

Improving cardiovascular outcomes among Aboriginal Australians: Lessons from research for primary care

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Abstract

Background: The Aboriginal people of Australia have much poorer health and social indicators and a substantial life expectancy gap compared to other Australians, with premature cardiovascular disease a major contributor to poorer health. This article draws on research undertaken to examine cardiovascular disparities and focuses on ways in which primary care practitioners can contribute to reducing cardiovascular disparities and improving Aboriginal health.

Methods: The overall research utilised mixed methods and included data analysis, interviews and group processes which included Aboriginal people, service providers and policymakers. Workshop discussions to identify barriers and what works were recorded by notes and on whiteboards, then distilled and circulated to participants and other stakeholders to refine and validate information. Additional engagement occurred through circulation of draft material and further discussions. This report distils the lessons for primary care practitioners to improve outcomes through management that is attentive to the needs of Aboriginal people.

Results: Aspects of primordial, primary and secondary prevention are identified, with practical strategies for intervention summarised. The premature onset and high incidence of Aboriginal cardiovascular disease make prevention imperative and require that primary care practitioners understand and work to address the social underpinnings of poor health. Doctors are well placed to reinforce the importance of healthy lifestyle at all visits to involve the family and to reduce barriers which impede early care seeking. Ensuring better information for Aboriginal patients and better integrated care for patients who frequently have complex needs and multi-morbidities will also improve care outcomes.

Conclusion: Primary care practitioners have an important role in improving Aboriginal cardiovascular care outcomes. It is essential that they recognise the special needs of their Aboriginal patients and work at multiple levels both outside and inside the clinic for prevention and management of disease. A toolkit of proactive and holistic opportunities for interventions is proposed.

Keywords

Cardiovascular disease, prevention, primary care, cultural safety, Indigenous, Aboriginal, disparities

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Introduction

In Australia, Aboriginal and Torres Strait Islander (hereafter Aboriginal) people experience poorer health and substantially reduced life expectancy compared with other Australians.¹ According to the disability-adjusted life year (DALY) method, the Aboriginal population has 2.5 times greater total burden of disease and injury than the general Australian population.² Cardiovascular disorders are the largest single cause of this gap, accounting for 17% of total burden and are 4.6 times more frequent (per capita) in Aboriginal than in non-Aboriginal people.^{2,3} While the reasons for this ongoing disparity in outcomes are situated

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throughout the life course and patient illness experience, health systems are recognised as critical for the treatment and prevention of ill-health and central strategies for addressing health inequity and wider social injustice.⁴

Australia's healthcare system is complex with its access underpinned by universal health insurance for its citizens through Medicare. Detailed information on the healthcare landscape is available elsewhere,^{5,6} although clear description is challenged by ongoing reform processes that have occurred over recent years. However, there is increasing recognition of the need for primary healthcare to have greater responsibility for coordinating management of the increasing burden of chronic disease.⁷ Primary healthcare refers to a range of providers and services across the public, private and non-government sectors. For Aboriginal people, it is provided in a variety of community-based settings including in general practices, community health and Aboriginal Community Controlled Health Services (ACCHS) established because of the long-standing failure of mainstream healthcare delivery to meet the needs of Aboriginal people.⁸ The services delivered within primary health settings are broad-ranging, spanning the prevention-through-treatment spectrum (health promotion, prevention and screening, early intervention, treatment and management); a hallmark is continuity of care and treating patients within their social context, including knowledge of family and community. General practitioners are the predominant providers of primary healthcare in Australia, but the size of Australia and maldistribution of health professionals mean that there is a diversity in models for delivery of primary healthcare. As highlighted in the National Primary Health Care Strategic Framework, primary care services look and operate differently with location, changing from metropolitan areas to rural and remote settings with variations related to geography, community and population characteristics, socio-economic circumstances, infrastructure, health status and workforce mix and availability.⁹

Since the Alma-Ata Declaration, quality primary care has been acknowledged as a prerequisite to improving health outcomes, particularly for disadvantaged populations.¹⁰ Alma-Ata recognised the need for primary healthcare to be holistic, comprehensive and social determinants- and equity-focussed, a model that has been embraced by ACCHS.^{8,11} Improvements in access and high-quality primary healthcare are fundamental to redressing the health disadvantage of Aboriginal people, their cardiovascular disparities and improving their survival and quality of life.¹²

