



Chapter 2

Cardiovascular conditions

At a glance

Analysis of Statistical Area Level 3 (SA3) rates shows a nine-fold variation in hospitalisations for MI and a four-fold variation for hospitalisations for atrial fibrillation as a principal diagnosis.

In Australia, cardiovascular conditions are the leading cause of death and are responsible for 13% of hospitalisations. To address rates of cardiovascular hospitalisations, risk factors must be reduced through public health initiatives. System changes are needed to improve access to primary health care for high-risk groups, and primary and secondary prevention for individuals needs to improve. Increasing the health literacy of high-risk groups and their ability to self-manage risk factors is a vital component of any strategy to reduce hospitalisations due to cardiovascular diseases.

Hospitalisation rates for MI are 3 times higher among Aboriginal and Torres Strait Islander Australians than other Australians. Higher rates of hospitalisation for MI are also found in areas of socioeconomic disadvantage. Reducing smoking rates could decrease the number of hospitalisations for MI and atrial fibrillation significantly.

The original intent of this chapter was to examine patterns of use of many more investigations and therapies for cardiovascular disease. However, the available data would not have produced reliable results. For example, difficulties in tracking the care of patients transferred between hospitals meant that accurate pictures of variation in the use of interventions for MI could not be produced. Developing capabilities to use linked data will enable variation in care for patients with cardiac disease to be explored. Collecting more detailed data on cardiac care, ideally through a clinical quality registry, would enable more intensive analysis of treatments and outcomes, helping to guide future improvements in care. Routine review of benchmarked clinical performance and outcomes data through clinical quality registries could also improve cardiac care.



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Recommendations

- 2a. State and territory health departments to examine variation in the timeliness and access of patients to appropriate investigations and interventions for suspected acute myocardial infarction.
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- 2b. The Commission to develop a clinical care standard on the management of atrial fibrillation.
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Background

This chapter includes information about hospitalisations for:

- Acute MI
- Atrial fibrillation, as a principal diagnosis, and as a principal or secondary diagnosis.

Cardiovascular conditions were the underlying cause of approximately 29% of all deaths in Australia in 2014, and the leading cause of death.¹ Cardiovascular disease is the second leading cause of burden of disease in Australia and was responsible for 13% of hospitalisations in Australia in 2012–13.^{2,3} In Australia, cardiovascular conditions are more common in socioeconomically disadvantaged groups, people living in remote areas, and Aboriginal and Torres Strait Islander Australians.⁴

Coronary heart disease (ischaemic heart disease) is the most common form of cardiovascular disease.^{4,5} It is the leading cause of death in Australia, accounting for 33,054 deaths in 2012–14.^{2,3,5} Coronary heart disease can lead to MI (heart attack) or angina – pain in the chest due to a temporary shortage of blood supply to the heart muscle.

Atrial fibrillation is a type of abnormal heart rhythm, also referred to as arrhythmia.⁶ Risk factors for atrial fibrillation include older age, long-term high blood pressure, obesity, coronary heart disease and family history.^{7,8} Atrial fibrillation has been estimated to affect 6% of Australian men and 5% of Australian women aged 55 years and over.^{9,10} Atrial fibrillation increases the risk of stroke significantly, especially for older people.⁶ For example, among people aged 80–89 years, atrial fibrillation increases the risk of stroke by 4.5 times.¹⁰ Treatment for atrial fibrillation may include medications to control the heart's rhythm and rate, blood thinning (anticoagulant) medication to prevent the formation of blood clots and reduce stroke risk, and medication and lifestyle changes to manage the risk factors.^{6,10,11}

Heart failure, also a common cardiovascular condition in Australia, is discussed in Chapter 1. Heart failure and atrial fibrillation commonly coexist, and each condition can cause or exacerbate the other.

