

Tackling Disparities in Heart Care and Disease Outcomes in Women: Insights and Highlights From the Women and Heart Disease Forum



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Australia is in a unique position to achieve step-change improvements in cardiovascular health. On a background of high-quality health care and research, but with substantial disparity in access and outcomes, there are significant residual unsolved challenges. Recently, we have seen historic investment in research, and dramatic improvements in the strategic and co-ordinated leadership of the research community, as reported in the February edition of this journal [1]. Furthermore, both federal and state ministers and their offices are recognising the urgent need for both investment in research and nation-wide changes in the implementation of research into clinical practice, to the benefit of the community. The time is ripe.

With respect to cardiovascular disease (CVD), there are clear and concerning disparities in knowledge, implementation of evidence-based pathways and care, and outcomes between the sexes, making women's heart health a clear example of a challenge requiring significant "investment, leadership and collaboration".

This aligns perfectly with the stated purpose of a Medical Research Future Fund Mission, and the recently announced \$220 Million 'Mission for Cardiovascular Health'. Such a focussed and strategic investment in cardiovascular health will facilitate research across the whole translational pipeline

and ensure that the current and emerging evidence is implemented to provide all Australians with equitable access to state-of-the-art care.

Women and Heart Disease Forum

On 19 June 2019, the Australian cardiovascular research community gathered at the Roundhouse, University of New South Wales (UNSW) for the National Heart Foundation's (NHF) second Women and Heart Disease Forum. This event, overseen by the NHF Women's Heart Disease Program, brought together researchers, a broad range of health professionals, key stakeholders in state and federal government, and consumers, to discuss the challenges women face to achieve optimal and equitable cardiovascular health (Figure 1).

The Forum was first conceived during a meeting of leading female cardiologists (the aptly named 'Hearts and Heels' Group) for two key reasons: 1. In Australia there are clear disparities in cardiovascular research, management and outcomes between the sexes; 2. The issue of women's cardiovascular health is a societal one rather than a female one and thus any successful response must involve the wider community, including men.

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Table 1 Key Priorities and Actions from the Women and Heart Disease Forum.

Priorities identified	Proposed actions
Need for more robust preclinical and clinical data	<ul style="list-style-type: none"> • Studies powered <i>a priori</i> to enable gender disaggregated analysis • Requirement of major national funding bodies that studies receiving peer-review funding be adequately powered to report on gender-specific outcomes (a requirement of the NIH in the USA since the 1993) [8] • Establishment of multi-disciplinary women's CV health clinics which could be networked with harmonised clinical pathways and act as sites for nation-wide cohort studies and clinical trials
Poor understanding of the pathophysiology	<ul style="list-style-type: none"> • Support nation-wide collaborative research into conditions with a female sex preponderance such as Spontaneous Coronary Artery Dissection, 'MINOCA' (myocardial infarction with non-obstructive coronary arteries) and pregnancy associated CVD • Improved focus on the sex-specific pathophysiology driving susceptibility to common diseases such as atherosclerosis and heart failure
Lack of awareness at both patient and physician level	<ul style="list-style-type: none"> • Public health campaigns focussed on heart health awareness in women • Sex and CVD education programs focussed on medical students, physicians and other health care providers
Lack of acknowledgement and understanding of gender specific risk factors and markers	<ul style="list-style-type: none"> • Update to national CVD guidelines to include sex specific risk factors alongside 'traditional' risk factors • Focussed effort to discover and apply new blood and imaging markers of subclinical CVD and risk relevant to women
Need to engage the wider scientific community	<ul style="list-style-type: none"> • Each institution to focus on internal initiatives to engage a more diverse and wider group of researchers, and particularly to engage more men in this area

Despite an established tendency for the community to underestimate the role of cardiac disease as the leading cause of death in Australian women [2], emerging gender disaggregated analyses are shining light on this issue [3–6]. An important keynote of the Forum, emphasising the urgent need for strategic thought around women's heart health in Australia, was given by Professor Clara Chow, who discussed the confronting data recently published by her group on the management and outcomes of women in Australia suffering heart attack [7]. This was a large retrospective study using the Global Registry of Acute Coronary Events (GRACE)/Concordance dataset that included many sites in Australia showing that the 6-month mortality for women presenting with ST-elevation myocardial infarction (STEMI) is twice that of men, a difference that persists after correction for age and comorbid conditions. But it was not just the outcomes that were of concern; the authors showed the disparity was also present in the delivery of evidence-based treatment.

Data, presented by Khan and colleagues highlights our need to ask the following research questions:

- 1 What barriers are preventing women from presenting for treatment earlier?
- 2 Why are there delays in providing women with recognised life-saving treatments?
- 3 Why are women as a group treated less intensively than men despite having higher risk scores?
- 4 What biological differences require distinct therapeutic approaches and dedicated clinical trials, and why do we

not have adequate gender disaggregated clinical trial data to answer this question?

- 5 Are there sex-specific imaging or biological markers that could be used to detect early development of atherosclerosis, and to target preventative strategies to prevent heart attack in women?

The Forum brought together 40 presenters and 260 delegates to: analyse the current evidence base with respect to these above questions; highlight the key priority clinical and research questions; and, to make a call to action. In Table 1, there are some highlighted priorities for the day and proposed actions.

Beyond the Forum

The Australian Cardiovascular Alliance (ACvA), which successfully brought together researchers from across the nation and the translational pipeline to advocate for the 'Mission for Cardiovascular Health', continues to focus on innovative strategies to drive improved collaboration, translation and ultimately improve health outcomes through impacting the Australian cardiovascular research sector. The newly established six active flagships - Drug Discovery, Precision Medicine, Bioengineering, Big Data, Clinical Trials, Implementation and Policy - aim to facilitate strategic collaboration of our leading researchers, and deep interrogation

into the clinical problems in our community. Strengths in each of these flagships will potentially provide new solutions to improved risk identification, early disease detection, and improved preventative and therapeutic strategies specific to women.

Where to from here? The Federal Minister for Health, in addition to supporting investment in the ambitious Mission for Cardiovascular Health, has requested urgent strategic overview and collaborative approaches, for both research and implementation of existing evidence-based strategies, in order to tackle the huge health and economic burden of heart disease in women. Leaders from the National Heart Foundation, the ACvA and consumers will meet formally with Federal and State Health representatives in a formal round table to take place at the Shine Dome in Canberra on the 22nd August 2019. Research and implementation priorities to stem the burden of CVD morbidity and mortality in women will be discussed, aiming for formal commitments regarding investment and action on research questions, and delivering evidence-based care. Coordinated nation-wide and large-scale research focussed on the identified gaps, whilst maintaining ongoing dialogue with the implementation coalface may well place Australia in a world-leading position in unravelling missing biology, new markers and risks, and delivering state-of-the-art care to all. The clinical problems in our community. Strengths in each of these flagships will potentially provide new solutions to improved risk identification, early disease detection, and improved preventative and therapeutic strategies specific to women.

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