



# **The Linked Scottish Health Survey**

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# Summary

- Objectives
- Background
- Methods
- Results





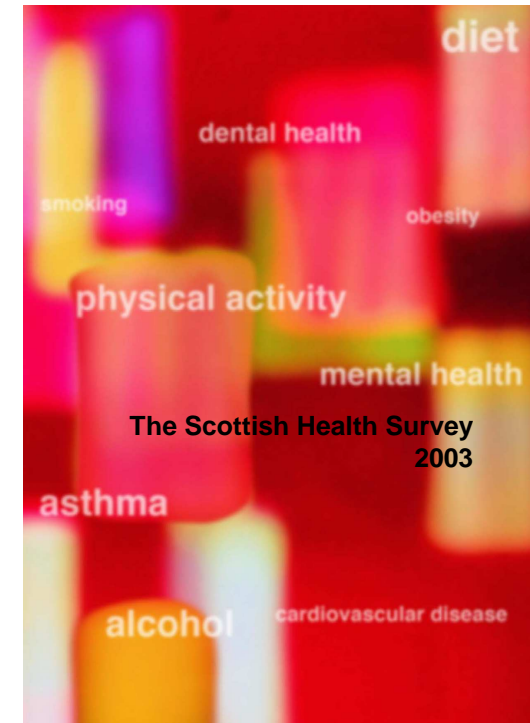
# Objectives

- To use record linkage techniques to create a Linked Scottish Health Survey dataset
- To provide a resource for longitudinal research
- To investigate the factors determining health service demand, mortality, etc

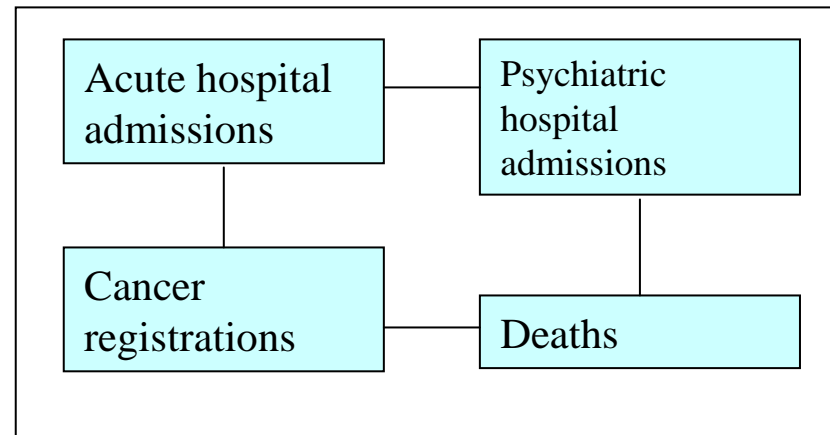


# Scottish Health Survey

- 3 surveys (1995, 1998, 2003)
- Household survey
- c.9000 adults participated in each survey
- 92% consent to record linkage

