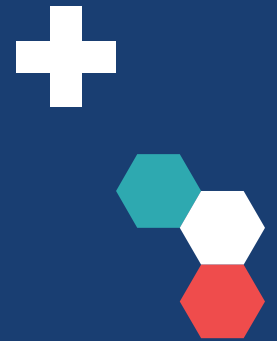


# What are the roles of cohort vs. routine data in Geriatric Medicine?



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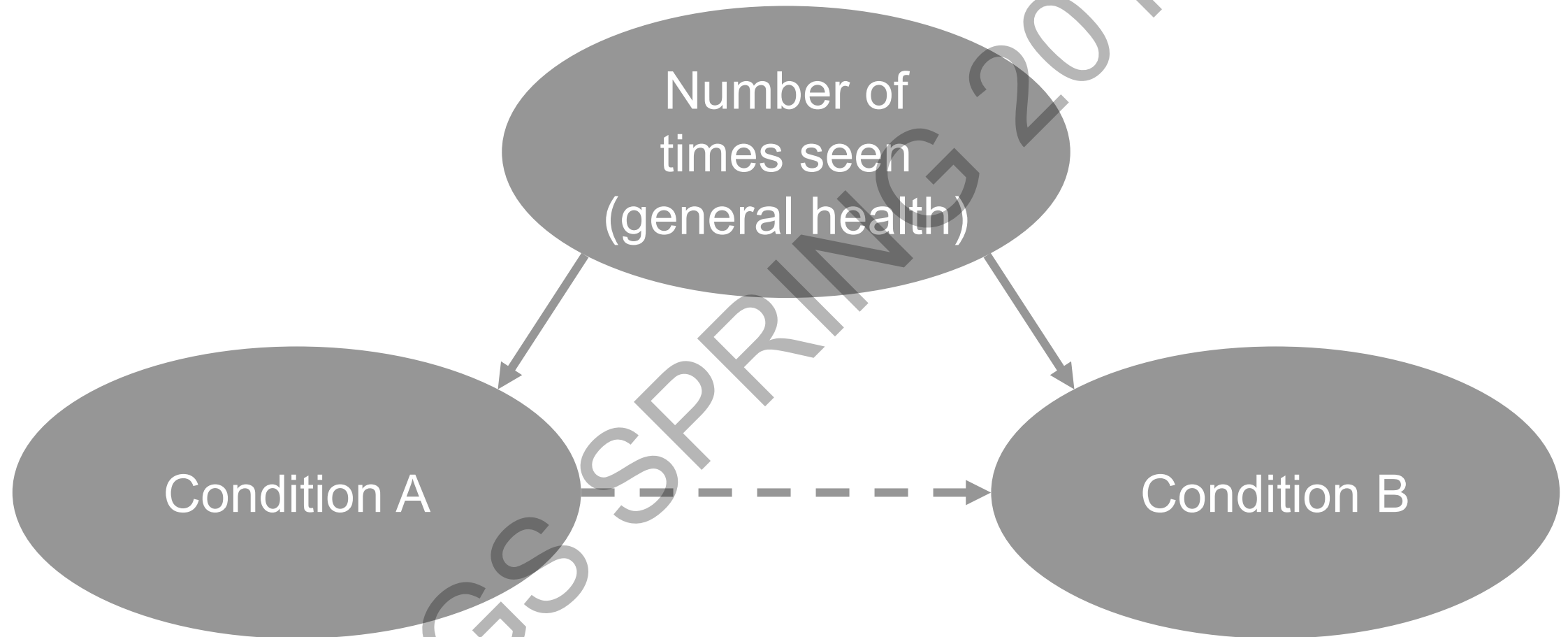
AAGM Symposium, Spring BGS, Cardiff, 11th April 2019



# Routine data

- This session has highlighted innovative ways in which routine datasets are addressing important clinical questions
- Describe current clinical practice
- Less likely to have biological samples available such as DNA
- Recall of patients for other studies typically not possible
- As with all observational datasets: potential for confounding
  - May lack information on important confounders – for example functional status and effect of influenza vaccination (Jackson et al.)
  - Presence in a routine dataset is not random – informed presence bias