Over the last 9 years, the authors have undertaken a series of projects examining Aboriginal cardiovascular health in the state of Western Australia (WA). Determinants of the substantial disparity in cardiovascular outcomes for Aboriginal Western Australians were investigated using a variety of research methods including analyses of linked morbidity and deaths databases, hospital record data collection, interviews of patients and service providers, literature reviews, programme evaluations and audits and engagement

with policymakers. Findings from the quantitative methods have been reported elsewhere^{13–24} and are less directly related to primary care practice. In brief, the major cardiovascular disorders studied (myocardial infarction (MI), heart failure (HF), atrial fibrillation (AF) and stroke) occur more frequently, and at substantially younger ages, in Aboriginal compared with non-Aboriginal Western Australians,^{14,15,23–25} and higher levels of comorbidity are characteristic of Aboriginal patients hospitalised with these disorders. Disparities in outcomes following hospitalisations with first-ever cardiac events become evident after the first month, with younger Aboriginal patients twice as likely to die within the first year of HF²³ and Aboriginal survivors of MI twice as likely to be readmitted or die within 2 years.¹⁷ The poorer Aboriginal outcomes reflect the impact of a much greater prevalence of comorbidities.

As part of reflecting on the evidence regarding disease occurrence and outcomes in the Aboriginal population, the authors also undertook a substantial body of consultation with stakeholders to identify strategies for action to address these disparities. Through this research, we developed many insights into where improvements in the quality of primary healthcare could make a major contribution to improving Aboriginal cardiovascular disease (CVD) outcomes. Both the research and our participatory processes highlighted opportunities for primary healthcare practitioners to 'step up' to improve the quality of care and what that might look like. Both access to primary care in all its dimensions (e.g. those described by Levesque et al.²⁶ include the following: approachability, acceptability, availability and accommodation, affordability and appropriateness) and ensuring that it is of high quality are essential (although on its own insufficient) to improving Aboriginal CVD outcomes.

We have not previously consolidated and published the learnings from the research with a specific focus on primary healthcare. Referring both to our own data and to broader published literature, we utilise a primary healthcare lens, focussing on information relevant to providers on approaches to prevention (primordial, primary and secondary) and management of CVD in Aboriginal people. While of relevance to all primary care service providers, in this article, we seek to make recommendations for private general practitioners in particular, as a key group that faces challenges in improving their care of Aboriginal and Torres Strait Islander people. We suggest a range of practical strategies for implementation and provide examples of how primary care practitioners can work to reduce the disparities in CVD experienced by Aboriginal people.

Methods

The interviews/forums/workshops and discussions undertaken as part of three separately funded research project grants are the main source of data for this article. Given that the work was undertaken over a period of 9 years as health

services research, multiple ethical approvals were required from different health services and universities. However, in view of the explicit Aboriginal focus of the research programme, primary ethics approval was obtained from the Western Australian Aboriginal Health Ethics Committee (179-07/07; 194-11/07; 381-01/2011; #159).

Over the first few years of the research, formal interviews and group discussions were held with a range of stakeholders including Aboriginal consumers and health service providers (Aboriginal and non-Aboriginal) in a variety of settings (urban and rural, hospitals as well as primary care including ACCHS). These interviews were audio-recorded and transcribed and their results were reported.²⁷⁻³⁴ Input from Aboriginal consumers through formal interviews was a critical part of our commitment to ensuring research is relevant, contributes to improved practice and positively impacts on health outcomes through actions that address health disparities. Primary care providers interviewed were those with extensive experience in and commitment to improving Aboriginal health. We recognised that their perspectives could deepen our understanding of the issues Aboriginal people face and provide insights into how care could be delivered in ways to better meet their needs.^{34,35} Furthermore, a number of forums were held with these key stakeholders – Aboriginal consumers, primary healthcare providers and health advocates – with the specific intention of gathering wisdom from their experience. For example, a World Café Forum was held in an Aboriginal health service's meeting room in November 2013, a building located adjacent to the State Health Department in Perth. Workshop discussions were recorded by notes and on white paper, facilitated general discussion occurred, all findings were collated and then distilled following the Forum and circulated to participants and other stakeholders to refine and validate information. As part of ensuring rigour in our findings while developing a summary report for stakeholders,²⁵ multiple meetings and iterations of documents occurred. Considerable time and energy were devoted to this community and stakeholder engagement, in particular through identifying where health systems need to improve care for Aboriginal people.

