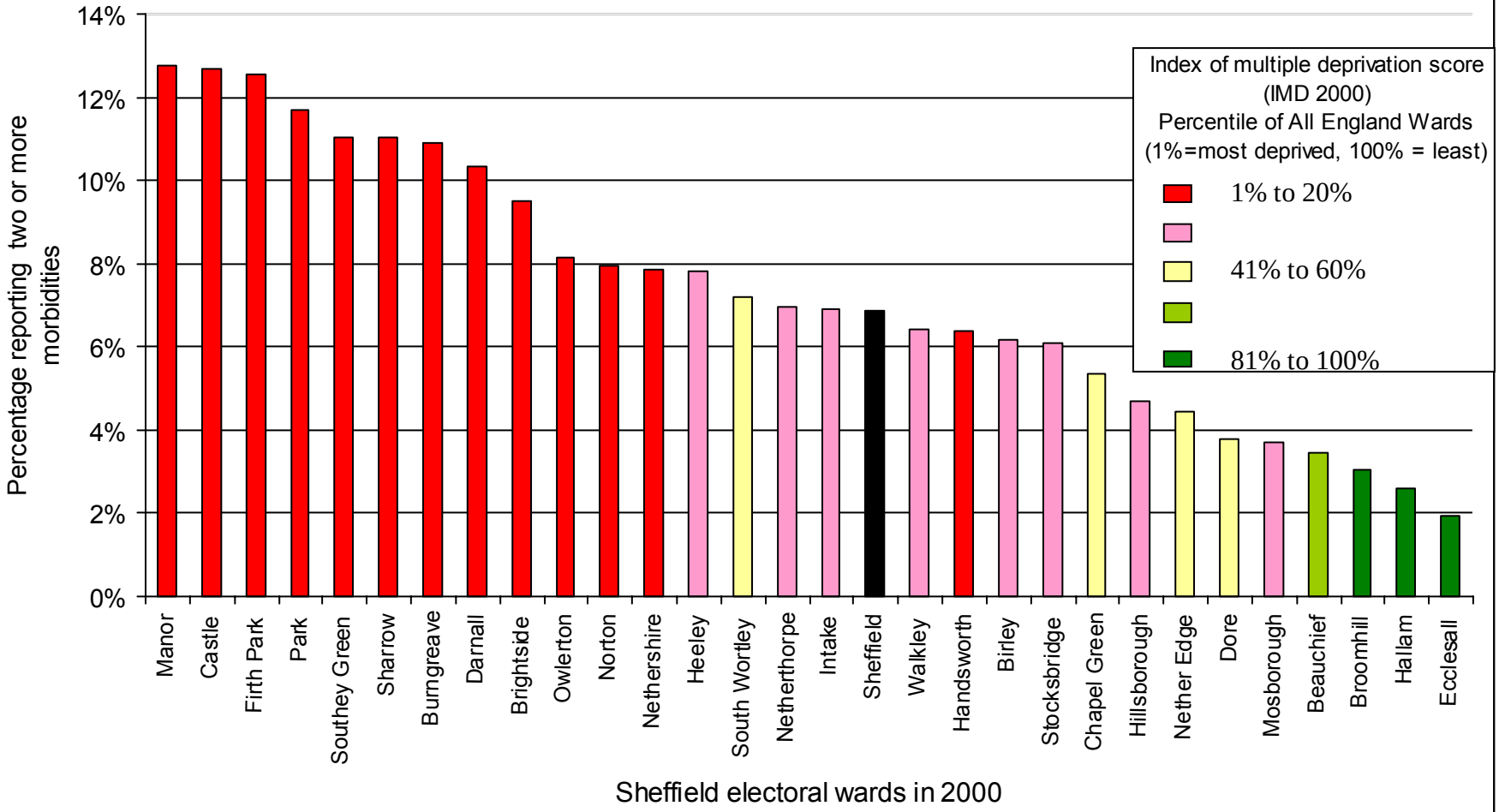
What do we already know about multimorbidity in Sheffield?

