Explaining Population trends in cardiovascular risk: A comparative analysis of health transitions in South Africa and England
A Research Dissemination and Knowledge Exchange Event

*Stellenbosch Institute for Advanced Study (Stias)*
*Wallenberg Research Centre, 10 Marais Road, Stellenbosch, South Africa*
*11th August 2023*

# CVD risk trends in South Africa and England

## Introduction to the ExPoSE project and the workshop programme

Annibale Cois, Stellenbosch University
Kafui Adjaye-Gbewonyo, University of Greenwich

Stellenbosch University
UNIVERSITY OF GREENWICH
UCL
UKRI Economic and Social Research Council

# Project overview

# Research Team

- Dr Kafui Adjaye-Gbewonyo, University of Greenwich
  - Research interests: Social epidemiology, non-communicable diseases (NCDs) in African and other low- and middle-income countries (LMICs)
  - Methods: Quantitative and econometric methods using large population surveys

- Dr Annibale Cois, Stellenbosch University
  - Research interests: Epidemiology of NCDs risk factors in LMICs, statistical models for heterogenous data sources, measurement and other sources of error in population surveys
  - Methods: Structural equation modelling, Bayesian multilevel modelling

# Funders & Collaborators



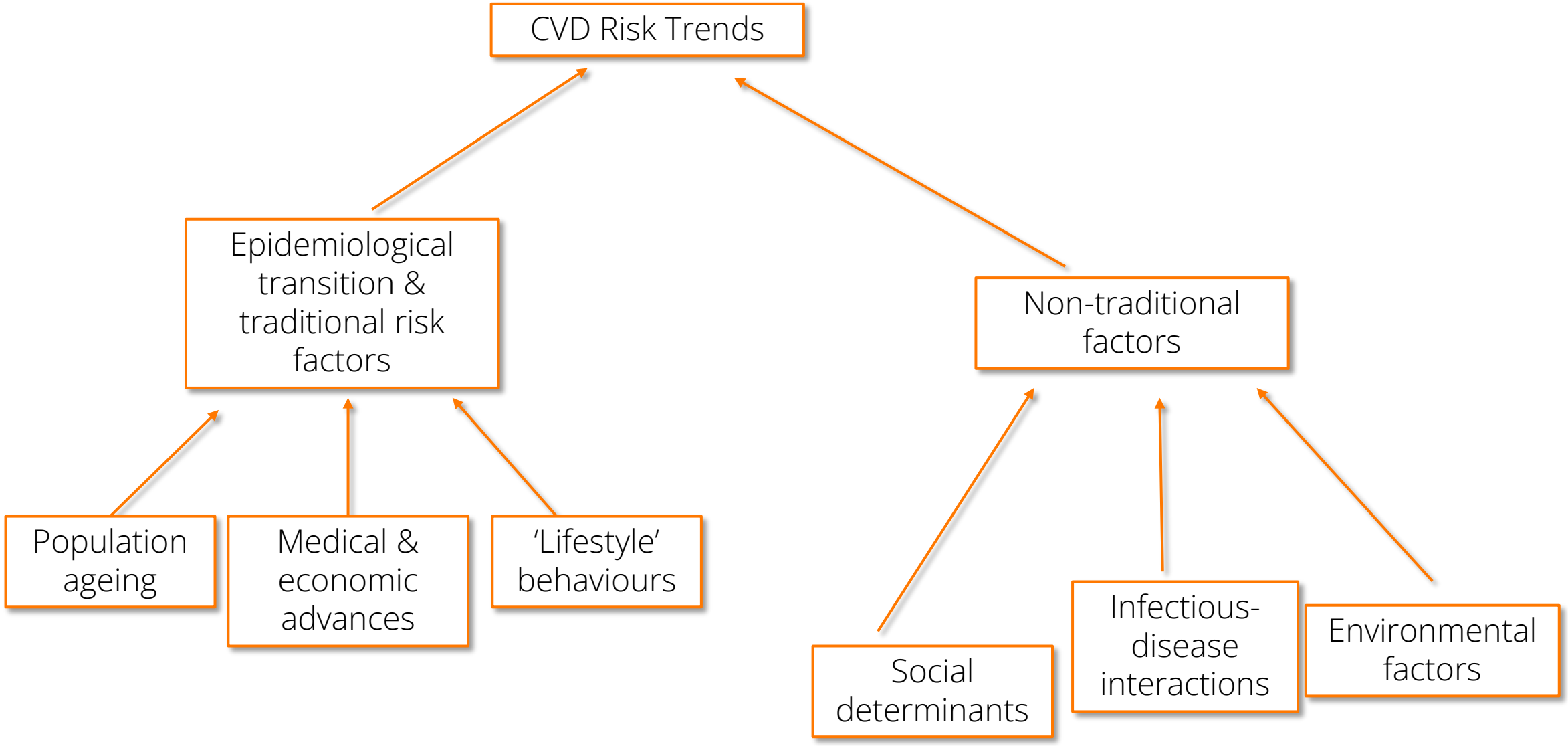
The project is funded by the UK's **Economic and Social Research Council (ESRC)** under the *Secondary Data Analysis Initiative*

