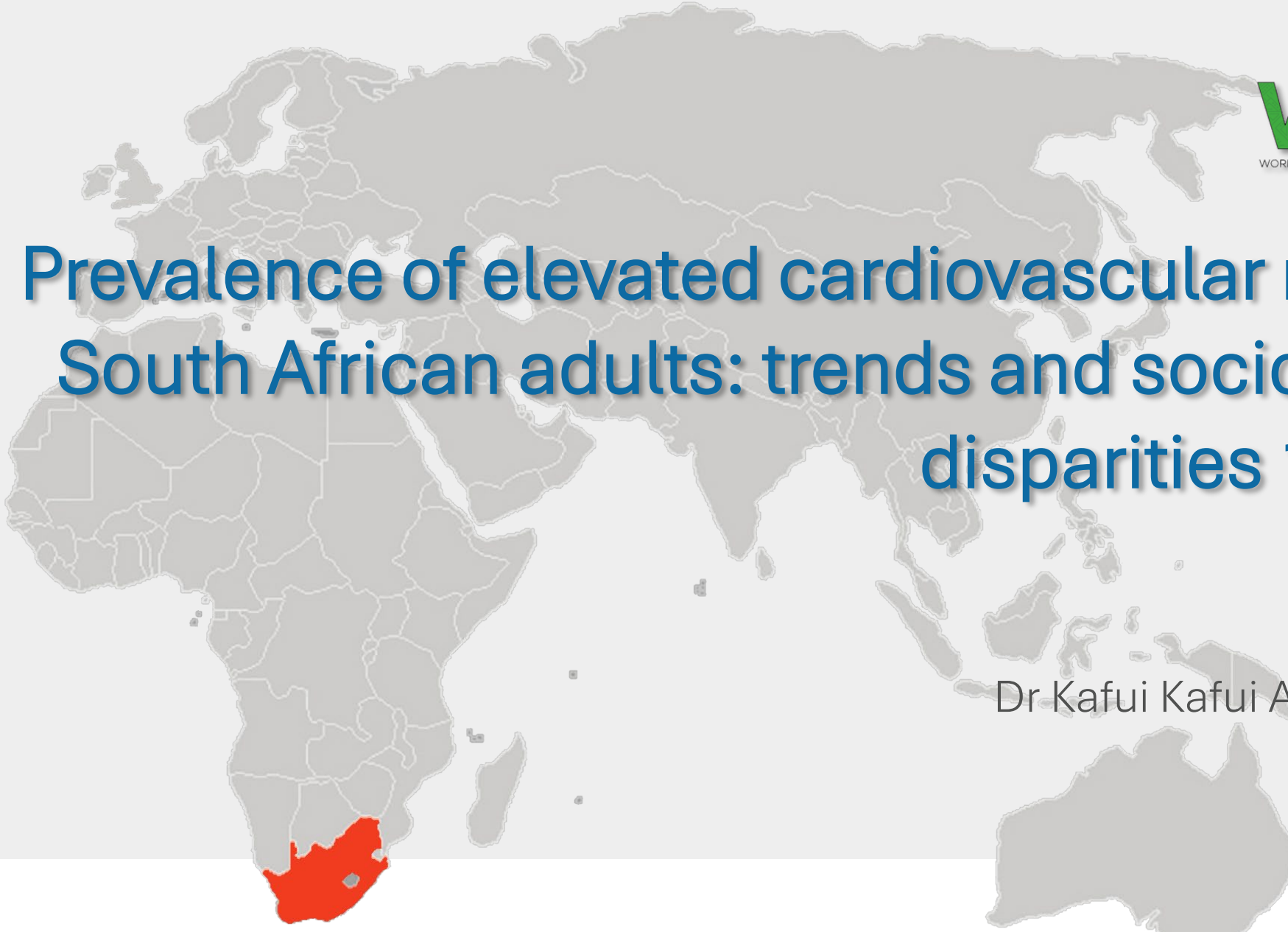


Prevalence of elevated cardiovascular risk among South African adults: trends and socioeconomic disparities 1998-2017