Our research included an explicit focus on research translation and exploring why knowledge was not always translated into policy and practice changes, including by investigating the responses of health decision makers to information about Aboriginal inequities in CVD care and outcomes. Translating research into policies and practice is a collaborative, interactive process³⁶ involving the interchange of knowledge between research users and research producers and requires genuine *interaction* among researchers, decision makers and other stakeholders.³⁷ Hence, many workshops and group meetings where useful information emerged were not formally recorded. Findings and reflections were reviewed, refined and compared to existing literature on healthcare for Aboriginal people, including journal articles, policy and models of care documents and other grey

literature. We have summarised the numbers and some of the key processes for interviews and forums which inform the views expressed in this article in Table 1. This article draws upon the knowledge accumulated throughout the research utilising the lens of how primary healthcare providers can contribute to reducing Aboriginal cardiovascular disparities.

Results

Implications for primary care

Consequences of the research findings for primary care and potential approaches to addressing the problems in primary care practice are presented for aspects of primordial, primary and secondary prevention. Challenges exist in urban, regional and remote settings and reflect the constellation of adversity that Aboriginal people face, so the optimal responses and support primary care providers can make available will vary with context. Practical strategies for intervention are listed in Table 2.

The imperative for prevention and recognition of the social underpinnings of poor health. Our finding of the huge differential in incidence of cardiovascular conditions, particularly marked at younger ages, highlighted the importance of primary prevention for CVD.¹³ Addressing social and equity determinants (primordial prevention) is essential, although not a domain for intervention that is traditionally conceived to be part of the responsibility of primary care practitioners. And yet, for those who conceive their health practitioner role to be more than that of applying 'Band-Aids' *after* disease is established, this is fundamental to improvements in Aboriginal health outcomes – for which CVD is only one outcome of concern. Practitioners with a genuine commitment to improve Aboriginal health outcomes must recognise and engage in efforts to improve the living conditions and life circumstances of Aboriginal people, so that they have more control over their lives. To achieve this, as emphasised by Aboriginal people involved in the research, primary care practitioners must look to Aboriginal concepts of health and primary healthcare delivery that emphasise a holistic approach. This recognises the importance of providing additional services such as environmental health and necessary supports for housing, justice and social and emotional well-being. In this context, ACCHS as well as offering self-determination provide a model for advocacy and holistic care delivery for Aboriginal people.⁸

A flow-on of improved education, housing and income will enable choices for Aboriginal people who are likely to result in better perinatal and early childhood outcomes and greater stability, enabling them to engage with and heed health advice for prevention and management of chronic disease.³⁸ Baum et al.³⁹ have previously examined the dilemmas that primary healthcare providers face in taking into account the limitations which individuals have from their life

Table 1. Indicative summary of research data collection and participants.

Data collection/forum	Nature of participants	Key reason/aims	Numbers of participants ^a
2007–2011 Tertiary hospital cardiology staff – working with AHW involved in cardiology care (2007–2008)	Various – nurses, managers, social workers, exercise physiologist, CCU staff and AHW	<ul style="list-style-type: none"> To assess the impact of an AHW working in a cardiology service in a tertiary hospital 	14
Aboriginal patients with recent heart disease (2008)	Metropolitan	<ul style="list-style-type: none"> To understand Aboriginal perspectives on CR and barriers to uptake 	12
Regional CR staff in rural hospitals and Aboriginal Health Services (2008)	<ul style="list-style-type: none"> 15 mainstream CR/secondary prevention services (hospitals ± community health) 9 ACCHS across WA 4 metropolitan, 20 regional 	<ul style="list-style-type: none"> To assess knowledge of and implementation of NHMRC guidelines on CR and secondary prevention for Aboriginal and Torres Strait Islander people 	24
Interviews and discussions with medical practitioners working to improve Aboriginal health (2009)	Three experienced non-Aboriginal GPs with many years of experience working with Aboriginal patients	<ul style="list-style-type: none"> To explore the challenges participants experienced providing care for their Aboriginal patients and the nature of the difficulties To draw on their experiences and observations to reflect on whether mainstream health services undermine or promote quality care for Aboriginal Australians 	3
Participants in Northern WA, opportunistically sampled (2010)	<ul style="list-style-type: none"> 12 Aboriginal patients 11 health providers 	<ul style="list-style-type: none"> To understand Aboriginal patients' and health providers' views of accessing and delivering healthcare for acute coronary disease and reasons for barriers and delays in accessing care 	23
2012–2016 Interviews with key stakeholders who expressed an interest in Aboriginal heart health (2012–2013)	Seven key stakeholders (researchers, clinicians, Health Department policy and programme delivery staff) interested in KET and Aboriginal heart health	<ul style="list-style-type: none"> To understand what works in KET in general and in particular in Aboriginal heart health 	7
Audit in a regional hospital and KET activities. Multiple iterations of feedback to regional executive and at local, state and national meeting (two audit periods 2011–2012; 2013–2014)	Formal interviews with four key personnel involved in the audit. Informal interviews with additional stakeholders including from the cardiovascular policy area of the Department of Health and from professionals closely associated with clinical service delivery	<ul style="list-style-type: none"> To understand what works in KET using an equity lens 	11
Parliamentary forum <i>Science Lands in Parliament</i> (October 2013)	Researchers meeting with parliamentarians	<ul style="list-style-type: none"> To ensure that parliamentarians were aware of Aboriginal inequities in heart disease occurrence and outcomes and the urgent need for policy and system changes to reduce heart disease in Aboriginal Western Australians 	>50
Meetings and workshop with health planners (December 2014)	<ul style="list-style-type: none"> Health Department service planners and managers Health networks Researchers Heart Foundation Aboriginal manager GP/GP hospital liaison AHWs/co-ordinator 	<ul style="list-style-type: none"> To use research results to identify priority areas to improve Aboriginal heart health Identify potential actions to address system deficiencies 	19