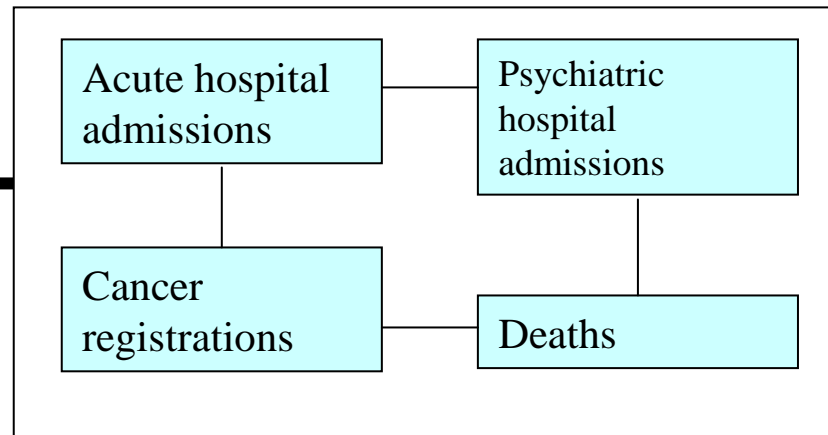


# Linking to hospital admissions data

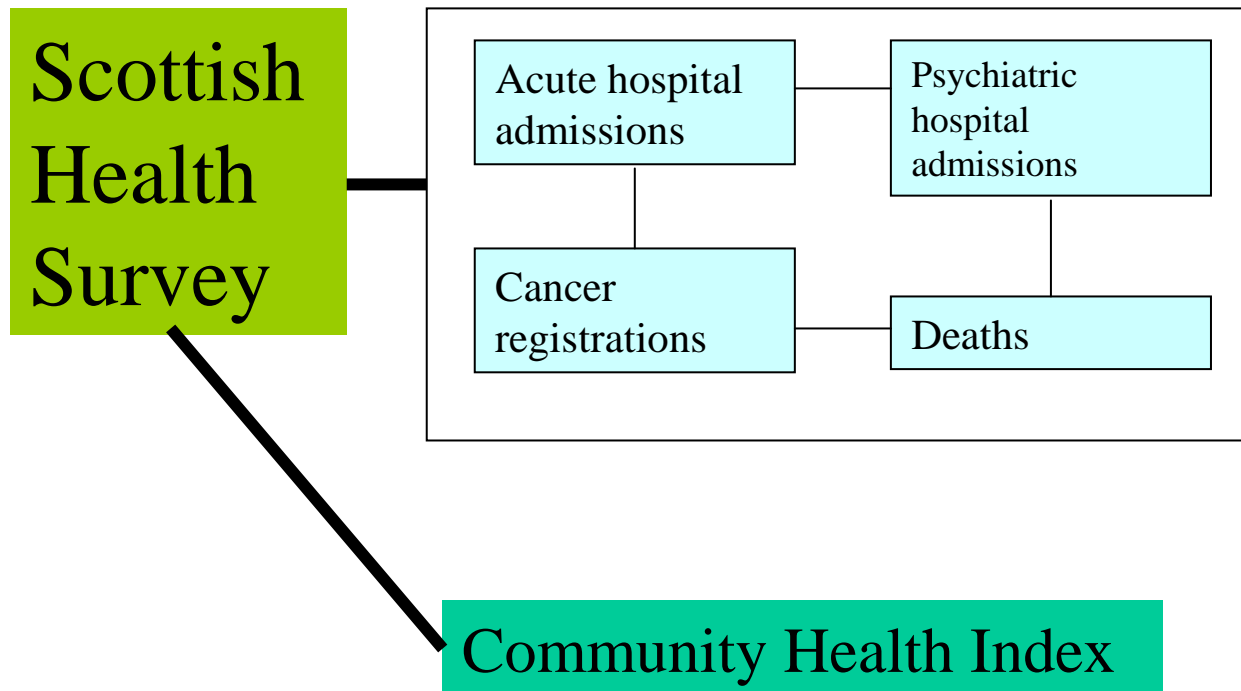


