



Australian Government
Department of Health

EVIDENCE BASE

Accompanying Document to the National Strategic Action Plan for Heart Disease and Stroke

February 2020



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Evidence Base - Accompanying Document to the National Strategic Action Plan for Heart Disease and Stroke February 2020

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We acknowledge Traditional Owners of Country throughout Australia and recognise the continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures, and to Elders both past and present.

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Background

Following the development of the *National Strategic Framework for Chronic Conditions* in 2017, the Australian Government identified the need to focus attention on a comprehensive and integrated approach to major chronic disease groups. Heart disease and stroke were among those highlighted.

The National Heart Foundation of Australia (National Heart Foundation), in partnership with the National Stroke Foundation, was commissioned by the Australian Government in June 2018 to develop a National Strategic Action Plan for Heart Disease and Stroke (the Action Plan). The Action Plan complements and builds on existing frameworks for heart disease and stroke in Australia. It reflects priorities and immediately achievable actions the Australian Government can implement to reduce the impact of heart disease and stroke on individuals, families, the community and the healthcare system.

There are three documents accompanying the Action Plan. Each is to be read in conjunction with the Action Plan. They are:

1. A **consultation summary** outlining the various consultation processes undertaken in developing the Action Plan
2. An **evidence base** document (this document) outlining the nature of the evidence that supports each action. Examples include, but are not limited to, an international model of care; best practice as outlined in clinical guidelines; and anecdotally indicated reforms that could benefit from piloting to strengthen the evidence base
3. A **stocktake of programs** outlining key programs, initiatives or activities already in place to address gaps in the approach to the prevention, treatment and management of heart disease and stroke, and which may be easily scaled up or rolled out nationally.

Introduction

Cardiovascular disease (CVD), a collective term for diseases that affect the heart and blood vessels, is a major cause of death in Australia.⁽¹⁾ The most common types of CVD in Australia are coronary heart disease (CHD), stroke and heart failure (HF).⁽²⁾

In 2018, CVD accounted for more than one in 4 deaths (26.4%) in Australia.^(1,3) In 2018, on average 115 Australians died of CVD every day (a total of 41,849 deaths), the equivalent of one person every 13 minutes.⁽¹⁾ Heart disease is Australia's single leading cause of death (27,680 deaths in 2018), and despite significant improvements in prevention and treatment over the past few decades, heart disease accounts for nearly one in 5 deaths (17.5%) in Australia.⁽¹⁾ Cerebrovascular disease (primarily stroke) is the third leading cause of death in Australia, accounting for 9,972 lives lost in Australia during 2018. In 2018, stroke accounted for one in 20 deaths (5.3%) - on average one person dies of stroke every hour.⁽¹⁾

Stroke is a leading cause of disability in Australia, with around half a million people living with the effects of stroke. People living in rural and regional areas are 19% more likely to have a stroke and are also more likely to have poorer outcomes.

CVD disproportionately affects certain populations in Australia.⁽²⁾ Lower socioeconomic groups, Aboriginal and Torres Strait Islander peoples, and those living in remote areas had the highest rate of hospitalisation and death resulting from CVD in Australia. Aboriginal and Torres Strait Islander peoples make up 3.3% of the total population⁽⁴⁾ and experience higher rates of ill-health and shorter life expectancy than other Australians.

Along with the significant burden of disease, the health system costs associated with CVD are a huge economic burden in Australia. In 2017, CVD accounted for 12.3% of the total burden of disease in Australia, and nearly 725,000 disability adjusted life years (DALYs) due to premature deaths from CVD (compared to life lived with disability).⁽³⁾

Hospitalisations for CVD have increased over time. In 2017-18 more than 580,000 hospitalisations occurred due to CVD - on average one person is hospitalised due to CVD every minute. Hospital admissions are the most expensive component of Australia's healthcare expenditure, of which CVD is among the highest expenditure groups. In 2015-16, cardiovascular diseases accounted for \$10.4 billion of Australia's healthcare budget.^(5,6)

Background

The actions outlined in the Action Plan aim to provide a framework for progress towards improving the current gaps in our approach to prevention and early detection, diagnosis and treatment, support and care, and research of heart disease and stroke. A strong focus on addressing these gaps and working collaboratively across governments and all sectors will ensure that the Australian Government continues to improve the lives of all Australians, by reducing the burden these conditions have upon individuals, the community and Australia's healthcare system.

This document provides the evidence base supporting the identified actions of the Action Plan.

Development of actions

Actions were developed, that take into account:

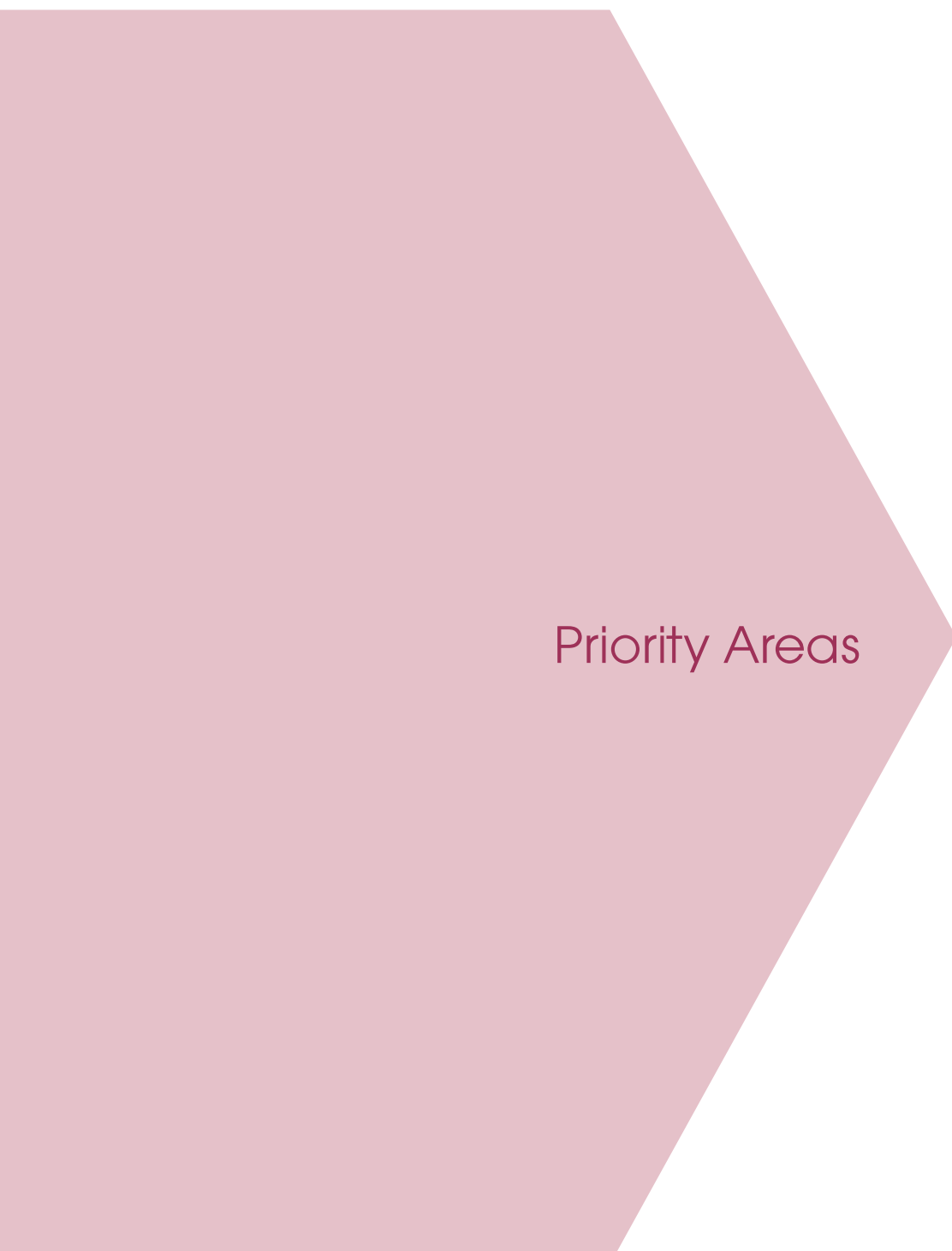
- Core monitoring information on the prevalence, incidence, hospitalisation and deaths from cardiovascular disease, reported by the Australian Institute of Health and Welfare (AIHW), and other sources.
- Consumer and stakeholder roundtable consultations.
- An online public survey.
- An analysis of Australian Government policies and strategies, including:
 - › National Strategic Framework for Chronic Conditions.
 - › National Aboriginal and Torres Strait Islander Health Plan 2013–23.
- An analysis of gaps in current approaches to heart disease and stroke.
- An analysis of successful programs and initiatives addressing heart disease and stroke in the community that have the potential to be scaled up or rolled-out nationally.
- Australian cardiovascular policies and strategies, including:
 - › Hearts and Minds (2017).
 - › The Birch Review of Cardiovascular Disease Programs (2009).
 - › Time for Action (2008).
 - › The National Service Improvement Framework for Heart, Stroke and Vascular Disease (2004).

- International cardiovascular and non-communicable disease policy approaches, including:
 - › World Health Organization Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–20.
 - › World Health Organization Tackling Non-Communicable Diseases: Best buys and other recommended interventions for the prevention and control of non-communicable diseases.⁽⁷⁾
- Actions proposed by other organisations charged with developing national action plans for chronic disease.
- Existing strategies, including the National Diabetes Strategy, National Men's Health Strategy, and the National Women's Health Strategy.
- The National Obesity Strategy (in development).
- Clinical guidelines and emerging evidence indicating best practice models.

Assessment criteria

Inclusion of actions was considered based on the following criteria:

- The likelihood this action will address an unmet need or gap in the current approach.
- The impact this action will have on avoidable hospital admissions or improvements in the effectiveness and efficiency of the health system.
- The likely significance, and population effect, of this action in addressing the burden of disease for heart disease and stroke.
- The strength of the evidence (nationally or internationally) for this action, and whether it has been shown to be cost-effective.
- The likelihood this action can be easily implemented or scaled up nationally.



Priority Areas

Priority Area 1

PREVENTION AND EARLY DETECTION

Introduction

Chronic conditions, such as CVD, are common in Australia and put great pressure on the nation's healthcare systems.⁽⁸⁾ However, a large portion of the disease burden is preventable, due to modifiable risk factors.⁽⁹⁾ Modifiable risk factors are those that individuals can manage (including blood pressure, cholesterol, diet, physical activity, weight, smoking and alcohol intake). Non-modifiable risk factors are generally beyond the control of an individual, such as family history, age, sex, ethnicity and socioeconomic status.

In Australia, 93% of all adults have at least two modifiable risk factors for CVD - and more than two in three adults have three or more.⁽¹⁰⁾ Modifiable risk factors that contribute significantly to Australia's burden of disease include tobacco use (smoking), high body mass (obesity), physical inactivity, high blood pressure and raised cholesterol.⁽⁹⁾ Decreases in the exposure to these modifiable risk factors could help to reduce the burden of disease in Australia.

Prevention and early detection of chronic disease are key components of an effective health system.⁽¹¹⁾ Public health interventions and management of risk at both the individual or population level aim to improve health and reduce the risk of developing diseases, disorders or conditions. Successful interventions include activities such as educational programs, screening or monitoring.

Direct healthcare expenditure for CVD exceeds that for any other disease group.⁽²⁾ Despite this, a focus on chronic disease prevention is only recently being considered a national commitment in Australia.

Australia's Long Term National Health Plan,⁽¹²⁾ announced in 2019, provides a vision to 2030 and charts the way forward in the key priority areas including primary care, hospitals, preventive health and medical research.

The Long Term National Health Plan commits to develop and implement a 10-year National Preventive Health Strategy to better balance prevention and treatment. Among the key goals are:

- Reduce smoking rates below 10% by 2025 (current rate is 13.8%)

- 'Eradicate' Rheumatic Heart Disease by 2030
- Build a more active Australia: more Australians, more active, more often.

An investment in disease prevention today has been shown to generate health dividends into the future, demonstrated by a recent study in the United Kingdom (UK) where a cash return of £14.30 for every £1 invested in public health interventions.⁽¹³⁾

Australia spends around \$2 billion on preventative health interventions each year, or \$89 per person, which equates to 1.3% of all health spending. This is notably less than equivalent countries such as Canada, the UK and New Zealand. This indicates there is a strong case for increasing health expenditure on disease prevention.

The World Health Organization (WHO) recommended "best buys" lists 88 interventions to address noncommunicable diseases (NCDs) based on an update to the Global Action Plan for the Prevention and Control of NCDs 2013–2020. The recommended 'best buys' interventions focus on four key specialties, including CVD.⁽⁷⁾ Of the 88 interventions listed, 16 are considered the most cost-effective and feasible for implementation. The 'best buys' interventions have an average cost-effectiveness ratio of less than \$100 per DALY averted in low- and middle-income countries.

Many of the actions identified in the Action Plan considered the WHO 'best buys', in particular:

- Early detection and coverage, prioritising cost-effective high-impact interventions to address behavioural risk factors
- Tobacco interventions (taxation, plain packaging, smoke-free areas, mass media education campaigns and bans on advertising, promotion and sponsorship)
- Reduced salt intake (food reformulation, action in public institutions, mass media education campaigns, front-of-pack labelling)
- Physical activity (mass media education campaigns).

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.1

Update the Guidelines for the Management of Absolute Cardiovascular Disease Risk (2012)

The presence of cardiovascular risk factors in the Australian population is a significant contributor to the CVD burden, with gaps existing in the treatment of risk.^(14, 15) In 2017-18, approximately 6 million Australians were reported to have high blood pressure and 5.5 million were thought to have high cholesterol (lipids), based on self-reported and measured data.⁽¹⁰⁾

A large portion of CVD events are first events in populations who are at risk. 1.4 million Australians aged 45 to 74 years are currently estimated to have a high absolute risk (>15%) of having a CVD event in the next five years, with over half of these people at risk of a primary CVD event.⁽¹⁴⁾

The probability that an individual will develop CVD within a given time period depends on the combination and intensity of all their identified risk factors, rather than on the presence of any single risk factor.^(14, 15) CVD risk factors, including blood pressure and lipid levels have a continuous association with the risk of CVD events.⁽¹⁶⁾ Due to the cumulative effects of multiple risk factors, achieving a moderate reduction in several risk factors is more effective in reducing overall CVD risk, than a major reduction in a single cardiovascular risk factor alone.

The ability to accurately identify Australians at risk of a primary CVD event is essential for two reasons: to have a major impact on health outcomes and expenditure, and to optimise treatment for those at risk. Absolute CVD risk assessment is an integrated approach, using risk-stratification tools, that take into account the cumulative effects of multiple risk factors (e.g. blood pressure, lipids etc), to calculate an individual's risk of experiencing a CVD event, including a heart attack or stroke, in the next five years.^(14, 15)

Absolute CVD risk assessment involves inputting relevant risk factor information into the Australian CVD risk calculator to determine the risk, reported as a percentage and stratified to high, moderate and low risk.⁽¹⁵⁾ Adoption of a high baseline risk strategy that targets treatment to those patients with high absolute CVD risk (>15% risk of having a CVD event in the next five years) is estimated to be more than twice as effective in reducing mortality rates, as treating people with single risk factors.⁽¹⁷⁾ This notion is well established and is supported by local and international evidence and guidelines.⁽¹⁸⁻²³⁾

The current uptake of absolute CVD risk assessment by general practitioners (GP) is suboptimal.⁽²⁴⁻²⁶⁾

In 2009-10, the Australian Government awarded funding for the development of Guidelines for the Management of Absolute Cardiovascular Disease Risk (2012)⁽¹⁵⁾ to provide evidence-based guidance in the assessment and management of CVD risk factors. The guideline was developed by the National Vascular Disease Prevention Alliance (NVDPA) and was endorsed by the National Health and Medical Research Council (NHMRC).

However, the NHMRC 5-year endorsement of the guideline has expired. Further, the risk prediction algorithm that underpins the guideline does not reflect Australia's demographic make-up, nor factor in important non-modifiable risk factors, such as family history. As such, both the clinical guidelines and underpinning risk prediction algorithm require revision.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.1 cont.

Update the Guidelines for the Management of Absolute Cardiovascular Disease Risk (2012)

Thank you to the hundreds of people living with, or caring for someone living with, heart disease or stroke, as well as to the consumer groups, health professionals, research institutions, peak bodies, different levels of government and other relevant stakeholders and organisations who were part of the National Strategic Action Plan for Heart Disease and Stroke consultation. Thank you to the broader Australian community who strive to prevent heart disease and stroke and to support better lives for people with these conditions.

We would particularly like to thank the National Strategic Action Plan Steering Committee for their oversight of the development of the Action Plan. The Committee was an advisory body comprised of some of Australia's leading thinkers. It was convened to support and guide the development of the Action Plan.

The National Strategic Action Plan for Heart Disease and Stroke will benefit all Australians, now and into the future, through creating a framework for ongoing progress in combatting two of the nation's biggest killers, heart disease and stroke.

Internationally, CVD risk calculators vary according to the dataset they are derived from, together with the selection of clinical endpoints and risk interval duration upon which the estimate is based.⁽²⁷⁻²⁹⁾ The Australian CVD risk assessment model lags behind international counterparts, with CVD risk clinical guidelines, and population-specific risk assessment tools, updated in: United States (US; 2013)⁽²⁰⁾; Europe (2016)⁽²¹⁾; Canada (2016)⁽²³⁾ and New Zealand (2018)⁽³⁰⁾.

The New Zealand Ministry of Health released updated CVD risk guidelines in 2018 that are based on the New Zealand PREDICT study, with an aim to integrate these into practice.⁽³¹⁾ These guidelines differ from the Australian guidelines in that they are applicable and validated for a broader population group, including Indigenous populations, and recommend CVD risk assessment earlier in some population subgroups. They also contain diabetes-specific equations, consider a broader range of risk factors, and make treatment recommendations that are based on the latest evidence.

In contrast, the 2012 Australian Absolute CVD risk management guideline⁽¹⁵⁾ and corresponding risk calculator are limited because:

- Unlike the New Zealand PREDICT calculator, the 2012 Australian Absolute CVD risk management guideline, and tools are currently based on a risk prediction algorithm derived from the American Framingham Heart Study.
- There is a lack of applicability to certain at-risk Australian populations, including

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.2

Develop a targeted approach to Absolute Cardiovascular Risk assessment and Integrated Health Checks

Chronic disease exacts a heavy toll on both the Australian population and health system, with CVD adding significantly to the morbidity and mortality burden.⁽⁹⁾

Effectiveness of cardiovascular health assessments

On 1 April 2019, two new interim items, 699 and 177, were made available on the Medicare Benefits Schedule (MBS). The items enable GPs and other medical practitioners to conduct an absolute CVD risk assessment (referred to as a Heart Health Check) on eligible patients in general practice, with full Medicare reimbursement.

This is a significant step towards ensuring the funding system supports best practice models of care. It also helps to ensure at-risk groups have access to appropriate health assessments and management plans that conform to appropriate clinical practice.

With appropriate usage, the MBS supported CVD risk assessments have the potential to provide critical information on uptake and effectiveness. As a guide, Medicare Australia Statistics online reports over 83,000 Heart Health Checks were performed between April 2019 and January 2020.

Permanent listing of these MBS item numbers is strongly supported and a recommended outcome in the short/medium term, subject to continued review and evaluation of effectiveness, in accordance with the MBS Review Taskforce processes.

Medicare Benefit Scheme support for integrated health checks

CVD has a strong relationship with type 2 diabetes and chronic kidney disease (CKD) due to shared risk factors, underlying causes and disease mechanisms. CVD is the leading cause of death in people with type 2 diabetes and end stage kidney disease, and as such, effective prevention and management of one chronic condition can lead to reduction in the risk of related diseases.

In 2011–12:⁽³⁴⁾

- Over one in 4 (29%) Australian adults had one of these conditions; 7% (1.2 million people) had at least 2 of these conditions and 1% (182,000 people) had all 3 conditions (based on self-reported and measured data).
- Over two-thirds of people with diabetes (68%) had CVD and/or CKD, and comparative rates of comorbidity occurred among people with CKD who also had CVD and/or diabetes (51%), and people with CVD who had diabetes and/or CKD (30%).
- The presence of comorbidity increased with age; predominantly, where one of the conditions was CVD. For example, for those aged 65 years and over who had CVD and CKD, the rate was 7 times that for those aged 45–64 (15% compared with 2%).

A broader risk assessment and management program within general practice, that integrates absolute CVD risk assessment with diabetes checks and kidney health screening, is considered more effective in responding to Australia's current burden of disease. This combined diagnostic work-up is called an Integrated Health Check.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.2 cont.

Develop a targeted approach to Absolute Cardiovascular Risk assessment and Integrated Health Checks

Extending the MBS support to cover Integrated Health Checks that incorporate a Heart Health Check, urine albumin-to-creatinine ratio (UACR) screening, and AUSDRISK score (to confirm type 2 diabetes), is a key driver for a comprehensive CVD prevention program for eligible Australians.