Modifiable risk factors for cardiovascular conditions include insufficient physical activity, smoking, obesity, poor diet, high cholesterol, high blood pressure and diabetes.^{12,13} A substantial proportion of cardiovascular events could be prevented by addressing risk factors from an early age through to adulthood, at both an individual and a population level.^{2,14,15} Gaps in preventive care have been identified in Australia. For example, almost 1 million Australians who are at high risk of a cardiovascular event are not receiving the recommended combination of blood pressure-lowering and lipid-lowering medications.¹⁴

Reducing smoking rates could decrease the number of hospitalisations for MI and atrial fibrillation significantly. Addressing the higher rates of smoking among Aboriginal and Torres Strait Islander Australians, people at socioeconomic disadvantage, and people living in remote areas could help reduce cardiovascular hospitalisations in these groups, in particular. For example, in 2014–15, the rate of daily smoking for the Australian adult population overall was 15%, compared with 41% for Aboriginal and Torres Strait Islander Australians.^{16,17} Attention should also be paid to the underlying determinants of smoking, such as psychological distress.¹⁸

Socioeconomic disadvantage may contribute to cardiovascular hospitalisations through a range of mediators, such as greater disease severity, multiple comorbidities and poor health literacy.¹⁹ Increasing patients' health literacy and ability to self-manage is a vital component of any strategy to reduce hospitalisations due to cardiovascular diseases. Changing the healthcare system to enable people with low health literacy to use it more effectively also has great potential for reducing hospitalisations – for example, by making the system easier to navigate and health information easier to understand.²⁰

Higher rates of hospitalisation for cardiovascular disease in rural and remote areas are due to a combination of factors. Overall, people living in rural and remote areas of Australia have higher levels of cardiovascular risk factors and cardiovascular disease, but generally poorer access to healthcare services and less supportive environments for a healthy lifestyle.²¹ Some states and territories have a substantially higher proportion of remote areas; the associated challenges to providing health care should therefore be considered when interpreting the variation in rates of cardiovascular hospitalisations between states and territories.

Contributors to cardiovascular disease among Aboriginal and Torres Strait Islander Australians

Premature and preventable deaths from cardiovascular conditions account for 24% of the mortality gap between Aboriginal and Torres Strait Islander Australians and other Australians.²² The average age for developing cardiovascular conditions is also lower among Aboriginal and Torres Strait Islander Australians than among other Australians.²³ The rate of cardiovascular disease in the 18–34-year age group is 9% for Aboriginal and Torres Strait Islander Australians compared with 4% for other Australians.²³

The reasons for higher rates of cardiovascular disease among Aboriginal and Torres Strait Islander Australians are complex, but a lack of health services that provide culturally appropriate care, high rates of chronic conditions, and associated risk factors such as smoking and socioeconomic disadvantage play a part.^{24,25} Higher rates of cardiovascular disease among Aboriginal and Torres Strait Islander Australians may also reflect gaps in the provision of population health interventions, and the need to strengthen services to detect and treat disease early, and improve chronic disease management.²⁶

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As part of the national Better Cardiac Care for Aboriginal and Torres Strait Islander People project, a set of 21 Better Cardiac Care measures were established to monitor progress in priority areas: primary prevention, timely diagnosis, guideline-based therapy, ongoing care, and diagnosis and management of rheumatic heart disease.²⁷ The first two national reports on the Better Cardiac Care measures in 2015 and 2016 reported on the 12 measures for which data were available.^{27,28} Hospitalisation for cardiac conditions was found to be 1.9 times as high among Aboriginal and Torres Strait Islander Australians as among other Australians. This difference remained similar between 2004–05 and 2013–14.

Why we need better data on cardiac care

The intent of this chapter was to explore the appropriateness of care for people with selected cardiovascular conditions. Analysis of variation in the use of recommended investigations and treatment for MI and atrial fibrillation could provide a window into the underlying reasons for variation in outcomes in people with cardiovascular conditions, and insights into what needs to change and where. The following were identified as important areas of practice to explore variation in care:

- Percutaneous coronary interventions/coronary artery bypass surgery for people who have had an MI
- Angiography to identify where there is a blockage in the heart's blood vessels
- Anticoagulant use to prevent stroke in people with atrial fibrillation.

Currently, routinely collected data are not sufficiently detailed to allow measurement of variations in outcomes after cardiovascular events, and to relate these to the appropriateness and effectiveness of care. Collecting more detailed data on cardiac care, ideally through a clinical quality registry, would enable more intensive analysis of treatments and outcomes, helping to guide future improvements in care.

