Appendix

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SUPPLEMENTARY MATERIAL

Additional detail regarding methods

The Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) includes a nationally representative sample of Aboriginal and Torres Strait Islander Australians selected using stratified multistage area sampling of private dwellings in remote, non-remote areas and discrete Aboriginal and Torres Strait Islander communities of Australia nationally. Private dwellings included houses, flats, home units and any other structures used as private places of residence at the time of the survey. Usual residents of private dwellings were invited to participate and included visitors who have resided in the dwelling for six months or more. People whose usual residence was a non-private dwelling, such as a hotel, motel, hostel, hospital, nursing home, or short-stay caravan park were not included. The sample coverage was limited by the ABS to manage the cost of the survey and informed by 2011 Census data indicating the location of dwellings with Aboriginal and Torres Strait Islander residents. Exclusions included: areas in the Northern Territory of Australia with no Aboriginal households; and some discrete Aboriginal communities or remote areas with a small number of households with Aboriginal residents. Aboriginal people were therefore underestimated by approximately four percent. The exclusions were accounted for by weighting the final sample to population benchmarks. Details of the AATSIHS are provided elsewhere[1]. These are the only national data of this type and represent a major improvement over what has been available until now. The final AATSIHS sample comprised 12,947 persons aged 2 years and over from 8,237 fully responding households (household response rate=79.5%). A total of 3,293 (40.4%) out of the 8,157 respondents of the AATSHIS aged 18 years of older provided biomedical data. Response rates for biomedical data were 28.1% and 55.8% for non-remote and remote biomedical respondents respectively.

Self-reported and measured variables

Prior CVD was based on self-report of previous CVD in response to the following question: "Including any conditions which can be controlled with medications, have you ever been told by a doctor or nurse that you have any heart or circulatory conditions?" A participant was considered to have had a previous CVD event if they answered yes to this question and reported one or more of the following long term conditions from a defined list: ischaemic heart disease, heart failure, oedema, other heart disease (including atrial fibrillation/flutter), cerebrovascular disease, and diseases of arteries, arterioles and capillaries.

Fasting blood samples and urine samples were taken and assayed (including: glucose, HbA1c; total cholesterol; high density (HDL- C) and low density (LDL-C) lipoprotein cholesterol; and estimated glomerular filtration rate, microalbuminuria) using standard measures[1]. Point measurements of estimated glomerular filtration rate were used to ascertain chronic kidney disease as repeated measures were not available.

Ascertainment of absolute risk of a primary CVD event

The Australian Bureau of Statistics generated participants' absolute CVD risk using the Australian National Vascular Disease Prevention Alliance (NVDPA) risk assessment and risk management algorithm, which includes the Framingham CVD risk equation[1-4]. This algorithm assesses an individual's risk of a global CVD event in the next 5 years, with global CVD defined as: coronary heart disease (myocardial infarction, coronary insufficiency, new angina, coronary death); cerebrovascular disease (ischaemic or haemorrhagic stroke, or transient ischemic attack); peripheral vascular disease (intermittent claudication); and heart failure[3].

Among individuals without prior CVD, those with the following characteristics were automatically categorised as high risk (often termed "clinically determined high risk")[1]: aged ≥75 years; diabetes and >60 years old; diabetes with microalbuminaemia; systolic blood pressure ≥180 mmHg; diastolic blood pressure ≥110 mmHg; total cholesterol >7.5 mmol/L; or estimated glomerular filtration levels <45 mL/min/1.73m2. Participants without previous CVD who do not meet the criteria for automatically being classified as at high risk then had their absolute cardiovascular risk calculated using the Framingham Risk Equation. Included in the equation is information on age, sex, current smoking status, diabetes status, systolic BP, and total cholesterol to HDL ratio[5]. Although familial hypercholesterolaemia is usually part of this assessment, it was not captured in the NATSIHMS. Based on the algorithm, participants in the study were categorised as low (<10%), moderate (10-15%) or high (>15%) absolute primary CVD risk.

Sample weighting

To account for the sampling strategy and response rates, weights were applied to the Aboriginal and Torres Strait Islander population data[1]. Small sample size and weighted data can result in confidence intervals that include values less than zero or greater than one hundred. In these few cases confidence intervals were truncated at zero or one hundred and marked in the tables.

Missing data

Participants included in the analyses did not differ significantly from those with missing data on components of the absolute CVD risk algorithm in terms of age, sex, employment status, relationship status, socioeconomic disadvantage, household income, self-rated health, smoking status, diabetes status, blood pressure or cholesterol level; however, they did differ in terms of education level and speaking an Indigenous language at home.

Data on medications were available for a reduced sample of respondents, and missing data on lipid-lowering medications were more common in smokers and participants with greater levels of disadvantage, those speaking an Indigenous language at home and those in poorer health. . In contrast to data from the general Australian population, comprehensive quantification of recommended prescribed treatments according to absolute risk was therefore not possible [1].

Table 1 Weighted percentage of high risk characteristics among those with clinically determined high cardiovascular disease risk.

High risk characteristic	Weighted % (95%CI)
Diabetes with microalbuminuria	45.5 (36.0-55.1)
Diabetes and over the age of 60	31.4 (22.9-39.9)
Total cholesterol > 7.5mmol/L	17.4 (9.5-25.2)
Moderate to severe kidney disease (eGFR<45mL/min/1.73m^2)	9.3 (4.2-14.4)
Diastolic blood pressure ≥ 110mmHg	8.0 (3.0-13.0)
Systolic blood pressure ≥ 180mmHg	5.5 (0.1-10.2)

Note: percentages do not sum to 100% because respondents could have more than one high risk characteristic.

References

1.	Australian Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2012-13 [Internet]. 2013. Available from: http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/4727.0.55.002Main%20Features12012-13?opendocument&tabname=Summary&prodno=4727.0.55.002&issue=2012-13&num=&view=.
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