

COVID-19 in South Asian communities

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Non-communicable disease in South Asian populations

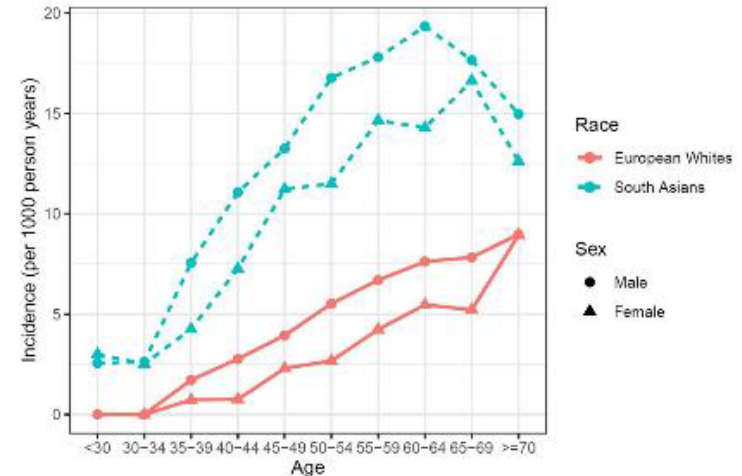
Group Aims

Aetiology: What are the behavioural, environmental and molecular factors that drive chronic disease in Asian populations?

Translation: How can we deliver 'Personal' and 'Population' based approaches for health promotion in Asian settings?

T2D incidence: South Asians vs Europeans

A.



B.

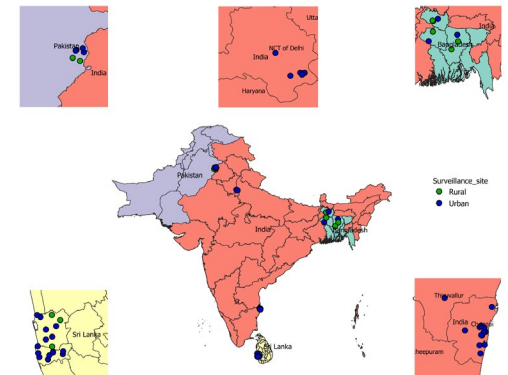
Model	RR (95%CI) of T2D in South Asians vs Europeans	P=
Age, sex	2.62 (2.33 to 2.96)	6.1E-56
+ BMI, WHR	2.66 (2.34 to 3.01)	4.6E-53
+ Glycaemic traits	2.23 (1.93 to 2.58)	6.6E-28
+ Physical activity	2.19 (1.90 to 2.57)	2.4E-26
+ Amino acids	2.21 (1.90 to 2.57)	8.4E-25
+ Genetic risk score	2.11 (1.80 to 2.47)	9.9E-21

Global Health Research Unit Surveillance study

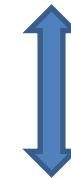
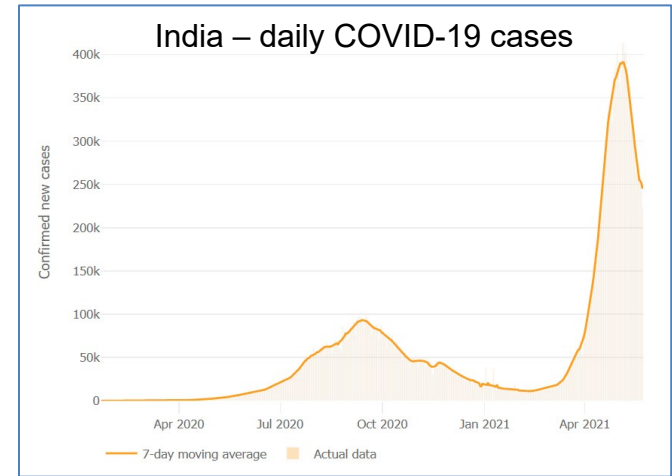
150,000 South Asians with rich phenotypes and samples