Annibale Cois

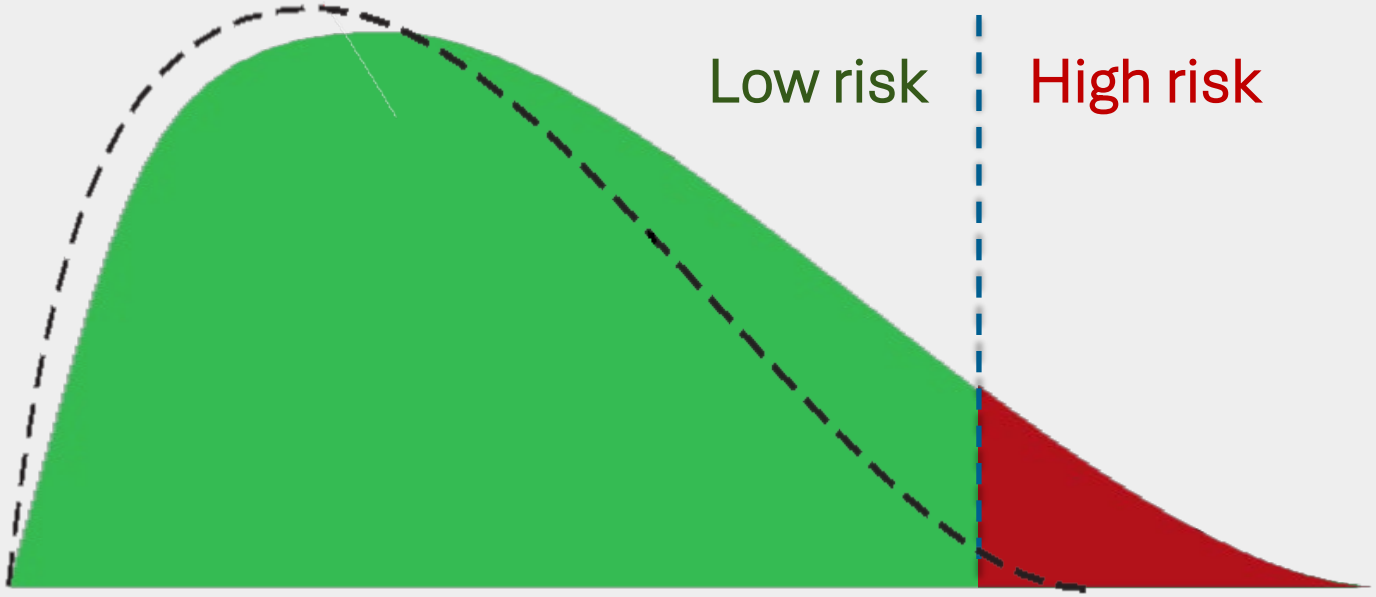
Dr Kafui Kafui Adjaye-Gbewonyo

Cape Town International Convention Centre, 25 September 2024

Cardiovascular diseases (CVDs) are the leading cause of death globally.

An estimated 19.8 million people died from CVDs in 2022, representing about one third of all global deaths.

Over three quarters of CVD deaths take place in low- and middle-income countries.



Mensah GA, Fuster V, Murray CJL, et al. Global Burden of Cardiovascular Diseases and Risks, 1990-2022. *Journal of the American College of Cardiology*. 2023;82(25):2350-2473. doi:10.1016/j.jacc.2023.11.007

Laranjo L, Lanas F, Sun MC, et al. World Heart Federation Roadmap for Secondary Prevention of Cardiovascular Disease: 2023 Update. Global Heart. 2024;19(1). doi:10.5334/gh.1278

Secondary joint analysis of multiple population survey datasets

Trends in CVD risk and determinants in South Africa and England between 1998 and 2017

Adult population (15+/16+): 155000 + 168000 records

Harmonised reweighted dataset/harmonisation code available

- **9 nationally representative surveys** conducted in South Africa between 1998 and 2017
- 51000 individuals aged **40-74 years without history of CVD**.
- 10-year CVD risk (office-based **Globorisk score**)
- GAMs to recover temporal trends in the prevalence of elevated risk (**risk score >20%**), by sex, age, population group, education level, and rural vs urban residence.
- **Multiple imputation** to deal with missing data.