Table 1. (Continued)

Data collection/forum	Nature of participants	Key reason/aims	Numbers of participants ^a
Meetings with Aboriginal planning and policymakers, Aboriginal Health Improvement Unit, Aboriginal Health Council of WA (ongoing)	Multiple meetings over the course of the research	<ul style="list-style-type: none"> To interventions 	10
Consultations with people in the Pilbara for programme development (Heart Foundation) (2014)	<ul style="list-style-type: none"> Aboriginal people with heart disease/their carers/community members 46 (all Aboriginal). Health service providers 37 (12 Aboriginal) Non-health service providers 25 (10 Aboriginal) 	<ul style="list-style-type: none"> To consult with the Aboriginal community and service providers in the Pilbara describe findings from the research To suggest potential and undertake a needs assessment in the West Pilbara to determine the need for a heart health programme, the type of programme and method of programme delivery 	108
Meeting with key state health department managers	Chief Medical Officer and research advisors	Knowledge exchange and research translation, seeking further funding	3
Information for Action Workshop (data collection and KET) (October 2014)	Participants' roles included the following: AHW, clinician, policy, management, project officer and research <ul style="list-style-type: none"> 18/31 completed the evaluation 14 non-Aboriginal 4 Aboriginal 11 working directly in Aboriginal heart health 	To engage stakeholders in sharing success stories <ul style="list-style-type: none"> In prevention In hospital care In transition to the community World Café style and to discuss What worked and why? What problems needed to be overcome? How did you know it was successful? 	31
Meeting with CVD Health Network of WA Health Department (August 2014)	Network leads Network committee Network project officer Researchers	Participants invited to be part of reference group for the <i>Information for Action</i> report <ul style="list-style-type: none"> To report on research results and identify priorities for action to improve systems for Aboriginal cardiac patients in WA 	9
Rural Health West conference (August 2014)	Plenary session of rural health conference	<ul style="list-style-type: none"> To report on research results To identify interest of clinicians in attending a rural training workshop 	65
Aboriginal Business Conference (December 2014)	Presenters: <ul style="list-style-type: none"> Aboriginal business woman: work readiness Aboriginal manager: Heart Foundation Chair: Community Organisation with experience in implementing a Healthy Lifestyle programme GP Liaison: Royal Perth Hospital Researcher with expertise in cardiovascular and Aboriginal health	Interactive discussion with audience to highlight the high burden of heart disease in the Aboriginal community, and the contribution of the business sector to improving Aboriginal heart health in the workplace	40
Heart Foundation parliamentary breakfast in State parliament (November 2015)	Presenters included researchers and those involved in programme planning and advocacy	<ul style="list-style-type: none"> To present to politicians and other key stakeholders information from research and innovations in programme delivery to engage with and improve heart outcomes for Aboriginal people 	60

(Continued)

Table 1. (Continued)