A useful comparative model that illustrates how an integrated health check can successfully improve risk calculation can be seen through the implementation of MBS item 715. Under this item, all Aboriginal and Torres Strait Islander peoples are eligible for an annual health assessment comprising screening for cardiovascular risk factors, lifestyle and dietary measures and other chronic disease assessments. The introduction of MBS reimbursement has successfully increased the recording of cardiovascular risk assessments on a broad scale in Australia, however it is too early to evaluate the impact on cardiovascular disease outcomes.⁽³⁵⁾

Based on this model, the targeted roll-out of an Integrated Health Check to promote evidence-based detection, assessment, prevention and management of chronic kidney disease, type 2 diabetes, heart disease and stroke is indicated.

Evidence for cost effectiveness

The potential benefit to the Australian economy from accurately identifying and optimising treatment for Australians at high risk of a primary CVD event could be as much as \$1.5 billion over the next five years.⁽³⁶⁾ This is based on the estimation that as many as 76,500 CVD events can be avoided over the next five years by treating people who are identified at high absolute CVD risk, through anti-hypertensive and lipid lowering medications (unless contraindicated).

Cost-effectiveness has been demonstrated by international counterparts. Prior to the introduction of the UK's National Health Service (NHS) Health Check, cost effectiveness modelling was undertaken, showing the program would be highly cost effective.⁽³⁷⁾ While a subsequent economic evaluation of the NHS Health Check program has not been formally completed, economic evaluations of similar programs have.⁽³⁸⁾ Two such examples are the Oxcheck and British family heart studies, where economic evaluations of these interventions illustrated that screening and management of cardiovascular risk indicate cost effectiveness.⁽³⁹⁾ Furthermore, these studies were undertaken at a time when the cost of antihypertensive and lipid-lowering medication were significantly more expensive than today, therefore the cost effectiveness of these interventions could be higher.

A more recent example is the German KardioPro study, which also demonstrated that it is cost effective to screen for cardiovascular risk - in particular among people at high risk of a CVD event - and provide management in line with clinical guidelines.⁽⁴⁰⁾

Similar to the process undertaken in the UK, the National Heart Foundation undertook a cost benefit analysis to prospectively assess the implementation of absolute CVD risk assessments in Australia.⁽³⁶⁾ It modelled medication therapy for those identified at high absolute risk of having a CVD event, aligned to current recommendations. Using 2011–12 National Health Survey data, the outcome found almost three in every four adult Australians (72%) at high CVD risk were undertreated, receiving either blood pressure lowering medication or lipid-lowering medication or, worse still, neither.⁽⁴¹⁾

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.2 cont.

Develop a targeted approach to Absolute Cardiovascular Risk assessment and Integrated Health Checks

The Heart Foundation's internal economic modelling also found that systematic implementation of absolute CVD risk assessments for the estimated 1 million people at high absolute CVD risk (with recommended antihypertensive and lipid-lowering medication) could lead to the prevention of 76,500 CVD events per annum, and save \$2.1 billion in healthcare expenditure and productivity losses, returning a net benefit to the Australian economy of \$1.5 billion within the next five years.

The findings from this internal modelling are supported through numerous other economic modelling studies, which similarly demonstrated that interventions that provide optimal blood pressure and lipid-lowering medications to those people at highest CVD risk, are cost effective.⁽⁴²⁻⁴⁴⁾

Australian Government Practice Incentive Program

Absolute CVD risk assessment methodology is now incorporated in the Australian Government's Practice Incentives Program (PIP). This program supports general practices to participate in quality improvement (QI) activities to deliver best practice care.

Since August 2019, general practices that participate in continuous quality improvement activities - including performing CVD risk assessment and providing regular practice data reports - in collaboration with local Primary Health Networks (PHNs), will benefit from a PIP QI Incentive payment.⁽⁴⁵⁾ This important development is in parallel to the PIP QI Incentive program that continues to support Aboriginal Community Controlled Health Services (ACCHS) in their work in quality improvement within Aboriginal and Torres Strait Islander communities, where systems using primary health data to perform quality improvement activities are well-established.

A broadened quality improvement program that rewards general practice for routinely performing and documenting Heart Health Checks is expected to have a significant and positive impact on CVD risk detection and management in Australia.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.3

Improve identification and management of hypertension (high blood pressure)

High (elevated) blood pressure is a major risk factor for heart disease and stroke and is, in parallel, a significant determinant of an individual's overall CVD risk.⁽⁹⁾

Blood pressure assessment is an integral component of an absolute CVD risk assessment. Lowering an individual's blood pressure by only 1–2 mmHg is known to markedly reduce cardiovascular morbidity and mortality.⁽¹⁹⁾ However, high blood pressure, also called hypertension, remains under-recognised and under-treated. In 2017–18 one-third of adult Australians (33.7%) were living with hypertension.⁽¹⁰⁾

Hypertension was the greatest contributor (47%) to the burden of CVD in Australia in 2017.⁽³⁾ It significantly contributes to the burden of stroke, kidney failure and premature death and disability⁽⁴⁶⁾.

Controlling high blood pressure and its effects on individual CVD risk, and at a population level, remains a large national challenge. National guidelines for the detection and management of Hypertension, published in 2016, provide GPs and medical practitioners with guidance in clinic blood pressure measurement, and management, aligned to an absolute CVD risk approach.⁽¹⁹⁾

The rationale for management of hypertension inevitably starts with accurate measurement of blood pressure. Accurate BP measurement is critical, given that a 5-mmHg measurement error may lead to incorrect hypertension status classification in 84 million individuals worldwide.⁽⁴⁷⁾

Measurement errors may be minimised through appropriate preparation and standardised techniques. The Lancet Commission recently published recommendations for global consistency in blood pressure measurement through better regulation and mandatory independent validation of blood pressure measurement devices according to the International Organisation for Standardization Standard.⁽⁴⁸⁾ Many of the recommended actions align with global recommendations for improved identification and management of high blood pressure.⁽⁴⁹⁾

High blood pressure is both preventable and treatable. Governments, commissioners, health professionals, the private sector, communities, families and individuals can work collaboratively to reduce its impact.

The role of health literacy and medication adherence in identification and management of hypertension

In 2017–18, one in ten Australians (10.6% or 2.6 million people) reported having hypertension.⁽¹⁰⁾

One-third of the Australian population have been told by a doctor that they have high blood pressure, but only half are reported as taking their prescribed medication.⁽¹⁹⁾ Further, of adult Australians who were taking anti-hypertensive medication in 2017–18, two in five did not have their blood pressure well controlled.

⁽¹⁰⁾ Low health literacy is thought to be a contributing factor.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.3 cont.

Improve identification and management of hypertension (high blood pressure)

Health literacy describes a person's ability to access, understand and apply health information. As healthcare systems become more complex, this skill is becoming more essential. Inadequate health literacy has even been observed in 4 in every 10 Australians with a health-related qualification.⁽⁵⁰⁾ Health literacy is important because there is consistent evidence that indicates associations between individual health literacy, health behaviours and health outcomes.

Improving health literacy to reduce high blood pressure, includes improving their understanding of risks and potential lack of observable symptoms, and is particularly important among young adults. These approaches should include information on modifiable risk factors, such as diet, alcohol intake, physical activity, as first-line preventive measures which can effectively delay or prevent the onset of high blood pressure, or contribute to lowering readings in treated patients with known hypertension and, in some cases reduce or eliminate the need for medication.

As blood pressure increases, it is more difficult to control with lifestyle modification alone and antihypertensive medication becomes necessary.

In Australia, general practice is the key setting for interventions to improve the management of hypertension, as this is the context where hypertension is diagnosed and treated. Hypertension is the most common problem managed at Australian general practice consultations (a rate of 9.1 problems per 100 encounters). However, blood pressure control, even in people identified at high CVD risk, is not optimal.

Shared decision-making, consumer facing risk calculators and clinical audit tools are promising interventions in improving health literacy of risk factor management. Web-based calculators that provide estimates of 'heart age', rather than risk reported as a percentage (%), have been used by government health organisations in the UK, USA, China to improve health literacy.⁽⁵¹⁾ An older heart age than current age, indicates higher CVD risk.

The benefits for blood pressure lowering therapy in patients with significantly elevated blood pressures are well established.⁽¹⁹⁾

The WHO advocates for effective control of hypertension (using an absolute CVD risk approach), and recommends cost effective analyses of selected medication and counselling to individuals at high risk of having a CVD event, as well as those who have had a heart attack or stroke.⁽⁷⁾

It is essential that health professionals are supported to better identify and manage high blood pressure, as well as medically manage and treat patients with appropriate medication to guideline recommended targets. Integrated tools that support shared decision making between clinicians and their patients during CVD risk assessment and management is critical. (See also Action 3.3.1)

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.3 cont.

Improve identification and management of hypertension (high blood pressure)

Opportunistic health checks to improve identification of those with high blood pressure

Opportunistic health checks are an effective tool for increasing community awareness of high blood pressure, identifying those at high risk and prompting them to take action.⁽⁵²⁾ In 2014, the National Stroke Foundation launched Australia's Biggest Blood Pressure Check (ABBPC), recognising high blood pressure as a key risk factor for stroke. Initially held as a one-day event involving free blood pressure checks in capital cities and pharmacy stores nationally, the campaign was extended in 2016 to one month, with new partners Priceline Pharmacy and Sisu Wellness.

In 2017, a total of 63,211 free health checks were delivered across Australia from 17 May to 14 June. Subsequent analysis showed that 31% of participants were found to be at high risk of stroke and were referred to their doctor for a comprehensive assessment.⁽⁵²⁾ Of those high-risk participants who agreed to be contacted, 8% completed a follow-up survey. 71% of survey participants had already visited or planned to visit their doctor to discuss their results, 45% were eating more fruit and vegetables, 42% had increased their exercise levels, and 25% had lost weight.

Lowering salt intake in the Australian diet to reduce high blood pressure

A broad range of research studies have identified excess dietary salt intake as one of the major factors associated with the development of hypertension and subsequent increase in stroke risk.⁽⁵³⁻⁵⁴⁾ In addition, a positive association between dietary salt intake and the incidence of new-onset Atrial Fibrillation (AF) has been demonstrated.⁽⁵⁵⁾

Studies consistently show that a modest reduction in salt intake lowers blood pressure in people with both normal and raised blood pressure, across all age groups and ethnic groups.⁽⁵³⁾ Several studies have shown that a reduction in salt intake, at a population level, is one of the most cost-effective interventions to reduce the incidence of heart disease and stroke worldwide.

The WHO has identified salt reduction among the 'best buys' (most cost effective) measures to reduce noncommunicable diseases such as heart disease and stroke at the population level.⁽⁷⁾ The WHO recommends reformulation of food products to contain less salt, together with target levels for the amount of salt permitted in foods and meals.⁽⁷⁾

Several countries have successfully carried out salt reduction programs that resulted in salt intake declining. As an example, Finland initiated a salt reduction program in the late 1970s consisting of mass media campaigns, cooperation with the food industry, and implementation of salt labelling legislation. Along with a reduction in salt intake, a significant decline in high blood pressure and a reduction in mortality from heart disease and stroke in Finland was reported during this period. Other high-income countries have also successfully developed programs of voluntary salt reduction in collaboration with the food industry, including the UK and US. More recently, several developing countries have also launched national salt reduction initiatives.⁽⁵⁶⁾

Reducing population salt intake requires action at all levels, including government, the food industry, non-governmental organisations, health professionals and the public.⁽⁵⁶⁾

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.14

Raise awareness for health checks (including atrial fibrillation) at appropriate ages, among health professionals and the community

Raising public awareness for cardiovascular risk assessment and increasing demand for Heart Health checks in primary care must take a multifaceted approach that targets consumers and health professionals, health policy and health system factors, such as financial incentives for general practice. International preventative health screening activities, that successfully led to an increase in health assessments, namely in the UK and New Zealand, provide key insights.^(57, 58) Both the NHS Health Checks in the UK and the 'More Heart and Diabetes Checks' in New Zealand were large scale national programs delivering health screening services to at-risk populations based on their ages and ethnicities.

NHS Health Checks which were rolled out in 2009 and later became mandated by local authorities, involved the routine, structured clinical assessment and management of adults aged 40–74 years without pre-existing diabetes or CVD.⁽⁵⁷⁾ These included an assessment of risk factors related to CVD, CKD, diabetes and dementia. Health checks were offered to all eligible patients and received a national uptake rate of 48% between 2013 and 2017, with higher uptake seen among older people and females, but lower among those living in the most deprived areas.⁽⁵⁹⁾ Evaluation of the program has shown increased detection of hypertension, diabetes and CKD as well as increased referral for behavioural interventions and increased prescription of blood pressure and lipid-lowering medication. Evaluation of the program found that it was not only positively received by patients but potentially to result in approximately 300 fewer premature deaths and 1,000 more people living free of CVD each year in England.⁽⁶⁰⁾

A similar success story comes from New Zealand, where national heart and diabetes checks were rolled out in 2012 and reached 90% of the target population by 2015.⁽⁵⁸⁾ With strong Ministry of Health support, national benchmarking, financial incentives and strong buy-in from practice nurses, the program successfully raised awareness of CVD risk and how to manage it. Evaluation of participants (both practitioners and consumers) reported lifestyle changes and medical treatment as a result of risk assessments. Importantly, it appears that this national program contributed to a significantly higher proportion of New Zealand GPs prescribing statins according to lifetime risk, compared to prescribing patterns in Australia.⁽⁶¹⁾

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.4 cont.

Raise awareness for health checks (including atrial fibrillation) at appropriate ages, among health professionals and the community

Opportunistic point-of-care screening for atrial fibrillation

Australian best-practice guidelines provide a strong recommendation with a moderate quality of evidence that opportunistic point-of-care screening for atrial fibrillation in the clinic or community should be conducted in people aged 65 years or more.⁽⁶²⁾ The basis for this recommendation is that AF meets the justification for screening, which is to find patients with unknown asymptomatic AF at high-enough risk of stroke to result in a reduction in stroke burden from combined screening and treatment. Previously unknown AF is responsible for 10% of all strokes,^(63, 64) and appropriate treatment (anticoagulation) for these patients has been shown to reduce the risk of embolic stroke by approximately 70%, and of mortality by 29%.^(65, 66) Thus, improving screening rates in Australia has the potential to have a significant impact on these outcomes, as well as significant economic benefits associated with the reduction in stroke and mortality.

Implementing education and awareness programs to promote opportunistic point-of-care AF checks is likely to result in some patients aged 65 years or more prompting their GP for AF screening, thus improving uptake of the Australian guideline recommendation. Health systems should also be strengthened through financial mechanisms, such as practice incentives, and training for primary care health professionals as a multi-pronged approach to achieve change.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.1

Detect and better manage Australians at risk of heart disease and stroke

ACTION 1.1.5

Provide health professionals with appropriate tools and resources to support health checks and care

Australian and international evidence indicates that GPs report inconvenience and time-consuming processes as significant barriers to conducting absolute CVD risk assessments, during a consultation.⁽⁶⁷⁻⁶⁹⁾ In order to address these barriers, integration of absolute CVD risk tools and resources into clinical software must be optimised.

Practice nurses and other general practice staff should be appropriately supported with tools and resources, that better enable them to provide systematic and structured ways of identifying and recalling high risk patients.

Supporting practice level change in primary care to increase the assessment of CVD with additional resources has been shown to work, as evidenced by the successful implementation of the More Heart and Diabetes Checks program in New Zealand.

Enhanced decision support software⁽⁷⁰⁾, systems and clinical audit tools must be made available to clinicians to improve identification, support active recall and reminder processes, and drive behaviour change – all contributing to improved uptake of guideline recommendations.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.1

Build on and strengthen existing work to reduce tobacco use and exposure to tobacco smoke in the community

Tobacco smoking is the leading preventable cause of burden on the Australian health system. Australia's Long Term National Health Plan includes a target to reduce smoking rates below 10% by 2030.⁽¹²⁾

Smoking tobacco causes heart disease and stroke,⁽⁷¹⁾ yet around 2.6 million Australian adults smoked daily in 2017–18, and a further 1.4% of Australians identified as less regular smokers.⁽¹⁰⁾ In 2017, an estimated 22,000 Australian deaths were attributed to tobacco use.⁽³⁾ Thousands more suffer from associated chronic diseases including heart disease and stroke.⁽⁷²⁾ In 2017, tobacco use was responsible for the largest share of the burden of disease in Australia (~10%). In some priority populations, including socioeconomically disadvantaged Australians, in particular Aboriginal and Torres Strait Islander peoples, smoking prevalence remains extremely high.⁽⁷³⁾ In 2014–15, almost two in five (39%) Aboriginal and Torres Strait Islander peoples aged 15 years and over, smoked daily. Adding to this, evidence now suggests that electronic cigarette use, which was promoted for smoking cessation, can increase the risk of heart disease, heart attack, and stroke.⁽⁷⁴⁻⁷⁶⁾

Tobacco control is identified by the WHO as one of the 'best buys' (most cost effective) measures to reduce noncommunicable diseases such as heart disease and stroke at the population level.⁽⁷⁾

The WHO Framework Convention on Tobacco Control (FCTC) is the first international treaty negotiated under the auspices of WHO.⁽⁷⁷⁾ The WHO FCTC was developed in response to the globalisation of the tobacco epidemic and is an evidence-based treaty that affirms the right of all people to the highest standard of health, providing legal dimensions for international health cooperation. It was adopted by the World Health Assembly in 2003 and came into force in 2005. It has since become one of the most rapidly and widely embraced treaties in the history of the United Nations.

'Best buys' recommended by the WHO to reduce tobacco smoking rates include: excise on tobacco products; enforcement of comprehensive tobacco advertising bans; mass media public education campaigns; and elimination of exposure to second-hand smoke in all indoor workplaces, public places, and public transport.⁽⁷⁾

Although daily smoking in adults has declined significantly in most developed countries over the past decade, smoking continues to be a major contributor to mortality.⁽¹¹⁾ Much of the fall is associated with individual smoking cessation interventions as well as population-based measures aimed at reducing tobacco consumption, including public awareness campaigns, advertising bans, increased taxation and banning of smoking in public spaces.

Public education campaigns

Within the next National Tobacco Strategy (NTS), renewed investment in tobacco control education campaigns is essential. The last major campaign for the general population was in 2012.⁽⁷⁸⁾

The 10-year National Preventive Health Strategy announced in 2019, aims to better balance prevention and treatment, and commits Australian governments to strengthen mass media campaigns. A commitment of \$20 million over 4 years towards a national tobacco campaign was announced in 2019.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.1 cont.

Build on and strengthen existing work to reduce tobacco use and exposure to tobacco smoke in the community

The use of emotive, mainstream television-led public education campaigns has been a missing piece of a comprehensive national approach to tobacco control. Population-targeted public education campaigns, when delivered as part of a comprehensive approach and at high intensity and frequency, have been shown to be effective at motivating quitting behaviours from all sociodemographic groups, including young people.⁽⁷⁹⁻⁸³⁾ They have even more impact on low socioeconomic groups when delivered at higher, evidence-based intensity.

According to the WHO, investment in mass media education campaigns (along with initiatives such as taxing tobacco products and legislating smoke-free public places) is one of the most cost-effective interventions available to any government.⁽⁷⁾

In Australia there is strong evidence to suggest that implementation of sustained mainstream television-led public education campaigns at adequate levels motivates smokers to quit, prevents relapse, and reduces smoking prevalence.^(79-81, 83-84)

Effective public education campaigns must be equitable – greater funding of campaigns can reduce disparities and enhance equity. Modelling based on current Australian media buying costs, outlines the minimum campaign investment needed (>\$20-40 million per year over successive years) to avoid exacerbating disparities, is required to drive equitable effects across population groups.

The modelling undertaken demonstrates significant investment is needed to reach target populations, including lower socioeconomic groups, who have high television media consumption levels. As such, a successful campaign would require a sustained television campaign component over a significant period to increase quit attempts.⁽⁸⁴⁾

As well as reducing smoking prevalence, past campaigns have been unequivocally cost-effective.⁽⁸⁵⁾ Evaluation of the first National Tobacco Campaign in 1997 showed that, over a sustained six-month period, the campaign yielded \$740.6 million in direct healthcare savings, prevented 55,000 deaths and gained 323,000 life-years.⁽⁸⁵⁾ Adjusting for inflation and the costs of campaign renewal, the \$9 million invested in 1997 (returning \$740.6 million) translates to approximately \$15.6 million in 2019 – with well over \$1.3 billion in expected returns, given the inflated healthcare costs over two decades.⁽⁸⁶⁾

In 2016, Australia collected \$11.3 billion in total estimated revenue and GST on tobacco products. Revenue from tobacco products alone totalled \$12.1 million in 2019. Tobacco excise more than doubled in Australia between 2012 and 2018 (232%) and increased by 187% in New Zealand.⁽⁸⁷⁾ Yet investment in areas such as mass media anti-smoking campaigns for the general population is at its lowest point in 20 years, while funding for all measures shown to reduce prevalence is well below benchmarks.

Smoking rates have steadily declined since 1995, with the proportion of Australian adults who are current smokers remain at an all-time low.⁽¹⁰⁾ Even so, smoking rates of 13.8% continue to exceed the National Preventive Health Strategy target and calls for the reinvigoration and renewal of initiatives that have previously been successful.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.1 cont.