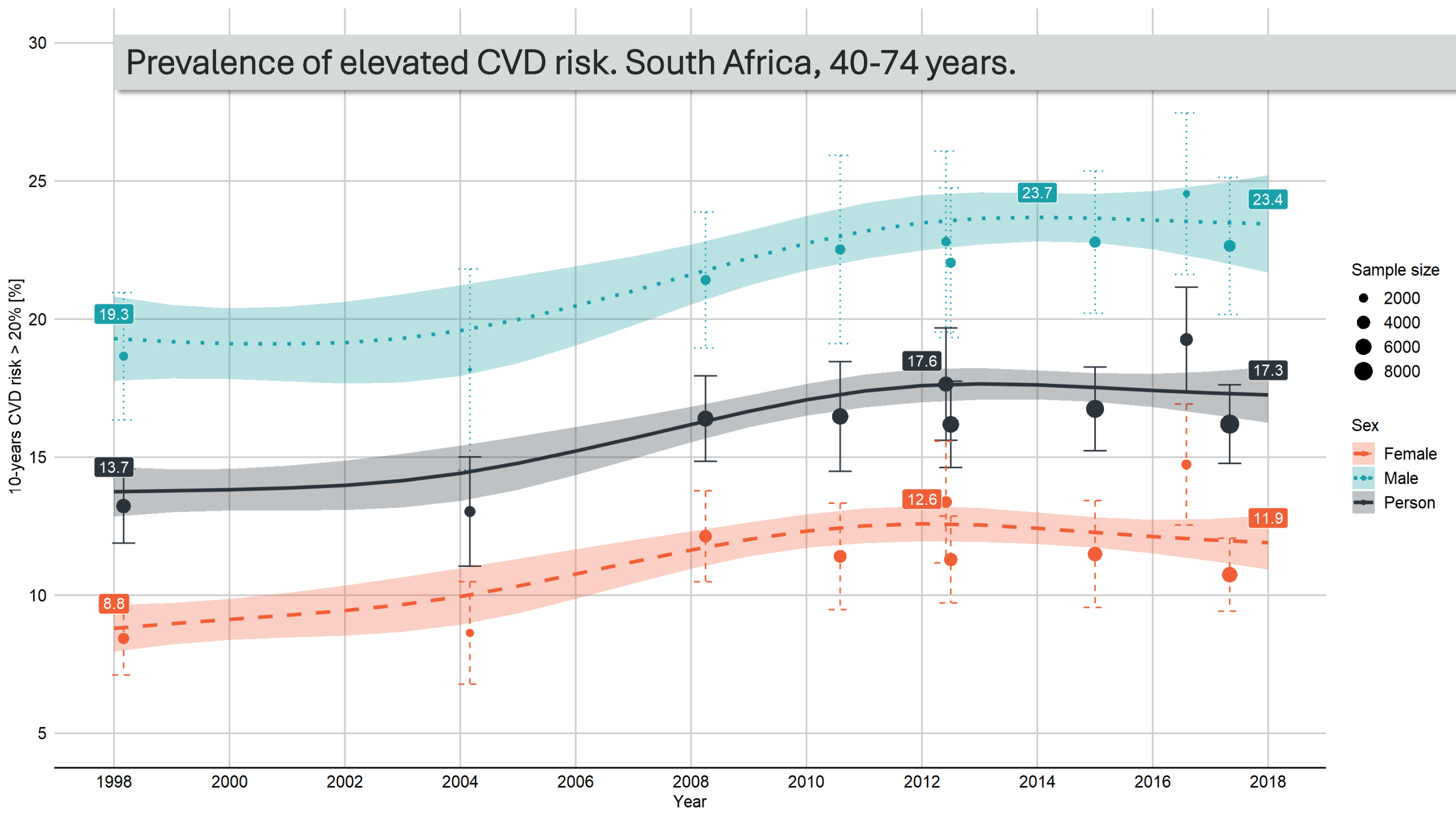
DataFirst

Protocol:
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(3):e061034. doi:10.1136/bmjopen-2022-061034

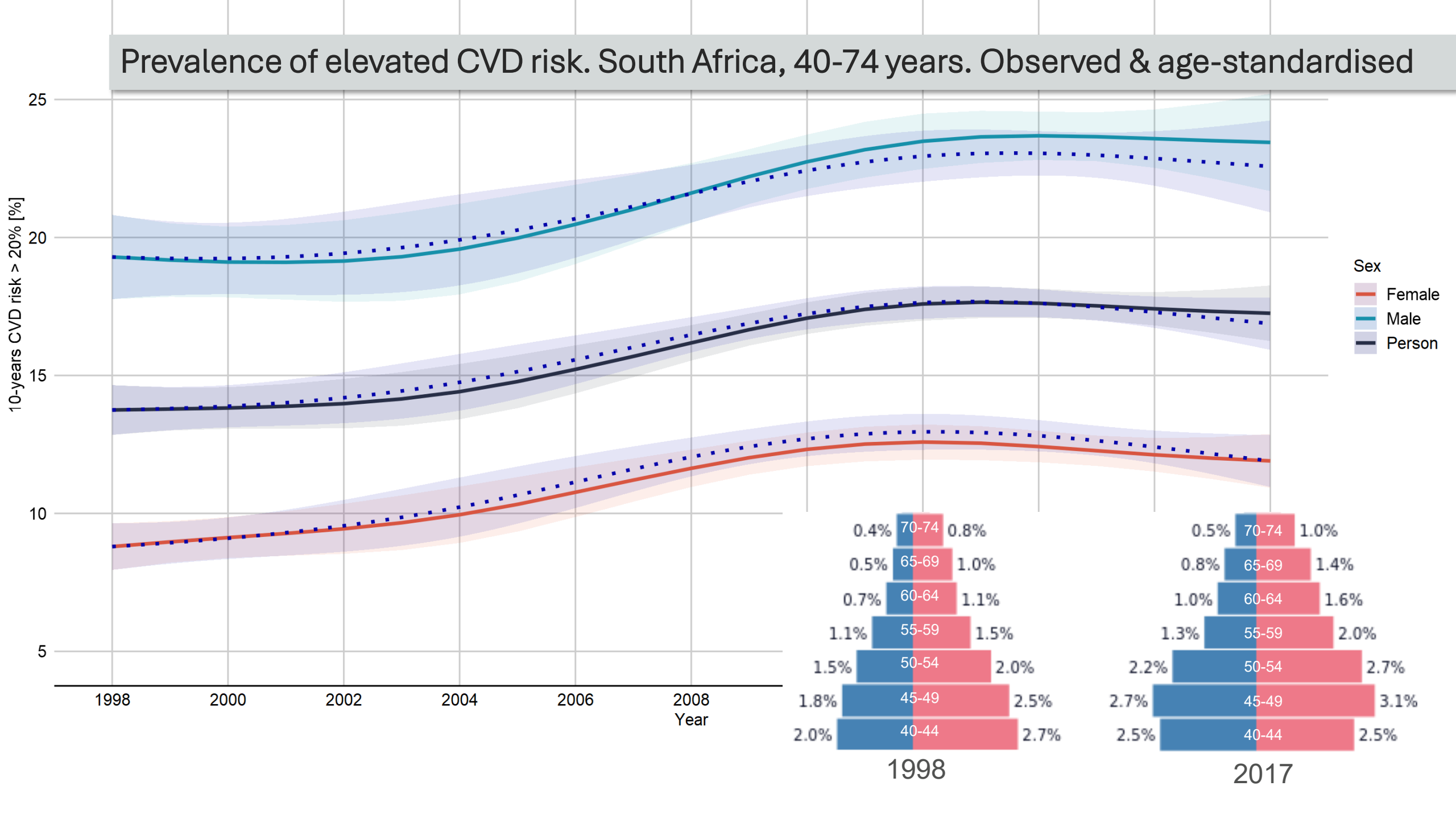
ExPoSE datasets & code:
https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/981

