Australia's role in improving global cardiovascular health

Do Australian trends in cardiovascular disease have lessons for other countries?

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doi: 10.5694/mja14.00373

On 4–7 May this year, Melbourne will host the World Congress of Cardiology, a tribute to the high international regard in which Australian cardiology research and practice are held. Australia's achievements in cardiology are considerable, with well substantiated claims for the invention of the world's first cardiac pacemaker in the 1920s[1] and the establishment of the first coronary care unit in the 1960s.[2]

Discoveries made early in the careers of distinguished Australian cardiac investigators, such as Philip Barter on the role of transfer proteins in high-density lipoprotein (HDL) cholesterol metabolism, and Murray Esler on the role of the sympathetic nervous system in blood pressure control, have led to extensive clinical testing of modifiers of HDL cholesterol[3] and renal denervation as a potential major advance in the treatment of hypertension.[4] Both these developments are the subject of active current controversy and ongoing clinical trials to clarify their roles in the treatment of dyslipidaemia and hypertension. They are inspiring examples of how decades of dedicated basic research can open up new and unexpected pathways for clinical progress.

Australia's impressive collaborative capability for large-scale, nationally inclusive clinical projects has been demonstrated by the LIPID and ANBP2 study groups, with their respective major practice-changing trials of statin therapy after acute coronary syndromes[5] and comparisons of antihypertensive therapies.[6] The recent national ACACIA and CONCORDANCE registries and the binational SNAPSHOT audit of acute coronary syndromes confirm a strong Australian appetite for collaborative cardiovascular research.[7]

The theme of the 2014 World Congress is global health, with a stated aim to reduce premature deaths from cardiovascular disease globally by 25% by 2025. Perhaps the most important Australian contribution to global cardiovascular health may come from an examination of our dramatic, if uneven, decline in the rate of cardiovascular disease since the 1960s. The Australian statistics in this regard are particularly impressive: rates of premature cardiovascular death have declined to less than a third of the level in the late 1960s; non-fatal myocardial infarction and stroke have declined; and survival after a coronary event has improved.[8]

The role of health promotion bodies such as the Heart Foundation has been an important key to this success. Although changes towards a lower-fat Australian diet have no doubt contributed, the current ready access to high-energy foods and a high prevalence of obesity remain concerning. With 28.3% of the adult population being obese, Australia already ranks among the top three most obese nations in the world and is growing fatter faster than almost any other nation.[9] On the other hand, Australia's decline in rates of adult smoking has been impressive and continues.[10] Innovative and persistent campaigns from public health advocates such as Simon Chapman have stimulated effective community support and government action on tobacco control.[11] Australia's world-leading introduction of plain packaging laws will almost certainly see the trend to limit smoking continue.

However, Australia's decline in coronary mortality, while impressive, is unevenly shared throughout the community. It may have slowed in younger age groups, and obesity trends may reverse some of the decline. Importantly, the Indigenous population continues to have excessively high rates of cardiovascular disease and has not shared in the improvements in cardiovascular health.[12]

We have much to be proud of in a vigorous basic cardiovascular research effort that can translate to major clinical improvements. We need to balance our basic research effort with clinical and population research. A fruitful Australian contribution to reducing the global burden of cardiovascular disease may be a critical analysis of what we are doing right, where we are not succeeding and how we can maximise the trends seen in Australia. We can then assess whether lessons learned here are applicable in other countries.

Competing interests: No relevant disclosures.

Provenance: Commissioned; externally peer reviewed.

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