Build on and strengthen existing work to reduce tobacco use and exposure to tobacco smoke in the community

Sustained funding for mass media education campaigns should be part of the comprehensive approach that has served Australia so well over the past three decades.

Smoking cessation programs

The 2018 Heart Attack Survivors Survey undertaken by the National Heart Foundation found that 34% of heart attack survivors had been advised by their doctor to quit. Further, more than half of those who smoked prior to their heart attack continued to do so after.⁽⁸⁸⁾ Quitting smoking is one of the most effective ways of reducing repeat heart attacks and improving health after a heart attack.⁽⁷⁾ The WHO recommends that effective interventions to tackle tobacco cessation include provision of cost-covered, effective and population-wide support (including brief advice, national toll-free quit line services) for tobacco cessation to all those who want to quit.

There is overwhelming evidence to support the case for an ongoing, concerted approach to reducing smoking in the Australian population. While price policy such as increasing the cost of cigarettes is an effective part of the approach, it can also create a significant short-term impact on those population groups already experiencing financial hardship, demonstrating further need for cessation support as part of a comprehensive approach. Directing a small portion of the excise revenue from tobacco into cessation support programs to assist those populations who carry much of the health, social and financial burdens associated with tobacco is warranted, alongside other interventions.

The average weekly household spend on tobacco products grew by 2.2% between 2009-10 and 2015-16.⁽⁸⁹⁾ Because tobacco is a highly addictive product, many people experiencing financial disadvantage will put tobacco purchases before food and other essentials. In the lowest-income households, expenditure on tobacco products as a proportion of total household weekly expenditure is more than double that in the highest income households.

People experiencing social and financial disadvantage can and will quit, particularly when motivated and assisted to do so. Implementing strategies, including practical assistance to assist smokers to quit, will address a gap in Australia's current approach to cessation. Further, it will make quitting more equitable for all subgroups of the population.

Australia does not have integrated treatment guidelines, nor does it take a comprehensive approach to promoting smoking cessation. Australia is falling short of implementing the guidelines for Article 14 of the Framework Convention on Tobacco Control (FCTC),⁽⁷⁷⁾ which sets out demand reduction measures concerning tobacco dependence and cessation. Implementing Article 14 of the WHO FCTC to promote evidence-based cessation of tobacco use and adequate treatment for tobacco dependence requires systematic changes at the Australian Government level.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.1 cont.

Build on and strengthen existing work to reduce tobacco use and exposure to tobacco smoke in the community

Of concern is emerging evidence showing increased use of e-cigarettes. E-cigarettes typically contain nicotine, flavourings and humectants (to retain moisture) and were viewed as nicotine replacement therapy aiding smoking cessation. The health effects of e-cigarettes on cardiovascular diseases are not well understood. A review sponsored by the U.S. Food and Drug Administration (FDA) in 2018 concluded that e-cigarettes have biological effects in humans with evidence of short-term effects on CVD (raised heart rate and blood pressure). The implications of longer term effects on morbidity and mortality are not yet clear.⁽⁹⁰⁾ A comprehensive approach to promoting smoking cessation must also extend to reducing the use of e-cigarettes.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.2

Ensure Australians are supported to be physically active

Physical inactivity is a major health problem in Australia, and a significant risk factor for heart disease and stroke.⁽⁹¹⁾ Physical inactivity is also a major risk factor for obesity.⁽⁹¹⁾ It is estimated to be the main cause of approximately 30% of the ischaemic heart disease burden.⁽⁹²⁾

In 2017, the AIHW found that when physical inactivity is combined with rates of overweight and obesity, the burden of disease increases is 9% - equal with tobacco smoking!⁽⁹¹⁾

Disappointingly, only 56% of Australian adults engage in the recommended 150 minutes (or more) of physical activity each week. Health conditions associated with physical inactivity, including CVD, diabetes, cancer and dementia, are among the leading causes of morbidity and mortality in Australia.⁽⁹¹⁾

Physical inactivity is also a contributor to the rates of chronic disease in Aboriginal and Torres Strait Islanders, accounting for 6% of the total disease burden.⁽⁹⁾ For Australia's ageing population the statistics are even worse – 75% of adults aged over 65 years are not sufficiently active to achieve any health benefits.⁽⁹³⁾

Active living is an important factor in preventing or reducing rates of obesity, a leading contributor to chronic disease in Australia. An extra 15 minutes of brisk walking, 5 days each week, could reduce disease burden due to physical inactivity by an estimated 13%.⁽⁹¹⁾

According to a WHO study that looked at self-reported activity levels in 1.9 million people aged 18 years and over, Australia has is among one of the worst physical inactivity levels worldwide.⁽⁹⁴⁾ The 2016 Australian census revealed only 14% of Australians travel to work by public transport.⁽⁹⁵⁾

Only 30% of children aged 2-17 years meet the recommended physical activity guidelines. A Royal Automobile Club of Victoria (RACV) study in 2015 found that almost one in four children aged five to 12 never walked, cycled, or scooted to school, supervised or not.⁽⁹⁶⁾ But three-quarters of kids surveyed would like to.

If more children walked to school each day, they are more likely to reach recommended physical activity guidelines, less likely to be overweight and expected to perform better at school. Nationwide programs such as 'Ride2School', coordinated by the Bicycle Network, are designed to help schools encourage active journeys to school. In 2019, registrations increased to over 900 schools, and 56% of students rode, walked, scooted or skated to school.

In recent years, there have been significant advances in global physical activity policy. The endorsement by the World Health Assembly of the WHO Global Action Plan on Physical Activity 2018-2030: More Active People for a Healthier World is a significant global milestone.⁽⁹⁷⁾ The Global Action Plan provides a framework of effective and feasible policy actions to increase physical activity at all levels and provides opportunities for leadership in describing a whole-of-society approach in increasing physical activity levels across the population, according to ability and across the life course.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.2 cont.

Ensure Australians are supported to be physically active

The built environment can influence and facilitate healthy choices as it affects the transport choices of both adults and children. Characteristics such as higher residential density, land use mix, urban sprawl, traffic volumes and speed, quality of footpaths and bike paths, street connectivity, access to destinations such as shops and parks, aesthetics and personal safety have been found to be important correlates of walking for transport and physical activity in general.

A focus is needed on creating supportive environments for behaviour change through partnerships between health and planning, transport and infrastructure, recreation and sport and across all levels of government. Urban bicycle infrastructure through commuting corridors of larger cities demonstrated increased cycling activity, and potential for Improved social capital and health outcomes.⁽⁹⁸⁾

The WHO and the United Nations have committed to reducing physical inactivity across the world by 15% by 2030.⁽⁹⁷⁾ To achieve this target, member states, including Australia, are being encouraged to establish a multi-sectorial national committee or coalition to provide necessary leadership and coordination. Investment and leadership by the Australian Government is an essential component.⁽⁹⁹⁾

The National Heart Foundation published a *Blueprint for an Active Australia* that summarises urgent action for change, through 13 action areas to drive improvement in addressing the gaps in physical activity in Australia.⁽⁹⁹⁾ The action areas cover built environments, workplaces, healthcare, active travel, prolonged sitting (sedentary behaviour), sport and active recreation, disadvantaged populations, Aboriginal and Torres Strait Islander peoples, children and adolescents, older people, financial measures, mass-media strategy, and research and program evaluation. The Blueprint aligns with the WHO's Global Action Plan on Physical Activity 2018-2030: *More Active People for a Healthier World*. It provides a framework to tackle physical inactivity and its associated health consequences for the Australian population.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.3

Promote healthy eating patterns to address heart disease and stroke risk factors

Strategies that can directly or indirectly improve risk factors for heart disease and stroke such as high blood pressure, high cholesterol, obesity and diabetes are integral to a comprehensive approach to prevention of heart disease and stroke.

Healthy dietary practices at all life stages play an integral part in the primary and secondary prevention of CVD, as well as in the mitigation of CVD risk factors.⁽¹⁰⁰⁾ Poor diet is the leading contributor to the burden of ischaemic heart disease, responsible for 66% of the total burden (in DALYs).⁽³⁾ Poor diet is also a leading contributor to CVD (2nd), accounting for 41% of the total burden of CVD and a leading contributor to the total burden of disease (3rd), accounting for 7% of the total burden of disease in 2017. A large proportion of the burden of disease in Australia is due to poor nutrition, as a result of:

- An excessive intake of: discretionary foods and drinks that are high in kilojoules (high kilojoule), saturated fat, added sugars and salt; and alcohol.
- An inadequate intake of healthy foods associated with a decreased risk of disease, such as vegetables, fruit and wholegrains.

During 2011-12, Aboriginal and Torres Strait Islander peoples on average consumed greater amounts of discretionary foods (6.1 serves per day), than non-Indigenous Australians (5.5 serves per day). The leading contributors to this trend included alcoholic beverages (10%), sweetened drinks (9.1%), and discretionary foods comprising fried potato products, pastries, and confectionary.⁽¹⁰¹⁾

A National Nutrition Strategy to complement the National Obesity Strategy

Evidence-based strategies to redress the imbalance in people's diet are required. Australia is behind its international counterparts by not having an up-to-date policy on such a critical health issue. Australia's Food and Nutrition Policy (1992) needs updating. The requirement for a contemporary National Nutrition Strategy to provide a strong evidence base, with regular reviews to the Australian Dietary Guidelines (2013), is supported by several peak public health groups and stakeholders in Australia.

The WHO European Food and Nutrition Action Plan 2015-20 is a regional strategy that calls for whole-of-government action to reduce the burden of preventable chronic diet-related diseases, obesity and all forms of malnutrition.⁽¹⁰²⁾ Examples of integrated nutrition strategies can also be found in the US, UK, Mexico and many Asian countries, including Singapore and Japan.

Development and funding of a National Nutrition Strategy would support the government's Long Term Health Plan (and align with the National Strategic Framework for Chronic Conditions (NSFCC) and the National Obesity Strategy). It would contribute to the Government's long term commitment to prevent chronic illness and reduce potentially preventable hospitalisations. A focus on improving nutrition and food security, and ensuring equitable access to affordable, balanced and healthy foods is essential to better tackling chronic disease and addressing risk factors for heart disease and stroke.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.3 cont.

Promote healthy eating patterns to address heart disease and stroke risk factors

Despite the importance of good nutrition to population health, Australia lacks a national strategy and appropriate monitoring to provide direction for programs/policies to reduce the burden of preventable diet-related disease, obesity and malnutrition and to ensure equitable, nationwide access to an affordable, balanced healthy diet. Consequently, the Australian diet increasingly comprises energy-dense, nutrient-poor foods, that are otherwise known as 'discretionary food and drinks'. These foods, which include snack foods, pies, pastries and high-kilojoule takeaway foods, now make up one-third of an adults average kilojoule intake (5-7 serves per day) and over 40% of a child's daily kilojoule intake.⁽¹⁰³⁾ Not only are these foods and drinks directly linked to an increased risk of being overweight or obese, they displace nutritious foods in the diet, such as vegetables, fruits, wholegrains, nuts and seeds, that are linked to a reduced risk of heart disease and other chronic disease related illness.^(9, 103) Indeed, in 2017-18, 95% of Australian adults did not meet the recommended intakes for fruits and vegetables daily.⁽¹⁰⁾ Not surprisingly, risk factors for heart disease including hypertension and obesity continue to rise.

Overweight and obesity are risk factors for CVD

Overweight and obesity are major risk factors for CVD and a major public health issue. Over the last decade, the number of Australians with a body mass index (BMI) in the obese range (BMI 25 or over) has increased by almost 30%.⁽²²⁾

Alarming, Australia's rates of overweight and obesity are at an all-time high, with approximately 12.5 million people being overweight or obese, accounting for two-thirds (67%) of Australian adults in 2017-18⁽¹⁰⁾ - a statistically significant increase from 2014-15. (The increase in the population of adults categorised as obese rose from 28% in 2014-15 to 31% during 2017-18.)

Children and younger adults are most affected. Almost one-quarter of children aged 5-17 years were overweight or obese in 2017-18 (17% overweight and 8% obese). There was also a large increase among those aged 18-24 years, with 39% overweight or obese in 2014-15 compared with 46% in 2017-18. A greater proportion of men aged 18 years and over were overweight or obese than women - 75% and 60%, respectively - in 2017-18.⁽¹⁰⁾

Rates of overweight and obesity are higher in regional and remote Australia (72%) compared to metropolitan areas (65%) and increases with relative disadvantage. If left unmanaged, obesity rates among both adults and children risk a steep increase in related illnesses and conditions, potentially causing significant ongoing public health challenges.⁽¹¹⁾

In recognition of these trends, development of a National Obesity Strategy, commissioned by AHMAC and led by Queensland Health, is a positive development. If all Australians ate the recommended daily intake of vegetables the risk of CVD would be reduced by approximately 17%.⁽¹⁰⁴⁾

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.3 cont.

Promote healthy eating patterns to address heart disease and stroke risk factors

Excessive intake of discretionary foods

Australians are eating out more than ever before, at an average of two to three times a week.⁽¹⁰⁵⁾ Much of this is discretionary food that is high in energy, saturated fat, salt and added sugars, making a significant contribution to poor diet.

Sugar-sweetened drinks are considered discretionary foods, adding little nutritional value. In 2017-18, one in 11 adults (9.1%) consumed sugar-sweetened drinks daily.⁽¹⁰⁾ Those living in the most disadvantaged areas were three times more likely to drink sugar-sweetened drinks daily than the least disadvantaged (14% compared to 4%). Additionally, a higher proportion of adults living in outer regional and remote Australia consume sugar-sweetened drinks daily (13%) compared with 10% living in inner regional Australia, and 8% living in metropolitan areas.

Replacing 5% of energy intake from saturated fats with the equivalent energy from polyunsaturated fat, monounsaturated fat or wholegrains would reduce the risk of heart disease by 25%, 15% and 9%, respectively.⁽¹⁰⁶⁾ A recent evaluation of dietary patterns in Australia found that of the eight dietary patterns evaluated, all promoted regular consumption of both fruits and vegetables, and whole grains.⁽¹⁰⁰⁾

In addition, Australians continue to consume excess salt in their diet, which has been linked to an increased risk of developing hypertension⁽¹⁰⁷⁾ and new-onset AF.⁽⁵⁵⁾

The WHO has identified salt reduction as one of the most cost effective 'best buys' measures to reduce noncommunicable diseases, such as heart disease and stroke at the population level.⁽⁷⁾

The Australian government is coordinating food reformulation through the *Australian Healthy Food Partnership*, building on earlier voluntary salt reduction initiatives of the Food and Health Dialogue. Reduction targets on voluntary salt, sugar, and saturated fat are the result of extensive consultation, but remain under review.⁽¹⁰⁸⁾

It has been shown that adequate labelling can help to change eating patterns and drive reformulation. A recent meta-analysis of 60 labelling intervention studies reported that on average people reduced energy intake by 7%, salt intake by 9% and increased vegetable intake by 14% when foods were labelled.⁽¹⁰⁹⁾ Trans fatty acid content of foods fell by 64%.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.4

Collect population health data on heart disease and stroke

The Australian Health Survey is the most comprehensive health survey conducted in Australia. Information is collected about various health conditions, health status, risk factors, medication uses, health service usage, demographic and socioeconomic factors.⁽¹¹⁰⁾

It is important that the Australian Health Survey be routinely undertaken (at least every six years), in order to provide researchers, decision makers and health professionals, among many others, with the data to understand the health of the nation. This will inform the status and impact of key risk factors and the effectiveness of interventions. Without this data, we are unable to determine and accurately monitor the long term trends and impacts of such things as diet and other risk factor profiles.

In 2011–13, this survey also included a biomedical component for the first time.⁽¹¹⁰⁾ This involved the testing of voluntarily provided blood and/or urine samples from a representative sample of 11,000 volunteers for a range of chronic disease and nutrition biomarkers. This data is a valuable resource to monitor progress and evaluate interventions.

Without this, Australia cannot effectively or efficiently tackle the growing burden of chronic disease. The last Australian Health Biomedical Survey to collect data on risk factors, including those relating to heart disease and stroke, was conducted by the Australian Bureau of Statistics (ABS) in 2011–12.

Repeating the Australian Health Survey regularly would provide data that tracks changes in health needs and risk factors to provide better targeting of healthcare and health interventions and improve efficiency in healthcare spending. The second Australian Health Survey should be undertaken in 2021. Thereafter, the Australian Health Survey should be conducted every six years, in conjunction with the National Health Survey. The Medical Research Future Fund provides an appropriate source of funding.⁽¹¹¹⁾

During the development phase of the Action Plan, the Australian Government announced the funding of a \$90 million Intergenerational Health and Mental Health Study, which shares many similarities with the Australian Health Survey. The Study will consist of four surveys, completed over the course of three years, covering mental health and wellbeing; people's health characteristics and chronic health conditions; nutrition and physical activity; and various health measures involving the collection of voluntary blood and urine samples. Under the Minister's new Long Term National Health Plan, the Study will be repeated every three to six years.⁽¹²⁾

This will provide invaluable baseline data to track reduction of modifiable risk factors for the duration of the 10-year National Preventative Health Strategy (2020-30).⁽¹²⁾

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.2

Address risk factors for heart disease and stroke to encourage all Australians to live healthier lives

ACTION 1.2.4 cont.

Collect population health data on heart disease and stroke

International approach

In the US, the National Center for Health Statistics (NCHS) within the Centers for Disease Control and Prevention (CDC) collects data on the health and nutritional status of adults and children through the National Health and Nutrition Examination Survey (NHANES).⁽¹¹²⁾ Findings are used to determine the prevalence of major diseases and risk factors for diseases, and to assess nutritional status and its association with health promotion and disease prevention. NHANES findings are the basis for national standards for such measurements as height, weight and blood pressure. Data from this survey is used in epidemiological studies and health sciences research, which help to develop sound public health policy, direct and design health programs and services, and expand the health knowledge for the nation. Importantly, the information from NHANES is made available through an extensive series of publications and articles in scientific and technical journals. For data users and researchers throughout the world, survey data is available on the internet.

The UK also runs a Health Survey for England that is conducted annually with a representative sample size of 10,000 including 2,000 children.⁽¹¹³⁾ A sub-sample also participates in biomedical measurement. It provides '...vital information which is used by central government (the Department of Health and Public Health England) and local government for a range of different purposes'. Local authorities use the survey to compare local indicators with national figures, and it is used by the NHS, charities and voluntary organisations and by universities for education, research and analysis purposes. Data from the survey is also used as a component in the formula allocating public health grants from the Department of Health to local authorities. This survey, and others including the National Child Measurement Programme and the UK National Study of Health and Wellbeing, are the reason why the UK is recognised internationally as a world-class source of public health intelligence.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.3

Increase awareness and understanding of heart disease and stroke within the Australian community

ACTION 1.3.1

Implement nation-wide, targeted, education and awareness campaigns, including priority populations

National warning signs campaign – heart

On average, an Australian has a heart attack every 10 minutes.⁽¹¹⁴⁾ In 2017, heart attacks claimed 7,813 Australian lives, which is an average of 21 Australians dying each day as a result, or one heart attack death every 67 minutes.⁽¹⁾

Heart attacks are a time-critical emergency, and any delay to a person being treated can lead to further injury to the heart muscle, causing poorer health outcomes and even death.

When a heart attack occurs, a blockage restricts oxygenated blood flow to the heart muscle. Tissue within the heart muscle begins to die within minutes of not receiving essential oxygen. Early reperfusion (restoring blood supply to the heart) is critical. Delays in treatment can lead to irreversible damage to the heart and can result in permanent disability.⁽¹¹⁵⁾

The Australian Clinical Guidelines for the Management of Acute Coronary Syndrome recommend heart attack patients should receive emergency reperfusion therapy via primary percutaneous coronary intervention (PCI), or thrombolysis (clot dissolving therapy).⁽¹¹⁶⁾

The average pre-hospital delay for patients experiencing symptoms of a heart attack is estimated to be between three to six hours.⁽¹¹⁷⁾ These delays exceed the recommended window to seek professional help (within two hours).⁽¹¹⁸⁾ Consequently, up to half of heart attack deaths can occur outside of hospital.⁽¹¹⁹⁾

Pre-hospital delays and the subsequent poorer patient outcomes have been linked to a variety of factors, including a lack of recognition of the signs of a heart attack.⁽¹²⁰⁾ Currently, more than one in three Australian adults aged 30–65 years (35%) cannot recognise the common signs of heart attack such as chest, arm, shoulder, neck, jaw or back pain.⁽¹²¹⁾ A recent survey showed that only one in two Australian adults were confident in knowing what to do if they were to suffer a heart attack.⁽⁸⁸⁾

Evidence suggests there has been little change to pre-hospital delay times over the past decade, with less than half of patients presenting with acute coronary syndrome (ACS) attributing their symptoms to their heart and most still not using emergency medical services (EMS) systems.⁽¹²⁰⁾

Mass-media public awareness campaigns are known to influence population health behaviours.⁽¹²²⁾ They can have a positive impact on the community's awareness of heart attack symptoms. Between 2009 – 2013, the National Heart Foundation ran a nationwide mass media education campaign to improve ambulance use by patients with chest pain. The campaign comprised a 23-month intervention focused on television and digital media activity. A subsequent evaluation of the campaign showed this intervention was associated with 11% increase in emergency attendances for people with chest pain, and an 11% increase in attendances for suspected ACS.⁽¹²³⁾ One in seven adults recalled heart attack warning sign messages 3-months post campaign. This indicates that mass media interventions are effective at influencing appropriate health-seeking behaviour in response to chest pain symptoms.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.3

Increase awareness and understanding of heart disease and stroke within the Australian community

ACTION 1.3.1 cont.