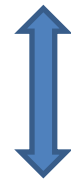
FUNDED BY
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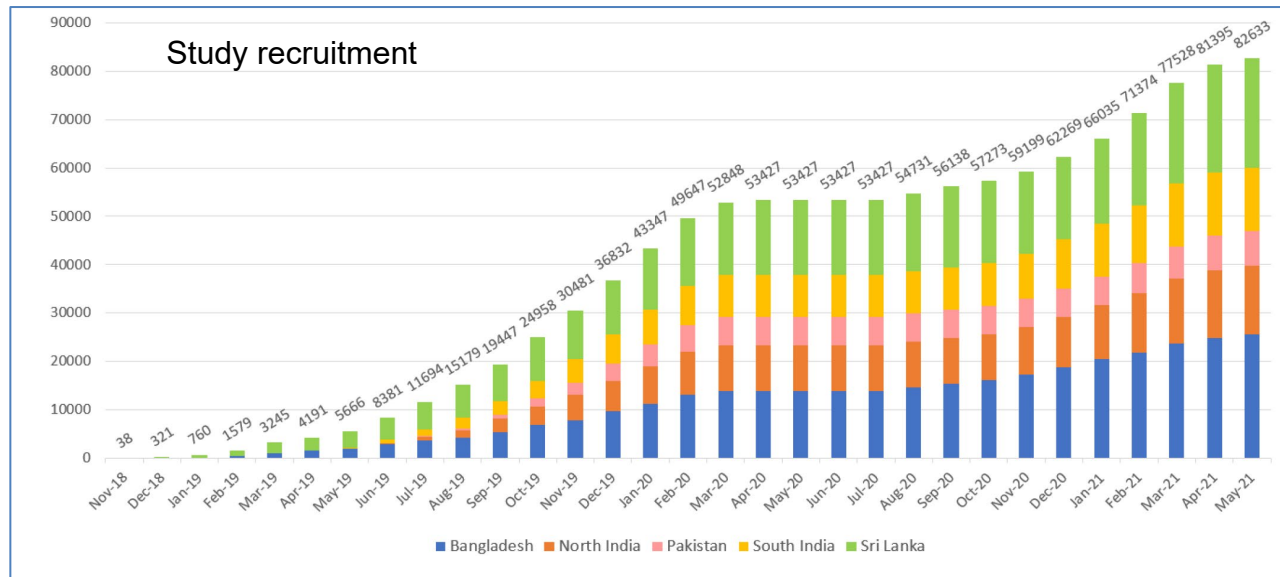
COVID-19 and study activity