Data collection/forum	Nature of participants	Key reason/aims	Numbers of participants ^a
Pilbara Heart Health Forum (August 2015)	Full day event which included interactive workshops, attended by 70 people Preceded by evening CPD session for doctors (n= 18), with presentations by two cardiologists Diverse range of organisations represented, including primary care providers including ACCHS, the Primary Health Network, the Heart Foundation, private and public service providers, planners and universities. Most participants came from the Pilbara region with almost a quarter coming from Perth (16% Aboriginal health workforce)	<ul style="list-style-type: none"> To improve knowledge about heart health management and culturally appropriate care for Aboriginal patients To provide inter-professional exchange and collaboration during the forum and ongoing To improve inter-professional and multi-disciplinary communication for improved cardiac care in rural areas To support better co-ordination of services in the region To identify service delivery issues for the Pilbara and begin the process of addressing these Improve rural-urban interaction and problem solving Establish a working group for the cardiac <i>Health Pathways</i> Video-recorded sessions for online distribution 	70
NHMRC Research Translation Conference (October 2013) Heart health literacy videos	<ul style="list-style-type: none"> Researchers and practitioners Educators: one cardiology trained nurse experienced in educating Aboriginal people, two Aboriginal people with expertise in heart health and healthy lifestyle	To workshop barriers and facilitators to translation of research findings, particular focus on Aboriginal heart health <ul style="list-style-type: none"> To assist Aboriginal patients and their families to understand aspects of prevention and management of heart disease better 	32 14 video clips http://wachr.uwa.edu.au/aboriginal-health-projects/understand-your-heart-heart-disease 10-15
Meetings/planning of discharge tool (June-September 2015)	Multiple meetings with planning group Representatives from stakeholder organisations including the following: WA Country Health Service Health networks WA Primary Health Alliance GP hospital liaison service Hospital cardiology service Aboriginal Health Improvement Unit Epidemiology branch, Department of Health	<ul style="list-style-type: none"> To develop a mapping tool for hospital discharge staff discharging and referring rural and remote Aboriginal heart patients 	

ACCCHS: Aboriginal Community Controlled Health Services; AHW: Aboriginal health worker; CCU: coronary care unit; CR: cardiac rehabilitation; GP: general practitioner; KET: knowledge, education and translation; NHMRC: National Health and Medical Research Council; WA: Western Australia; CPD: Continuing Professional Development.

More than 30 formal conference presentations (cardiovascular disease, public health, rural health, primary care, Aboriginal health) are not listed.
^aNumbers shown in bold refer to formal primary data collection and those in italics were primarily knowledge exchange from the research although many were workshop-style forums where there was a rich exchange of information, including from experienced practitioners.

Table 2. Improving the quality of Aboriginal cardiovascular health in primary care – a proactive and holistic management toolkit.

Aspect of care

Practice infrastructure and facilities

- Proactively ascertain and accurately record the Aboriginal identity of all patients
- Establish reliable means of contacting patients for follow-up (several alternative contact strategies may be necessary)
- Encourage use of electronic record systems wherever possible and good exchange of information with other service providers
- Develop linkages with Aboriginal-specific services and with Aboriginal staff in your local primary healthcare bureaucracy
- Ensure that all practice staff are sensitive to the needs of Aboriginal patients
- Make your practice visually welcoming, for example, with culturally appropriate health posters, with positive health messages or with art work, Aboriginal flags or other acknowledgement of Aboriginal people
- Demystify going to the doctor
- Optimise comprehensive care by maximising the use of specific government subsidies for Aboriginal and other disadvantaged patients/families (for health services and pharmaceuticals)
- Enlist specific government subsidy/incentive schemes for Aboriginal PHC (e.g. in Australia, register the practice with specific Aboriginal Health Incentive which aim to support general practices and Aboriginal health services to provide better healthcare for Aboriginal patients, including best practice management of chronic disease). This enables access to additional checks or no/reduced pharmacy costs

Consultation Style

- Recognise the diversity of Aboriginal patients and the wide range of educational levels and beliefs related to health
- Make time for patients to feel comfortable and listened to; this is central to establishing rapport for all patients but especially important in this context. Ensure that you are responding to concerns and questions of the patient
- Proactively ask additional questions about symptoms, for example, chest pain – do not expect or wait for patient to volunteer these
- Involve the patient's family or support person in their care if that is their preference
- Give positive culturally appropriate and educationally tailored health messages. Visual props and use of analogy work well with many Aboriginal patients
- Ask patients about their circumstances (e.g. financial, social and housing) that will impact upon their ability to follow medical recommendations
- Promote concordance with medication regimens by careful explanations of medication use – enlist resources to assist with this
- Communication and engagement with the patients should include showing them how/what to do, not making assumptions and personal contact (phone/text/visit)

Clinical care

- Initiate screening for conventional cardiovascular risk factors from age 15 years onwards, including attention to family history
- Include opportunistic risk assessment and management irrespective of patient's presenting problem/s
- Incorporate prevention/management of diabetes into consultation, reiterating always the importance of exercise, healthy eating and not smoking
- If possible, develop a mechanism for using the services of an Aboriginal health worker (there are funding mechanisms/MBS item numbers for this) where you feel this might make a difference
- Treat diseases to recommended targets, mindful of risk profile and ensuring the patient understands their disease and the importance of medication adherence
- Use Webster packs for medications to make dosage adherence easier