Implement nation-wide, targeted, education and awareness campaigns, including priority populations

A further study showed that a comprehensive mass media campaign targeting the community's awareness of heart attack symptoms significantly reduced the incidence of out-of-hospital cardiac arrest and associated deaths.⁽⁶⁾ Additional evidence suggests this mass-media campaign significantly influenced prehospital behaviour and times, with the campaign being linked to shorter pre-hospital decision making and faster presentation to hospital.⁽¹²⁰⁾

National Women and Heart Disease campaign

Heart disease is a leading killer of Australian women.⁽¹⁾ In 2018, approximately 70,000 women had their first hospital admission related to heart disease.⁽¹²⁴⁾ 19,387 women were hospitalised due to heart attack during 2017-18 (34% of total). Approximately 3,300 women suffered a fatal heart attack (45% of total) – some without ever reaching a hospital.

For women aged 40 years and over, the chance of developing heart disease is around one in three.⁽¹²⁵⁾ The health outcomes following a heart attack are often worse for women than for men, and women are more likely to die from a repeat heart attack than men.⁽¹²⁶⁾

Lack of awareness and action are primary factors contributing to the significant impact of heart disease on Australian women:

- Low levels of awareness among women, that heart disease is one of the greatest killers of women.⁽¹²⁷⁾
- Women are less likely to have spoken to their GP about heart disease than men (41.3% compared to 55.5%).⁽¹²⁷⁾
- Women are also less likely to have had a heart health check in the last two years (39% for women compared to 54% for men)⁽¹²⁷⁾ This is despite more than one-third (36%) of women stating they have a family history of heart disease and more than a third of women (36%) having three or more risk factors for heart disease.⁽¹⁰⁾
- Less than one in two women are confident they would know what to do or actions to take if they were having a heart attack.⁽¹²⁷⁾
- Time from onset of symptoms to presentation is greater for women than men, contributing to their poorer outcomes.⁽¹²⁸⁾

In 2009, public awareness of heart disease in women was at an all-time low, and only 23% of women surveyed perceived heart disease as a leading cause of death in women.⁽¹¹⁵⁾ The National Heart Foundation instigated a campaign to address this issue, and by 2018 women's awareness of heart disease risks had increased to 30%.

Alarming, less than one in 3 Australian women are aware that heart disease is a leading health issue for women. A national campaign that utilises mainstream media to educate women on heart disease should be the keystone to awareness raising activities focussed on the public, as well as health professionals. In particular, the campaign should focus on women's clinical risk factors and motivate eligible women at risk of heart disease, to have a Heart Health Check. For women with heart disease, the campaign should directly focus on symptom awareness and management, and the importance of cardiac rehabilitation.

Priority Area 1

PREVENTION AND EARLY DETECTION

OBJECTIVE 1.3

Increase awareness and understanding of heart disease and stroke within the Australian community

ACTION 1.3.1 cont.

Implement nation-wide, targeted, education and awareness campaigns, including priority populations

Support for a national women and heart disease campaign with a focus on warning signs would:

- Improve awareness – so that Australian women know that heart disease is a leading cause of death and are alert to the associated key risk factors.⁽¹⁾
- Drive knowledge – to highlight what women should do to reduce their risk of heart disease.
- Change behaviour – to increase the number of women who have had a Heart Health check, and who recognise the warning signs of a heart attack.⁽¹²⁹⁾

National F.A.S.T. campaign – stroke

When a stroke occurs, the best outcomes for patients are achieved when treatment is received quickly.⁽¹³⁰⁾ Too often, emergency treatment is delayed due to a lack of community awareness about the signs of stroke. The 2017 Audit of Acute Stroke Services showed that just 36% of patients with stroke reached hospital within the critical 4.5-hour time window for life-saving thrombolysis (clot dissolving therapy).⁽¹³¹⁾ Recognition of stroke as a medical emergency remains a high priority.

F.A.S.T. (face, arm, speech, time) is a mnemonic for remembering the three main signs of stroke and the need to call for professional help, ensuring prompt access to treatment. The F.A.S.T. message is a globally adopted message with proven results locally and internationally. Public awareness campaigns using the F.A.S.T. message have shown increases in ambulance dispatches for stroke⁽¹³²⁾ and have led to a sustained improvement in patients' and bystanders' response after major stroke.⁽¹³³⁾

StrokeSafe program

A current 'volunteer-led' community education program has proven to be effective in community stroke education.⁽¹³⁴⁾ The Stroke Foundation's StrokeSafe program is a national, community-based, standardised education program for stroke, complementing large-scale media awareness campaigns.

F.A.S.T. for Aboriginal and Torres Strait Islander peoples

A current proposal exists to deliver a F.A.S.T. Aboriginal and Torres Strait Islander Education Program. The program would focus on delivering a public health initiative in partnership with Aboriginal and Torres Strait Islander Health Councils to provide targeted education to Aboriginal and Torres Strait Islander Health Workers (ATSIHWs) in regional communities. ATSIHWs are key navigators in effective Aboriginal health promotion. Their knowledge, community and family connectedness, professional roles, skills and experience in delivering healthcare to their communities, combined with their commitment to their communities mean that they are the most important first point of contact.⁽¹³⁵⁾ Adopting a train-the-trainer approach, the primary target audience for this program is ATSIHWs as they are vital in the provision of quality care to Aboriginal and Torres Strait Islander peoples. The train the trainer approach for the program can be an effective method for delivering a public health initiative and allows for the program to be tailored for local needs.⁽¹³⁶⁾

Priority Area 2

DIAGNOSIS AND TREATMENT

Introduction

All Australians need and deserve access to evidence-based care and treatment that is proven to save lives and improve outcomes. Addressing disparities in care among Australians is essential to improving outcomes and inequalities. All Australians should have equal access to efficient, effective and appropriate treatment and care, when and where it is needed. As Australia's population ages, the number of people living with multiple chronic conditions (multimorbidity) including heart disease and stroke is expected to rise.⁽¹⁰⁾ The complexity of treatment and the involvement of multiple health providers only adds to the challenges we must address.

The WHO outlines nine overarching principles which inform a comprehensive approach to treatment and management of chronic diseases, such as heart disease and stroke.⁽¹³⁷⁾ These elements include human rights approach, equity-based approach, national action, multisectoral action, life-course approach, empowerment of people and communities, evidence-based strategies, universal health coverage, and management of real, perceived or potential conflicts of interest. These concepts form the basis for implementation actions across the diagnosis and treatment priority.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.1

Improve management of people at high risk, or living with, heart disease and stroke through primary healthcare

There are inherent limitations to GPs and medical practitioners using the Australian Absolute CVD risk guidelines (2012) and corresponding CVD risk assessment tools (see Action 1.1.1 for further details).⁽¹⁵⁾

Data from Australian studies show that, in addition to the suboptimal estimation or calculation of CVD risk in primary care, there is a concerning under-treatment gap of individuals at high risk of a CVD event. Over 70% of people who are stratified at high risk of having a primary CVD event within five years, do not receive the recommended combination therapy to lower blood pressure and cholesterol.⁽¹⁴⁾

Historically, the adherence to the absolute CVD risk management guidelines has been poor, with evidence indicating Australians continue to be treated for individual risk factors, rather than for their overall risk of heart attack or stroke within the next five years.^(14, 24, 138-139) Primary care data also shows that 43% of high-risk patients are not prescribed cholesterol-lowering therapy, as recommended in the guideline.⁽¹⁴⁰⁾ More recent analysis of Australian general practice MedicineInsight data, reviewed by the National Heart Foundation in 2019, has shown that fewer than one in five adult Australians have a full complement of risk factors recorded, under a Heart Health Check.

There is an opportunity to greatly improve the detection and management of people stratified at high risk of a CVD event, by ensuring that they are identified appropriately and managed through lifestyle modification, and medication therapy where clinically appropriate.

A structured approach to improve the management of CVD risk within Australian general practice, is necessary. The implementation of systematic cardiovascular risk assessment in primary care settings has led to small but significant reductions in systolic blood pressure and cholesterol levels.⁽¹⁴¹⁻¹⁴²⁾ The Australian Government's Practice Incentives Program (PIP) Quality Improvement (PIP QI) now incorporates absolute CVD risk assessment methodology into the PIP QI program, and this is a positive step towards addressing gaps in system support.

The current Australian guidelines fall short of accurate assessment of predicted CVD risk among Aboriginal and Torres Strait Islander peoples.⁽¹⁵⁾ The guidelines recommend assessment from 35 years, which is no longer considered best practice. These outdated recommendations are also reflected in the Guidelines for preventive activities in General Practice 9th edition (Red Book).⁽¹⁴³⁾

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.2

Improve equity across cardiovascular treatment and care through national standards

During 2017-18, over 580,000 hospitalisations occurred due to CVD⁽¹¹⁴⁾ Disparity exists in cardiac treatment and care, along with the prevalence of heart disease risk factors, dependent on where a person lives and what services are available for treatment:⁽¹⁴⁴⁾

- If you live in one of Australia's most disadvantaged communities, you are almost twice as likely to be hospitalised for a heart-related condition; 50% more likely to die from ischaemic heart disease; almost 60% more likely to be obese; and 2.5 times more likely to be a current smoker than a person living in one of Australia's least disadvantaged communities.
- People living in very remote Australia have almost twice the rate of heart-related hospital admissions and die from ischaemic heart disease at 1.6 times the rate of those living in major cities.
- People living in outer regional and remote areas are also 50% more likely to smoke and 40% more likely to be obese than those living in our major cities.
- Australian residents born in Southern Asia, North Africa, the Middle East, Eastern Europe or Southern Europe have a higher chance of being admitted to hospital for a heart-related condition than those born in Oceania and Australia.
- Some Australians are at higher risk of heart disease simply because of their social status, income, education level, cultural background, or where they live.

Health inequalities are systemic, avoidable and unfair.⁽¹⁴⁴⁾ Equitable healthcare does not mean providing the same services for all people. It is about ensuring services are tailored to meet the health needs of the community. The risk of developing heart diseases, including ACS, unstable angina and heart failure increases the further one lives from a major city. Health improves with good education, secure employment, adequate housing, access to affordable, healthy food and culturally appropriate health services.⁽⁹³⁾ Health equity depends on empowered, respected and inclusive communities.

Standards to address CVD inequalities for Aboriginal and Torres Strait Islander peoples

The Essential Service Standards for Equitable National Cardiovascular Care for Aboriginal and Torres Strait Islander people (ESSENCE) project was established to define minimum service standards for the prevention, risk factor management and acute and chronic care that can provide a framework for evaluating progress in overcoming CVD inequalities in Australia.⁽¹⁴⁵⁻¹⁴⁶⁾

ESSENCE outline elements of care that are necessary to reduce disparity in access and outcomes for five critical cardiovascular conditions – ischaemic heart disease, chronic heart failure, stroke, rheumatic heart disease (RHD) and hypertension.⁽¹⁴⁵⁻¹⁴⁶⁾ The standards highlight that 'an agreed platform of acceptable and recommended care, available to and received by all Australians, may provide a vehicle for policy reform, service planning and ultimately a reduction in disparate health outcomes for Aboriginal and Torres Strait Islander peoples'.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.2 cont.

Improve equity across cardiovascular treatment and care through national standards

There is a strong evidence base to support inclusion of the ESSENCE standards into policy and practice, including the National Aboriginal and Torres Strait Islander Health Plan 2013–2023, recognising that they have a significant impact on reducing CVD differentials', highlighting the fact that there is a significant gap between what is defined as best practice and what is actually delivered to those in need.⁽¹⁴⁵⁾

The ESSENCE standards outline that in order to achieve successful implementation of the necessary standards, data on the availability, accessibility and quality of cardiovascular services must be addressed.⁽¹⁴⁶⁾ High-quality data is required to effectively track the real impact that policy is making on closing the gap and create opportunities to provide feedback loops to services to stimulate improved practice. An assessment of performance against that standards was conducted in South Australia. 28 measurement indicators, out of a possible 43, were reported against. These included measures of risk factor burden, activity and quality of care, and cardiovascular outcomes. The assessment found clear disparities in burden of disease and the quality of care provided to Aboriginal people. Aboriginal people in South Australia were 60% more likely to be hospitalised for a cardiovascular disease (age-standardised), but less likely to receive evidence-based care.⁽¹⁴⁷⁾

Importantly, the ESSENCE standards highlight the fact that unless Australia moves from 'social, policy and political intent to practical and resourced implementation of equitable care for all Australians, the gap between Australians defined by culture, ethnicity, location and socio-economic status may continue to widen'.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.3

Eliminate disparities in treatment of heart disease and stroke for Aboriginal and Torres Strait Islander peoples

The National Aboriginal and Torres Strait Islander Health Plan 2013–23 outlines 'health system effectiveness and clinically appropriate care' as one of its priorities, with the goal being a health system that delivers 'clinically appropriate care that is culturally safe, high quality, responsive and accessible for all Aboriginal and Torres Strait Islander peoples.'⁽¹⁴⁸⁾ The plan outlines key strategies to assist in achieving its goals, which align with improving disparities in treatment and care of Aboriginal and Torres Strait Islander peoples.

The Action Plan recognises that Australia has a world-class health system, however access is not equal by all Australians according to need.⁽¹⁴⁸⁾ Data shows that Aboriginal and Torres Strait Islander peoples access health services at an almost equal rate to non-Indigenous Australians, despite their need for health services being an estimated 2–3 times higher due to their poorer health status. They have also been shown to receive fewer procedures and prescriptions than non-Indigenous Australians with the same health conditions.

CVD remains a major cause of premature death in Aboriginal and Torres Strait Islander peoples, accounting for almost one-third of the gap in life expectancy between First Australians and the remainder of the population.⁽¹⁴⁹⁾ A much higher burden of CVD in Aboriginal and Torres Strait Islander peoples has been well documented, as well as significant disparities in and barriers to cardiac care, compared with the non-Indigenous population.⁽¹⁵⁰⁾ The reasons for these disparities are complex and multifactorial and include the burden of social determinants of health, cultural safety, communication problems and systemic problems of poor access to care.

Ischaemic heart disease was the leading cause of death for Aboriginal and Torres Strait Islander peoples in 2018, who were almost twice as likely to die from ischaemic heart disease than non-Indigenous Australians.⁽¹⁾ Death and hospitalisation rates occurs at younger ages in this population. In 2010–12, Aboriginal and Torres Strait Islander peoples aged 35–44 years were eight times more likely to die from ischaemic heart disease than non-Indigenous Australians.⁽¹⁵¹⁾ In 2013–14, this population were also found to be almost twice as likely as non-Indigenous people to be hospitalised with a principal diagnosis of CVD (age standardised), with the majority of the CVD hospital admissions for Aboriginal and Torres Strait Islander people under the age of 55.

The Better Cardiac Care for Aboriginal and Torres Strait Islander People project is an initiative of the Australian Health Ministers' Advisory Council (AHMAC) that aims to reduce deaths and ill health from cardiac conditions among Aboriginal and Torres Strait Islander peoples.⁽¹⁵²⁾ The project aims to achieve this by increasing access to services, better managing risk factors and treatment and improving coordination of care.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.3 cont.

Eliminate disparities in treatment of heart disease and stroke for Aboriginal and Torres Strait Islander peoples

Although some progress is being made toward better cardiac care for Aboriginal and Torres Strait Islander peoples, there is still significant work to be done. The most recent report on Better Cardiac Care measures for Aboriginal and Torres Strait Islander peoples highlights some examples of disparity in care. In 2015–16, Aboriginal and Torres Strait Islander peoples:⁽¹⁵²⁾

- Were less likely to use specialist services than non-Indigenous Australians, despite having a suspected or confirmed cardiac condition.
- Were less likely than non-Indigenous Australians to be reviewed by a specialist after a cardiac related procedure.
- Were almost twice as likely as non-Indigenous Australians to be hospitalised for cardiac conditions.

In 2013–14 to 2015–16, Aboriginal and Torres Strait Islander peoples were less likely than non-Indigenous people to be treated with evidence-based PCI after being hospitalised with a severe heart attack (59% compared to 78%).⁽¹⁵²⁾ The gap in provision of treatment for cardiac care between First Australians and the remainder of the population, is still wide.

With support from the Australian Government, the National Heart Foundation has worked with Aboriginal and Torres Strait Islander health organisations and other key partners to reduce the disparities in care faced by Aboriginal and Torres Strait Islander peoples who present to hospital with ACS. The Lighthouse Hospital Project has made significant progress to improve cultural awareness within participating hospitals, but gaps still exist in treatments received, and the outcomes, of Aboriginal and Torres Strait Islander people with ACS who are admitted to hospital.

Stroke care for Aboriginal and Torres Strait Islander peoples

The Australian Commission on Safety and Quality in Health Care Acute Stroke Clinical Care Standard (2015) aims to ensure that patients with stroke receive optimal treatment during the acute phase of management.⁽¹²³⁾ The Standard states that patients with ischaemic stroke for whom reperfusion treatment is clinically appropriate, and who have had brain imaging to exclude haemorrhage, should be offered a reperfusion treatment (e.g. intravenous thrombolysis) in accordance with the settings and time frames recommended in the Clinical Guidelines for Stroke Management.⁽¹⁵³⁾

Disparities in stroke care are well documented between Aboriginal and Torres Strait Islander people and non-Indigenous patients. The prevalence of cerebrovascular disease in Aboriginal and Torres Strait Islander people is double what is seen in the non-Indigenous population, which is reflected by a much higher hospitalisation rate for stroke for Aboriginal and Torres Strait Islander people.⁽²⁾ Disparities also exist in stroke death rates, with the greatest disparity in the 25-29-year age group. With the aim of reducing these disparities, the ESSENCE standards target enhanced access to time-sensitive assessment, transport, thrombolysis and imaging for patients.⁽¹⁴⁶⁾ Specialised in-hospital units and long term secondary prevention support are also priorities.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.3 cont.

Eliminate disparities in treatment of heart disease and stroke for Aboriginal and Torres Strait Islander peoples

In 2016, Aboriginal and Torres Strait Islander people were hospitalised for stroke at a rate 1.5 to 2.3 times higher than non-indigenous Australians.⁽¹⁵⁴⁾ They also suffered from stroke at a younger age and were 1.5 times as likely to die from a stroke compared with non-Indigenous Australians. The disparity in mortality between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians is likely influenced by multiple factors including late presentations to hospital, deficiencies in acute management, and inadequate follow-up.⁽¹⁵⁵⁾ The quality of care received in hospital is one important factor that can affect risk of death and disability. Aboriginal and Torres Strait Islander peoples receive reduced quality of care in hospital, for example being less likely to receive an allied health assessment during the first 48 hours after stroke, and less likely to be treated in a stroke unit than non-Indigenous patients.⁽¹⁵⁶⁾

Further, Aboriginal and Torres Strait Islander peoples are underrepresented in stroke rehabilitation services.⁽¹⁵⁷⁾ Many Aboriginal stroke survivors come from areas where rehabilitation services are limited or non-existent. In addition, allied health professionals report not feeling adequately prepared or confident to work with Aboriginal families.⁽¹⁵⁸⁾

NHMRC-funded projects 'Missing Voices' and 'Healing Right Way' have investigated and continue to investigate the barriers to accessing best-practice stroke care for Aboriginal and Torres Strait Islander peoples. The Missing Voices study investigated the impact of acquired brain injury, including stroke, in Aboriginal people across Western Australia.⁽¹⁵⁹⁾ Findings suggest that significant changes in service delivery are warranted. Following this work, the current Healing Right Way project aims to redress imbalance by improved delivery of rehabilitation services and overall health outcomes for people after stroke, and brain injury more broadly, and will conduct an economic evaluation to support the business case for funding new rehabilitation services.⁽¹⁶⁰⁾

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.4

Implement the Rheumatic Heart Disease Roadmap

No child born in Australia should die of RHD. RHD is a deadly condition mostly experienced in low- and middle-income countries.⁽¹⁶¹⁾

RHD and its precursor, Acute rheumatic fever (ARF), are preventable diseases that predominantly affect children, adolescents and young adults, and are important causes of premature mortality.⁽¹⁶²⁾ RHD disproportionately affects Aboriginal and Torres Strait Islander people living in remote Australia, who experience disease rates among the highest in the world.⁽¹⁶³⁾

Between 1977 and 2005, Aboriginal and Torres Strait Islander peoples were 18.9 times more likely to die from RHD than are their non-Indigenous peers. Almost all cases of RHD and associated deaths are preventable and in 2012, RHD Australia, in partnership with the National Heart Foundation and the Cardiac Society of Australia and New Zealand, released the Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease.⁽¹⁶²⁾

Between 2013-15, Aboriginal and Torres Strait Islander peoples were 7.8 times more likely than other Australians to be hospitalised for rheumatic fever and RHD.⁽¹⁶⁴⁾

In 2017, almost 6,400 people were living with living with ARF or RHD.⁽¹⁶⁵⁾ Prevalence rates are highest in the Northern Territory (NT), among females, and in particular, children aged 5–14 years at highest risk of a first episode of rheumatic fever.⁽¹⁶³⁾ The prevalence of RHD among Aboriginal and Torres Strait Islander peoples was 37 times the rate for non-Indigenous people overall in 2015, and a staggering 111 times greater for those aged 25 to 34 years.⁽¹⁶⁴⁾ Nearly 60% of new RHD diagnoses occur among people aged under 25 years.⁽¹⁶⁵⁾

The Resolution on Rheumatic Fever and Rheumatic Heart Disease adopted by the World Health Assembly in 2018 represents the first global commitment on RHD to be endorsed by all governments. This was a significant advancement for the CVD community, as this global policy demands national and international decision makers take action to prioritise and fund RHD prevention and control in all endemic settings.⁽¹⁶¹⁾

Tackling RHD has been a priority of the Australian Government since 2009. Australia's National Rheumatic Fever Strategy (RFS) aimed to improve the detection, data collection and monitoring systems, and management of ARF and RHD through State-based register and control programs in the Northern Territory, Western Australia, South Australia and Queensland. An independent review of the RFS, published in 2017, has helped to inform the Australian Government's commitment to prevention activities in high-risk communities.⁽¹⁶⁶⁾

In February 2018, the Commonwealth Department of Health commissioned the development of an RHD Roadmap, led by the National Aboriginal Community Controlled Health Organisation (NACCHO) in conjunction with RHD partners. The RHD Roadmap sets out a comprehensive, community-based approach to prevent Australians developing RHD.

