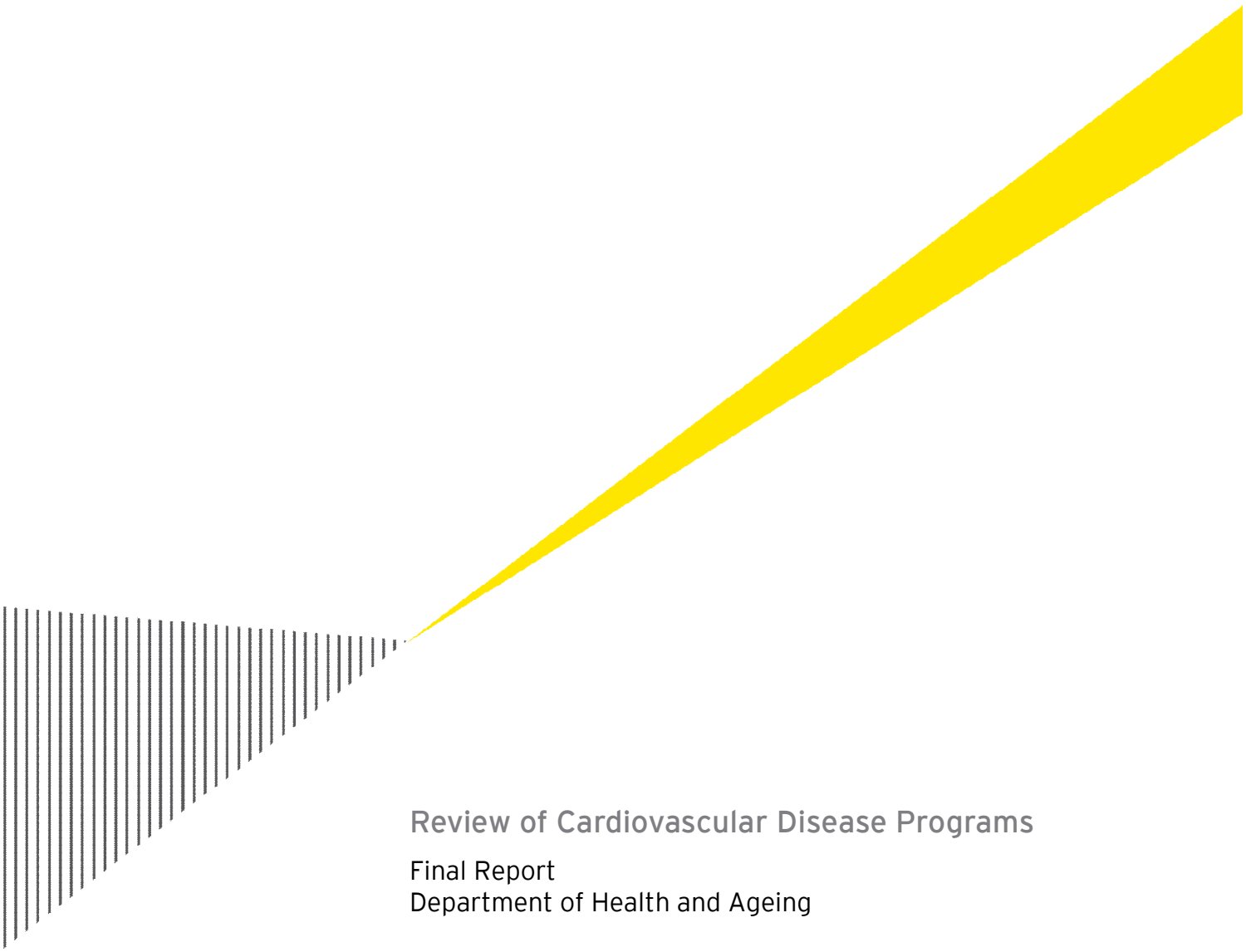

Review of Cardiovascular Disease Programs

Final Report
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Ernst & Young

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1. Abbreviations

Abbreviations	
ACSQHC	Australian Commission for Safety and Quality in Health Care
AFRM	Australasian Faculty of Rehabilitation Medicine
AGPN	Australian General Practice Network
AIHW	Australian Institute of Health and Welfare
ASC	Australian Stroke Coalition
AWASH	Australian Division of World Action on Salt and Health
CARPA	Central Australian Rural Practitioners Association
CVD	cardiovascular disease
DoHA	Department of Health and Ageing
ECG	electrocardiogram
EHR	electronic health record
GDP	gross domestic product
KPI	Key performance indicators
NEHTA	National e-Health Transition Authority
NHF	National Heart Foundation
NHMRC	National Health and Medical Research Council
NICS	National Institute of Clinical Studies
NIRA	National Indigenous Reform Agreement
NP	National Partnership
NSF	National Stroke Foundation
OECD	Organisation for Economic Cooperation and Development
RACGP	Royal Australian College of General Practitioners
SES	Socioeconomic status
TIA	transient ischaemic attack
WHO	World Health Organization

2. Qualifications and Assumptions

The statements and opinions given in this report are given in good faith and in the belief that such statements and opinions are not false or misleading. In view of the nature of the assignment we have, of necessity, relied on un-audited information provided by DoHA, jurisdictions and stakeholders. Data has been sourced through officers of DoHA, jurisdictions and representatives of peak bodies and we have been reliant upon them to advise and ensure that variables are included or excluded as appropriate.

In accordance with the policy of our international firm, we do not express an opinion as to whether the information supplied is accurate and no warranty of accuracy or reliability is given. Furthermore, we do not imply and it should not be construed that we have verified the information provided to us, or that our enquiries could have revealed any matter which a more extensive examination might disclose. To the extent that our report makes indicative assessments of adequacy, we confirm that the assessments are based on significant assumptions contained in this report. This report is based on information and data provided to Ernst & Young by DoHA, jurisdictions and stakeholders and is subject to refinement, including but not limited to the incorporation of currently unknown information. Ernst & Young reserves the right to amend findings in the event of any material omission or misstatements, which subsequently become known.