Lockdown 1



Wave 2



Pre-COVID



Phase 1



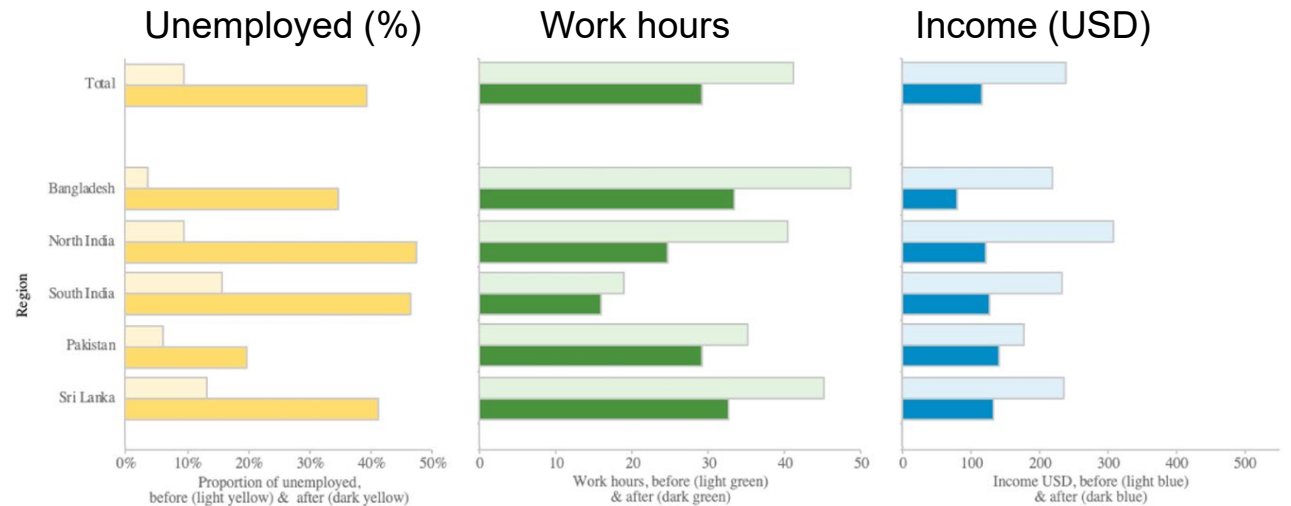
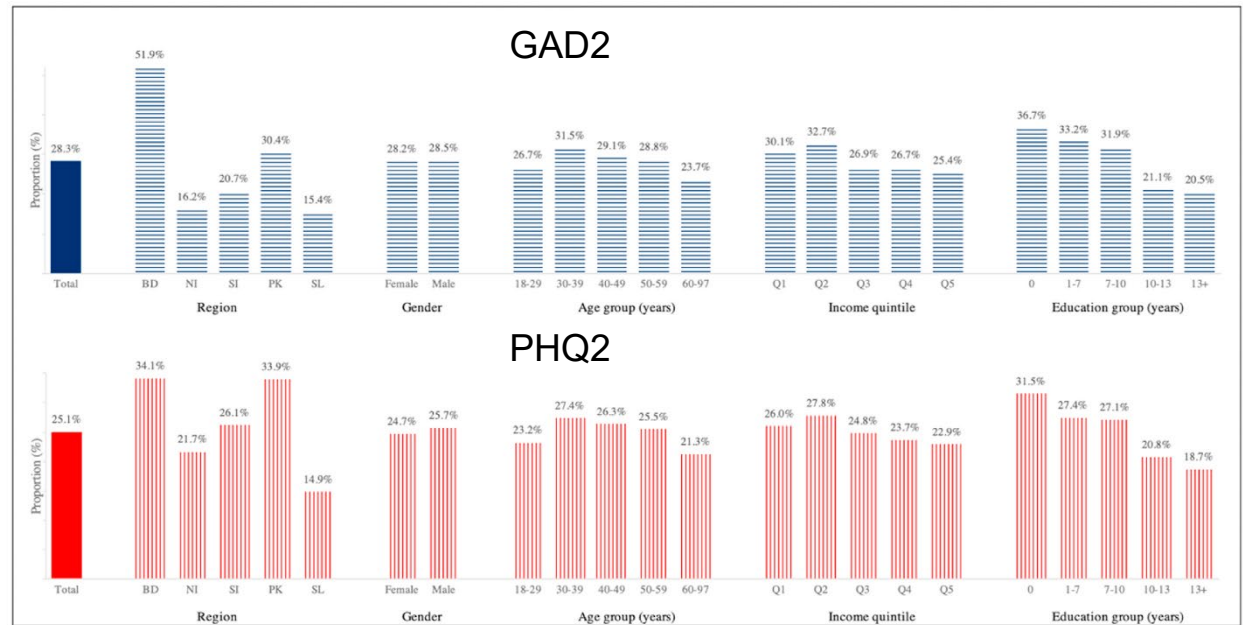
Phase 2

