

Clinical focus

A framework for overcoming disparities in management of acute coronary syndromes in the Australian Aboriginal and Torres Strait Islander population

A consensus statement from the National Heart Foundation of Australia

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Cardiovascular disease, particularly coronary heart disease (CHD), is the major cause of premature death for Aboriginal and Torres Strait Islander peoples, accounting for 26% of all deaths.¹ Cardiovascular disease is also a major contributor to the gaps in life expectancy between Indigenous and non-Indigenous Australians,² with recent statistics suggesting that Australian Aboriginal and Torres Strait Islander men and women can expect to live 10.6 and 9.5 fewer years, respectively, than other Australians.³

Acute coronary syndromes (ACS) include a broad spectrum of clinical presentations including ST-elevation myocardial infarction (STEMI), non-STEMI and an accelerated pattern of angina without evidence of myonecrosis (unstable angina); the latter two are often grouped as non-ST-elevation acute coronary syndromes (NSTEMACS). Current National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand guidelines highlight the importance of effective systems of care in delivering optimal management of ACS.⁴⁻⁶

In 2006, the Australian Institute of Health and Welfare (AIHW) released a landmark report on access to ACS treatment by Aboriginal and Torres Strait Islander patients. The report found that, compared with other Australians, Indigenous Australians hospitalised with ACS had:

- more than twice the rate of death from CHD
- a 40% lower rate of being investigated by angiography
- a 40% lower rate of percutaneous coronary intervention (PCI)
- a 20% lower rate of coronary artery bypass graft (CABG) surgery.⁷

Further studies have indicated that, over and above in-hospital treatment disparities for ACS, Aboriginal and Torres Strait Islander patients have greater mortality 6–12 months after a coronary event than non-Indigenous Australians, owing to suboptimal follow-up care.⁸⁻¹¹ These disparities in outcomes underpin the development of this patient-oriented framework for the diagnosis and management of ACS in Aboriginal and Torres Strait Islander peoples. The process of developing the framework is described in Appendix 1 (all appendices online at mja.com.au).

Summary

- Aboriginal and Torres Strait Islander patients with acute coronary syndromes (ACS) experience lower intervention rates and poorer outcomes compared with non-Indigenous patients.
- A broad range of geographical, cultural and systemic factors contribute to delays and suboptimal treatment for ACS.
- Every Indigenous ACS patient, regardless of where they live, should be able to expect a coordinated, patient-centred pathway of care provided by designated provider clinical networks and supported by Indigenous cardiac coordinators, Aboriginal liaison officers (ALOs) and health workers.
- These designated provider clinical networks provide:
 - ▶ appropriate prehospital and in-hospital treatment
 - ▶ an individualised patient care plan developed jointly with the patient and his or her family
 - ▶ culturally appropriate education initiated within the hospital setting and involving families with support from ALOs
 - ▶ effective follow-up care and access to relevant secondary prevention programs.
- We outline generic pathways to provide policymakers, health planners and health care providers with a framework for ACS diagnosis and management that can be implemented across the diverse settings in which Aboriginal and Torres Strait Islander people reside and their care is delivered, in order to optimise care and assertively address the current disparities in outcomes.

Aboriginal and Torres Strait Islander people represent 2.5% of the Australian population,⁷ dispersed at varying density levels across urban, regional and remote locations. In 2006, almost one-third of the Indigenous population lived in major cities; 21% in inner regional areas; 22% in outer regional areas; 10% in remote areas; and 16% in very remote areas.¹² While Aboriginal and Torres Strait Islander people make up a small proportion of the population in the large cities, there are higher population densities of Indigenous Australians in regional and remote communities — in the Torres Strait, 83% of the population is Torres Strait Islander; in the Northern Territory, 32% of the total population is Indigenous (>75% in Arnhem Land); and in Central Australia, Aboriginal people make

up 50% of the population.^{11,13} The diversity of this linguistic, cultural and geographic landscape provides many challenges to the delivery of appropriate cardiac services for these populations.