In no circumstances may any third party to whom a copy of the Report is provided rely upon the Report, the contents of the Report, or any part of the Report and Ernst & Young disclaims any liability whatsoever to those parties in relation to the Report.

3. Executive summary

Cardiovascular disease (CVD) is the term given to a group of diseases of the heart and blood vessels. CVD includes coronary heart disease, stroke, heart failure, rheumatic fever and rheumatic heart disease, peripheral vascular disease, hypertension and hypertensive heart disease, renovascular and chronic kidney disease.

Ernst & Young has undertaken a Review of Cardiovascular Disease Programs for the Department of Health and Ageing (DoHA). The review was undertaken in the context of the National Service Improvement Framework for Heart, Stroke and Vascular Disease (NSIF), with particular attention to the identified Critical Intervention Points (CIP's) agreed by Health Ministers in 2005. Consultation was held with jurisdictions, peak bodies and other key stakeholders. This report analyses the current state of programs for CVD management in Australia, discusses key themes emerging from research, literature review and stakeholder consultation, and recommends future options for consideration.

In this review Ernst & Young has sought to balance strategies that improve outcomes across the broad range of CVD with disease specific strategies that will significantly decrease morbidity and/or mortality from a particular disease.

In undertaking this consultancy Ernst & Young has been mindful of the significant fiscal constraints which exist and to this end acknowledge that any potential enhancement in CVD programs and services in Australia will need to occur over a number of years and be based on a logical and evidence based rollout.

Ernst & Young would like to thank the Department of Health and Ageing, the States and Territories, peak bodies, non-government organisations and individuals who took the time to speak with us and to respond to our requests for information. The information received has deepened and enriched the final report.