Phase 1

June 2020

28,909
participants
re-interviewed

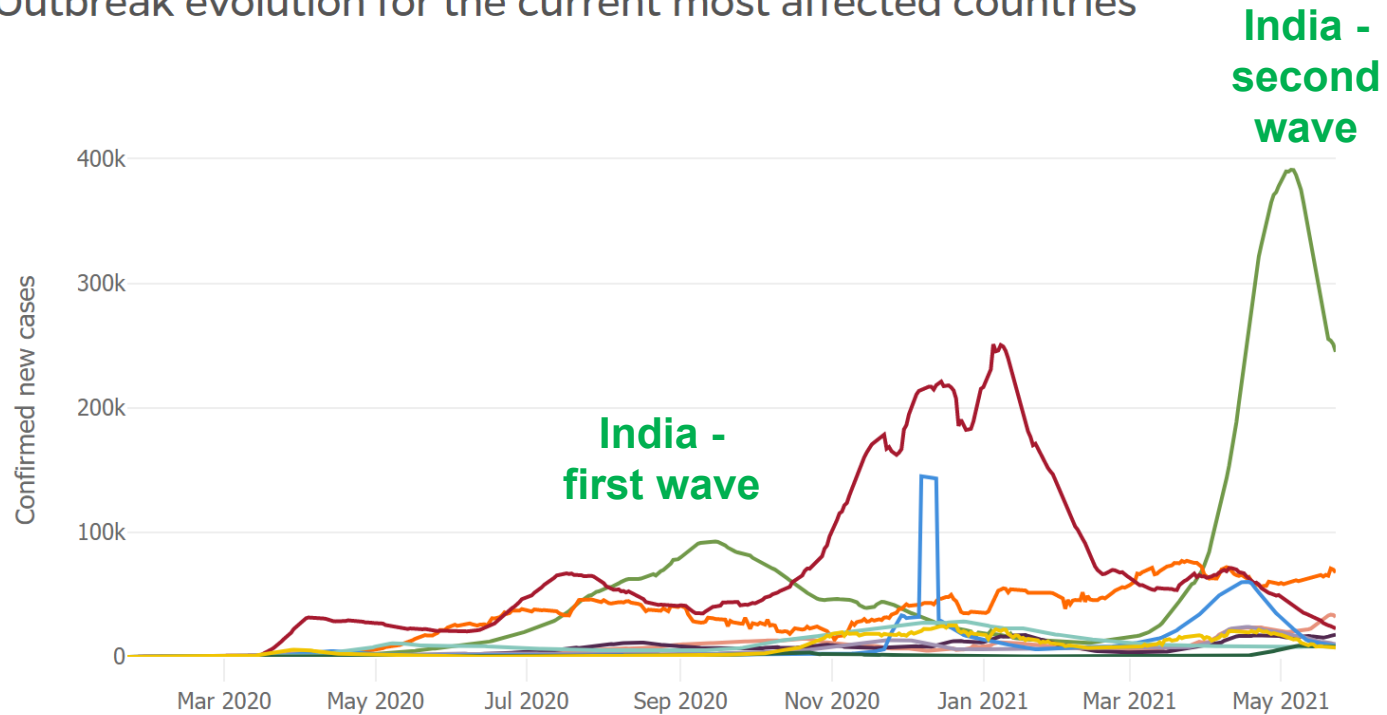
1% reported
symptoms
suggestive of
COVID-19



Impact of COVID-19 in South Asians

DAILY CONFIRMED NEW CASES (7-DAY MOVING AVERAGE)