Without a new, comprehensive approach to integrated disease control strategies, the number of people living with ARF or RHD is predicted to triple to nearly 15,000 by 2031.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.4 cont.

Implement the Rheumatic Heart Disease Roadmap

RHD is one of five Indigenous health priorities.⁽¹⁵²⁾ To eradicate RHD, the Minister's new Long Term National Health Plan commits significant Commonwealth investment, through dedicated Aboriginal Community Controlled Health Services, to achieve Close the Gap targets.⁽¹²⁾ Funding directed to communities and stakeholder groups to improve Aboriginal and Torres Strait Islander health must include implementation of the RHD Roadmap (currently under review with the COAG Health Council).

The release of the RHD Endgame Strategy in early 2020 is anticipated to provide a comprehensive strategy to implement the RHD Roadmap. Ongoing investment in Aboriginal and Torres Strait Islander leadership, community-driven change and co-ordination are critical to ensuring a framework to bring about an end to RHD in Australia.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.5

Continue to fund services for rural, regional and remote communities, including remote Aboriginal and Torres Strait Islander communities

On average, Australians in regional and rural areas experience poorer health outcomes than their metropolitan counterparts.⁽¹⁶⁷⁾ An Australian review of factors affecting urban-rural disparities showed that socioeconomic factors played an important role.⁽¹⁶⁸⁾

Poorer health outcomes experienced by Australians living in regional and rural areas are the result of numerous compounding issues. Compared to metropolitan areas, people living in rural and remote locations tend to have lower incomes, lower levels of education and employment and lifestyle differences, including food insecurity that is closely linked to obesity (arising from limited access to affordable healthy foods).

In addition, rural areas have fewer health professionals, reduced health infrastructure and higher costs of health care delivery. In 2017–18, potentially preventable hospitalisation rates in very remote areas were 2.5 times the rates in major Australian cities.⁽¹⁶⁷⁾

Aboriginal and Torres Strait Islander peoples experience a disproportionate burden of CVD, which is further exacerbated for those living in remote communities.⁽¹⁶⁷⁾ Aboriginal and Torres Strait Islander people living in remote Australia were twice as likely to report having heart and circulatory diseases as their counterparts living in major cities (20% compared with 10%).⁽¹⁶⁹⁾ They also experience double the rate of hospitalisations due to heart attack and heart failure. These factors are largely preventable.

To address the health deficit experienced by people living in remote and rural areas, the urgent development of a cross-jurisdictional national rural prevention strategy is needed. There is comprehensive evidence on effective service models in different contexts. A national framework is needed, that uses this knowledge to scale up local successes and works with rural communities to co-design and implement prevention strategies that address all relevant risk factors to improve equity in health outcomes.⁽¹⁷⁰⁾

A well-resourced and trained workforce is integral to addressing barriers to appropriate access and care for priority population groups. Rural, regional and remote communities have inequitable access to an appropriately skilled and well distributed workforce, particularly with access to allied health services, Aboriginal health workers and practitioners, specialist medical care, mental healthcare, reperfusion services and children's services.⁽¹⁶⁷⁾ Ongoing professional development, supervision and peer support for those working in rural, regional and remote Australia is integral to addressing workforce issues in these priority populations. Multidisciplinary care, involving an empowered and supported primary care team working together with specialists through outreach services or telehealth, is important for patients who are at high clinical risk and those living in remote areas.⁽¹⁵⁰⁾

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.1

Provide efficient, effective and appropriate treatment for all Australians

ACTION 2.1.5 cont.

Continue to fund services for rural, regional and remote communities, including remote Aboriginal and Torres Strait Islander communities

Access to services is an integral issue.⁽¹⁶⁸⁾ State governments should work closely with primary health networks to strengthen primary care services in rural areas, including addressing financial barriers to urgent care.⁽¹⁷⁰⁾ Telehealth services should be widely available to provide people outside metropolitan areas with access to specialist services. Ensuring there is adequate infrastructure in rural, regional and remote areas is essential to supporting such services. For digital health models to be implemented effectively, digital health inequalities need to be addressed.

Cultural safety and security are paramount to ensuring that actions and implementation to address improved services for Aboriginal and Torres Strait Islander peoples is successful. Access to specialist health services is linked to better healthcare outcomes for Aboriginal and Torres Strait Islander peoples.⁽¹⁷¹⁾ As an example, in 2010, an innovative model for providing specialist cardiac outreach services to Aboriginal and Torres Strait Islander peoples in rural and remote Queensland was established and successfully implemented. This model involved a comprehensive approach encompassing community engagement; delivering recovering interventions to improve health outcomes; building community capacity to self-manage chronic illness and promoting health and wellbeing, with the aim of community self-governance of chronic disease and health promotion.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.1

Improve the delivery of emergency stroke treatment to rural, regional and remote Australians through telehealth

Stroke is a medical emergency requiring urgent medical attention, but with the right treatment at the right time, many people recover.⁽¹³⁰⁾ Where you live should not impact your access to emergency stroke treatment and evidence-based care.

The 2017 National Stroke Foundation National Acute Audit found that among the 127 Australian participating hospitals (including 45 regional and one rural), only 53% of regional hospitals offered thrombolysis (clot dissolving therapy) as an acute stroke treatment 24/7, compared with 83% of metropolitan hospitals.⁽¹³¹⁾ This discrepancy is likely to be underestimated, as regional hospitals that participate in the audit process are more likely to employ clinicians with an interest in stroke.

Most stroke specialists, who play an essential role in diagnosing and treating stroke, work in metropolitan areas.⁽¹³¹⁾ People living in rural, regional and remote areas are therefore missing out on essential life-saving stroke treatment. Stroke telemedicine allows patient-practitioner consultations to be undertaken using audio-visual technology rather than face-to-face interactions, and stroke specialists are therefore able to review brain imaging and provide emergency treatment advice remotely.⁽¹⁷²⁾ There is strong evidence to show that this model of care increases timely identification of patients eligible for clot dissolving therapy and access to thrombolysis treatment.^(172, 173)

International studies indicate telestroke networks are cost effective from a long term, societal perspective, with the initial investment to establish the service balanced over the longer term by the reduced need for rehabilitation and advanced nursing care when there is increased use of clot dissolving therapy.⁽¹⁷⁴⁻¹⁷⁶⁾

Victorian Telestroke Service

A comprehensive telestroke service has been delivering stroke care in Victoria since 2010.⁽¹⁷⁷⁾ The service is an effective and sustainable model of stroke telemedicine for regional hospitals in Victoria, providing them with access to a network of neurologists. The service has seen many achievements, including a 30-minute reduction in door-to-needle time (the critical time period from arrival at hospital to scanning and thrombolysis), 23% increase in patients with acute stroke treated with thrombolysis within 4.5 hours of onset, and 130% increase in patients with acute stroke treated within 60 minutes of arrival in hospital. Research indicates that the benefits of the Victorian telestroke program extend beyond the direct patient and clinician involved in the clinical consultation to improved care coordination, capacity building for regional clinicians and hospitals, and increased awareness of the signs of stroke in regional communities.⁽¹⁷⁸⁾

A similar acute telestroke service trialled in South Australia found thrombolysis rates doubled, compared to an equivalent pre-trial period; reperfusion therapy was administered in 23% of cases; and importantly, unnecessary patient retrieval was avoided (53%).⁽¹⁷⁹⁾

State governments in Victoria, South Australia and Western Australia fund ongoing telestroke services while the stroke telehealth service in New South Wales is jointly funded between the Commonwealth and State Governments. However, there is no agreement to fund a national roll out of telestroke services.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.2

Establish standardised national, pre-hospital, time-critical responses for heart attack and stroke

Early recognition of the signs and symptoms of heart attack and stroke, and prompt transitions of care to appropriate acute services, are critical to ensuring optimal outcomes.^(131, 178, 180) Every minute counts from onset of symptoms and receiving treatment. In this hyperacute phase of care, ambulance services have a central coordinating role, working with clinicians in the emergency department, and the catheterisation laboratory/radiology and cardiology/neurology departments to deliver prompt care to patients. Communication between pre-hospital teams and in-hospital personnel is critical.⁽¹⁷⁸⁾

Barriers to calling an ambulance

Despite the time-critical nature of treatment, only 54% of heart attack patients treated in an Australian hospital reported travelling to hospital by ambulance.⁽¹⁸¹⁾

The decision-making processes that patients employ can lead to delays in accessing emergency medical services. In almost two-thirds of cases the patient made the decision to seek professional help, rather than a trained health professional e.g. helpline. Most decision-making processes considered factors of time, type and severity of symptoms, and cost.⁽¹⁸¹⁾

A significant number of Australians would not call an ambulance in a life-threatening emergency because they fear out-of-pocket costs. More than one in four Australian adults (27%) would be reluctant to call for an ambulance if they were experiencing signs of a heart attack due to the cost.⁽¹¹⁵⁾ Younger Australians, aged between 18 and 29 years, were less likely to call for an ambulance if they were experiencing signs of a heart attack, due to the cost, compared to those aged 30 to 65 years, or aged 66 years and over.⁽¹⁸²⁾ Similarly, those living in metropolitan areas were less likely to call for an ambulance if they were experiencing signs of a heart attack, due to the cost, than those living in regional, rural or remote areas.

Evidence indicates that when the barrier of out-of-pocket costs is eliminated (for example, in Queensland), more people with emergency conditions access ambulance care when needed and do not delay because of the threat of excessive ambulance service fees.⁽¹⁸³⁾ The introduction of universal access to community ambulance cover across Queensland has not had a significant long term impact on overall demand.⁽¹⁸³⁾

Pre-hospital notification

Ambulance services should pre-notify the hospital of a suspected stroke case where the patient may be eligible for reperfusion therapies.^(153, 184) Delivery of the right patient to the right treatment facility with prior notification enables access to reperfusion therapies in the shortest length of time.

A proven application for pre-hospital notification is Pulsara.⁽¹⁷⁸⁾ The Pulsara smartphone application streamlines communication between pre-hospital and in-hospital personnel in cases of suspected stroke or suspected ST-elevation myocardial infarction (heart attack).

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.2 cont.

Establish standardised national, pre-hospital, time-critical responses for heart attack and stroke

Implementing Pulsara in the Australian health services has improved patient flow, and delivered assessment, diagnosis and treatment more quickly, leading to reduced variation in care. Results of a recent pilot study in a Victorian regional hospital and 11 Ambulance Victoria branches have shown that the use of the application can reduce stroke door-to-needle times by 33 minutes. A 12-month evaluation is underway in two regional Victorian hospitals. A study in the US has shown that mean door-to-needle times post-app decreased 21 minutes (77 to 56 minutes), a 28% improvement.⁽¹⁵³⁾ In addition, patients meeting door-to-needle times of less than 60 minutes improved from 32% to 82% after the application's implementation. These results indicate that the application can improve acute treatment times by streamlining multi-disciplinary communication and improving coordination of care.

The Australian Commission for Safety and Quality in Health Care (ACSQHC) published the Acute Coronary Syndromes Clinical Care Standard which recommends that patients with acute chest pain or other symptoms suggestive of an ACS receive a 12-lead electrocardiogram (ECG) and the results are analysed by a clinician experienced in interpreting ECG within 10 minutes of the first emergency clinical contact.⁽¹⁸⁵⁾ The Standard states that health services should ensure systems and processes are in place in the pre-hospital and hospital setting to assess patients with symptoms of an ACS. International data also recommends the use of pre-hospital ECGs; however, pre-hospital notification is utilised in only 10–25% of patients with ST Elevation Myocardial Infarction (STEMI – a form of heart attack), and coordination with the receiving hospital is not always effectively translated.⁽¹⁸⁶⁾

The use of pre-hospital ECG in consultation with the interventional cardiologist has resulted in a significant reduction in door-to-balloon times (the critical time period from arrival at hospital to perfusion) for Primary PCI and a trend towards increased six-month all-cause mortality benefit.⁽¹⁸⁷⁾ Further investigation into the use of pre-hospital ECGs and initiation of therapy in the Australian setting is warranted; but adoption of an early response strategy should be strongly encouraged for suspected heart attack patients transported by ambulance.

Stroke capable ambulances

Australians living in rural and regional areas are 19% more likely to have a stroke. To expedite access to appropriate care, portable brain imaging tools are being developed and tested under the Australian Government's Medical Research Future Fund (MRFF) Frontiers initiative. Air and road ambulances will ultimately be equipped with lightweight mobile equipment and telehealth capability to transform access to stroke specialists, who are largely based in major cities.

Stroke capable ambulances provide the opportunity to deliver expert stroke care to the patient at first response, ensuring emergency time-critical treatments can be delivered prior to hospital arrival.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.2 cont.

Establish standardised national, pre-hospital, time-critical responses for heart attack and stroke

A mobile stroke ambulance, Mobile Stroke Unit (MSU), currently operates in Victoria, carrying a built-in CT scanner, telemedicine equipment and a mobile laboratory. The ambulance is staffed by a neurologist, stroke nurse, radiographer and paramedic, enabling a specialist stroke team to quickly evaluate a patient and deliver life-saving thrombolysis in the field. Results of the current Victorian Stroke Ambulance research pilot, involving 400 cases (41% of pilot cohort) show the Stroke Ambulance has: ⁽¹⁸⁸⁾

- Delivered reperfusion therapy almost 60 minutes earlier (97 minutes vs. 156 minutes).
- Reduced the time to clot removal (endovascular thrombectomy - removal of a clot by a retractable mechanical device) (162 minutes vs. 234 minutes).
- Treated more patients within the first hour after symptom onset compared to hospital (Hospital 2% vs. MSU 12%).
- Reached a previously untreated group of patients – 10% of all treated patients would not have qualified for thrombolysis at all if not for the Stroke Ambulance's prompt response.

The first Mobile Stroke Unit, or 'stroke ambulance', was successfully implemented in 2010 in Hamburg in Germany, and was followed by the launch of a second MSU in Berlin in 2011. ⁽¹⁸⁹⁾ Following promising results in both German sites, the first MSU in the US was launched in Houston Texas in 2014. Since then MSUs have been launched in several US cities, as well as in Canada, Norway and Argentina. The number of MSUs worldwide continues to increase every year.

Results from the first MSU randomised control trial demonstrated that pre-hospital stroke treatment significantly reduced the average time from onset to therapy decision from 76 minutes to 35 minutes, with no impact on safety. ⁽¹⁹⁰⁾ In addition, the number of patients with a door-to-needle time of less than 60 minutes increased significantly in the MSU group. This high rate of patients with a door-to-needle times of less than 60 minutes with MSU implementation has also been demonstrated in the US. ⁽¹⁹¹⁾

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.3

Develop and implement a national endovascular thrombectomy and thrombolysis plan

Recent advancements in time-critical therapies are saving lives and reducing disability in stroke survivors. The phrase 'time is brain' refers to the fact that the longer you wait to treat a stroke, the more damage is done to the brain.⁽¹³¹⁾ Importantly however, only a limited number of Australians have access to time-critical treatments for stroke.

Thrombolysis involves administering a drug which can break down and disperse a clot that is blocking a blood vessel and preventing blood from reaching the brain.⁽¹⁹²⁾ Prompt treatment with thrombolytic drugs can restore blood flow before major brain damage has occurred and assist people to make a good recovery from their stroke.^(186, 192)

Endovascular thrombectomy is a highly effective treatment and has been shown to increase the odds of independence 90 days post-stroke two-fold, whilst decreasing the odds of death by 30%.⁽¹⁹³⁾ As well as saving lives, this treatment is proven to be cost effective.⁽¹⁹⁴⁾

The Australian Clinical Guidelines for Stroke Management (2017, updated to living guidelines in 2019), strongly recommend that eligible stroke patients should receive intravenous thrombolysis while endovascular thrombectomy is concurrently arranged, with neither treatment delaying the other.⁽¹⁵³⁾

Significant disparity exists in access to these life-saving proven treatments for stroke. The 2017 Audit of Acute Stroke Services captured this variation.⁽¹³¹⁾ In the Australian Capital Territory thrombolysis availability was 100%, in Victoria it was 90%, but in Western Australia thrombolysis availability was only 31%. Similarly, variation exists in availability of endovascular thrombectomy services across the country. Australia continues to be well behind indicators of efficiency for patients accessing time-critical treatments. Only 30% of appropriate patients accessed thrombolysis within 60 minutes of hospital arrival⁽¹³¹⁾, compared to 59% in the US and 62% in the UK.^(34, 195)

Systems of care need to be redesigned to offer endovascular thrombectomy and thrombolysis to eligible patients. Clear clinical pathways and protocols are needed at a national level to ensure all Australian patients with stroke have access to these life-saving treatments when they need it.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.4

Improve access to specialised stroke units

Stroke unit care is characterised by provision of care in one location by a multidisciplinary team including medical, nursing and allied health professionals (occupational therapists, physiotherapists, speech pathologists, social workers and dietitians) that exclusively manage stroke patients.⁽¹³¹⁾ Evidence to support the effectiveness of stroke unit care is well established. Stroke patients who receive organised inpatient care in a stroke unit are more likely to be alive, independent, and living at home one year after their stroke.⁽¹⁹⁶⁾ Appropriate staffing of these stroke units has been shown to be essential; for example, presence of stroke care coordinators is associated with reduced length of stay and improved delivery of evidence-based care in hospitals with a stroke unit.⁽¹⁹⁷⁾

In Australia, audit results of stroke services in 2017 showed that 41% of stroke patients were not cared for in a stroke unit during their acute admission.⁽¹³¹⁾ Of those who did receive care in a stroke unit, less than half spent at least 90% of their acute hospital stay in a stroke unit.

In Australia, criteria to define a stroke unit are outlined in the National Acute Stroke Services Framework 2019.⁽¹⁹⁸⁾ However, a national accreditation program of these services does not exist in Australia. Accreditation programs are used internationally to reduce variations in standards of care in stroke units and to improve access to high-quality stroke units. The results of a limited number of large observational studies (between 30,000 and 1.2 million patients) have shown that compared with non-accredited hospital admissions, patients admitted to primary stroke centres in the US experience:

- Lower rates of in-hospital adverse events such as pneumonia and sepsis.⁽¹⁹⁹⁾
- Lower in-hospital, 30-day and one-year mortality rates.⁽²⁰⁰⁻²⁰²⁾
- Higher rates of thrombolysis.^(199, 202-203)

These findings suggest that rigorous stroke unit and stroke centre accreditation programs have the potential to improve the quality of stroke care and patient outcomes.

Priority Area 2

DIAGNOSIS AND TREATMENT

OBJECTIVE 2.2

Ensure treatment and care is accessible when and where it is needed

ACTION 2.2.5

Improve access to transient ischaemic attack (TIA) clinics

Transient ischaemic attacks (TIAs) are predictors for subsequent stroke, with the high risk of disabling and fatal stroke being the basis for a recommendation from clinical guidelines for urgent intervention.⁽¹⁵³⁾ All patients with suspected TIA should have urgent clinical assessment due to the high risk of stroke within the first few hours and days after a TIA. It is highly recommended that all hospital services develop a local TIA pathway involving primary care, emergency department, and stroke specialist teams to ensure patients are managed as rapidly and comprehensively as possible, matching locally available resources.