3.1 Context

Australia has achieved excellent health outcomes and is one of the best performing nations when comparing OECD health outcomes data. In 2005 Australian males had the highest life expectancy along with Japanese males. Australian women had the second highest life expectancy, along with French women.[1]

Australia can be justly proud of the reductions achieved in mortality from CVD and the fact that Australia has improved its ranking amongst OECD countries for mortality rates from CVD.[2] Between 1991 and 2002, mortality rates for CVD in Australia fell by 36.3% for males and 33.7% for females, which in the main can be attributed to a combination of reductions in some risk factors and improved treatments.[3]

Nevertheless cardiovascular disease (CVD) remains a major health issue for Australia. While mortality rates for CVD have fallen significantly, disability associated with CVD has increased (an estimated 18.2% increase in disability the last decade).[4] CVD is a significant contributor to our overall burden of disease, and the major cause of mortality in Indigenous Australians.

In addition, CVD mortality rates have not improved uniformly across all socioeconomic groups, with people from lower socioeconomic groups bearing a proportionately higher burden of disease and Indigenous Australians bearing the greatest burden of disease. The average life expectancy for Indigenous Australians is 17 years less than non-Indigenous Australians, and rates of heart attack in Indigenous Australians are three times higher than for other Australians. The AIHW quotes data from Vos et al. (2007) that indicates that the burden of disease and injury among Indigenous Australians in 2003 represented 3.6% of the total burden of disease in Australia, whereas Indigenous Australians comprise only 2.5% of the total Australian population.[5]

In response to the continuing gap in health outcomes for Indigenous Australians, the Commonwealth and the States have agreed to an Indigenous Health National Plan worth $1.6 billion over four years, with the Commonwealth contributing $806 million and the States $772 million. This proposal will contribute to addressing the COAG-agreed Closing the Gap targets for Indigenous Australians, closing the life expectancy

[1] Australian Institute of Health and Welfare, Australia's Health 2008, Australian Government, Canberra: AIHW
[2] Ibid
[3] National Health Priority Action Council (NHPAC) (2006), *National Service Improvement Framework for Heart, Stroke and Vascular Disease*, Australian Government Department of Health and Ageing, Canberra
[4] Ibid
[5] AIHW, *Australia's Health 2008*, Australian Government, Canberra

gap within a generation and halving the mortality gap for children under five within a decade. The proposal includes expanded primary health care and targeted prevention activities to reduce the burden of chronic disease.[6]

A study of inequalities and socioeconomic disadvantage in relation to Coronary Heart Disease (CHD) was undertaken by the AIHW and found:

"Over the 10-year period from 1992 to 2002, excess CHD mortality in males aged 25–74 years and excess stroke mortality in females of the same age increased steadily. For all CVD and stroke in males, and for CHD in females, the proportion of excess deaths due to socioeconomic inequality among people aged 25–74 increased between 1992 and 1997 but then remained stable."[7]

Further this study found that:

If all people aged 25–74 years had experienced the same age-specific rate of CVD mortality in 2002 as those living in the least disadvantaged areas of Australia, approximately 27% of CVD deaths in males (2,278 deaths) and 31% of CVD deaths in females (1,149 deaths) could have been avoided. More than one-third of the excess CVD mortality in males (838 deaths) and almost 40% in females (439 deaths) occurred among the most disadvantaged (quintile 1).[8]

Discussions about CVD should be undertaken in the context of Australia's high overall health status and the range of services and programs that already exist to support improvement and prevention of other chronic diseases, while giving due consideration to the existing health gaps between socioeconomic groups and particularly the impact of CVD on Indigenous Australians.

3.2 Conclusions

The NSIF is well researched and sound; it had high levels of input from key stakeholders; consultations indicate its content is still held to be current and applicable. However, despite being endorsed by the Australian Health Ministers in 2006, the Framework has not been fully utilised and has only been partially implemented, often in an ad hoc fashion by the jurisdictions.

There are various reasons why this is the case; key amongst these has been a limited take up of the Framework as a base for structured planning with associated actions, resource allocation and performance measures. In this absence, other priorities have taken over, some complementary and some competing.

