WP7 - *Linkage to Health data - Hospital episode statistics*

Lead study: Understanding Society
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Presenters

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Background

- Administrative data useful to validate, substitute and supplement survey data
- Hospitalization data marks
  - Health status
  - Resource use

Project focus

- **Selectivity related to:**
  - ☐ Informed consent to link survey and administrative data
  - ☐ Statistical match of some data held in the survey and some administrative data
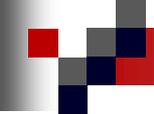- **Pilot/demonstration of use of linked survey and hospital records**

Aim 1 activities

- Objective: determine the sociodemographic and health profiles (self-reported and biomedical) of consenters and non-consenters to estimate potential bias in linked health data
- Data from 4 studies

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Building on prior research

- Sala, E., Burton, J., & Knies, G. (2012). Correlates of obtaining informed consent to data linkage respondent, interview, and interviewer characteristics. *Sociological Methods & Research, 41*(3), 414-439.

- Knies, G., Burton, J., & Sala, E. (2012). Consenting to health record linkage: evidence from a multi-purpose longitudinal survey of a general population. *BMC Health Services Research, 12*(1), 52.

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Description of Studies

	Cohort studies		HH Panel studies	
	NSHD	NCDS	BHPS	UKHLS
Start year	1946	1958	1991	2009-10
Scope	GB	GB	GB, then UK	UK
Sample	Births in week, Mainly British White	Born in week, Mainly British White, ethnic boosts	Cross-section of resident population in 1991, regional boosts	Cross-section of resident population in 2009-10, ethnic boosts
Timing of interviews	Specific times	Specific times	Annual	Annual
Mode	Postal survey, home/clinic visit	F2F	F2F	F2f

Consent procedures

	Cohort studies		HH panel studies	
	NSHD	NCDS	BHPS	UKHLS
Sweeps before consent asked	22	7	Up to 18	None
Linkage referenced in advance letter	No	Yes	Yes	No
Consent asked by	Postal, else by research nurse	Trained interviewer	Trained interviewer	Trained interviewer
Linkage information leaflet	No	Yes, at interview	Yes, advance	Yes, in interview
Health data mentioned	GP & hospital records	Hospital & GP records, prescriptions	NHS Central Register, hospital & GP records, prescriptions	NHS Central Register data, hospital records

Percentage consenting

	Percent	Approximate time
NSHD	Almost all of Nurse visit attendees	2006-2011
NCDS	79	2008
BHPS	41	2008
UKHLS	69	2009-2010

Unweighted figures for GB only
Consent to link adult health records

Analysis strategy

- Restrict analysis to NCDS, BHPS, UKHLS
- 4 classes of predictors
  - ☐ Socio-demographic
  - ☐ Socio-economic
  - ☐ Health behaviours and health status
  - ☐ Indicators of survey cooperation
- Pairwise comparisons
- Logistic regression
- Examination of age-related covariates

Initial lessons from analysis

- Socio-demographic variables
- Socio-economic variables – more in NCDS than HH panel studies
- Health behaviours, use, status – not as strong as expected, not consistent. Minor in relation to community-based disease studies
- Survey cooperation indicators – consistent influence

Statistical matching

- Based on conditions of consent, negotiate with the data holder for access and process for matching
  - ☐ Overlapping data fields for match
  - ☐ Longitudinal studies have choices of data fields on which to match but errors in both survey and admin records

More on Aim 2 activities

- Objective: assess several criteria for matching to the national registers including the potential biases introduced by incomplete matching

- Data source: Understanding Society, BHPS

- Requested data extraction & linkage to national register by NHS Information Centre

- Proposed fields-full name, date of birth, gender, postcode

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Objective 3 – pilot study
Data source NSHD

- Explore use of linked data in its multiple stages: consent, approval, matching, charges, analysis

- Describe utilization

- Compare self-reported use, verified use, and administrative records for all consenters

Initial Decisions – pilot study

- Participants from England

- Signed consent form 3 in relation to nurse visit from 2006-2011

- HES file: admitted patient care data

- Application for linkage and extract services
  - August 2013

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Closing

- Comparing methods and procedures is important, not trivial

- May be more convergence than anticipated across studies based on timing of consents and matching

- Process of working through stages will help identify best practices and areas for improvement

Extra slides

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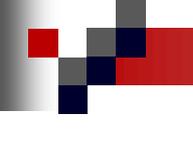
Objectives

- 1) determine the sociodemographic and health profiles (self-reported and biomedical) of consenters and non-consenters to estimate potential bias in linked health data;

- 2) assess several criteria for matching to the national registers including the potential biases introduced by incomplete matching; and

- 3) carry out pilot work on linking to Hospital Episodes Statistics (HES).