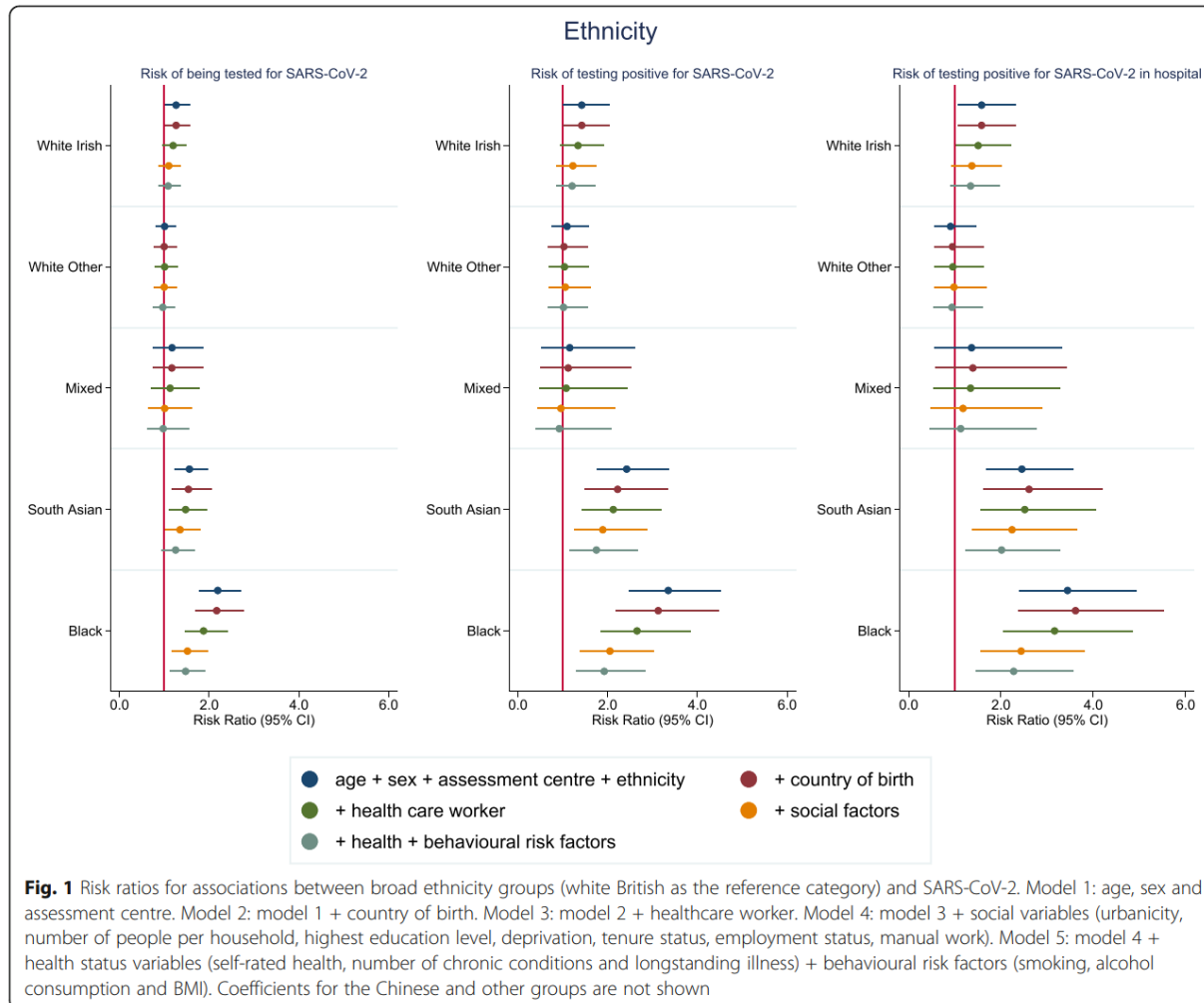
Outbreak evolution for the current most affected countries



Click any country below to hide/show from the graph:

- | | | | | |
|-------|--------|-----------|---------------|----------|
| India | Brazil | Argentina | United States | Colombia |
| Iran | Turkey | Russia | Nepal | Germany |

UK Biobank: South Asians are at increased risk of COVID-19



Article

Factors associated with COVID-19-related death using OpenSAFELY

<https://doi.org/10.1038/s41586-020-2521-4>

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 Check for updates

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COVID-19 mortality amongst >23M people using UK electronic medical records

	Age/sex adjusted	'Fully adjusted'
White	1.00 (ref)	1.00 (ref)
Mixed	1.62 (1.26–2.08)	1.43 (1.11–1.84)
South Asian	1.69 (1.54–1.84)	1.45 (1.32–1.58)
Black	1.88 (1.65–2.14)	1.48 (1.29–1.69)
Other	1.37 (1.13–1.65)	1.33 (1.10–1.61)

Potential limitations

- UK Biobank: 7,323 South Asians
- OpenSAFELY:
 - No biological samples
 - Incomplete baseline data
- Limited data for South Asia

Phase 2

Aims

- Determine the incidence of COVID-19 and its major complications in South Asian populations from India and the UK.
- Identify the primary risk factors predicting adverse COVID-19 outcomes in South Asians.
- Investigate whether known / novel risk factors account for differences in COVID-19 outcomes between South Asians and Europeans

Outcome variables

Primary COVID-19 endpoints:

- i. Total: all with confirmed SARS-CoV2 infection
- ii. Severe: COVID-19 (hospital admission or main / contributory cause for death)
- iii. Prolonged: persistent symptoms after 6 weeks.