**Health and Social Surveys Research Group** (HSE team), **UCL: c**onsulting on use of the Health Survey for England (HSE)

# Research questions

1. What are the population trends in CVD risk in South Africa since its first national health survey in 1998?
2. To what extent are these trends explained by demographic, behavioural, social, environmental, health-related and/or other factors?
3. How do these results compare to those in a high-income country with a different infectious disease profile such as England over the same time period?

# Conceptual framework



# Data sources

## South Africa:

- 11 Nationally-representative cross-sectional surveys from South Africa 1998 through 2017
  - DHS 1998, DHS 2003, SAGE 2007-8, NIDS 2008, NIDS 2010-11, SANHANES 2012, NIDS 2012, NIDS 2014-15, SAGE 2014-15, DHS 2016, NIDS 2017

## England:

- 17 nationally-representative cross-sectional surveys from the Health Surveys for England (HSE), 1998-2017

# Analysis

Examine population trends in CVD risk

Identify potential explanatory variables

Explain trends over time

# Stakeholder & User Advisory Group

Role is to:

- Provide input on the analysis
- Collaborate & co-produce outputs
- Assist with dissemination & impact

17 members from South Africa & the UK participated in the first two meetings

# Stakeholder & Users Advisory Group Meeting: 16th November 2021

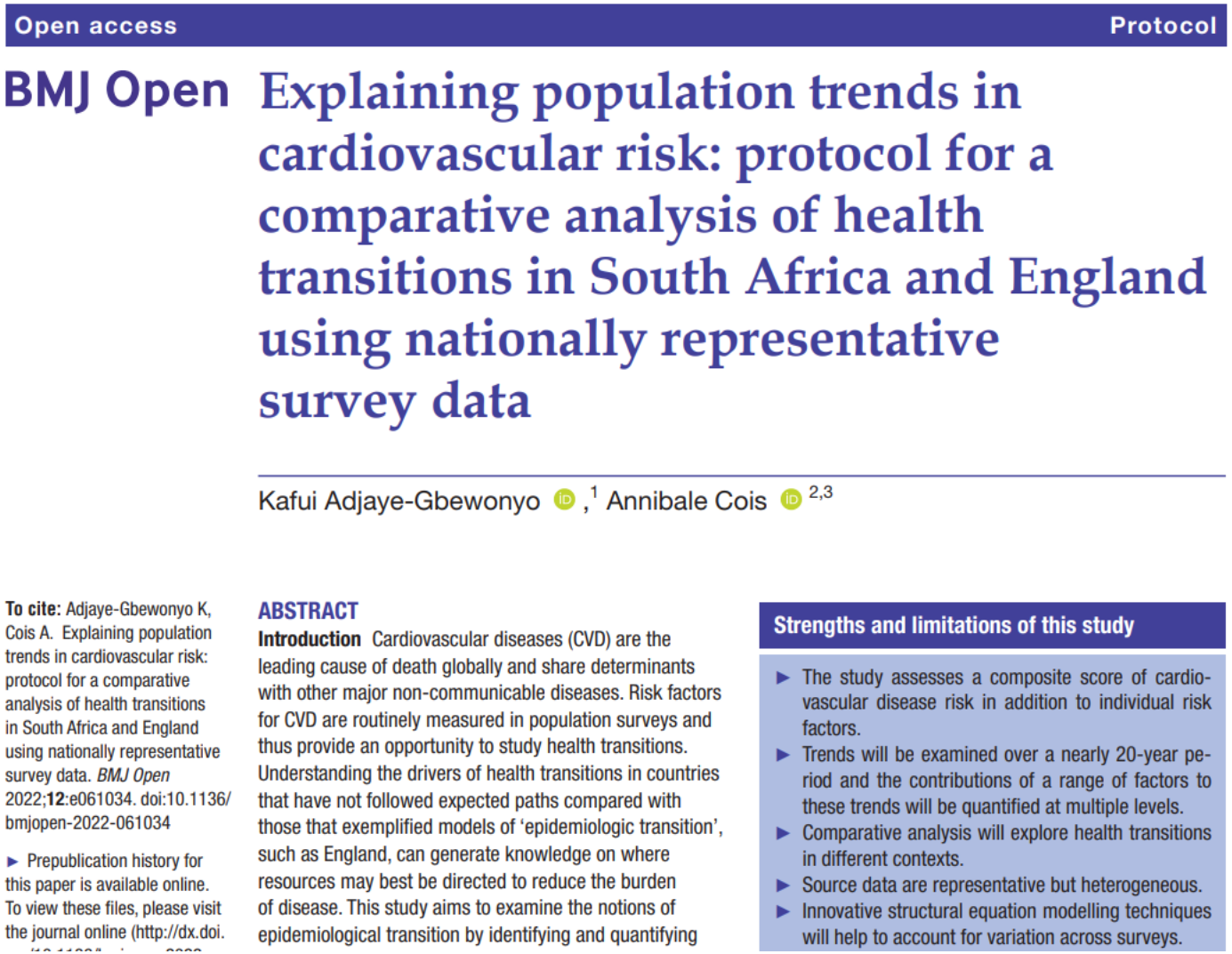
# Stakeholder & User Advisory Group

- **Departments of Health**: SA National Department of Health
- **Academic**: Stellenbosch, Greenwich, UCL, Wits University, KCL
- **Research**: South African Medical Research Council, Human Sciences Research Council, Africa Health Research Institute, National Centre for Social Research
- **Civil society**: Health Systems Trust, Heart & Stroke Foundation of South Africa
- **Healthcare**: Charlotte Maxeke Hospital, Khayelitsha District Hospital, Council for Medical Schemes