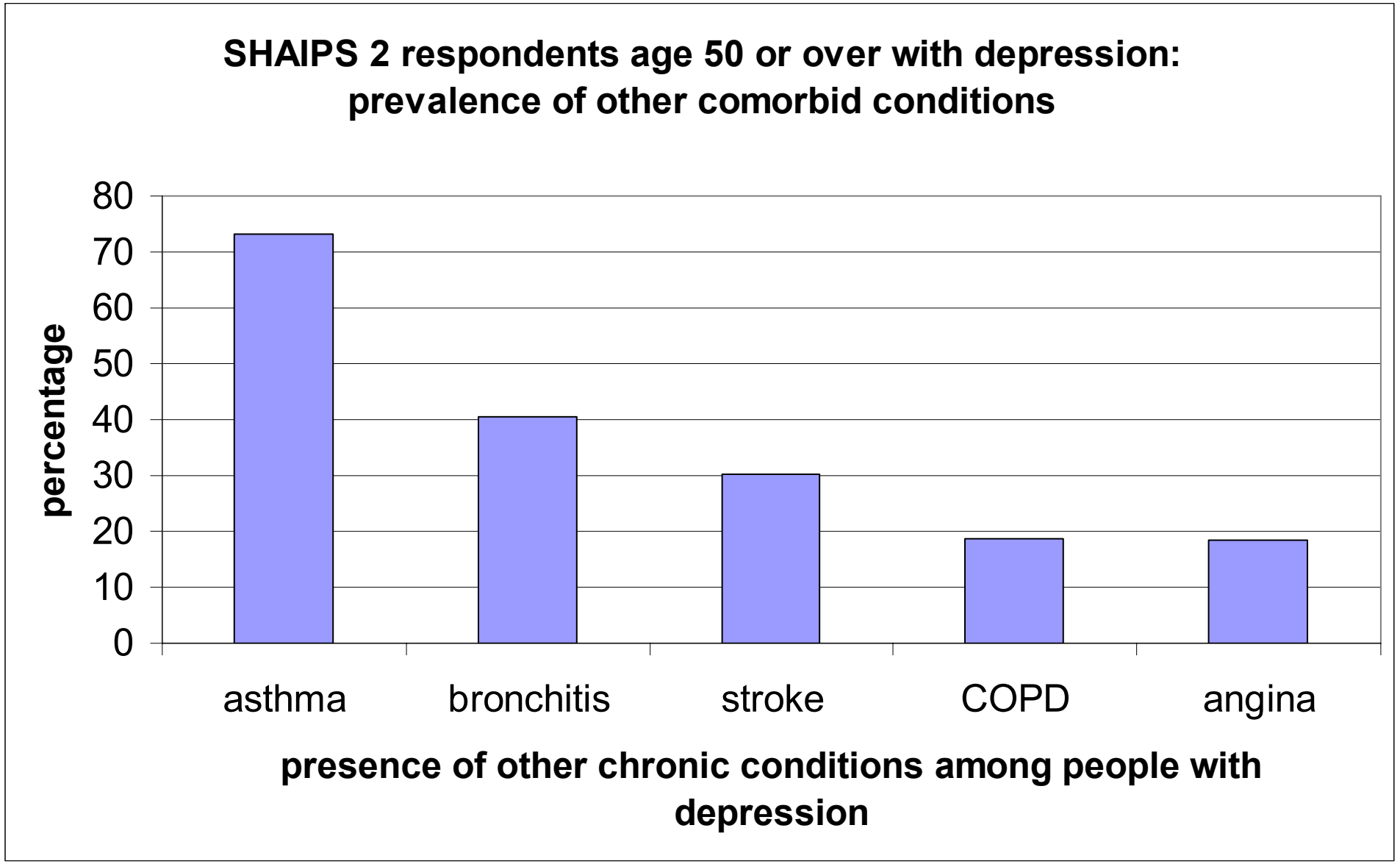
The responses to a number of questions in SHAIPS 2 were grouped to create a multimorbidity variable. This tested whether an individual had 2 or more of diabetes, bronchitis, depression, stroke, or angina

- the prevalence of multimorbidity was 6.9% in Sheffield
- there was a very strong relationship between the prevalence of multimorbidity and ward-level deprivation, with higher rates in more deprived wards
- the multimorbidity results illustrate the degree of health inequalities in Sheffield and the strong link between health status and socio-economic influences.

SHAIPS 2: multimorbidity and ward-level deprivation in Sheffield

Percentage of respondents with two or more of the following health conditions:-
diabetes, bronchitis, depression, stroke and angina & using age-sex standardised data




SHAIPS 2 respondents age 50 or over with depression:
prevalence of other comorbid conditions
percentage
80
70
60
50
40
30
20
10
0
asthma
bronchitis
stroke
COPD
angina
presence of other chronic conditions among people with depression

Linkage to other datasets

- key strength of this research project
- linkage achieved using the unique NHS number of SHAIPS 2 respondents
- identify level of hospital service use over a 9 year period
- mortality data
  - calculate survival rates

Data Linkage: ethics

- not using named data
  - pseudonymised
- key variables
  - NHS number
  - unique ID number created for each SHAIPS participant
- permission granted via NHS Research Ethics Committee in 2000 and 2009
- SHAIPS 2 participants were informed about data linkage in a covering letter
  - completion and return of the SHAIPS 2 questionnaire was deemed consent to data linkage

Data linkage: process

- the linkage process uses an Oracle relational database table containing a record for each of the 10,185 SHAIPS 2 respondents

- date fields in the Oracle table include:
  - unique SHAIPS 2 ID number
  - the NHS number
  - the GP practice of respondent
  - postcode of respondent (enabling linkage to area level socioeconomic data)

- SQL query code will be written to link this table to other datasets, using NHS number as the linking data item

Data linkage: outputs

- running the sql query produces a set of results
  - identifier is the ID number of respondents
  - NHS number excluded to ensure anonymity
- import into excel spreadsheet & then SPSS for further processing
- ultimately merge with the full SHAIPS 2 results dataset in SPSS for further analysis

Data linkage: key data sets

- Hospital inpatient admissions data
- Hospital outpatients data
- Mortality data

Hospital inpatient data

Key variables

- total number of admissions
- type of admission e.g. emergency/elective
- diagnosis for each admission
- length of stay
- readmissions
- operative procedures

Example of a possible analysis using hospital inpatient admissions data

Emergency admissions to hospital may indicate inadequate levels of care

- What is the rate of emergency admissions among respondents with/without multiple morbidity?
- Does the rate of emergency admissions among people with multimorbidity vary according to socioeconomic status
  - measured individually from survey responses and by area-level deprivation

References

- Coy, J., Skinner, J., Stead, M., Reid, G (2002). Sheffield – a picture of health? Sheffield Health Authority/Sheffield Primary Care Trusts
  - Downloadable from: http://www.sheffield.nhs.uk/shaips/
- Joint Health Surveys Unit (2004) The Health Survey for England 2003: Summary of key findings Joint Health Surveys Unit: London.