# Informed presence bias (Goldstein et al 2016; Gross et al 2018)

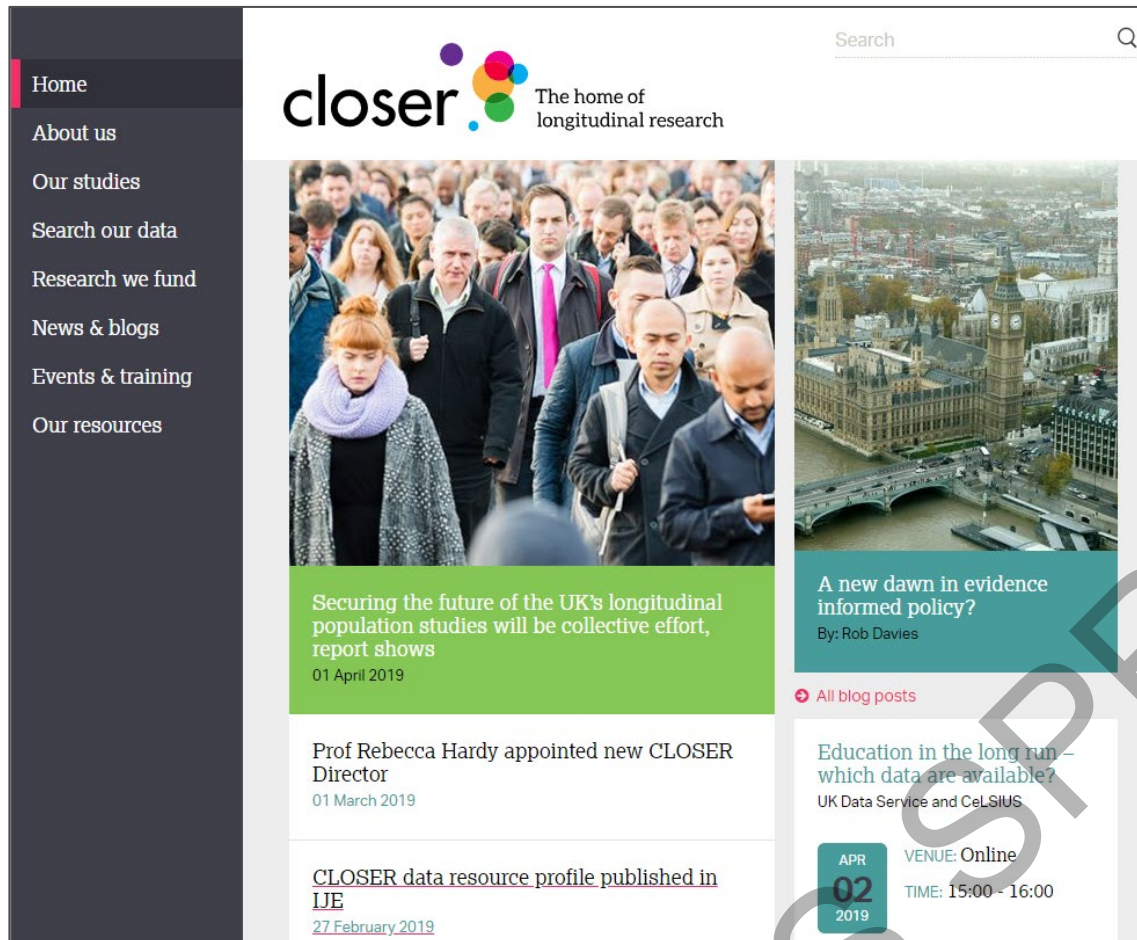


# Cohort studies in the UK

- The UK has a wealth of longitudinal studies spanning all stages of the life course
- MRC review in 2014 highlighted that **3.5% of the population** are cohort members
- Measures vary but often cover cognitive and physical function
- Healthy responder bias
- Many accessible without charge