Outcomes identification

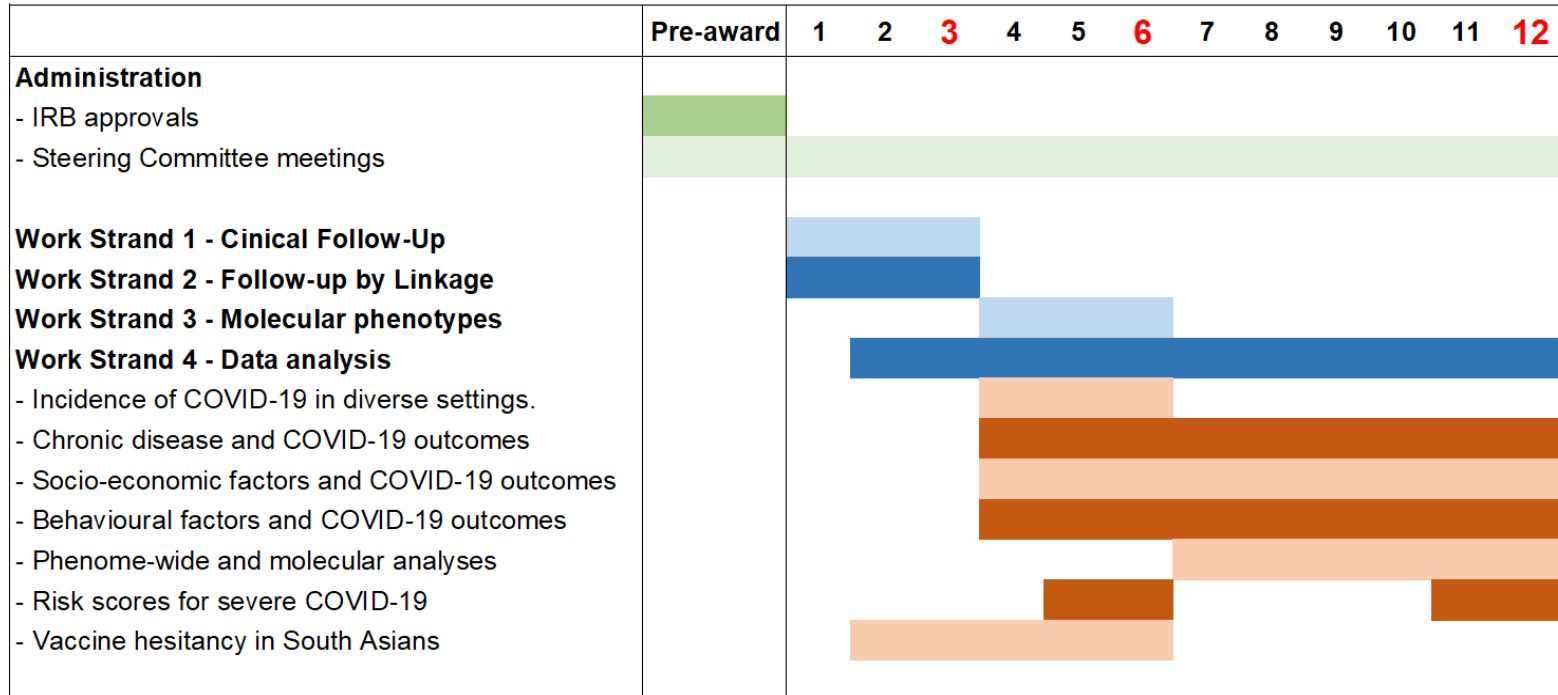
- **WS1: Clinical follow-up**
 - Evaluate 30,000 South Asians for COVID-19
 - Three existing cohorts:
 - **LOLIPOP study** (UK; N=19,000)
 - **iHealth-T2D** (UK and South Asia; N=24,000)
 - **GHRU Surveillance study** (South Asia, N=53,000)
 - Questionnaire: WT/IHCC template
 - Blood sample: COVID-19 serology (Roche N&S?)
- **WS2: Record linkage**
 - UK: NHS and mortality data
 - India: ICMR COVID-19 registry

Analysis

- WS3: Molecular phenotyping
 - Collate existing molecular data
 - New GWAS on 2,500 COVID cases / controls

- WS4: Analysis
 - Incidence in UK and SA communities
 - Risk factors for COVID-19 outcomes:
Environmental, behavioural & molecular factors.
 - Primary determinants of the ‘excess risk’ in SA

Timelines



Funding



Department of
BioTechnology,
Government
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सत्यमेव जयते

The collaboration

Imperial College
London



NIHR Global Health Research Unit

on Diabetes and Cardiovascular Disease in South Asia