Post-consultation

- If a CVD problem is identified, get patients back to see you until stabilised or arrange quality care as close to home as possible
- Keep patients on the radar through phone calls (preferred but make sure your practice number comes up on their phone – if they do not know who it is, they may not answer) or letters (be cautious if they move often; better used only as a back-up)
- Encourage patients who develop an understanding of their disease to become health champions – to their family and in their community

Referrals

- Routinely provide immediate assistance with making diagnostic, specialist and other appointments to prevent delays
- Explain payment options to patients (many will delay appointments due to their financial position and fear of costs) and facilitate bulk billing where appropriate
- Refer and/or link in with Aboriginal-specific services (ACCHS, Closing the Gap initiatives)
- Refer and/or link in with other support services if required – housing, financial and social/emotional/mental health support
- Refer patients at high risk or post-event to cardiac rehabilitation and reinforce the importance of exercise, nutrition, stopping smoking and adherence to prescribed medications

Community engagement

- Advocacy for Aboriginal health promotion – politically and through population health services and through promoting wider knowledge and uptake of successful programmes
- Work intersectorally to mobilise resources to help people deal with and change the underpinning conditions of their health, recognising this is largely determined by where they live, work and play
- Assist with health screening at Aboriginal community events

circumstances, and the challenges for providers in being more responsive to social determinants. The authors encouraged providers to undertake advocacy for policies that create healthier communities and to build alliances with communities and social movements.³⁹

Reiterating the value of a healthy lifestyle. The traditional Aboriginal lifestyle as a hunter-gatherer required considerable expenditure of energy to obtain foods that would today be recommended by nutritionists as 'healthy'.^{40,41} However, Western influences have interfered with both foods consumed and physical activity levels.⁴² In addition to primordial prevention, primary care practitioners have opportunities to assist with primary prevention through providing advice around lifestyle and health behaviours and to detect and treat antecedent risks early, before disease is established. In their approach to providing advice, primary care practitioners should be mindful of benefits that can occur for remote Aboriginal people living on their traditional lands, and that a stronger attachment to traditional culture has been found to be associated with enhanced outcomes across a range of socio-economic indicators.^{43,44} Multiple guidelines exist to support general practitioners in the prevention of chronic disease.⁴⁵ While the use of and adherence to them in practice is likely to vary, evidence across many clinical contexts has shown that adherence to clinical guidelines is a determinant of patient outcomes.⁴⁶⁻⁴⁸ Regular assessment of risk factors for Aboriginal people should occur from a much earlier age than might be common practice in the general population. Assessment and advice on weight, exercise, nutrition and smoking are all important, and under-screening is known to occur in patients who are younger, attend less frequently and whose uptake of the Medicare Health Assessment is low.⁴⁹ In providing medical advice, providers need to recognise that many Aboriginal clients have low health literacy and may have little trust in Western-based health providers, as for many interactions with health services are compromised by past (personal or community) experiences of discrimination.^{34,50,51} Some Aboriginal patients will be influenced by traditional beliefs and many are fatalistic with respect to health outcomes.⁵²⁻⁵⁴ Importantly, family doctors can reiterate that many risk factors for CVD are modifiable, and that lifestyle changes can significantly reduce and delay a person's risk of disease. Benefits of increasing exercise activity occur at all levels of physical activity, but the greatest reductions in cardiovascular risk occur when people who are sedentary increase their activity levels with even small amounts of physical activity, including activities such as standing, since these are associated with lower CVD risk.⁵⁵

Removing barriers to accessing care early. Complex patient and service factors cause delays in accessing and receiving prompt, effective hospital treatment.³³ Competing cultural, family and personal responsibilities as well as logistical challenges (like distance from healthcare and challenges