A number of themes for moving forward have emerged through the work undertaken. These are:

- the current inequities in health status and access to timely and appropriate care for disadvantaged Australians, particularly Indigenous Australians;
- the role that prevention strategies have in reducing the overall and individual burden of disease and the importance of early prevention strategies to reduce risk of CVD in children, adolescents and younger adults;
- the value of supporting general practice and primary health care in CVD risk assessment, early detection and ongoing management of CVD;
- the importance of improving care processes at presentation to and throughout acute and immediate post-acute episodes of care;
- the need to improve uptake and support of clinical guidelines across all settings and at all stages of CVD;
- the importance of key performance indicators within an accountability framework against specific performance measures to monitor and improve acute, sub-acute and primary care performance for CVD;
- the importance of regularly monitoring and evaluating the impact of national strategies at a population level;
- the requirement for adequate information systems, research and data to support clinical care and outcomes measurement; and
- a desire for identified national leadership for CVD moving forward, through the development of a National Action Plan for CVD or similar.

[6] Council of Australian Governments Meeting Communique, 29 November 2008, Canberra
[7] AIHW Bulletin 37, *Socioeconomic Inequalities in Cardiovascular Disease in Australia – Current Picture and Trends Since 1992*, August 2006, Canberra
[8] Ibid

These themes link to major health reforms and health strategies underway in Australia, particularly the following:

- National Health Preventative Taskforce
- National Primary Health Care Strategy
- National Health and Hospitals Reform Commission
- Social Inclusion approaches
- E-Health
- National Chronic Disease Strategy
- Rural Health Review
- Review of the Medicare Schedule

Ernst & Young has taken the consistent themes, tested them against evidence and practice, balanced them with key national priorities and developed a set of prioritised recommendations for action, using as reference points key documents such as the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* and *Time for Action* – the action plan developed jointly by the National Heart Foundation and the National Stroke Foundation.

4. Recommendations

A number of stakeholders (and in particular, the National Heart Foundation and National Stroke Foundation) have invested in substantial research and analysis of CVD. They have also developed a number of recommendations for improvement of CVD management in Australia and made submissions to the Australian Government and jurisdictions on matters of budget. In developing the recommendations contained in this report, Ernst & Young has referenced these existing reports and submissions and examined a range of evidence relating to CVD programs.

In developing these recommendations it is acknowledged that there is variable opinion and debate about the order and priority of any new investments. There are many strongly held views about what are the most important components of a CVD program and it is unlikely that a consensus on this is achievable. However, Ernst and Young have tested with stakeholders the hypotheses upon which the recommendations are made and received a substantial degree of support.

Recommendations have been grouped into logical bundles using a framework based on a conceptual map of the CVD journey as experienced by individuals. Groups of recommendations have then been listed from highest to lowest priority. The highest priority recommendations in this report are intended to improve capacity in the system through the establishment of a strong foundation based on the elements of clinical governance, information and performance.

These are Foundation recommendations and are pre-fixed with "F". It should be noted that some Foundation recommendations may have an immediate commencement but a long lead time to full implementation, due to the complexities associated with their implementation. Investments would need to reflect this, with staged investment planned for some recommendations.

The next priority recommendations are contained in Group 1, then Group 2 and so on and are made in the context of the current environment, the Australian health reform agenda, the concerns of key peak bodies and other stakeholders and the available evidence. Improving capacity is an essential prerequisite for a number of further recommendations, particularly those which will result in increases in demand, hence the prioritisation of Foundation recommendations.

Some recommendations depend on the guidance of specific Australian Government endorsed bodies, such as the Australian Commission for Safety and Quality in Health Care, the National Health and Medical Research Council, or the Australian Institute of Health and Welfare. Other recommendations may link with strategic directions for major reforms, such as the National Primary Health Care Strategy or the Health and Hospitals Reform Committee.

In many cases there are existing processes, such as the Australian Primary Care Collaboratives, that have demonstrated success in achieving change and could be used to assist implementation of some recommendations. In addition, some of the jurisdictions have already developed strategies linked to some of the recommendations and are either in the process of implementation or planning to implement. However, a lack of consistency in approach, commitment and progress is evident across the jurisdictions.