- **Data hosting**: DataFirst, UK Data Service

# Stakeholder & User Advisory Group Members

- Prof. André Pascal Kengne
- Dr Ayanda Trevor Mnguni
- Ms. Candy Day
- Ms. Carrie-Anne Cairncross
- Ms. Cristina Magder
- Prof. Edward Fottrell
- A/Prof. F. Xavier Gomez-Olivé
- Prof. Jenny Mindell
- Ms. Lynn Woolfrey Manager
- Dr Mark Siedner
- Prof. Mauricio Avendano Pabon
- Prof. Megan Vaughan
- Prof. Pamela Naidoo
- Ms. Qinisile Dlamini
- A/Prof. René English
- Prof. Rosana Pacella
- Ms. Sandhya Singh
- Ms. Anne Connolly

# Protocol



Open access Protocol

BMJ Open

## Explaining population trends in cardiovascular risk: protocol for a comparative analysis of health transitions in South Africa and England using nationally representative survey data

Kafui Adjaye-Gbewonyo [1], Annibale Cois [2,3]

**To cite:** Adjaye-Gbewonyo K, Cois A. Explaining population trends in cardiovascular risk: protocol for a comparative analysis of health transitions in South Africa and England using nationally representative survey data. *BMJ Open* 2022;**12**:e061034. doi:10.1136/bmjopen-2022-061034

► Prepublication history for this paper is available online. To view these files, please visit the journal online (http://dx.doi.

**ABSTRACT**

**Introduction** Cardiovascular diseases (CVD) are the leading cause of death globally and share determinants with other major non-communicable diseases. Risk factors for CVD are routinely measured in population surveys and thus provide an opportunity to study health transitions. Understanding the drivers of health transitions in countries that have not followed expected paths compared with those that exemplified models of 'epidemiologic transition', such as England, can generate knowledge on where resources may best be directed to reduce the burden of disease. This study aims to examine the notions of epidemiological transition by identifying and quantifying