Patient pathways: barriers and enablers

It is a commonly held misconception that Aboriginal and Torres Strait Islander peoples living in urban centres have outcomes similar to the non-Indigenous urban population. There are a number of systemic issues that detrimentally affect the outcomes of all Indigenous Australians, although these issues are likely to be exacerbated by remoteness. Contributing to negative outcomes across the geographic spectrum are issues of fear, institutional racism,¹⁴ cultural misunderstandings, waiting times, transport issues, financial constraints and poor health literacy.

Generic pathways to timely diagnosis and management as recommended by best-practice guidelines for patients with ACS living in urban communities are shown in Appendix 2. The more complex pathway for those living in regional or remote communities is tracked in Appendix 3.

Key barriers contribute to the disparities in care and outcomes experienced by Aboriginal and Torres Strait Islander patients regardless of whether they follow a regional/remote or less convoluted urban pathway. These, along with key strategies for addressing them, are discussed below.

Early response and access

There is strong evidence that Aboriginal and Torres Strait Islander patients with a suspected heart attack may delay presentation to hospital.¹¹ Urgent access to care is firstly dependent on patients and/or their families understanding the potentially serious nature of the situation and the need to seek medical help urgently.

Aboriginal and Torres Straits Islander peoples' culture, spirituality and health literacy all play major roles in potential communication gaps, particularly in remote and isolated communities where English is likely to be a second language. Qualitative internal research undertaken by the Heart Foundation in 2010 identified factors linked with patient delay (unpublished report; Heart Foundation of Australia. Warning signs Aboriginal and Torres Strait Islander Research. Report of qualitative research. Melbourne: The Social Research Centre, 2010) for Aboriginal and Torres Strait Islander people with ACS, including limited knowledge of symptoms and a lack of awareness of the need for urgent treatment: the symptoms associated with ACS are often not acted on until they are unbearable. Other factors contributing to delay include:^{15,16}

- competing personal and family demands that may be seen as higher priorities than the individual's own health (eg, caring for family members, and cultural or community events)
- cultural beliefs
- fear of hospitals, which may be perceived as places to go to die or as being unfriendly to Aboriginal and Torres Strait Islander patients based on previous personal or family encounters
- lack of available or affordable transport
- lack of communication options for calling for assistance

- long distance to the nearest hospital
- lack of understanding of the diagnostic and treatment pathways, and inability to have family involvement in decision making
- going to the nearest Aboriginal community controlled health service before going to hospital or calling an ambulance
- inappropriate triage at first contact between a health service provider and patient due to inadequate understanding of the symptoms and signs of ACS on the part of the health care provider.

To overcome these barriers, health care providers must look at effective strategies to improve Aboriginal and Torres Strait Islander peoples' understanding of the warning signs of a heart attack. This requires the development and provision of culturally appropriate health education through community and primary health care networks, including media organisations. Such programs must not only improve understanding of the warning signs of heart attack within local communities, but also advise how to access immediate help and provide information about the patient journey so that patients and their families understand what might happen once they seek help, and can make informed decisions about treatment. In an urban setting, this includes culturally specific education around the triple zero (000) emergency service and the availability and potential cost of the ambulance service.

Minimising delay: pre-tertiary pathways

Beyond health education and basic access to emergency services, patients require access to timely and effective treatment through a system of care that supports early diagnosis and is responsive to patient need, including digital 12-lead electrocardiogram capability, point-of-care pathology testing and, where relevant, prehospital fibrinolysis.