Study website
https://www.exposeproject.net/

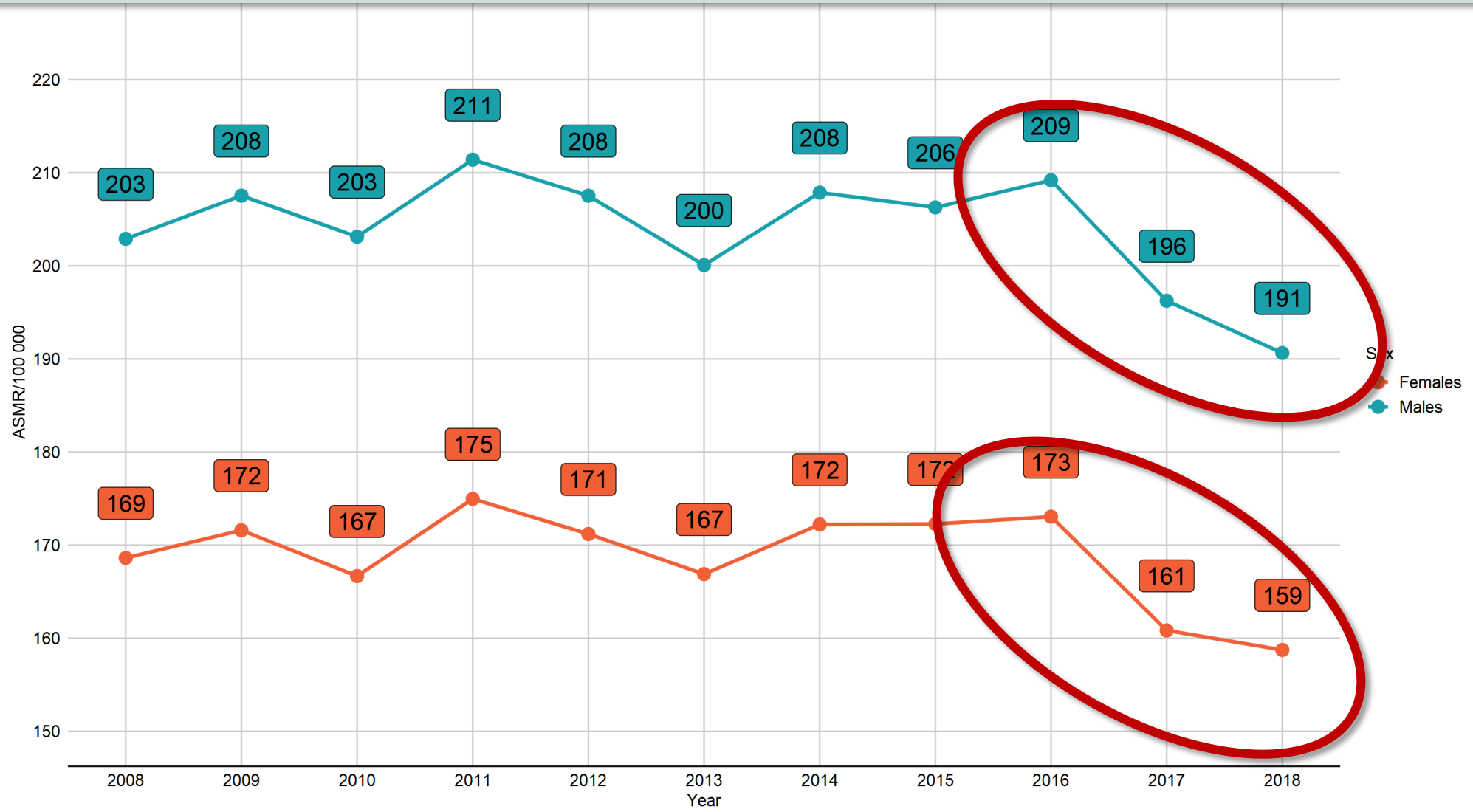
Result1:
A changing trend


Prevalence of elevated CVD risk. South Africa, 40-74 years.
10-years CVD risk > 20% [%]
30
25
20
15
10
5
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Year
19.3
23.7
23.4
13.7
17.6
17.3
8.8
12.6
11.9
Sample size
2000
4000
6000
8000
Sex
Female
Male
Person

Prevalence of elevated CVD risk. South Africa, 40-74 years. Observed & age-standardised