Recommendations recognise the common contributing risk factors for CVD and other chronic and complex conditions. Community awareness, primary prevention and risk assessment strategies are generally shared across the range of cardiovascular diseases; strategies to reduce risk factors and improve rates of CVD will be applicable to CVD and a number of other chronic diseases. However, a cardiac event is very different from a stroke; the identification and treatment of an emergency stroke presentation differs from the identification and treatment of an acute cardiac infarction. Similarly the post-acute experiences of a person who has suffered a stroke are very different from those of a person who has experienced as heart attack. Recommendations recognise points on the CVD journey, generally for acute and immediate post-acute care where specific actions are required in order to achieve outcomes for specific diseases.

Finally, it is clear that improved responses are required to meet the needs of Aboriginal and Torres Strait Islander people, people who are socially excluded and many people from culturally and linguistically diverse (CALD) backgrounds. Ordinarily, it would seem logical to group recommendations particularly pertinent to this group into Foundation recommendations. It is our view that there is a need to first establish consistent and high quality responses to CVD across primary and acute health services and through population health responses.

Notwithstanding, specific recommendations to improve outcomes for significantly disadvantaged groups are included high in the list of priorities. It is particularly important that these recommendations are considered in the context of the current significant disadvantage experienced by Indigenous Australians, particularly in remote Indigenous communities and the serious ongoing workforce shortages in these communities.

It should also be taken as a given that all recommendations will need to be considered within the context of relative disadvantage, with priority given to reducing current gaps in health status for those people with the highest levels of social and economic disadvantage

4.1 Detailed recommendations

4.1.1 Foundation Elements

F1. Use the National Health and Research Medical Council (National Institute of Clinical Studies) to manage the development and review of new and existing national clinical practice guidelines for CVD.

Clinical guidelines are a critical component in the translation of evidence into practice and improving the quality of healthcare. In order to ensure evidence based, consistent and safe approach to CVD, it is critically important to utilise clinical practice guidelines. Providing accessible guides to best practice will assist clinicians and policy makers to make the most appropriate health care decisions.

There is a range of guidelines currently available in Australia for the acute care of people with cardiovascular disease. It was identified by stakeholders during the consultation process that not only was there was a definite need for further clinical guideline development and the ongoing maintenance of guidelines but there was also a need for incentives to comply with guidelines.

Stakeholders advise that clinician involvement in the development and review of clinical practice guidelines is critical to their successful adoption and implementation.

The NHMRC (NICS) currently provides support for evidence-based practice through:

- *working in partnership with clinical groups and health care organisations to help improve evidence uptake in areas where there are important evidence-practice gaps;*
- *providing access to resources and evidence for health professionals, managers, researchers and policy makers; and*
- *providing opportunities for health professionals to increase knowledge and skills in improving evidence uptake*[9]

In addition NHMRC is currently transitioning to a model whereby NICS will be responsible for the process of developing clinical practice guidelines funded by DoHA. This new model is planned to commence on the 1st July 2009.

A strategic approach by DoHA to the development of CVD guidelines will need to be taken to incorporate their development and review into NICS business plan.

F2. Work strategically with the National Institute of Clinical Studies within National Health and Research Medical Council to improve uptake of nationally standardised clinical guidelines across general practice, acute and community care.

The adoption of clinical guidelines into practice is often slow and is dependent on successful implementation strategies. The NHMRC through NICS aims to facilitate the translation of best available evidence into clinical practice and is currently undertaking a survey of Australian clinical practice guidelines and developing a portal and register to improve access to evidence-based clinical practice guidelines. In addition NHMRC (NICS) offers fellowships to future clinical leaders who have identified practice areas where there is evidence available but it is not being applied. Fellowships provide financial support, education, mentoring and access to expertise that would not otherwise be readily available.