It is essential that centres providing initial care for patients with suspected ACS are part of a clinical network for the provision of cardiac care, and are appropriately equipped to follow up-to-date evidence-based protocols¹⁷ (Appendix 4). For urban populations, tertiary "receiving" hospitals need to develop formalised networks with smaller secondary "referring" hospitals that provide initial triage, as well as with the local ambulance services. In regional and remote settings where patient transfer times to centres with PCI capability are greater than 1 hour, it is essential that there is a formalised "designated provider clinical network" of cardiac care providers — essentially a mechanism for providing or obtaining expert clinical advice at short notice — that includes appropriate infrastructure and treatment and transfer protocols.^{18,19}

NSTEACS

All patients with NSTEMI should have their risk of adverse clinical outcomes assessed to direct management decisions.⁴ Patients identified as being at high risk should be treated with dual antiplatelet therapy and an antithrombin agent, and arrangements should be made for coronary angiography and (where indicated) revascularisation as soon as possible. Regional and remote communities have the added difficulty of seeking distant, expert medical advice with appropriate and timely transfers to facilities that have at least

full diagnostic and risk stratification capability. NSTEMI patients stratified as intermediate risk or high risk are best managed within a structured clinical pathway,⁴ as ad hoc management can lead to delays in seeking advice and the potential for inappropriate and/or conflicting advice, as well as inefficient use of emergency medical transport services.

Early reperfusion for STEMI

The initial diagnosis, treatment and subsequent outcomes for patients experiencing STEMI are determined by the patient's location, the level of medical expertise of the first emergency medical contact, and the infrastructure available. Patients with STEMI who present within 12 hours of the onset of ischaemic symptoms should have reperfusion therapy implemented as soon as possible, using either fibrinolytic therapy or PCI.⁴

Urban and some inner regional populations often have direct access or immediate access through interhospital transfer to primary PCI facilities with first emergency medical contact to PCI delays of less than 90 minutes. Where such access exists, clearly, primary PCI is the preferred modality for reperfusion. Patients in other inner regional, most outer regional and all remote areas will not have such access and require early fibrinolysis (door-to-needle time of less than 30 minutes⁴) with immediate or early transfer (within 24–48 hours) to a tertiary cardiac facility with revascularisation capability (PCI and/or CABG surgery). For most patients in non-urban settings, the local hospital emergency department will be the most appropriate facility for early STEMI diagnosis and fibrinolysis. However, where inherent delays between first emergency medical contact and access to any facility capable of delivering reperfusion therapy exceed 60 minutes, routine access to prehospital fibrinolysis is strongly recommended.

There are essential infrastructure and standards requirements for prehospital fibrinolysis, either in an ambulance or a remote health clinic (Appendix 5). Currently, in the Northern Territory, remote health clinics provide prehospital fibrinolysis without a doctor being present, and several state ambulance services are effectively providing prehospital fibrinolysis via intensive care paramedics.²⁰

Designated provider clinical networks should be configured to reduce the number of medical transport legs and time delays to tertiary care (including bed access block) to a minimum, given that remote area patients will often unavoidably require up to three transfers (Appendix 3) over very long distances. Historically, this has resulted in tertiary access delays of 5 days or more (own unpublished data; MKI, 2012).

Hospital treatment

As highlighted in the 2006 AIHW and subsequent reports, the inhospital disparities in ACS care experienced by Aboriginal and Torres Strait Islander peoples warrant special consideration by health service providers.^{7,18}

It is well documented that Aboriginal and Torres Strait Islander people suffering from ACS are less likely to undergo angiography in hospital and receive PCI or CABG surgery than non-Indigenous patients.⁷ Although there has been no extensive study of why these disparities exist, potential reasons include:¹⁸

- poor health literacy and understanding of invasive procedures
- inadequate cultural competence of health care providers and hospitals
- bias favouring conservative management based on perceptions of more comorbidities among Aboriginal and Torres Strait Islander patients and lower compliance with medications
- disengagement of family members in the decision-making process¹⁰
- delayed patient transfer to hospitals with PCI facilities compounded by the complexity of the patient journey (highlighted in Appendix 3) in requiring multiple transfers
- patient choice.

Difficulties in transferring patients to hospitals with revascularisation facilities may be overcome with improved communication to enhance uptake of these crucial interventions. Patients frequently have a poor understanding and fear of these procedures, and studies indicate that they often feel disengaged from medical staff.⁸ The support of Indigenous cardiac coordinators (described below) is important in this process.