Routine review of benchmarked clinical performance and outcomes data through clinical quality registries could also improve cardiac care.

Without access to data that links episodes of care received for the same event, there is no precise way to quantify how many people do not have investigations or interventions after hospitalisation for MI.

Future analyses could use data linkage techniques to explore cardiac care and the variation in access to appropriate care. Ideally, these analyses will enable mapping of variations in care across the patient journey from care in the community through to hospital treatment and follow-up.

About the data

Hospital admission data are sourced from the National Hospital Morbidity Database, and include both public and private hospitals. Rates are based on the number of hospitalisations per 100,000 people. Because a record is included for each hospitalisation, rather than for each patient, patients hospitalised more than once in the financial year will be counted more than once. For both MI and atrial fibrillation, admitted patients transferred from another hospital have been excluded, so only the initial admission is captured in these data.

The analyses and maps are based on the residential address of the patient and not the location of the hospital. Rates are age and sex standardised to allow comparison between populations with different age and sex structures. Data quality issues – for example, the recognition of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

Australian initiatives

The information in this chapter will complement work already under way to address the rate of hospitalisation for cardiovascular conditions in Australia. These include strategies to address risk factors. At a national level, this work includes:

- The National Strategic Framework for Chronic Conditions, which addresses primary, secondary and tertiary prevention of chronic conditions, recognising that there are often similar underlying principles for the prevention and management of many chronic conditions; it is anticipated that the framework will be publicly available in 2017
 - The National Tobacco Strategy 2012–2018 – a framework to reduce tobacco-related harm in Australia
 - The Australian Chronic Disease Prevention Alliance – an alliance of five non-government health organisations working together on the primary prevention of chronic disease, with particular emphasis on the shared risk factors of poor nutrition, physical inactivity and obesity
 - Medicare Benefits Schedule (MBS) items relating to chronic disease management – an Australian Government initiative that helps general practitioners to manage the health care of people with chronic conditions; it makes MBS rebates available for those requiring multidisciplinary, team-based care from a general practitioner and at least two other healthcare providers
 - The Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013–2023, which outlines strategies and actions to be taken to improve health outcomes for Aboriginal and Torres Strait Islander Australians; it will soon be updated to address social and cultural determinants of health
 - The Better Cardiac Care for Aboriginal and Torres Strait Islander People project
 - The Indigenous Australians' Health Programme, which includes a focus on the prevention, early detection and management of circulatory disease
 - MBS incentive payments for general practice health assessments for Aboriginal and Torres Strait Islander patients
 - Essential Service Standards for Equitable National Cardiovascular Care for Aboriginal and Torres Strait Islander People
 - The Lighthouse Hospital Project – a joint initiative of the Heart Foundation, and the Australian Healthcare and Hospitals Association; this hospital-based project features the Lighthouse Toolkit, a practical workbook for continuous quality improvement that hospitals can implement to improve cultural competence and healthcare services for Aboriginal and Torres Strait Islander Australians with acute coronary syndromes.
- Many states and territory initiatives are also in place to reduce hospitalisations for cardiovascular conditions, including:
- Chronic disease self-management programs – for example, Black Swan Health and 360 Health and Community, Western Australia
 - Programs to support a healthy lifestyle, such as Active Measures through Arche Health, Western Australia, and Get Healthy, NSW Health
 - Victorian Heart Health: Improved Services and Better Outcomes for Victorians policy
 - Northern Territory Integrated Cardiac Network Service, including outreach cardiology services, expansion of cardiac diagnostic services (low-risk angioplasty, echocardiograms and angiography), cardiac rehabilitation services in rural and remote communities, patient education, cardiac IT systems, and the establishment of point-of-care systems in remote communities.
 - For Our People, by Our People program, Derbarl Yerrigan Health Service and the National Health Foundation
 - The My Heart My Family Our Culture and Pilbara Aboriginal Heart Health programs, Heart Foundation of Western Australia
 - The Medical Outreach Indigenous Chronic Disease Program, Western Australia
 - The Queensland Aboriginal and Torres Strait Islander Cardiac Health Strategy 2014–2017
 - The Queensland Cardiac Outcomes Registry
 - State and territory cardiac networks.

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