TIA clinics offer a model of rapid, comprehensive assessment and treatment of risk factors as an alternative to hospital admission. TIA clinics have been shown to offer substantial cost savings compared with routine hospital admission, without increasing risk of stroke.⁽²⁰⁴⁾ The National Audit of Acute Services (2017) found that only 29% of acute services reported access to a rapid access TIA clinic for patients not admitted to hospital, and the average wait time for patients to access these clinics was twice as long as the recommended 48 hours.⁽¹³¹⁾

Other models for TIA management can be considered provided they ensure rapid assessment and initiation of treatment to reduce the risk of stroke, and appropriate local referral pathways, in line with clinical guidelines.

Australia's geographical and population density, and ageing population, adds complexity to the delivery of equitable cardiovascular services. The complexity of treatment and the involvement of multiple health providers adds to the challenges that must be addressed.

Priority Area 3

SUPPORT AND CARE

Introduction

Heart disease and stroke have major impacts on the lives of Australians. For many, these impacts limit their quality of life, and for some they last a lifetime. With improvements in healthcare, more people are surviving cardiovascular events but may be faced with long term disability which can result in prolonged physical, psychological, social and financial consequences.⁽²⁰⁵⁾ CVD can have a significant impact on individuals, their families and communities. Additionally, there is a large cost to governments via lost productivity and increased healthcare expenditure.⁽⁹³⁾ People living with heart disease and stroke, and their loved ones, need ongoing support to live well, resume their previous roles and activities and prevent recurrent cardiovascular events. People living with heart disease and stroke should be at the core of rehabilitation and support programs with initiatives tailored to their needs. Programs must be evidence based, person-centred and delivered in flexible formats to enable high levels of participation.

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.1

Improve access to high-quality rehabilitation services

ACTION 3.1.1

Improve access to best practice cardiac rehabilitation services

Access and completion – under-utilisation of cardiac rehabilitation

Despite national and international guidelines advocating for referral to cardiac rehabilitation (CR) services for patients post-ACS,^(116, 206) referral, uptake and completion of CR in Australia remain low.

More than 57,000 Australians are hospitalised each year due to heart attack.⁽¹¹⁴⁾ Over 10 years (2008–09 to 2017–18), hospitalisations due to heart attack have grown on average by 0.3 percent each year.

Those who survive their heart attack, are at greater risk of a repeat event, with repeat events counting for more than one-third of hospital admissions for heart attacks.^(126, 207, 208) Of note, repeat heart attacks have also been shown to carry a higher risk of being fatal, particularly among women.⁽¹²⁶⁾ In 2010, one in five repeat heart attacks resulted in death, compared to only one in 10 initial events.⁽¹²⁶⁾

Geographical, population density and limited service availability inhibit patient access to CR services in rural and remote areas. An Australian and New Zealand audit stated a referral rate of only 46% of those eligible, which is supported by National Heart Foundation patient data.^(88, 209) Moreover, once referred to CR services, attendance rates remain low. Only 30% of eligible patients complete CR⁽¹²⁶⁾, well below the UK's NHS's gold standard target of 65%. Referral to CR should be embedded as a standard component of the hospital discharge process, supported by stable funding arrangements for CR programs, and consistent measurement indicators to monitor performance.

Patients at the highest risk (for example, those who have adverse risk profiles and poorer knowledge of risk factors) are the least likely to attend CR.⁽²¹⁰⁾ These may include:

- Aboriginal and Torres Strait Islander people, with documented participation rates in CR of less than 5%.⁽²¹¹⁾
- People living in rural and remote areas are also less likely to attend CR, largely due to geography, population density and service availability.⁽²¹²⁾
- People who are socially isolated.⁽²¹³⁾
- Women, who are 55% less likely to attend CR, compared to men.⁽²¹⁴⁾
- The elderly (>70 years of age), who are less likely to attend CR than younger patients.⁽²¹⁴⁾

Barriers to attendance

Attendance is impacted by a range of barriers at the system and service level (e.g. lack of referral), along with physical (e.g. lack of transport, work commitments) and personal barriers (e.g. a personal belief that CR will not benefit).^(214, 215) The reported barriers to participation in metropolitan and traditional hospital-based CR programs have included older age, female gender, lower education levels, a lack of perceived benefit, work or time constraints, transport difficulties, lack of referral, limited availability of programs, lack of reimbursement, and limited social or family support.⁽²¹⁶⁾ Additional barriers to participating in CR, including poor access and extensive travel times, are reported by rural and remote patients.⁽²¹²⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.1

Improve access to high-quality rehabilitation services

ACTION 3.1.1 cont.

Improve access to best practice cardiac rehabilitation services

The emotional stressors and challenges of a heart event can significantly impact patients' quality of life and adherence to therapy. Routine screening is recommended.⁽²¹⁷⁾

Benefits of increasing CR attendance

Attending CR is not only critical to saving lives, reducing avoidable hospital readmissions and improving quality of life, it is also good for the health of our economy.⁽²¹⁸⁾ CR can reduce hospital readmissions and death within the first year following a coronary event, by 56% and 30%, respectively. If over a 10-year period, uptake of CR increased from the current 30% to 65% (in keeping with international good practice), net financial savings would increase by \$86.7 million, and there would be net social and economic benefits of \$227.2 million in the state of Victoria alone. This highlights that it is critical that action is taken to reduce costly readmissions and the burden of heart disease.

Alternate delivery models of care

To help overcome some of the barriers to CR attendance, there has been increasing availability and evidence of alternative modes of delivery of CR, including phone-based, home-based and online.⁽²¹⁹⁻²²³⁾ People living in regional, rural and remote communities will benefit through improved access and via alternative models of care that are flexible and patient-centred, allowing patients and carers to access CR services in the way that best suits them.

The implementation of home-based CR, case management and, more recently, telephone coaching programs that are flexible, multifaceted and integrated with the patient's primary healthcare provider have been shown to be effective in Australia.^(219, 222-224) The COACH (Coaching patients On Achieving Cardiovascular Health) program (TCP) was introduced in 2009 by Queensland Health to assist people diagnosed with chronic diseases and to reduce the risk of future complications, through providing ongoing secondary prevention and lifestyle modification advice and support.^(219, 224) The program has been shown to be superior to usual medical care in reducing risk factor levels in two studies.

Evaluation of TCP programs showed similar reductions in risk factors in both Aboriginal and Torres Strait Islander peoples and non-Indigenous peoples, suggesting that such a program can be successfully applied across different populations and cultures.⁽²²⁴⁾

Culturally appropriate models for Aboriginal & Torres Strait Islander peoples

There is a need to improve access to best practice, culturally appropriate CR services for Aboriginal and Torres Strait Islander peoples. Despite this population having twice the rate of readmission or death within the first two years of a heart attack,⁽²²⁵⁾ less than 5% attend CR.⁽²¹¹⁾ Aboriginal and Torres Strait Islander peoples are reluctant to attend CR due to a range of barriers, including cost, transport difficulties, inflexible scheduling, and a lack of access to culturally appropriate services.⁽²²⁵⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.1

Improve access to high-quality rehabilitation services

ACTION 3.1.2

Improve access to best practice stroke rehabilitation services

Rehabilitation is a holistic process that should begin early after stroke, with the aim of maximising participation of the stroke survivor in the community. Stroke rehabilitation improves function in the immediate and long term and increases independence.⁽²¹²⁾ Any stroke patient with identified rehabilitation needs should be referred to a rehabilitation service.⁽¹⁵⁵⁾ The latest Cochrane review of the evidence for inpatient care for people with stroke stated that 'there are no firm grounds for restricting access (to rehabilitation) according to a person's age, sex, stroke severity or pathological stroke type.'⁽²³⁰⁾

Assessment for Rehabilitation Tool

According to the Australian Clinical Guidelines for Stroke Management (2017, updated 2019)⁽¹⁵³⁾, every stroke patient should have their rehabilitation needs assessed within 24–48 hours of admission to the stroke unit, using the Assessment for Rehabilitation Tool. However, a recent study found that the ongoing rehabilitation needs were not being assessed in 43% of stroke patients, and many of these patients were consequently not referred to rehabilitation services.⁽²³¹⁾

Models of rehabilitation

Rehabilitation as a process can occur in a variety of settings, including in hospital on acute or specialised rehabilitation wards, in the home, or in community outpatient settings. Different models of care for rehabilitation services should be available to ensure services promote access and can be individually tailored.

An example of an alternative model is an early supported discharge (ESD) service, which is supported by the Australian Guidelines for Stroke Management (2019).^(153, 232) Early supported discharge services allow patients to return home from hospital earlier than usual and receive rehabilitation in the familiar environment of their own home. Appropriately resourced early supported discharge services can reduce long term dependency as well as reduce length of stay in hospital.⁽²³³⁾ Early supported discharge services following stroke unit care have also been proven to be cost effective.⁽²³⁴⁾ However, an audit of stroke services found very few sites nationally (11%) reported access to an early supported discharge service.⁽¹³¹⁾

Pilot and evaluate models to support ongoing review

Consumer surveys of stroke survivors and carers support the need for services and support in transitioning between services, and the ongoing monitoring of needs after formal service provision has ceased.^(235, 236)

The need for ongoing reviews and monitoring of stroke survivors has also been identified in a previous CVD strategy.⁽²³⁷⁾ One outcome of ongoing review or monitoring could be the identification of newly emergent needs that require re-entry into formal service provision or referral to subsets of service provision.⁽²³⁸⁾

There are various tools available to support health professionals in comprehensive reviews of stroke survivors in the chronic phase, such as the Chronic Stroke Review Tool and Intervention Guide and the Post Stroke Checklist that has been endorsed by the World Stroke Organization.^(239, 240) However, there are no consistent formal mechanisms in place to ensure stroke survivors are reviewed in the community, so that their health and emotional needs can be met.

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.1

Improve access to high-quality rehabilitation services

ACTION 3.1.3

Expand digital health approaches, including telehealth, to improve access to allied health services and rehabilitation

Telehealth includes the use of any technology to remotely promote wellbeing, assess health status or manage disease.⁽²⁴¹⁾ It can also be described as telemedicine, telehealth, telemonitoring and telecare. Telehealth has emerged as an innovative way of delivering health interventions, as the technology can be harnessed to address the limited access to specialist services and rehabilitation programs in rural, regional and remote areas, as well as consider patient preference. As a result, the American Heart Association has published a policy statement on the Recommendations for the Implementation of Telehealth in Cardiovascular and Stroke Care.⁽²⁴²⁾

Telehealth to support accessible models of secondary care and rehabilitation

Telehealth in the context of secondary care and rehabilitation can include phone, internet, and videoconference communication between patient and healthcare provider. However, these programs are safest in low to moderate risk heart and stroke patients. Choices should reflect patient preferences, risk profile, funding, and accessibility to health services.

A recent systematic review provides evidence that indicates telehealth stroke rehabilitation interventions have better or equal effects on motor, higher cortical and mood disorders compared with conventional face-to-face therapy.⁽²⁴³⁾

Telehealth interventions have also been found to be effective for heart disease management, including significantly lower rehospitalisation or cardiac events, improved lipid profile, systolic blood pressure, and smoking cessation.⁽²⁴⁴⁾ They have also been shown to have similar outcomes to centre-based CR for weight, exercise capacity, diastolic blood pressure, mortality, quality of life and psychosocial state.⁽²⁴⁵⁾

A systematic review of telehealth exercise-based CR found it to be at least as effective as centre-based exercise CR for improving modifiable cardiovascular risk factors and functional capacity. It is more effective in enhancing physical activity level and exercise adherence.⁽²⁴⁶⁾

The reported benefits of telehealth to patients in rural and remote areas includes lower costs and reduced inconvenience while accessing specialist health services, improved access to services and improved quality of clinical services.⁽²⁴⁷⁾ However, CR and secondary prevention trials such as ProActive Hearts and TEXTMe have demonstrated that alternative models via telehealth are also popular for people living in metropolitan areas.⁽²²⁰⁻²²¹⁾

Access to specialists via telehealth

Video consultations with specialists have been rebated by Medicare since July 2011 as a means of increasing access to specialist care in rural areas, aged care facilities and Aboriginal health services. However, some specialists have had greater proportional uptake (e.g. geriatrics and psychiatry) and there are still gaps in services. There is a high need for the Medicare rebate for telehealth to also cover allied health consultations.

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.1

Improve access to high-quality rehabilitation services

ACTION 3.1.3 cont.

Expand digital health approaches, including telehealth, to improve access to allied health services and rehabilitation

Telehealth via videoconference enables patients to receive quality care closer to home via telecommunication technology, improving access to specialist healthcare for people in regional communities and reducing the need to travel for specialist advice. Telehealth outpatient clinics are also offered across a range of clinic types, including cardiology.⁽²⁴⁸⁾

In 2016, the Victorian Stroke Clinical Network funded a tele-neuropsychology in stroke rehabilitation service (TNSR) piloted at Echuca Regional Health in collaboration with Monash University. Only 39% stroke survivors had access to psychological services in metropolitan hospitals, and only 4% in regional areas. The aim of the pilot was to examine whether TNSR improves clinician assessment and management of patient mood impairments post-stroke and build capacity within the inpatient regional rehabilitation team.⁽²⁴⁹⁾ Data from the pilot supported the feasibility, acceptability, effectiveness and efficiency of tele-neuropsychology. In addition, economic simulations indicated that TNSR service costs are approximately half that of an equivalent face-to-face service. The TNSR has successfully addressed a service gap and is a feasible and economically viable model for increasing access to neuropsychology intervention. The Victorian Stroke Clinical Network scaled up the TNSR project to three additional rural hospitals, with tele-neuropsychology services delivered from a new metropolitan-based clinical hub.

In Western Australia, the Western Australia Country Health Service (WACHS) Acute TeleStroke Service is linking the rehabilitation team in Geraldton Hospital with stroke rehabilitation specialists at Osborne Park Hospital in Perth using mobile wireless telecarts.⁽²⁵⁰⁾ This is enabling stroke survivors to undertake rehabilitation locally rather than being transferred to Perth. The TeleStroke TeleRehab clinical service began in April 2018 and aims to improve health outcomes for WACHS residents through timely and equitable access to specialist stroke rehabilitation care closer to home.⁽²⁴⁶⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.2

Improve the patient and carer journey from hospital to the community, through multidisciplinary, coordinated care

ACTION 3.2.1

Improve transition of care from hospital to the community

Discharge is one of the most crucial transitions in care, with potential impact on patient outcomes post-discharge, including readmission. The aim of discharge planning is to reduce hospital length of stay and unplanned readmission to hospital, and to improve the co-ordination of services following discharge from hospital.⁽²⁵¹⁾ Importantly, the hospital's responsibility for the patient does not end at the time of discharge but extends until the GP assumes responsibility for patient care following hospitalisation. As such, timely and accurate communication between the hospital and the GP is a vital component of a safe transition from inpatient to primary care. This communication directly impacts the continuity of care, patient outcomes, patient and caregiver satisfaction, and use of healthcare resources.⁽²⁵²⁾ Poor communication during discharge reportedly results in adverse events post-discharge, with evidence indicating that the danger for patients at discharge is often related to medication reconciliation, adverse drug events, and pending test results or testing needed after hospitalisation.^(252, 253)

Discharge planning

Evidence highlights that effective discharge planning is associated with long term prognosis of patients with ACS. The national ACS Clinical Care Standard recommends that prior to discharge from hospital, patients with ACS are involved in the development of a written, culturally appropriate, individualised care plan, addressing factors such as gradual physical activity, adherence to medication, smoking cessation, psychosocial needs, and includes referral to a CR program or other secondary prevention program.⁽¹⁸⁵⁾ It is advised that this plan is provided to the patient and their GP or ongoing clinical provider within 48 hours of discharge. A challenge in discharge planning for ACS care is the extensive amount of complex information which must be shared quickly and accurately with all stakeholders.

Evidence-practice gaps exist in the continuum of care for patients with ACS, particularly at hospital discharge. Findings of a baseline audit for the Discharge Management of ACS (DMACS) project showed that despite the robust evidence base and availability of Australian Clinical Guidelines for the management of ACS⁽¹¹⁶⁾, the management of ACS can be improved as only 83% of patients had a documented ACS management plan at discharge.⁽²⁵⁴⁾ Of these, 90% included a medication list, 56% had a chest pain action plan and 54% provided risk factor modification advice, but only 67% included a referral to CR. Systems and tools are available to lower this risk.

Care planning in stroke

A range of physical, psychosocial, social and financial consequences can create challenges for the stroke survivor's adjustment to life in the community following discharge.

Effective discharge care planning facilitates the transfer of the stroke survivor to the community by maximising independence, minimising social isolation and ensuring that the needs of the patient and carer are addressed. Carers often report lack of preparation for living with stroke in the community.

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.2

Improve access to high-quality rehabilitation services

ACTION 3.2.1 cont.

Improve transition of care from hospital to the community

Discharge care planning covers a variety of areas, including educating patients about lifestyle modifications that can help reduce their stroke risk, and providing stroke survivors, their family members and carers with information on relevant supports and services in the community.

Evidence indicates that discharge care planning, which is recommended in the Clinical Guidelines for Stroke Management and is an indicator in the Acute Stroke Clinical Care Standard,⁽¹⁸⁵⁾ can reduce hospital readmission and length of stay.^(251, 255) In addition, the quality of discharge care planning has been positively related to quality of life for stroke survivors, following discharge.⁽²⁵⁶⁾

Importantly however, the 2017 Audit of Acute Stroke Services reported that over one-third of patients were discharged from hospital without a care plan.⁽¹³¹⁾

Multidisciplinary care programs for heart failure patients

HF is increasingly widespread, characterised by high morbidity, mortality and poor quality of life. There are gaps in the transition of care and management for people with heart disease and specifically HF patients.

Access to multidisciplinary care programs for HF patients, including telemonitoring and telephone support programs, especially where access to face-to-face multidisciplinary HF disease-management programs after discharge, is inconsistent. Rural, regional and remote communities are most affected. Access to and expansion of nurse-led medication titration clinics and telemonitoring services for HF patients could also help to alleviate this gap in care and management.

Hospital readmissions are common in HF patients and often occur within the first 2–4 weeks of discharge.^(257, 258) These admissions are often avoidable through case management by specialist multidisciplinary services, aimed at identification of early deterioration, up titration of guideline-directed medical therapy, and patient and carer education.⁽²⁵⁹⁾ There is strong evidence supporting multidisciplinary management of HF as this reduces rehospitalisation and mortality.⁽²⁶⁰⁾ Referral to these programs is recommended as standard care for patients at high risk of rehospitalisation.⁽²⁶¹⁾ As many people living with HF have complex co-morbidities and chronic diseases, including stroke, management requires an integrated, multidisciplinary and comprehensive disease management approach. People living with HF can endure symptoms that rapidly worsen, and they are particularly susceptible to decompensation in the first weeks' post-discharge. It is important that referrals are followed up quickly and waiting lists are avoided.

All HF patients with high risk features, regardless of aetiology, should be considered for enrolment into a HF disease management program.⁽²⁶¹⁾ These programs cover both HF with reduced ejection fraction (HFrEF), and HF with preserved ejection fraction (HFpEF). It is recommended that multidisciplinary programs focus on patients at increased risk of premature morbidity and mortality (e.g. aged >65, more severe HF, lower socioeconomic status, language barrier, multimorbidity, and social isolation).

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.2

Improve the patient and carer journey from hospital to the community, through multidisciplinary, coordinated care

ACTION 3.2.1 cont.

Improve transition of care from hospital to the community

Multidisciplinary HF disease management programs comprise input from range of HF specialists, including HF advanced practice nurses and pharmacists, who are collectively involved in the management of HF patients during their transition home after hospital discharge, with frequent home visits.⁽²⁶¹⁾ In areas or populations where access to a face-to-face multidisciplinary HF disease management program after discharge is limited, other models of disease management programs include telemonitoring and telephone-supported programs which significantly decrease mortality and rehospitalisation.^(262, 263)

Nurse-led medication titration clinics for indicated heart failure patients

Australian guidelines recommend that clinicians should also consider models of care that optimise medication titration (e.g. nurse-led titration clinics).⁽²⁶¹⁾ Nurse-led medication titration (NLT) clinics are recommended in patients with HFrEF who are stable and euvolaemic and have not achieved maximum tolerated doses of prescribed medication. These clinics have been shown to be effective in reducing the time to achieve optimal dose medication, reducing rehospitalisation and improving survival in patients with HFrEF.⁽²⁶⁴⁾ It is recommended that these clinics involve a nurse practitioner or advanced practice nurse experienced in HF supported by a cardiologist or physician with an interest in HF.⁽²⁶¹⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.2

Improve access to high-quality rehabilitation services

ACTION 3.2.2

Improve post-discharge support services for people with heart disease and stroke, and their carers

Dedicated helplines – National Heart Foundation Helpline and StrokeLine

For 21 years, the National Heart Foundation's Helpline has provided free, personalised information and support on heart health, modifiable risk factors and steps to a healthy lifestyle to Australians.