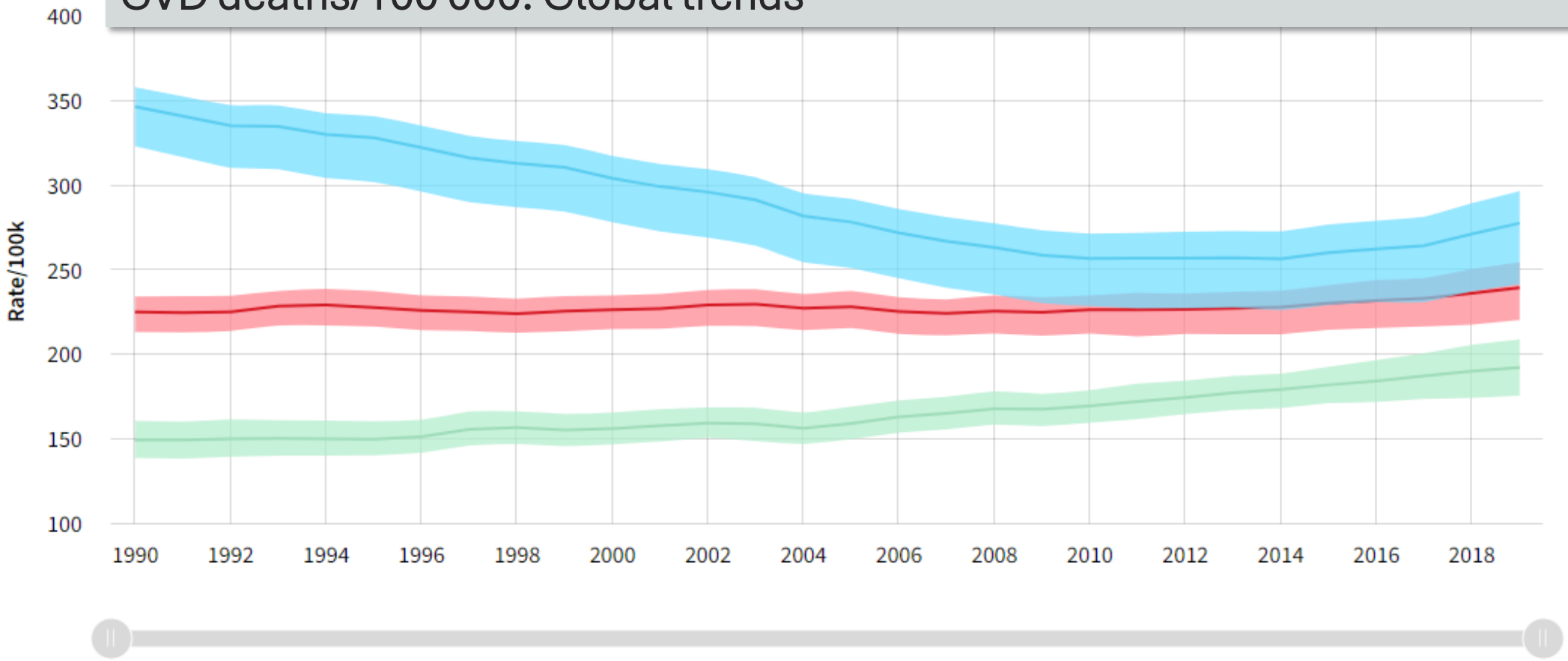


CVD deaths/100 000. South Africa, all ages.



Statistics South Africa. Non-Communicable Diseases: Findings from Death Notifications, 2008-2018. Statistics South Africa; 2023. https://www.statssa.gov.za/publications/Report-03-08-01/Report-03-08-012018.pdf

CVD deaths/100 000. Global trends

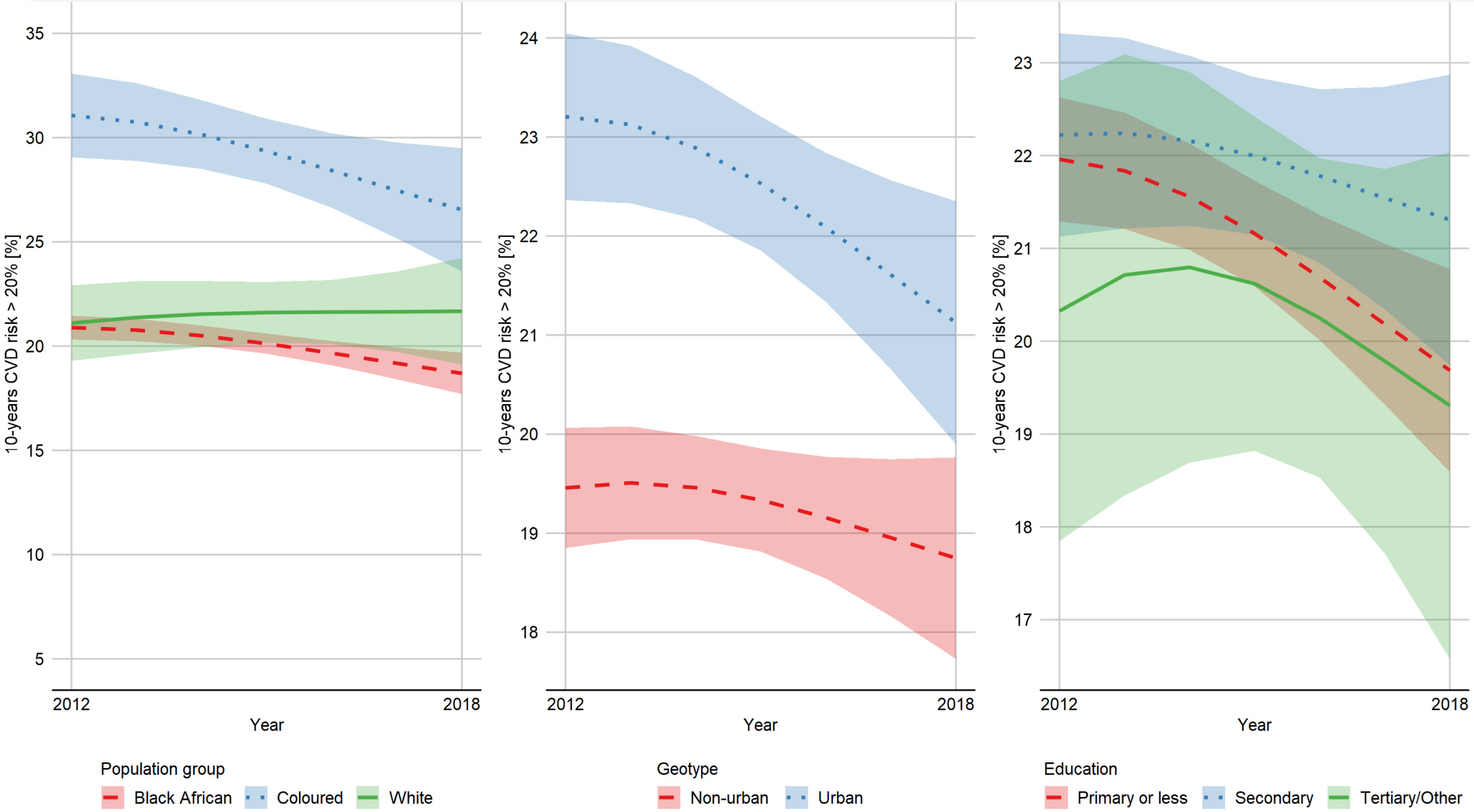


https://world-heart-federation.org/world-heart-observatory/trends/

Results 2:
large differences across population strata

Number at elevated CVD risk. South Africa, 40-74 years.