Other key strategies for improvement, involving Aboriginal health practitioners (where access is available), general hospital staff, retrieval services and the state health departments, include:

- establishing a coordinated transfer system as part of the overall designated provider clinical network (fewer steps in the patient pathway will reduce the number of transfers and inherent delays)
- providing a system that allows a family member to accompany the patient throughout the continuum of care
- developing a patient care plan in conjunction with the patient and his or her family, with involvement of the hospital Aboriginal liaison officer (ALO) and interpreters as needed
- commencing patient education in hospital using culturally appropriate educational tools, so that both the patient and his or her family are fully informed of the clinical process and timelines for returning home
- ensuring financial and social support to facilitate transfer to other hospitals, even in the urban environment.

Discharge against medical advice

Aboriginal and Torres Strait Islander patients have a much higher rate than other patients of discharge from hospital against medical advice, which increases with remoteness.²¹ This reflects problems in communication and a lack of engagement with and respect for Aboriginal and Torres Strait Islander patients and their families that contributes significantly to a fear of hospitals and invasive procedures. A lack of culturally competent health care providers accentuates this problem.

Aboriginal and Torres Strait Islander patients and their families need considerable explanation of their diagnosis and proposed procedures to minimise the risk of discharge against medical advice. Patients who have had PCI procedures or CABG surgery should be encouraged to become

patient advocates and discuss their story with other patients and family members.

In the urban environment, language is usually not presumed to be an issue (although literacy levels may be²²), but for patients referred from regional and remote settings English is likely to be a second language, resulting in additional communication barriers.¹⁸ It is essential that interpreters are made available on request and that considerably more time is set aside for discussions with Aboriginal and Torres Strait Islander patients and their families than might be expected for non-Indigenous patients.

Follow-up care, cardiac rehabilitation and secondary prevention

Proven short- and long-term health benefits and reductions in mortality form the basis for recommendations that all patients with ACS be referred for appropriate cardiac rehabilitation.^{23,24} Unfortunately, rates of participation in cardiac rehabilitation programs by Aboriginal and Torres Strait Islander peoples are extremely low due to extended family responsibilities, sociocultural inappropriateness of programs, poor understanding of cardiac rehabilitation, the connection between colonialism and health services, heart health messages in the media and the younger age of the affected Indigenous population.²⁵

Patients returning home after ACS must have an understanding of their medical condition, and require education regarding medication use, wound care (in the event of recent surgery), risk factor modification, potentially reduced functional capacity, and prognosis. Therefore, patient education must be commenced while in hospital and include culturally appropriate education tools²⁶ and the development of an individualised care plan that provides the basis of the outpatient and maintenance cardiac rehabilitation programs after patients return to their communities (Appendix 6).

The care plan is essential in providing support to the local medical officer and clinics regarding a patient's:

- medications
- targeted program for outpatient and maintenance cardiac rehabilitation
- overall prognosis
- returning to work and personal independence issues (eg, driving).

This requires the treating hospital to have a comprehensive understanding of the services available on the patient's return home as well as his or her risk-factor profile, home circumstances (specifically, family support, occupation and capacity to return to work) and education and literacy levels. To improve outcomes it is also important to assess the patient's and family's understanding of the importance of ongoing cardiac rehabilitation and adherence to an individualised, formalised care plan.

The care plan should be developed with the patient and his or her family in liaison with the Indigenous cardiac coordinator. At discharge, the plan should be forwarded to the appropriate cardiac rehabilitation services nearest to the patient's home. Follow-up care and outpatient and ongoing maintenance programs should include the elements highlighted in Appendix 7. Appendix 8 outlines key considerations in planning cardiac rehabilitation programs for

Indigenous patients, as recommended by National Health and Medical Research Council guidelines.²⁶

The longer-term maintenance of secondary prevention strategies is perhaps the most important element of post-acute care for Aboriginal and Torres Strait Islander patients after an ACS, as ineffective strategies result in poorer long-term outcomes among Indigenous patients even when short-term hospital outcomes are similar.^{11,27} Cardiac coordinators are required to facilitate regular appointments for general and specialist review and investigation (including echocardiography when necessary). In addition, regular coordinated outreach clinics are required to service Aboriginal and Torres Strait Islander populations in urban, regional and remote areas because of inherent difficulties in attending hospital outpatient clinics and private cardiology practices.