with transport) may cause delays in seeking treatment, even with a serious condition such as chest pain.³⁴ Based on data from interviews with Aboriginal patients and service providers in remote northern WA, reasons identified by patients for delays in responding to acute coronary syndrome (ACS) symptoms include poor symptom recognition (particularly amidst comorbidities); conflicting cultural priorities and gender role-related responsibilities (the male imperative to be 'strong' and enculturation against expressing pain, female prioritisation of family needs over self); cultural/communication disjunction with health services; downplaying of symptom significance in the face of socio-economic hardship; normalisation of symptoms and avoidance/denial due to perceived implications of symptoms.⁵⁶ Patients may not call an ambulance because of concerns about costs and may further worry about out-of-pocket costs in accessing care. Personal experiences of discrimination (or expectations based on the experiences reported by others) within the health system may predispose Aboriginal patients with acute cardiovascular symptoms to be reluctant to seek treatment, contributing to delays in accessing emergency care.³³ Aboriginal people have often perceived discrimination within the health system, with many feeling unwelcome and unsafe in community health settings as well as during hospitalisation.⁵⁷ The potential exists to diminish this in the primary care setting by establishing trust and ongoing relationships with patients⁵⁸ and through provision of specific, culturally appropriate education on risk factor and symptom management to enhance adherence.^{31,59} Overall, practice ambience as well as consultation style contribute to improvements in this regard and include how doctors run their practices and how all staff (from the receptionist to the practice nurse) engage with Aboriginal patients.⁶⁰ Specific tips on making the practice more welcoming in terms of the ambience and facilities, consultation style and through community engagement are shown in Table 2.

Providers experience their own challenges: different communication styles of Aboriginal people and diagnostic difficulties in patients with complex comorbidities, unsuitability of specialist-developed guidelines for remote settings, difficulties accessing specialist advice and mismatch between patient transport rules and patients' support needs. Distances in remote areas present formidable challenges to reducing delays,^{15-18,20,56} although transport challenges exist even in metropolitan areas. Limited understanding of Aboriginal culture and communication styles among service providers and consequent miscommunication can reinforce such perceptions.^{29,30,32} This in turn influences patient behaviour and attitudes to treatment.

Acknowledgement and awareness of these issues by primary care providers is an essential first step, as there are ways primary care providers can reduce some of these difficulties. Many ACCHS provide assistance with transport,^{8,11,61} but some private general practices have also entered into such arrangements.⁶² Something as simple as ensuring that

Aboriginal people are identified within practice information systems helps to ensure that they have access to entitlements specifically targeting Aboriginal people.⁶³ It might also increase the doctor's sensitivity to particular needs Aboriginal patients may have and influence consultation style and clinical care (Table 2). The reputation of a doctor as caring and taking the time necessary to understand and work through a patient's concerns, including treating them in the context of their broader social context, is likely to reduce delays in accessing care. Trust is important both in health seeking behaviour and in acting upon advice.^{52,59,64}

Education of the patient to increase their understanding of their health and the health system is important. When medical advice is sought, an important consideration for a health provider is to ensure that patients have the means to follow that advice. Thus, established links and partnerships with relevant agencies that provide social, material and logistical support for patients can influence patient decisions around care seeking and ongoing care.²⁹ Financial barriers are an important issue but may not even be raised by the patient. Some primary care services are better suited to reducing barriers to care that arise in traditional fee-for-service primary health settings;^{11,65} the implications for providers in mainstream services may be to refer patients if appropriate or to waive or reduce their standard fees. While there have been efforts to improve the engagement and cultural sensitivity of general practitioners and other health professionals towards Aboriginal people,⁶⁰ there are important structural barriers to overcome to make services more accessible and culturally secure and that go beyond just the interpersonal-professional interaction with the treating doctor. Thus, even though there have been improvements in payment options for supporting the management of Indigenous clients in terms of preventive checks and chronic disease care,⁶⁶ challenges for private practitioners remain.

Supporting initiatives for better integrated care and proactive follow-up. Our findings suggest that post-discharge management in the community is suboptimal for Aboriginal patients.^{28,29,67} While there are system deficiencies such as inadequate discharge planning and poor communication between hospital and primary care practitioners, the widening of disparity with time suggests an important role for active follow-up and management in primary care including proactive systems to prevent Aboriginal patients 'falling through the cracks'.^{14,29,30} A coordinated, patient-centred pathway of care provided by clinical networks and supported by Aboriginal cardiac coordinators, Aboriginal liaison officers (ALOs) and health workers⁶⁸ must interface with primary healthcare providers in order to optimise care. There is huge potential offered through information technology to improve information on patient discharge and links between service providers.^{29,69}