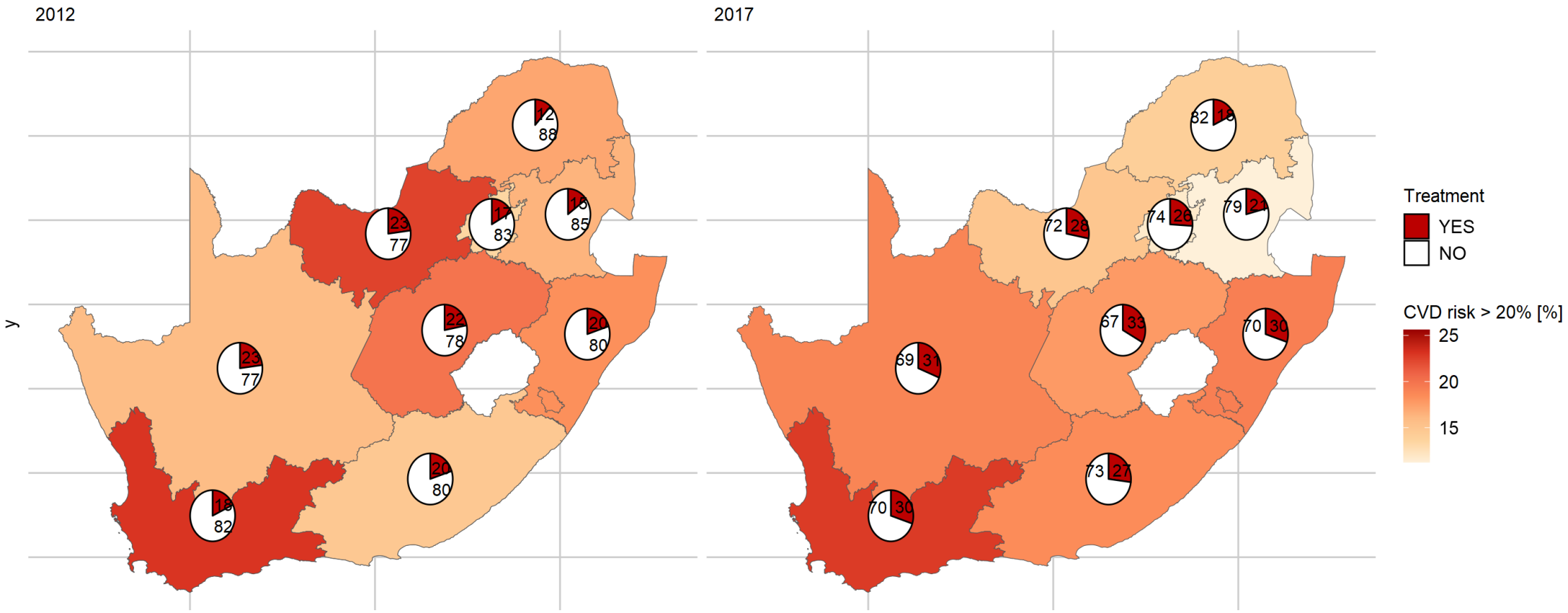
Age-standardised prevalence of elevated CVD risk. South Africa, 40-74 years, by group



Why so?

Prevalence of major CVD risk factors. South Africa, 40-74 years.