The service has predominantly responded to public enquiries, and while community awareness of the National Heart Foundation's Helpline is low at ~20%, the majority (85%) of adult Australians believe it is important that the National Heart Foundation provides this free service to the general public and health professionals.⁽¹¹⁵⁾

Those who have used the service are more likely to be males, young adults (18 to 29 years), and those who speak a language other than English. Through user experience research, patients with ACS and Heart Failure have expressed a need for the service, which is seen as providing the most benefit at the beginning of their diagnosis by assisting them to clarify aspects in the management of their condition that they don't understand.⁽²⁶⁵⁾

Through a trial, the National Heart Foundation's Helpline provides telehealth prevention program run by cardiac health professionals.

National post-discharge support services

Queensland Health has developed a standard for Heart Failure Support Services (HFSS) to ensure that all patients with symptomatic HF have access to appropriate specialist medical review and management, as well as coordinated nursing and allied healthcare.⁽²⁶⁶⁾ As part of this, discharge from the HFSS service depends on availability of local health providers such as GPs and domiciliary care. Prior to HFSS discharge, all patients (or their family or care givers) should, at a minimum:

- Be able to self-manage, recognise worsening symptoms, have an action plan and know how to use it (or have a carer and/or support services organised if required).
- Know how to exercise safely according to his or her condition and participate in lifelong activity.
- Be in the care of a GP (and specialist outpatient or palliative care if required).
- Have reached optimal tolerated doses of heart failure medications (if HFrEF) and have a medication plan provided to the GP (titration by GP still requires involvement by HFSS until target is achieved).

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.2

Improve the patient and carer journey from hospital to the community, through multidisciplinary, coordinated care

ACTION 3.2.2 cont.

Improve post-discharge support services for people with heart disease and stroke, and their carers

Stroke Foundation's Stroke Outreach Program (StOP)

Stroke Foundation's StOP Program, which is currently being delivered in Tasmania, provides planned, individualised and coordinated education at a key point in an individual's stroke journey. It targets stroke survivors post-discharge from hospital, when they are highly motivated to act but often lack the knowledge and skills needed to effectively reduce their risk of subsequent stroke and live well. It provides mood screening and promotes attendance at outpatient appointments and connections with primary care, to ensure ongoing medical management.

StOP has two key components:

- Education and support for hospital clinicians, which enables health professionals to deliver targeted secondary prevention education and recovery planning for stroke survivors.
- Contact with the stroke survivor from a National Stroke Foundation health professional within 21 days of discharge from hospital.

StOP will increase the number of stroke survivors who are screened for risk and vulnerability, including mood disorders, and provide connections to appropriate services.

A similar National Stroke Foundation program, StrokeConnect Follow-up Service, has been running in Queensland since 2011, and has delivered excellent results for stroke survivors in that State.⁽²⁶⁷⁾

Better connected primary healthcare

Secondary prevention strategies (including adherence to evidence-based medication, biomedical management and living healthily) are a cost-effective way of reducing the associated morbidity and mortality from CHD.^(268, 269) However, once people leave hospital only about 50% adhere to recommended medicines and at best 30% achieve lifestyle modification. A more sustained and systematic approach is needed to strengthen secondary prevention in primary care. Overall, sustained implementation of secondary prevention is suboptimal and primary care is both the logical and the ideal setting for improvement.

Significant management gaps exist in the care of people with heart disease in general practice which are a major contributor to unnecessary morbidity, mortality and cost to the Australian healthcare system.⁽²⁷⁰⁾ This is particularly true for people in rural and remote areas, Aboriginal and Torres Strait Islander people and those from lower socioeconomic backgrounds.

The Heart Foundation's review of management gaps for the treatment of CHD in general practice found significant disparities between guideline recommendations and actual clinical practice.^(270, 271) For example, data collated by the Australian Primary Care Collaboratives (APCC) at baseline showed that, at best, just 48% of cardiac patients had their blood pressure treated to target.⁽²⁷²⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.2

Improve access to high-quality rehabilitation services

ACTION 3.2.2 cont.

Improve post-discharge support services for people with heart disease and stroke, and their carers

A patient-centred approach occurs where the chronological journey is defined by individual need, not by the system.

General practice is an ideal setting within which to address identified gaps in the management of heart disease and stroke. Within the healthcare sector, general practice is not only the first point of contact but also the 'gatekeeper' controlling access to medicines, further tests, and referral to other providers, such as specialists, allied health professionals, community supports and tertiary care facilities.⁽²⁷⁰⁾

However, this requires a systematic approach to the management of heart disease and stroke, including:

- Practice registers (and chronic disease registers) and preparation of a GP Management Plan for each registered case.
- Coordination of Team Care Arrangements (care planning and ongoing care) that utilises practice nurses and community support.
- Contribution to Multidisciplinary Care Plan, and care coordination networks spanning general practice, hospitals, pharmacies, specialists and allied health services.
- Quality improvements through strengthened data collection that enable practice teams to use their data for quality improvement, accreditation and participation in practice incentive payments.

Modelling has shown that improved general practice interventions in Australia could reduce coronary events alone, by as much as 15% and reduce coronary deaths by 17%.⁽²⁷³⁾ Modelling also suggests that a comprehensive cardiac chronic disease program has the potential to save between 7,576 and 23,554 DALYs each year, with relatively little financial investment.⁽²⁷⁴⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.3

Support Australians with heart disease and stroke to make the best recovery possible, to be well, to actively engage with the community and to optimally return to education, work or retirement

ACTION 3.3.1

Ensure access to tailored health information for all Australians

Although Australians are encouraged to be actively involved in maintaining their health, the level to which this is possible is dependent on a person's health literacy.⁽²⁷⁵⁾ In Australia, it is estimated that only 40% of adults have a level of health literacy that allows them to meet the demands of everyday life.⁽⁵⁰⁾

Poor health literacy has adverse effects on health outcomes and is often linked to a limited capacity to self-manage care and to follow medication guidance.⁽²⁷⁶⁾ It is associated with increased rates of hospitalisation and greater use of emergency care services.⁽⁵⁰⁾ The immediate implication of inadequate literacy levels is that clinicians must tailor their communication with patients.⁽²⁵³⁾

Health literacy is also not static among individuals; it can fluctuate depending on situational issues such as illness, levels of stress or where an individual is in their life course.⁽⁵⁰⁾ Several approaches to raise health literacy include regional initiatives that take into account the needs of local populations, improving levels of health literacy through schools, using settings where people are already unwell to improve their health understanding, and using My Health Record as a tool for raising literacy and for transferring accessible information suited to the person.⁽²⁷⁷⁾

Quality information in self-management is an important part of a comprehensive model of care.⁽¹²⁶⁾ The National Heart Foundation's Helpline has a proud history in this space – providing free information and support to the Australian community and is currently developing a comprehensive multi-channel patient support service to patients living with heart disease and their families.

Resources for patients with Acute Coronary Syndrome

The National Heart Foundation's Helpline is a key contributor to the comprehensive multi-channel patient support service. Operated by cardiac health professionals, this service provides evidence-based information covering heart attack recovery, medication adherence, support mechanisms, lifestyle changes and personal action plans in case of further heart attacks.

In Australia in 2017-18, there were over 75,700 ACS separations, and nearly 580,000 people living with ischaemic heart disease.⁽¹⁰⁾ Following a heart attack, patients require information that supports their return to daily activities including returning to work and making the necessary lifestyle modifications to avoid having another heart attack, or further hospital admissions. A Deloitte Access Economics report published in 2011 highlighted the need for high-quality information for patients and their families to reduce the risk and burden of repeat heart attacks and to protect patients.⁽¹²⁶⁾

National Heart Foundation research with ACS consumers, carers and health professionals showed a large variance in communication and support offered by health professionals to patients from the beginning of their post-heart-attack journey.⁽²⁷⁸⁾ The research also highlighted the important contribution of carers during a patients' recovery and extending support to carers has demonstrated better engagement in positive rehabilitation and healthy lifestyle choices. Carers' personal experience stories are powerful.

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.3

Support Australians with heart disease and stroke to make the best recovery possible, to be well, to actively engage with the community and to optimally return to education, work or retirement

ACTION 3.3.1 cont.

Ensure access to tailored health information for all Australians

'My Heart, My Life' is a comprehensive self-management tool developed by the National Heart Foundation and is the secondary prevention education resource selected by several state health departments for dissemination to patients with ACS in public hospitals. Despite this, 2011-12 data showed that more than one in two heart attack patients in Queensland left hospital without access to quality self-management tools, nor referral to CR.⁽²⁷⁹⁾ A digital version of the resource, released in 2016, has widened options of self-management tools through multiple media formats.

Resources tailored to support Aboriginal and Torres Strait Islander peoples who are at risk of, or have had a heart event, include the National Heart Foundation's 'My Heart, My Family, Our Culture' suite, as well as 'Heart Story' in the Northern Territory. These resources are used by Aboriginal community-controlled health organisations.

Resources for patients with heart failure

Patients with HF need to adhere to a complex regimen when managing their condition at home, to improve quality of life, maintain stability, and decrease hospitalisation and mortality.⁽²⁶¹⁾ In collaboration with the recommended multidisciplinary team of health professionals, support for patients in self-managing their HF, such as medication adherence, and empowering them with the skills and knowledge to actively participate in symptom monitoring, problem solving and shared decision making.

Educating patients and their carers about the self-management of HF is strongly recommended in patients with HF, to decrease hospitalisation and mortality.⁽²⁶¹⁾ It should commence soon after diagnosis, be patient-centred, appropriate to their level of health literacy, culturally appropriate, and revised continually throughout the person's life.

The National Heart Foundation has a portfolio of well-regarded and widely used low-health-literacy resources, providing sufficient information and a self-management action plan.⁽²⁶⁵⁾

Resources for patients with stroke

The National Audit of Acute Services (2017) shows that stroke survivors and their carers often do not receive the support they need for their recovery journey.⁽¹³¹⁾ To address this, the National Stroke Foundation has developed a suite of resources designed to support stroke survivors, their families and carers following discharge from hospital. These resources raise awareness and help survivors better manage their health and live well after stroke.

The 'My Stroke Journey' resource pack is delivered by Stroke Foundation's partner hospitals, to deliver high-quality information to stroke survivors, their family members and carers, and is designed to support care planning and the transition from hospital to home. However data from the national audit indicates that almost 40% of patients and carers had not received information supporting their recovery.⁽¹³¹⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.3

Support Australians with heart disease and stroke to make the best recovery possible, to be well, to actively engage with the community and to optimally return to education, work or retirement

ACTION 3.3.1 cont.

Ensure access to tailored health information for all Australians

A further resource has recently been developed for patients on life after stroke or TIA. It is focused on raising awareness of the signs of stroke and TIA, how to reduce the risk of recurrent stroke and TIA, how to access allied health and rehabilitation services and sources of additional information. An important part of this resource is the information it provides on how stroke can impact survivors, including depression and anxiety.

'EnableMe' is an online resource developed by the National Stroke Foundation, that is co-designed with stroke survivors and carers to provide:

- Videos, podcasts and fact sheets on a wide range of topics impacting daily life after stroke, including depression and anxiety.
- A community forum to ask questions and share experiences with other stroke survivors and carers.
- A tool to set and track personal goals for recovery.
- An online helpdesk to ask questions of National Stroke Foundation health professionals.

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.3

Support Australians with heart disease and stroke to make the best recovery possible, to be well, to actively engage with the community and to optimally return to education, work or retirement

ACTION 3.3.2

Provide peer and emotional support mechanisms for people living with heart disease and stroke, and their carers

Peer support networks have been shown to be effective for other diseases, for example for people diagnosed with cancer or diabetes.⁽²⁸⁰⁾ Peer support strategies can encourage appropriate regular care, provide practical and emotional support for developing healthy behaviours, and can help individuals cope with the effects of chronic diseases and conditions.⁽²⁸¹⁾

Support networks for people living with heart disease

To determine which types of support networks would be effective in patients with HF, the National Heart Foundation commissioned research with patients, carers and health professionals.⁽²⁷⁸⁾ The key question asked was around 'How can heart attack survivors be better supported in their recovery from a heart event to return to their version of a quality of life while managing their heart health?'. A prominent theme is to facilitate family, peer and community support, to help address the emotional health and confidence barrier by providing survivors and carers the opportunity to speak with others who have gone through a similar experience.

Similarly qualitative research with HF patients and carers identified that peer support was a key factor in helping HF patients become informed and increase their self-confidence.⁽²⁶⁵⁾ All participants involved in a peer support program (both formal and informal) emphasised the program's positive benefits and the importance of having made those connections during CR or through a consumer group. Peer support was viewed by patients and their carers, as vital to being informed, motivated and accountable and feeling confident to ask questions about their condition.

Participants identified that a peer support component should be established as part of the Heart Foundation's 'My Heart My Life' Patient Support program. The National Heart Foundation has already facilitated peer support for younger people with heart disease (Supporting Young Hearts) and for women with heart disease (Heart Collective) via closed Facebook groups. The aim is to expand this, and to offer online discussion forums.

Return to work support for stroke patients

Stroke can leave people with long term and persistent impairments, leading to activity limitations and restriction in participation.⁽²⁸²⁾ Mood disorders such as depression and anxiety are common following stroke and for many stroke survivors these mood disorders can hamper a return to work and can have a significant social impact.^(283, 284) Such effects are experienced by carers too.⁽²⁸⁵⁾

Younger stroke survivors (under the age of 65 years) face significant life challenges, with a long recovery ahead and a lack of information and support. The Clinical Guidelines for Stroke Management recommend assessment of abilities relative to work demands, among stroke survivors who wish to return to work.⁽¹⁵³⁾ However, half of stroke survivors who want to return to work are not provided with support to do so.⁽²⁸⁵⁾ Lost earnings due to reduced employment due to stroke in working-age Australians was estimated to be at a cost of \$975 million in 2012.⁽²⁸⁶⁾ International evidence shows the number of working-age people impacted by stroke will increase over the coming years, largely due to lifestyle factors.⁽²⁸⁷⁾

Priority Area 3

SUPPORT AND CARE

OBJECTIVE 3.3

Support Australians with heart disease and stroke to make the best recovery possible, to be well, to actively engage with the community and to optimally return to education, work or retirement

ACTION 3.3.2 cont.

Provide peer and emotional support mechanisms for people living with heart disease and stroke, and their carers

A proposal for a return to work program has been created by Australia's leading stroke clinicians and researchers to support the specific needs of Australia's increasing number of working-age stroke survivors, maximising not only their physical recovery, but also their psychological recovery, post-stroke. The program would equip working-age stroke survivors with the skills and support they need to actively engage with the community and optimally to return to work.

Peer support for stroke patients

A positive relationship has been demonstrated between perceived social support and stroke survivors' health-related quality of life.⁽²⁸⁸⁾ Peer support groups can provide a mechanism for peer support and offer therapeutic benefits through empowerment and inspiration, a sense of belonging, learning new coping mechanisms, feeling helpful, feeling secure, being able to express feelings, and an increased sense of independence.⁽²³⁶⁾

The use of peer support for stroke survivors is also supported in the Clinical Guidelines for Stroke Management.⁽¹⁵³⁾ These guidelines recommend that 'stroke survivors and family/carers should be given information about the availability and potential benefits of a local stroke support group and/or other sources of peer support before leaving hospital and when back in the community'.

Priority Area 4

RESEARCH

Introduction

Research is fundamental for ensuring that decisions are made that enable ongoing improvement and quality of health service delivery in Australia. Treatment, management and service provision must be grounded in a strong evidence base. Australia is recognised internationally for excellence in heart disease and stroke research, and in clinical care. Heart disease and stroke research is an investment in the social and economic wellbeing of the nation. Many advances in heart disease and stroke are derived from health and medical research discoveries. The community directly benefits from the application of evidence-based research in the prevention of these conditions, and in the detection, treatment and care, and ongoing management of patients.

Priority Area 4

RESEARCH

OBJECTIVE 4.1

Ensure a well-funded, collaborative approach to cardiovascular research

ACTION 4.1.1

Progress the Medical Research Future Fund Mission for Cardiovascular Health to address the heart and stroke burden of disease

While significant progress has been made in decreasing mortality and morbidity associated with CVD, ongoing strategic investment in Australia's research sector, with regular assessment of impact, is needed.⁽²⁸⁹⁾ CVD is not yet beaten, and is not an inevitable consequence of ageing or lifestyle.

The Australian Government's \$220m Medical Research Future Fund investment injects vital funds to support the ongoing research of cardiovascular disease. The 10-year MRFF Mission for Cardiovascular Health addresses four strategic objectives to: accelerate discovery; improve health of Australians; build capacity; and enhance translation. Acknowledging this major step forward, investment must be seen in the context of the sizeable economic costs of cardiovascular care in Australia. Consequently, monitoring the health and economic impact of the Mission could help to guide future strategic investment, independent of the financial investment in the sector.

The Australian Cardiovascular Alliance (ACvA) provides a key conduit to achievement of the MRFF Mission. ACvA is a not-for-profit incorporated entity, established in 2015, with the aim of increasing the visibility of CVD as a National Health Priority Area with the general public.⁽²⁸⁹⁾ The primary activities of the ACvA involve research into heart, stroke and vascular disease, and promote the development of strong collaborative networks between cardiovascular researchers nationally through six flagship areas, covering: implementation and policy; clinical trials; smart data; bioengineering; precision medicine; and drug discovery. ACvA also provides a collaborative platform for the strategic prioritisation of research activities.

The Australian Government's MRFF investment, working with the ACvA, provides strategic commitment to the cardiovascular research sector that has the potential to change the landscape of Australian health. A national bio-informatics program is among several capacity-building initiatives that will help to embed research in Australia's health system, support the careers of laboratory and clinical researchers, and offer young scientists the opportunity to progress towards being tomorrow's senior research leaders.

Priority Area 4

RESEARCH

OBJECTIVE 4.1

Ensure a well-funded, collaborative approach to cardiovascular research

ACTION 4.1.2

Allocate funding to tackle identified gaps in existing research

There are significant gaps in several areas of heart disease and stroke research regarding public health interventions that promote behavioural change. Enabling the consumer and consumer groups throughout the whole research process (i.e. tripartite fellowships between clinicians, academics and consumers) is critical to success.

Funding that supports research could address gaps in several areas. These include (but are not limited to) the examples highlighted below.

Gaps in stroke research

During the development of the Clinical Guidelines for Stroke Management⁽¹⁵³⁾ several 'evidence-free' areas were identified where further stroke research is needed. These gaps include, but are not limited to, Aboriginal and Torres Strait Islander populations, rehabilitation, long term care and recovery. The development of acute and rehabilitation guidelines for management of childhood stroke highlighted the need for further research across many areas of childhood stroke.⁽²⁹⁰⁾

Aboriginal and Torres Strait Islander peoples

The National Aboriginal and Torres Strait Islander Health Plan 2013–23⁽¹⁴⁸⁾ identifies the need to support skill development to enable Aboriginal and Torres Strait Islander peoples to actively participate in and conduct research relating to their own cultures. The plan recognises that many local services, including Aboriginal and Torres Strait Islander community-controlled health organisations, already contribute to the evidence base through local research, cultural knowledge and data collection, analysis and evaluation.

The Australian Government investment of >\$5.6 million in medical research and support for translational research projects to examine high priority issues, including healthy ageing among Aboriginal and Torres Strait Islander peoples, is a key development to investigate approaches to prevention, early intervention and treatment of priority ageing conditions, and to address the health gaps still experienced within these communities.

The research process should be regarded as an equal partnership recognising that the intellectual 'input' from communities is equally important to the intellectual 'output' by researchers. Aboriginal and Torres Strait Islander peoples should feel respected and valued throughout research and evaluation activities and be provided with an opportunity to access research findings in a culturally appropriate and relevant manner. Strategies should include a focus on establishing Aboriginal and Torres Strait Islander research leadership and the development of Aboriginal and Torres Strait Islander researchers.⁽¹⁴⁸⁾ Given that Aboriginal and Torres Strait Islander peoples comprise 3.3% of the total population and experience higher rates of ill-health and shorter life expectancy than other Australians, a significant expansion of the Aboriginal and Torres Strait Islander health researcher workforce is vital to better health outcomes.^(4, 291)

Priority Area 4

RESEARCH

OBJECTIVE 4.1

Ensure a well-funded, collaborative approach to cardiovascular research

ACTION 4.1.2 cont.

Allocate funding to tackle identified gaps in existing research

Better prevention, diagnosis and treatment of cardiovascular health among Aboriginal and Torres Strait Islander peoples is central to closing the gap in health outcomes. In order to ensure decisions on improving health service delivery are successful, research that incorporates Aboriginal and Torres Strait Islander peoples and their communities, is required.

Over five years (2014–18), the National Heart Foundation has invested more than \$5.5 million in 19 research projects specifically focused on Aboriginal and Torres Strait Islander health. The Aboriginal and Torres Strait Islander Research Award provides opportunities for funding focused on Aboriginal health (of a researcher and/or project). The National Heart Foundation also established a four-year partnership with RHD Australia and others, to update the RHD Guidelines,⁽¹⁶²⁾ and develop educational and support resources for Aboriginal health workers and local communities.