**Strengths and limitations of this study**

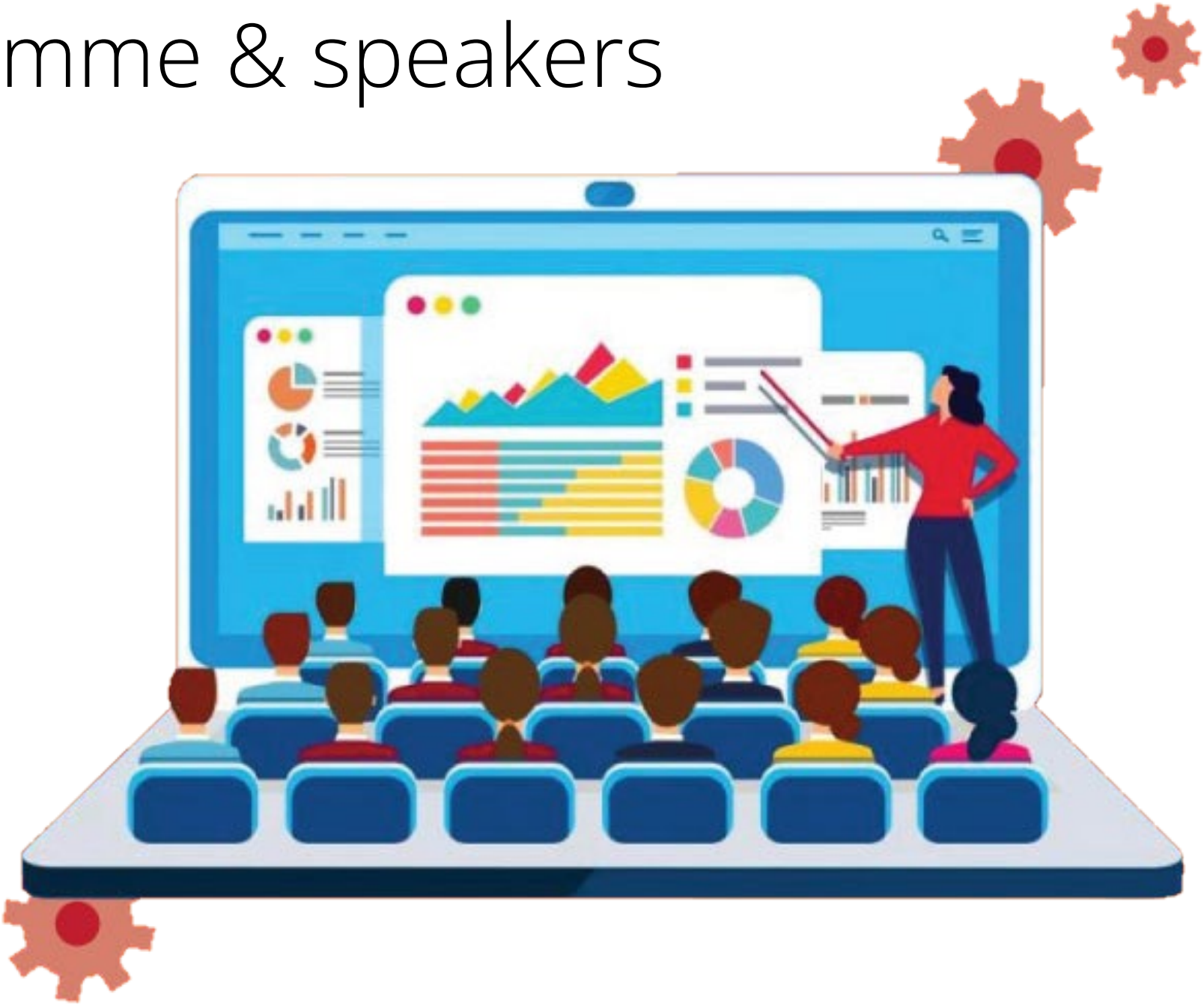
- ► The study assesses a composite score of cardiovascular disease risk in addition to individual risk factors.
- ► Trends will be examined over a nearly 20-year period and the contributions of a range of factors to these trends will be quantified at multiple levels.
- ► Comparative analysis will explore health transitions in different contexts.
- ► Source data are representative but heterogeneous.
- ► Innovative structural equation modelling techniques will help to account for variation across surveys.

- https://bmjopen.bmj.com/content/bmjopen/12/3/e061034.full.pdf

# Project website

www.exposeproject.net

# Programme & speakers



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|---|---|
| 9:30 – 9:50 | National data sources for cardiovascular risk analyses in the South African population<br>*Ms Candy Day, DG Murray Trust* |
| 9:50– 10:20 | The South African Health and Demographic Surveillance System: which data?<br>*Prof Xavier Gomez-Olivé, University of the Witwatersrand* |
| 10:20 – 10:50 | Morning break |
| 10:50 – 11:30 | CVD risk trends in South Africa & England: findings from the ExPoSE projects<br>*Dr Kafui Adjaye-Gbewonyo, University of Greenwich & Dr Annibale Cois, Stellenbosch University* |
| 11:30 – 12:00 | The broad picture: contextualising the ExPoSE findings<br>*Prof. Andre-Pascal Kengne, South African Medical Research Council* |
| 12:00 – 12:30 | The intersection between cardiovascular and Infectious diseases epidemiology<br>*Prof. Landon Myer, University of Cape Town* |
| 12:30 – 13:15 | Light lunch |
| 13:15 – 13:45 | Energy balance, body weight and cardiovascular risk: results from the METS study<br>*Prof. Vicki Lambert, University of Cape Town* |
| 13:45 – 14:45 | Panel discussion: on the implications of the ExPoSE findings/knowledge translation<br>*Prof Pamela Naidoo, Heart and Stroke Foundation & Stellenbosch University (Chair)*<br>*Dr Whadi-ah Parker , Human Sciences Research Council*<br>*Ms Sandhya Singh, Former Director: NCD Cluster, NDoH*<br>*Prof. Lungiswa Nkonki, Stellenbosch University* |
| 14:45 – 15:00 | Using the data dashboard, website/code & the ExPoSE dataset<br>*Dr Annibale Cois, Stellenbosch University* |
| 15:00 – 15:15 | Closing remarks<br>*Prof. René English, Stellenbosch University* |
| 15:15 - 16:00 | Afternoon tea & networking |