Prevalence of antihypertensive treatment. South Africa, 40-74 years, by province

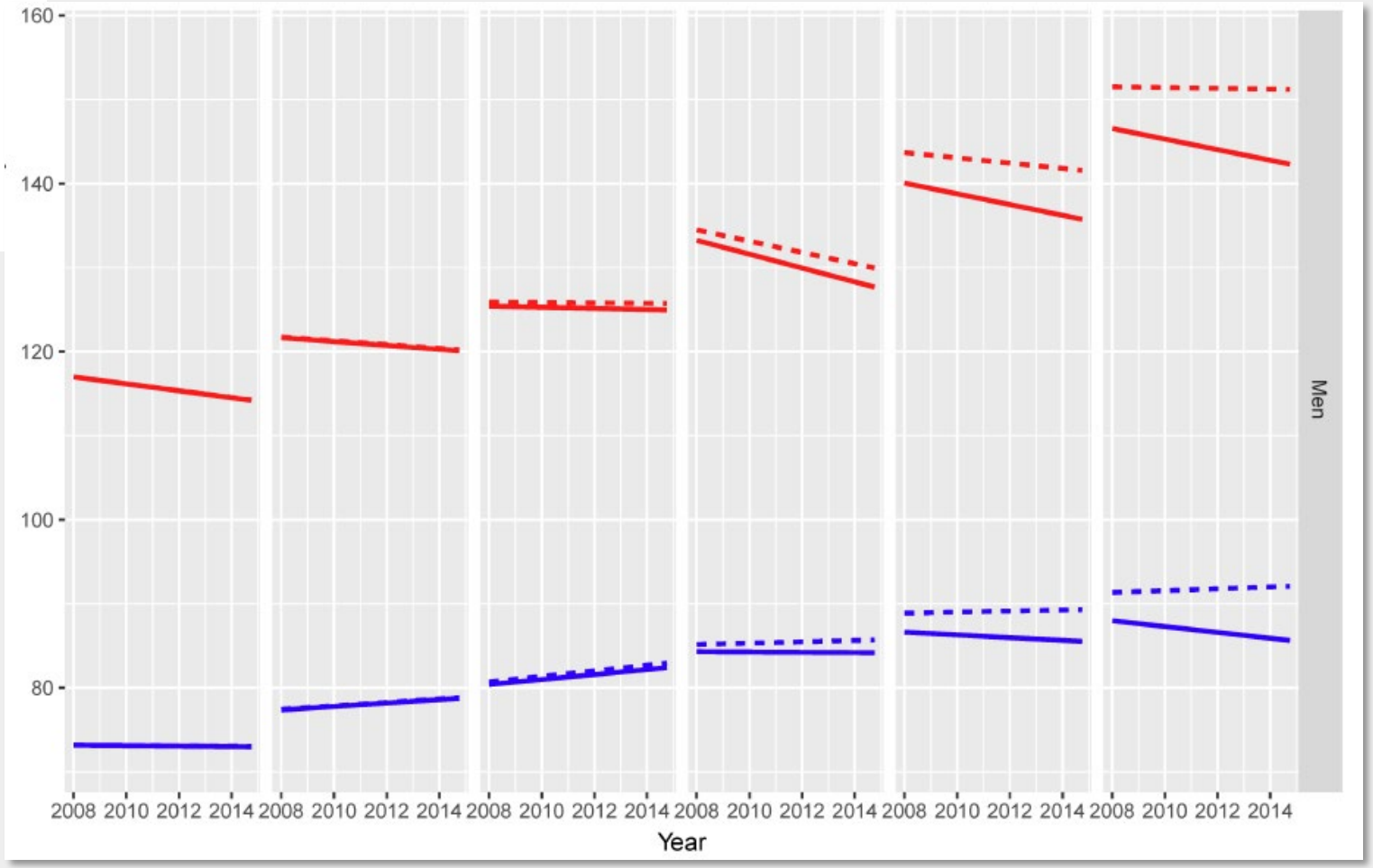


PLOS ONE

RESEARCH ARTICLE

Antihypertensive treatment and blood pressure trends among South African adults: A repeated cross-sectional analysis of a population panel survey

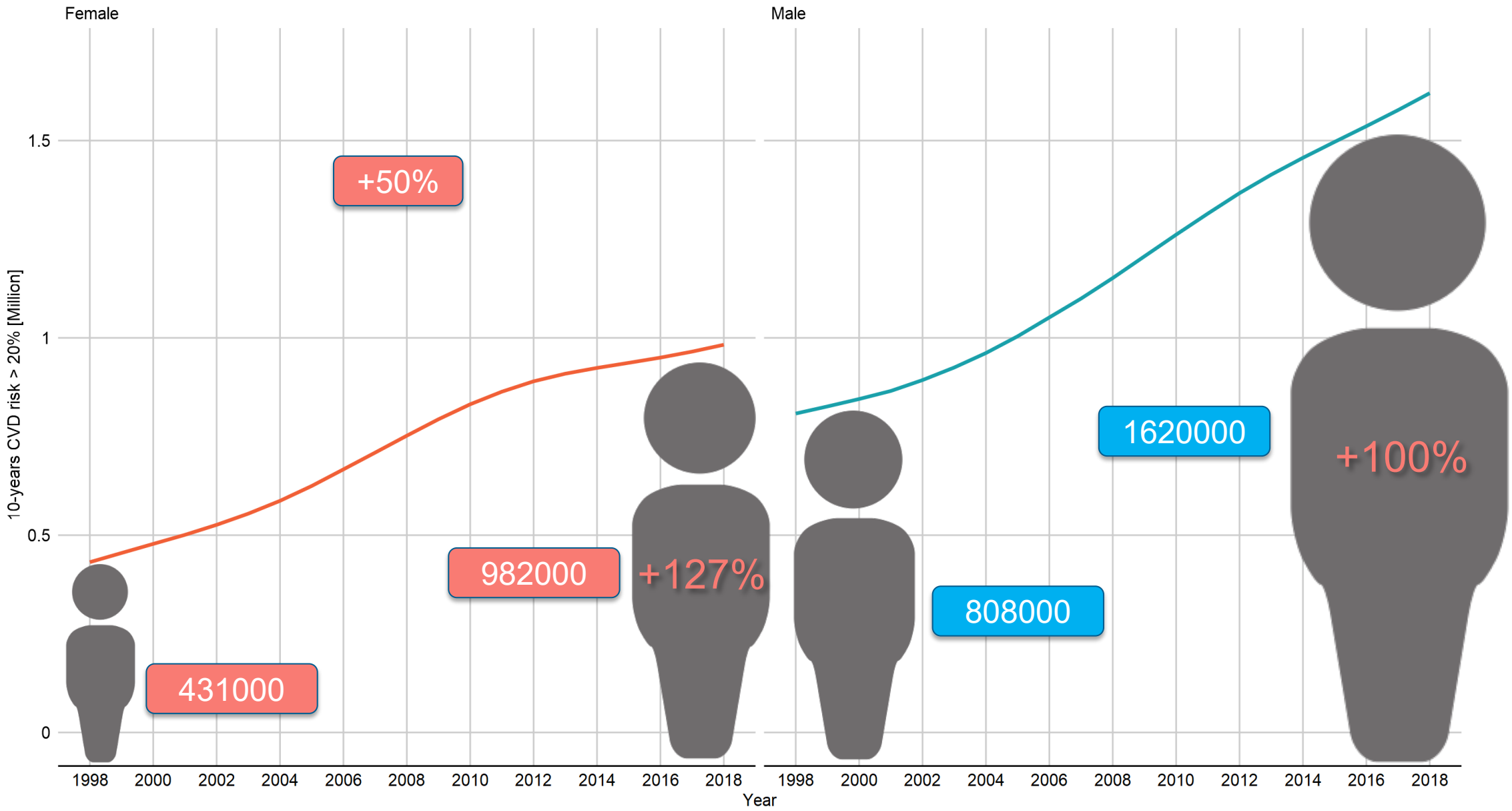
Annibale Cois[1]*, Rodney Ehrlich[2]