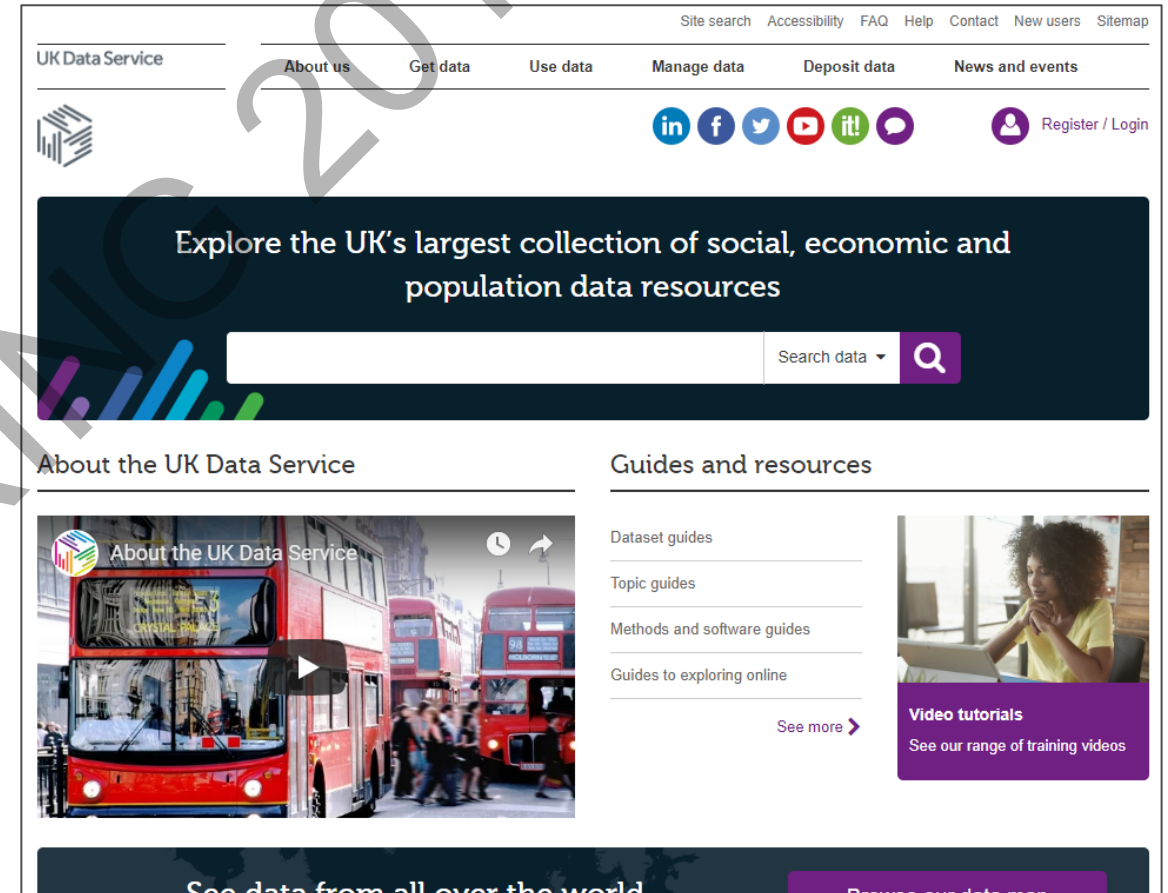
**Maximising the value of  
UK population cohorts**  
MRC Strategic Review of the Largest UK Population Cohort Studies





closer.ac.uk/

ukdataservice.ac.uk/





# Examples: grip strength in older people



## Secular trend

- Increasing IQ scores across 20<sup>th</sup> century – Flynn effect
- Grip strength a simple measure of physical function – less known about recent secular trend
- Data from English Longitudinal Study of Ageing
- Slight decline across 2004-13

Dodds et al. 2019

## Risk of hospital admission

- Does grip strength predict hospital admission over the next decade?
- Linkage between Hertfordshire Cohort Study and Hospital Episode Statistics
- Risk of admission increased with lower grip strength

Simmonds et al. 2015



- Hereditary haemochromatosis recognised phenotype
- Recent work shows link between C282Y homozygosity and:

- Sarcopenia
- Fried frailty
- PMR
- Chronic pain



- Recruiting volunteers from clinics and general population
- Potential to recall based on genotype and phenotype

### **SarcNet UK Pilot (CI M. Witham)**

- Sarcopenia phenotype
- Subsequent trials

Tamosauskaite et al. 2019

# Conclusions

- Routine data is increasingly being used to address important research questions related to clinical care of older people
- Such data tend to describe individuals who are unwell and this can lead to informed presence bias
- Information on function may not be recorded
- Traditional cohort studies, including their combination with routine data, remain a useful tool for questions at a population level and those involving measures not currently widespread in clinical practice

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