Pathway coordination

The ACS continuum-of-care pathway needs coordination, enabling timely access to investigation and treatment and making efficient use of the resources available within that clinical network. Appropriate infrastructure, protocols and policies that are specific to each designated provider clinical network provide the framework for investigations and decision making²⁸ (for requirements, see Appendix 4). However, there is also a need to coordinate patient and escort transfers for coronary procedures and the return home.

Indigenous cardiac coordinators have been trialled in the Northern Territory and at Flinders Medical Centre in South Australia, with significant improvements in patient flow, attendance for procedures and revascularisation rates (unpublished report; Heart Foundation of Australia; as above). Coordinators receive support from ALOs or interpreters as appropriate, as well as administrative support — a key factor in the success of the network. The Indigenous cardiac coordinators:

- review patients and have contact with their families within 24 hours of hospital admission
- monitor and coordinate patients' progress before and after diagnosis, including procedures and clinical reviews up to 3 months after an event
- liaise with cardiologists, remote health clinics and general practitioners
- coordinate transfers of Indigenous cardiac patients, with the relevant patient information, between hospitals, health clinics and other relevant agencies
- assess patients returning from tertiary services, including clinical assessment and consideration of social issues
- ensure cultural factors are considered when organising patients' appointments.

The success of the designated provider clinical network requires coordination of patient information from all elements of the network. Electronic transfer of patient records, including referrals, discharge information (to the local medical officer and local cardiac rehabilitation service or equivalents), medications and follow-up care plans, needs to be incorporated, and the development of electronic records will contribute significantly to this process.

Conclusion

To improve the quality of care across the health care continuum for Aboriginal and Torres Strait Islander patients with ACS, a properly structured and clearly defined patient-oriented clinical pathway (comprising adequate human, pharmacological and equipment resources) is essential for the delivery of evidence-based, high-quality care. The generic ACS management framework outlined is designed to provide guidance to policymakers, health planners and health care providers on the establishment of jurisdiction-specific designated provider clinical networks that significantly reduce inappropriate delays to treatment and enhance the uptake of medical services.

Coordinated pathways of care — involving Indigenous cardiac coordinators, facilitated by designated provider clinical networks and supported by ALOs — ensure the following for all Aboriginal and Torres Strait Islander patients, regardless of where they live:

- availability of culturally appropriate information regarding warning signs
- appropriate in-hospital treatment
- individualised inpatient care plans developed jointly with the patient and his or her family
- education involving culturally appropriate tools within the hospital setting and inclusion of families, with support from ALOs and interpreters as appropriate
- adequate follow-up care, secondary prevention programs and specific outpatient cardiac rehabilitation programs.

As the designated provider clinical networks need to be specific for each jurisdiction, they must be developed in collaboration with all involved in the patient pathway. This includes discussions and coordination with patients, families, Aboriginal health practitioners, primary care teams, retrieval services, emergency and cardiology services and health educators. The system should provide adequate cultural support throughout the process so that patients and families are engaged and adequately informed. Although cost-effectiveness has not been investigated in this consensus statement, the recommended framework should offer greater efficiencies in the use of existing resources.

With the advent of the ACS National Goal (announced by the Australian Commission on Safety and Quality in Health Care) and the recently funded Lighthouse Hospital initiative, improved data collection for monitoring effectiveness (including uptake and outcomes) is essential for the successful ongoing management and modification of the networks. The data from the designated provider clinical networks will also provide a more complete understanding of the issues confronting Indigenous patients. However, any delays in establishing the networks will only maintain the current disparities in service delivery and gaps in life expectancy. Therefore, the current lack of data should not delay the establishment of these networks.

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