Cois A, Ehrlich R. Antihypertensive Treatment and Blood Pressure Trends among South African Adults: A Repeated Cross-Sectional Analysis of a Population Panel Survey. PLOS ONE. 2018;13(8):e0200606-e0200606. doi:10.1371/journal.pone.0200606

Conclusions & Public Health perspective

Number at elevated CVD risk. South Africa, 40-74 years.

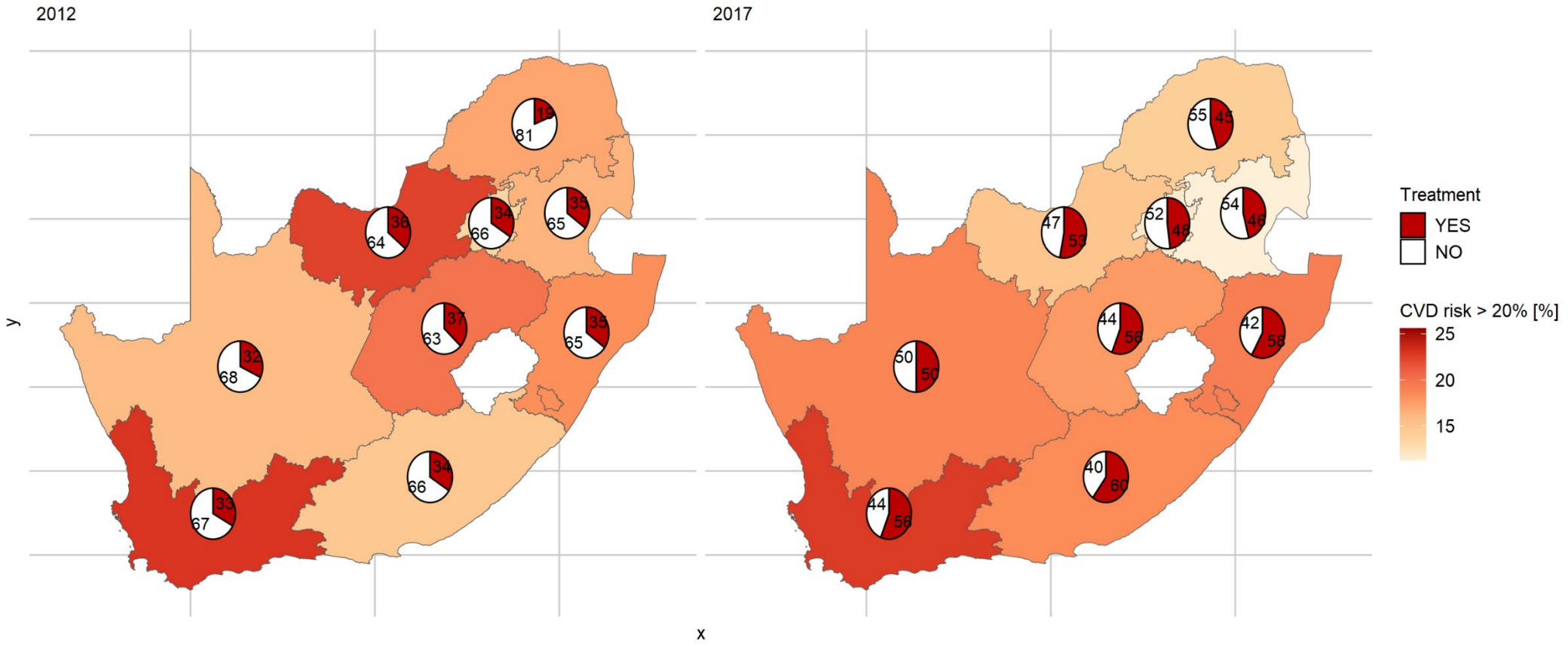


Low SES

Urban dwellers

Younger

Prevalence of treatment among high-risk individuals. South Africa, 40-74 years, by province



Treat the client with CVD risk

- If known CVD[1]: give simvastatin[4] 40mg daily. If on amlodipine, give instead simvastatin[4] 10mg daily. Avoid if pregnant or liver disease.
- If no known CVD: if CVD risk > 20%, give simvastatin[4] 10mg daily. Avoid if pregnant or liver disease.

Review the patient with CVD risk ≤ 20% yearly. Review the patient with CVD risk >20% 6 monthly. If trying to lose weight, review 3 monthly.

Thank you

Acknowledgements

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Department of Global Health, Stellenbosch University

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Economic and Social Research Council