Public health interventions which promote behavioural change, lifestyle measures and risk reduction interventions

There is a need for new evidence-based strategies to achieve lifestyle modification and healthy weight in Australian communities and improve adherence to preventive health strategies. Preventive health research investment including behaviour change research should include priorities such as how to engage people in effective healthy lifestyle behaviours and interventions, adherence to long term therapies, and sustainable screening models that are scalable across disease groups.

Effective system change research could provide advancements on how policy and legislation effect long term improvements to public health. Research into the rising rates of obesity in our community in order to drive innovative solutions is a further area for significant attention.

Tobacco control is one example where a multi-pronged approach to prevention has resulted in millions of healthcare dollars saved, and thousands of lives improved.^(85, 292) Tobacco control measures have directly reduced smoking rates in the population. A similar approach to risk reduction interventions targeting other risk factors (such as obesity) could be investigated.

Minister Hunt has announced funding for an 'Intergenerational Health and Mental Health Study', to commence mid-2020. This is a significant and welcome step forward to understanding the health and risk factors of Australians. The multi-year study of more than 60,000 Australians will provide the most complete picture ever of our physical and mental health.

This study will be conducted by the ABS over a three-year period, and it incorporates the National Health Study, the National Nutrition and Physical Activity Study, the National Health Measures Study and the National Study of Mental Health and Wellbeing. The study will provide an update to the 2011-13 Australian Health Survey and the 2007 Survey of Mental Health and Wellbeing.

Priority Area 4

RESEARCH

OBJECTIVE 4.1

Ensure a well-funded, collaborative approach to cardiovascular research

ACTION 4.1.2 cont.

Allocate funding to tackle identified gaps in existing research

The study will provide new insights into:

- The impact of mental and other chronic health conditions on Australians.
- The use and impact of health services, and barriers to accessing them.
- Factors underlying increases in chronic conditions and obesity.
- Dietary and physical activity habits.
- Undiagnosed health conditions and nutrition deficiencies.
- Environmental and biomedical factors that contribute to poor health outcomes.
- Lived experiences of suicide and related services.
- Biomedical baseline for future genomics testing.

The new study will provide invaluable evidence to inform future policy. The National Heart Foundation has advocated for an update to the 2011-13 Australian Health Survey, and the need for regular updates of these data to enable monitoring of trends in Australia's health care services.

Sex- and gender-specific focus on research

Women are a priority area of focus for heart disease, with specific initiatives needed to improve our understanding of disease patterns in women, especially the role of hormones and microvascular disease. Utilisation of health services by women, and gender bias amongst clinicians in the detection and treatment of heart disease, is also an area requiring further attention.

Heart failure

HF is just one example of an area in heart disease research where current gaps exist and where further work can be done. Guidelines for the Prevention, Detection, and Management of Heart Failure in Australia 2018⁽²⁶¹⁾ identifies areas for future research for HF which include several aspects of HF prevention, screening, diagnosis, management (including acute conditions and comorbidities), transitional care, and health economic evaluations of diagnostic and hospital- and community-based therapeutic strategies.

Priority Area 4

RESEARCH

OBJECTIVE 4.2

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.2.1

Improve research translation and availability of evidence through 'living', continuously-updated clinical guidelines

Key enablers of effective evidence-based care (and subsequent improvement in patient outcomes) include having up-to-date and aligned national clinical guidelines, with appropriate mechanisms to incorporate emerging evidence into guideline recommendations. However clinical guidelines are typically static, with periodic updates informed by a retrospective review of literature. Lengthy development processes, followed by public consultations and endorsement, risk aspects of the guidelines being out-of-date by the time of publication.

A living guideline is defined as a prospective approach and active processes that use continuous literature surveillance and a rapid response to incorporate new relevant evidence into a clinical guideline.⁽²⁹³⁾

The Australian Government has partnered with the National Stroke Foundation and Cochrane Australia to revolutionise the rapid translation of health research discoveries into clinical practice by piloting 'living guidelines' for stroke management.⁽¹⁵³⁾ Furthermore, the National Stroke Foundation, together with the National Heart Foundation, are members of the Australian Living Evidence Consortium, that was established in May 2018 to bring together leading experts in evidence synthesis, automation technologies, guideline development, consumer engagement and knowledge translation who are committed to making the task of finding, analysing, interpreting and using evidence faster, more efficient and more effective.

Significant resources are required to transform existing heart disease guidelines into a living guidelines approach. This would allow patients, clinicians and policymakers to have access to reliable, up-to-date evidence to inform healthcare decisions.

Priority Area 4

RESEARCH

OBJECTIVE 4.2

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.2.2

Develop a nationally consistent approach to support health professionals in the translation of clinical guidelines

A consistent finding from clinical and health services research is the failure to translate research into practice and policy.⁽²⁹⁴⁾ Despite the importance of knowledge translation, programs to support translation of guidelines and improvements in care operate inconsistently and only in some parts of Australia.

The 2017 Audit of Acute Stroke Services found that only 57% of services reported routine use of the Clinical Guidelines for Stroke Management to support access to care for all patients with stroke.⁽¹³¹⁾ Patients are being left with avoidable disability because pathways are not in place to ensure their access to best-practice stroke treatment.

Programs exist in some parts of the Australian healthcare system to help bridge the gap between best-practice care and actual care. An example of a successful program is the Queensland Stroke Quality Improvement Program (QSQIP), which uses data to enhance awareness of gaps in care and drive quality improvement activity in hospitals.⁽²⁹⁵⁾ An evaluation of the program is currently being undertaken by Monash Health; initial findings suggest that the program is associated with an improvement in the quality of stroke care.

The Stroke Foundation's StrokeLink program has been an integral part of the QSQIP. The StrokeLink program was first implemented in 2009 and facilitated educational workshops to support interpretation of local audit data against national benchmarks to help clinicians identify barriers and develop action plans to overcome barriers for areas prioritised for quality improvement.

As a result of this program, significant improvements have been made in the quality of stroke care in Queensland. These include the number of patients:⁽²⁹⁵⁾

- Receiving stroke unit care (2017 79% vs 2013 49%).
- Receiving thrombolysis (2017 8% vs 2013 3%).
- Being discharged with a care plan if discharged to the community (2017 61% vs 2013 52%).

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Continue to enhance data collection for, and management of, cardiovascular disease

ACTION 4.3.1

Establish National Clinical Quality registries for heart and stroke

Clinical Quality Registries (CQRs) collect and use data about patients' treatments to improve the delivery of healthcare. CQRs play a vital role in helping to deliver safer, higher quality healthcare, but the approach to CQRs in Australia has been ad hoc and fragmented. In response, the Australian Government is developing a Draft National Clinical Quality Registry (CQR) Strategy (2019-29), which proposes to integrate national clinical quality registries 'into Australia's healthcare information systems and systematically drive patient-centred improvements in the quality and value of healthcare and patient outcomes, across the national healthcare system'. ⁽²⁹⁶⁾

The draft strategy was developed by the Australian and state/territory governments, under the auspices of the AHMAC, working closely with the ACSQHC and key stakeholders.

The development of the strategy is a pivotal step towards a cohesive framework for clinical quality registries in Australia. The National Clinical Quality Registry Strategy should consider the implications of data collection processes associated with CQRs on the workforce and hospital systems, and ensure mechanisms are in place to support efficient and appropriate data collection in a timely, streamlined and efficient way.

CQRs supported by the National Clinical Quality Registry Strategy must be sustainable with appropriate levels of government funding to ensure long-term viability. A partnership approach is needed, involving clinicians and consumers in identifying clinical priority areas for registries, interventions and measures for quality improvement, and governance arrangements. The inclusion of Patient Reported Outcomes Measures (PROMs) and Patient Reported Experience Measures (PREMs) as part of routine data collection to support continuous quality improvement in health care delivery is recommended.

The establishment of national clinical quality registries for heart and stroke will aim to align with, and conform to, the requirements set out in the anticipated Australian National Clinical Quality Registry Strategy.

National clinical quality registries for heart disease and stroke would provide a cost-effective opportunity to monitor the quality of heart and stroke care, drive improvements in clinical practice and improve patient outcomes. ^(297, 298) A mature clinical quality registry will deliver significant returns on investment with benefits including:

- Greater survival for patients.
- Improvements in quality of life after treatment.
- Avoidance of treatment costs or hospital stays.

There is value in strengthening coordination and integration of cardiac registries, ⁽²⁹⁹⁾ to ensure comprehensive and consistent data collection and to improve efficiency and effectiveness, thus driving better care for patients. Quality-focused clinical cardiac outcomes registries exist in Queensland, Victoria and South Australia but these are not consistent.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.1 cont.

Establish National Clinical Quality registries for heart and stroke

Other specific registries include the Australian Cardiac Outcomes Registry (ACOR), which collates data for cardiac procedures, and will potentially extend current registries to the national level. Agreed national data standards between clinicians will allow expansion of data collection to further sites and provide comparable data, improving coverage across populations at risk.

Linking quality registries and other existing data sets will enrich data available on patient experience and navigation of the health system. Major advances in national linked data are currently underway which will greatly enhance and streamline this activity.⁽³⁰⁰⁾ Better integration of existing data collections – registries and other health data – would allow investigation of relationships between clinical measures and patient outcomes and enable a comprehensive assessment of patient experience and quality of life measures, and costs. It will enable researchers to connect the dots between primary prevention, experience of a cardiac event, their treatment, follow up care and outcomes.

A national quality cardiac registry would:

- Provide a comprehensive, quality, patient-based profile of cardiac care across the nation and across patient journeys.
- Establish an agreed national minimum data set.
- Enable benchmarking across Australia and lead to improvements in outcomes and enable healthcare providers and services to assess performance – this would also enable reporting against the Acute Coronary Syndromes Clinical Care Standard.⁽¹⁸⁵⁾
- Link multiple data sources to boost the quality of analysis that informs clinical decision making and service improvement.

Stroke Clinical Quality Registry

National clinical quality registries of stroke care lead to improvements in quality of care, patient outcomes and health policy.^(301, 302) The Australian Stroke Clinical Registry (AuSCR) (<http://www.auscr.com.au/>) is a voluntary, prospective, clinical quality registry that captures standardised data for nationally agreed variables for all patients admitted to participating hospitals with acute stroke or TIA.⁽³⁰³⁾ AuSCR meets the key requirements for a clinical quality registry as defined in the Draft National Clinical Quality Registry Strategy,⁽²⁹⁶⁾ currently providing prospective, systematic data on hospital care and outcomes of stroke survivors. This enables:

- National reporting of clinical data against the NHMRC Clinical Guidelines for Stroke Management (currently funded by the Australian Government as an innovative Living Guidelines Project)
- Benchmarking of treatment, management and clinical outcomes at health service, state and national level
- Critical research into treatment and management outcomes including patient reported outcome measures.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.1 cont.

Establish National Clinical Quality registries for heart and stroke

However, the registry operates only within some Australian states. The registry does not currently capture paediatric data, with the need for the development of a national paediatric registry identified in recent Australian paediatric stroke guidelines.⁽²⁹⁰⁾ A national approach to sustainable funding of a Stroke Clinical Quality Registry would support ongoing improvements in stroke care and service delivery across Australia.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.2

Develop a National Cardiac Rehabilitation Dataset

CR, along with appropriate secondary prevention measures, is vital to reduce the likelihood of someone having another heart attack or heart event.⁽³⁰⁴⁾ People are 40% less likely to be readmitted to hospital and 25% less likely to die from another heart attack if they have participated in a cardiac rehabilitation service.⁽²¹⁸⁾ This is supported by UK analysis that found CR can reduce hospital readmissions and death within the first year following a coronary event by 56% and 30%, respectively.⁽³⁰⁵⁾ If over a 10-year period, uptake increased to 65% from 30% then net financial savings would increase by \$86.7 million, and net social/economic benefits would increase by \$227.2 million.⁽²¹⁸⁾

National guidelines, together with the Acute Coronary Syndromes Clinical Care Standard, states that all patients with a diagnosis of ACS should be referred to a CR program.^(116, 185) Despite this, referral rates from medical staff in Australia are reported to be only 40% and as a result attendance remains low.^(88, 126, 209)

In order to improve quality of care and service delivery, CR data must be monitored and recorded.

Variability in delivery of cardiac rehabilitation

Although there are currently over 500 CR services across Australia, these programs do not deliver services in standardised ways. As a result, these services can vary in program delivery and quality, creating unwarranted clinical variation and gaps in care.^(304, 306, 307) Most CR services are not required to collect or monitor data about the delivery of their service, PREMS or PROMS. As such, there is no mechanism to systematically monitor the quality of CR delivery, or to routinely audit and benchmark the performance of CR programs across Australia.

Need for a national data monitoring system

The ability to quantify healthcare quality relies on the implementation of appropriate systems that can accurately capture how care is being delivered. Registries are effective instruments for collecting and reporting information on both the appropriateness of care (process) in keeping with clinical guidelines and the effectiveness of care (outcomes) received by individuals with heart disease.⁽³⁰⁸⁾ A CR registry could capture data to determine CR referral and completion rates and provide insights into patient characteristics and evaluate patterns of care and disparities.

Australia is currently behind in monitoring of CR

Unlike other high-income countries within Europe, and Canada, US, and UK, Australia has no national registry or audit to monitor and evaluate CR service delivery.⁽³⁰⁹⁾ Similar monitoring systems have been developed in stroke care in Australia via the AusCR and the National Stroke Foundation audit program 'InformMe'. These complementary programs are used to routinely assess adherence to national clinical guidelines with the audit being a cross-sectional comprehensive audit in a small number of cases with information on organisational resources also collected. By comparison, the registry is continuous and includes PROMs three to six months post-index event and long term survival from linkage with the national death index.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.2 cont.

Develop a National Cardiac Rehabilitation Dataset

CR needs an integrated system for monitoring the quality of care. Similar national data monitoring systems have demonstrated benefit in stroke care.⁽³¹⁰⁾

National quality indicators need to be developed

The current lack of defined CR indicators makes it difficult to effectively monitor and evaluate CR services across jurisdictions. A set of nationally agreed quality indicators for CR services in Australia would be a significant step in routinely measuring the quality of program delivery and provision of evidence-based interventions e.g. medication adherence, as recommended by the Australian Cardiovascular Health and Rehabilitation Association (ACRA).⁽³¹¹⁾ These data would enable an insight into current CR services in Australia and identify barriers and opportunities to increase CR referral, attendance and completion. Such data could drive quality improvement, improve patient outcomes, cut costs, and inform development of best practice and alternative models of service provision.

The proposed CR quality indicators would include a minimum set of the most useful data that can practically be collected by services and used to support continuous quality improvement initiatives. Indicators need to include:

1. Proof of delivery (e.g. referral rates, participation and completion rates, waiting time, assessments, transition of care to primary healthcare).
2. Proof an outcome is achieved (e.g. change in exercise capacity, body mass index, blood pressure, smoking status, depression status).

Other data is also useful in order to understand the indicators and make comparisons for the purposes of determining equity in delivery, such as sociodemographic information (location, age, gender, ethnicity, employment) and co-morbidities (diabetes, stroke, asthma).

A national and consistent approach to the collection of standardised CR data, that leverages off work undertaken in states and territories, is long overdue. The development of a national minimum dataset of quality indicators for life-saving CR services is overdue. A minimum dataset will introduce consistency and enhance the monitoring of CR delivery. In parallel, a national registry and monitoring system to evaluate CR service delivery across Australia, is urgently needed.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.3

Establish a National Cardiovascular Data Platform

The development of a CVD data platform will support the data-specific actions outlined in the Heart Disease and Stroke Action Plan and allow progress to be measured across the spectrum of care, from prevention to management and care.

Over recent years, there has been substantial growth in the volume of health data being generated and collected. With rapid advancements in the ability to analyse large and complex datasets, there is demand for data frameworks as well as protections surrounding the potential to use this information to support decision making and future resource allocation. This is highlighted in the Australian Government Public Data Policy Statement,⁽³¹²⁾ which labels the data held by the government as 'a strategic national resource that holds considerable value for growing the economic, improving service delivery and transforming policy outcomes for the nation'.

The Productivity Commission found, in their 2017 Inquiry report titled Data Availability and Use, that the Australian health sector provides an example of missed opportunities in relation to access and use of available data. It notes that this is due to legal, institutional and technical reasons and highlights the costs associated with not making timely use of available data.⁽³¹³⁾

The NSFCC identified information sharing as a strategic priority area.⁽³¹⁴⁾ This includes the collection, linkage and sharing of de-identified data. Sharing quality, accessible information can improve monitoring, reduce waste and duplication of effort, build the evidence base and improve care. The NSFCC highlights the benefit of integrating data sources to provide a more complete picture, and the value of national data that can be complemented by data from jurisdictions, to improve understanding and data utility.

A range of data relating to CVD is already collected within the health system. However, the complexity of the data environment limits its use. Despite strong community support for use of de-identified data and high degree of public trust,⁽³¹⁵⁾ to date, health data has been somewhat underutilised.⁽³¹⁶⁾ Use of routinely collected administrative data is comprehensive but has some variations in data quality.⁽³¹⁷⁾

National prevalence of chronic conditions is sourced primarily from population health surveys comprising self-reported data. There are also significant gaps in primary health care services data, where it is estimated that roughly half (51.6%) of patients at GP encounters had two or more diagnosed chronic conditions, with hypertension being most prevalent.⁽³¹⁸⁾

The emergence of electronic health records and other digital health technologies, including access to information on pathology results and biomarkers, are an opportunity that needs to be assessed and leveraged.⁽³¹⁹⁾

Increased access to primary health care data, population surveys and longitudinal cohort data, there is a need to facilitate data sharing, to allow for consistent, high quality and relevant data to be accessible to researchers and policy makers.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.3 cont.

Establish a National Cardiovascular Data Platform

Integration of data will enable better identification and capture of data relating to populations of interest, such as Aboriginal and Torres Strait Islander peoples⁽³²⁰⁾ those living in rural and remote areas, and culturally and linguistically diverse Australians. Integrated data also allow data gaps to be better identified and filled.⁽³²¹⁾

Within the context of CVD, this requires scoping of existing and emerging data sources and the development of consistent and quantifiable measures to determine progress against the Action Plan. In order to achieve this, a strategic and coordinated approach that focuses on collaboration and transformation of data into high quality evidence, is required.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.4

Develop a national approach to collection, monitoring and linkage of 'time to treatment' data

Heart attacks and stroke are time-critical emergencies, and any delay to a person being treated can lead to further organ damage, causing poorer health outcomes and even death.⁽²⁾

The sooner suspected heart attack cases receive potentially life-saving treatment, the better their outcome. There are several causes of delays in the time to treatment for patients experiencing heart attacks.^(117, 322) These can be described as pre-hospital delays (which includes patient delay and transport delay) and hospital delays. We need to decrease this delay.

In order to measure and introduce interventions to reduce the time to treatment and to drive quality improvement, detailed information including 'time of symptom onset' - the time that the patient first experienced their symptoms - is critical. This information is not currently recorded or collected systematically or consistently in Australia. Failure to extract this data can limit clinical decision making, case reviews, as well as subsequent use in continuous quality improvement initiatives, for example to monitor trends in presentation delays, or benchmark providers against other hospitals/regions/states or territories.

A consistent national approach is required to collect and monitor performance against all indicators contained in the ACSQHC Clinical Care Standards for ACS and Acute Stroke, respectively.

- 'Time is Heart': to consistently capture time to treatment data, to develop and evaluate interventions to reduce prehospital delay, and for hospitals across Australia to monitor, and report, improvement in performance against the Acute Coronary Syndromes Clinical Care Standard (2019) Indicator 3b: door to needle times (< 30 minutes) and Indicator 3c: door to balloon times (< 90 minutes) of first clinical contact⁽¹⁸⁵⁾ needs to be consistently captured and easily extractable from data systems.
- 'Time is Brain': to consistently capture 'time to treatment' indicators contained within the Acute Stroke Clinical Care Standard, including:
 - › Indicator 2c: Proportion of patients with ischaemic stroke presenting to hospital and received thrombolysis within 4.5 hours of symptom onset.
 - › Indicator 2d: Proportion of patients with a final diagnosis of ischaemic stroke who received thrombolysis within 60 minutes of hospital arrival.
 - › Indicator 2e: Time from onset of symptoms to thrombolysis for patients with a final diagnosis of ischaemic stroke.

Priority Area 4

RESEARCH

OBJECTIVE 4.3

Develop a platform to rapidly translate research evidence into clinical practice and policy

ACTION 4.3.4 cont.

Develop a national approach to collection, monitoring and linkage of 'time to treatment' data

The AuSCR is a highly regarded national clinical quality registry that provides prospective, systematic data on hospital care and outcomes of stroke survivors. However, it is a voluntary program collating data from participating hospitals only. Similarly, the Audit of Acute Stroke Services provides a robust and representative snapshot of acute stroke care in Australia, but it does not include data from all services delivering acute stroke care. Therefore, there is an opportunity to increase the number of services contributing data to the Audit, including private services.

Sustainable funding from the Australian Government to develop a national approach to the capture, collation and monitoring of linked 'time to treatment' data is overdue. Integrated data capture systems and CQRs with national linkages are needed to provide insight and support quality improvement activities to reduce variations in cardiovascular service delivery across Australia, and ultimately, decrease preventable deaths from CVD.

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