Supportive ongoing post-discharge management is particularly important for patients with limited health literacy

receiving complex pharmaceutical regimens following hospitalisation. Patient adherence with advice and prescription medications is at least in part a reflection of the skill and attention of the doctor's engagement with their patient, underpinned by the establishment of trust in the service provider.⁵⁹ More proactive follow-up and using approaches such as phone calls or text messages rather than just reminder letters are needed with some patients. An important contribution of the primary care practitioner is to encourage patients to attend cardiac rehabilitation (CR). Additional support around referral may be needed, using special initiatives that exist to support Aboriginal patients. A primary care practitioner's role includes the need to explain carefully and reiterate the benefits of exercise; the reasons why different medications are prescribed and how they should be used, that they need to be continued long-term, beyond the current script; and the importance of stopping smoking. However, more than this is needed. Aboriginal patients³² and staff³⁰ involved in CR programmes reported a number of barriers to participation: lack of awareness and need for more training among staff in relation to Aboriginal patients' cultural needs, negativity of heart health messages in the media and discomfort of young Aboriginal patients among much older non-Aboriginal patients. Furthermore, an evaluation of a CR programme established within an ACCHS showed that it was well attended and improved cardiovascular risk factors and health management.⁶¹

Health services must devote resources to best-practice systems of follow-up in order to improve secondary prevention for Aboriginal people with coronary heart disease (CHD), although we note that there are structural issues with the Australian health system which make this difficult in a fee-for-service setting. As one paper noted, there was a need to engage the Indigenous community and to be responsive to Indigenous consumer needs. However, the authors commented on the challenges of overcoming these issues since even with additional external support through a bus to provide transport and the assistance of an Aboriginal health worker; at practice level, less money was generated, follow-up appointments for chronic illness occurred less than medically desired and recall of patients generated patchy responses.⁶² Nevertheless, given the emphasis of primary care on understanding patients in their social and community setting, it is ideally placed to enlist family support for patients and to direct them to relevant local support services. Taking time to ensure that the patient sets specific targets and to understand and deal with identified barriers to participation is essential to optimising adherence.⁵⁹ Education on the necessity of rapidly seeking emergency medical care in the event of symptoms of ACS or stroke is particularly salient and can be augmented by provision of culturally adapted material (posters, leaflets) in waiting rooms as well as verbally during consultations. Understanding that many Aboriginal people do not have access to reliable transport or may need to travel longer distances to access care means that

additional information for the patient regarding who to call may need to be included in a heart action plan.

Conclusion

Aboriginal people in Australia experience common cardiovascular disorders at a higher rate and at younger ages of onset than their non-Aboriginal counterparts, with treatment disadvantage often compounded by geographical remoteness, comorbidities and patients' previous or collective experience of healthcare systems.²⁹ This article had its genesis in recognition by the authors that a multifaceted research programme without a principal focus on primary care identified many implications directly applicable to primary care. This underscores the imperative of embracing a life course approach to risk reduction and promoting seamless transitions in care, with support across the whole patient journey, particularly for vulnerable populations.²⁹ Quality care, particularly for chronic conditions, requires continuity and appropriate linkages with different parts of the healthcare system.

The optimal approach to addressing Aboriginal disadvantage in cardiovascular health is found both on primary prevention, reducing new cases of heart disease (which too often occur at a young age), and on improved management of Aboriginal patients with existing heart disease. In both of these areas, primary care practitioners have an essential role in making a difference to health outcomes, by addressing access in all its dimensions. There need to be strategies to maintain follow-up in a population that is characteristically mobile and in many instances suspicious of healthcare systems. Secondary and tertiary preventions for Aboriginal patients also require familiarity with the 'moving target' of subsidies legislated specifically for Aboriginal people, as well as those for economically disadvantaged people more generally, particularly for pharmaceuticals.

Our research shows a picture of clinical, logistical and cultural complexities that are challenging for clinicians. However, the distinctive needs of the Aboriginal population are accompanied by correspondingly large potential gains from improvement in quality of service provision. Primary care clinicians can contribute to services that enable comprehensive care beginning early in life, offer continuity of care and take into account multi-morbidities and the social determinants of health that have such impact on Aboriginal heart health outcomes. The practical strategies offered here will vary in their applicability according to context, and many are not new. However, we have stressed that important advances in outcomes require going beyond just making services more accessible, culturally secure and improving the interpersonal-professional interaction with the treating doctor. More widespread structural reform is required, and primary care practitioners have opportunities to contribute to better outcomes through advocating for policies that create healthier communities.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Ethical approval

Ethical approval for this study was obtained from multiple ethics review board. The lead Ethics Committee was the Western Australian Aboriginal Health Ethics Committee (WAAHEC) (179-07/07; 194-11/07; 381-01/2011).

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Informed consent

Written informed consent was obtained beforehand from all subjects who were interviewed for the study. Informed consent was not sought for the linked data analyses of the research reported in this paper, but data linkage studies were subject to stringent ethical requirements and oversight.

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