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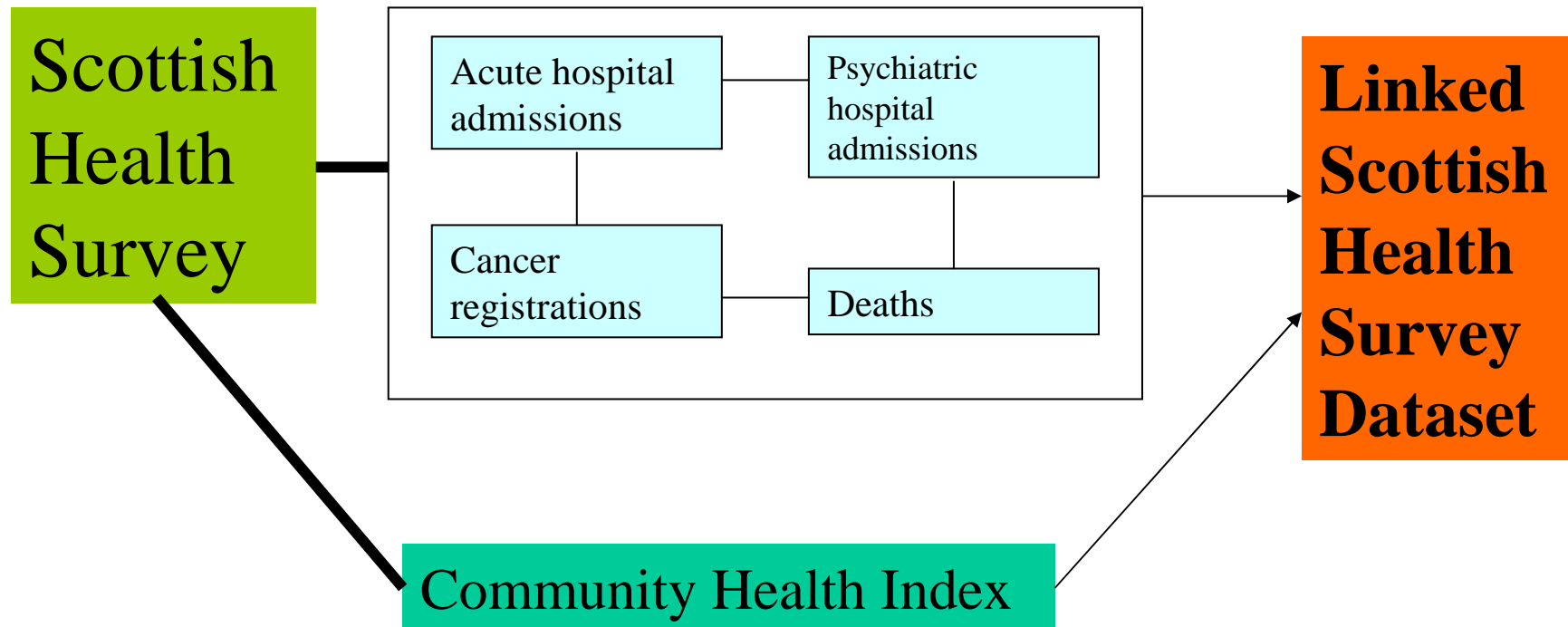
Scottish  
Health  
Survey



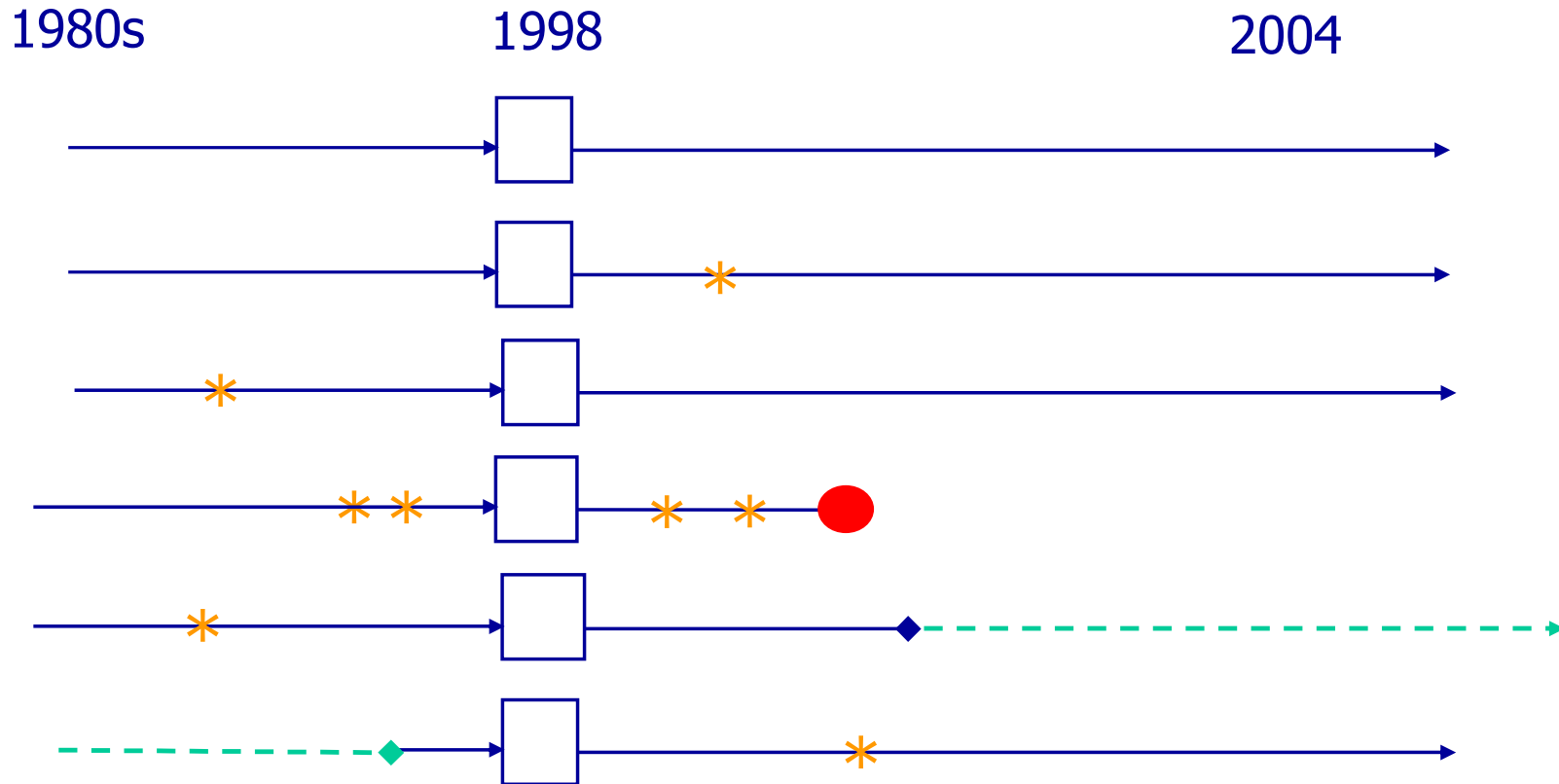
# Linking to hospital admissions data



# Linking to hospital admissions data



# Following respondents

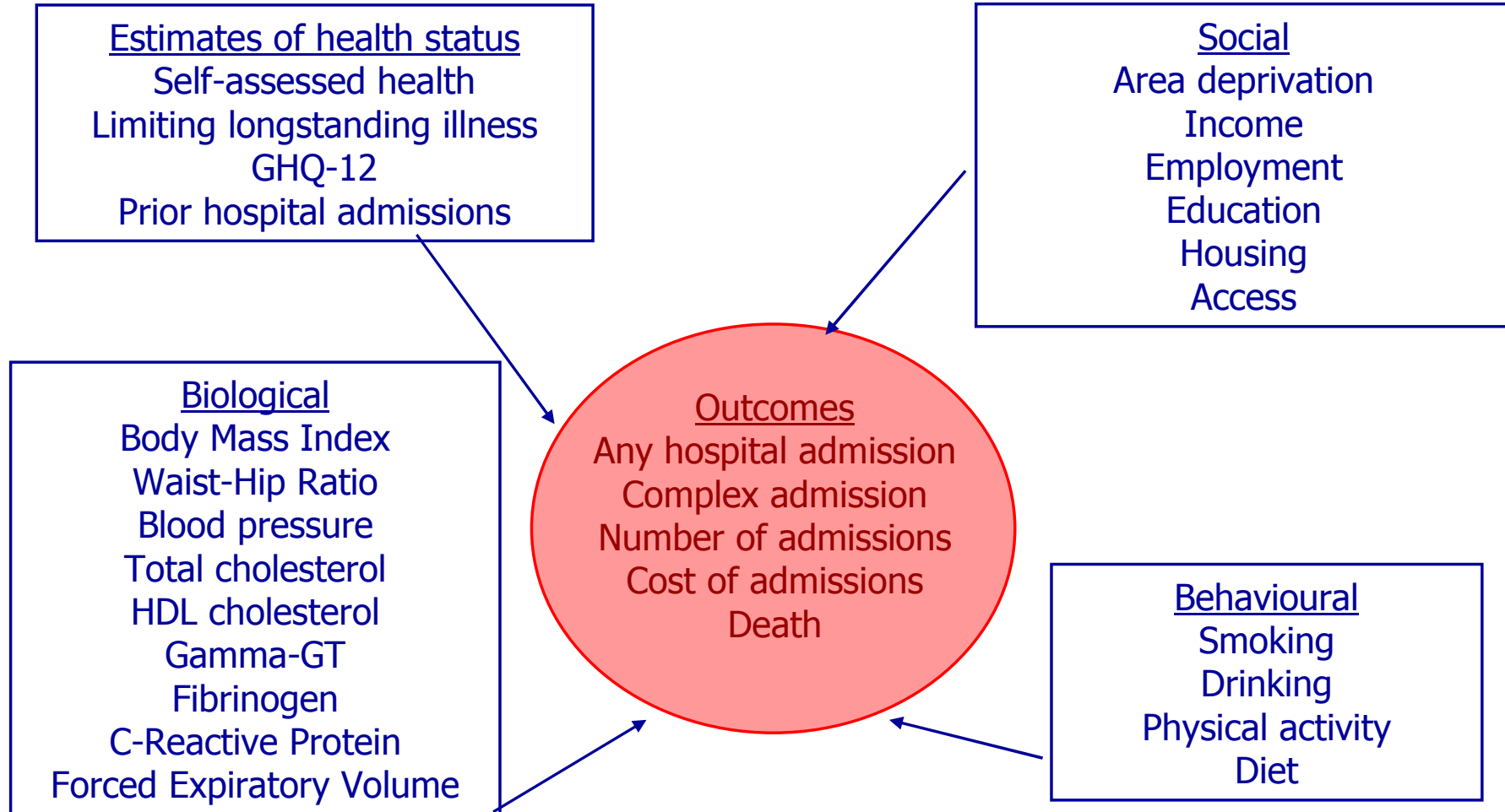




## **Linked Scottish Health Survey dataset**

- 1998 survey chosen for analysis
- 77% of respondents with a link to catalog
- Morbidity between Jan 1981 and Mar 2004
  - >31,000 hospital admissions
  - 420 deaths

# Factors and outcomes considered



# Demand for acute health services

## Measures of acute hospitalisation

- Subsequent admission
- Serious admissions
- Number of admissions
- Cost of admissions



## Self-assessed health and risk of a serious admission

Category	Percentage	Univariate Hazard-Ratio
Very good	35.1%	1.00
Good	39.5%	1.40***
Fair	18.9%	2.13***
Bad	5.4%	3.48***
Very bad	1.1%	3.79***

\*\*\*  $p < 0.001$  \*\*  $p < 0.01$

## Self-assessed health and risk of a serious admission

Category	Percentage	Univariate Hazard-Ratio	Multivariate Hazard-Ratio
Very good	35.1%	1.00	1.00
Good	39.5%	1.40***	1.07
Fair	18.9%	2.13***	1.32**
Bad	5.4%	3.48***	1.81***
Very bad	1.1%	3.79***	1.83**

\*\*\* p<0.001 \*\* p<0.01

## Determining factors for a serious admission

- Age
- Age \* Sex
- Smoking
- Forced expiratory volume
- Fibrinogen
- Distance from home to hospital
- Self-assessed health
- Longstanding illnesses
- Number of prior admissions



## **Issues related to the analysis of the Linked Dataset**

- Inclusion of estimates of health status
- Non-consent bias
- Migration
- Research opportunities





# Mortality models

- 9.75 years of follow-up from 1998 (735 deaths)
- Risk factors predictive of mortality
  - Age, sex\*age,
  - Smoking
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Prior admissions	Hazard ratio		p-value
	<i>multivariate</i>	<i>univariate</i>	
0	1.00	1.00	
1	1.22	1.46	0.00
2	1.15	1.57	0.00
3	0.98	1.45	0.05
4+	1.92	3.42	0.00

My Doctor said "Only 1 glass of alcohol a day". I can live with that.





# Alcohol-related morbidity

- Alcohol-related
  - hospital admissions
  - deaths
- Same risk factors + binge drinking
- Work ongoing





## Further Information

[www.scotpho.org.uk](http://www.scotpho.org.uk)

Publications (reports & papers)  
August 2007

*Hanlon et al, Journal of Public Health  
(2007) 29: 405 - 412*

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