Generally there is currently limited uptake and implementation of clinical guidelines across the acute and primary health care sector. This has been identified by stakeholders during the consultation process and in the literature review. It is not that clinicians are averse to utilising current evidence and clinical guidelines

[9] NICS Fact Sheet, NHMRC, Australian Government, Canberra, www.nhmrc.gov.au

to ensure the best care for their patients. The issue lies with the volume, length and currency of individual guidelines and the time taken to gain familiarity with multiple guidelines.

It is important to establish easy to access information sources for clinical guidelines and pathways that clinicians can use in their everyday work. One of the issues for clinicians is the sheer volume of evidence available; clinical information systems should be able to improve access to the right clinical information at the right time. Guidelines are often best incorporated into electronic decision support tools associated with electronic patient information systems. This action should link with work being undertaken to develop electronic clinical records that span the entire health service system.

A priority under this recommendation could be improving uptake of best practice guidelines for assessment and treatment of transient ischaemic attack (TIA) in public and private health facilities and NGO's (Hospital emergency departments, small hospitals, community health services, aged care services, General Practice).

TIA is closely associated with recurrent stroke, yet this condition is not always treated as seriously as is warranted. Early treatment after TIA (within 48 hours) can significantly reduce the risk of recurrent stroke. International evidence indicates that even when appropriate and timely acute care is provided for TIA, secondary prevention is often poor in both the inpatient and outpatient setting. [10]

A person who is experiencing TIA or has recently experienced TIA may present in a variety of settings, including but not limited to general practice, primary health care, the local pharmacy or within an aged care facility. Guidelines apply in all these settings.

Implementation of best practice clinical guidelines for TIA will require strategies which take into account the urban, rural and remote environments. Strategies might include testing innovative models of care for treatment of TIA across the primary health care and hospital settings.

In relation to the overall uptake of guidelines in General Practice, there is an opportunity to harness the energy created in participating general practices through the Australian Primary Care Collaboratives, AGPN, the Divisions of General Practice and the RACGP.

F3. Support the work of the Australian Commission for Safety and Quality in Health Care (ACSQHC) to validate its draft Operating Principles and Technical Standards for Australian Clinical Quality Registries.

ACSQHC has developed draft Operating Principles and Technical Standards for registries in collaboration with the NHMRC Centre for Research Excellence in Patient Safety and the National E-Health Transition Authority. It subsequently called for tenders for pilot studies to test and validate the draft principles and standards.

Two of the six registries selected for the validation study are the Australian Cardiac Procedures Registry and the Australian Stroke Clinical Registry.

The Australian Cardiac Procedures Registry is conducted by the Australian Society of Cardiothoracic Surgeons and Centre for Cardiovascular Research and Education in Therapeutics, Department of Epidemiology and Preventive Medicine, Monash University.

The aim of this registry is to enhance and develop the merger of two existing clinical registries in cardiac surgery and percutaneous cardiac intervention (PCI) into a scalable national cardiac procedures registry that will improve the reliability of information acquisition across all contributing locations, and to develop an additional module that will extend the registry information collection to include implantable devices such as pacemakers and implanted defibrillators. The development of such modules will enhance the cardiac registry functionality to provide a common platform to enhance its national utility.

The draft Operating Standards and Technical Standards will be tested and evaluated through the development of this nationally scalable registry.

The Australian Stroke Clinical Registry will be conducted by the National Stroke Research Institute, the George Institute for International Health, the National Stroke Foundation and Stroke Society of Australasia.

This will be a new clinical Registry, spanning all aspects of the development and implementation process (from governance establishment, dataset selection, ethics, clinical uptake and operation).

[10] Scholte Op-Reimer W J, Dippel D W, Franke C L, van Oostenbrugge R J, de Jong G,Hoeks S, Simoons M L, Quality of hospital or outpatient care after stroke or transient ischemic attack: insights from a stroke survey in the Netherlands, Stroke, 2006 July, 37 (7), pp1844 – 9,

The development of this registry will include the migration of existing data into a Registry compliant with the Principles as the NSRI proposal includes the migration of a minimum 1000 records from past stroke audits into the new Australian Stroke Clinical Registry – such that the impacts of this can be assessed and reported.

Implementation across multiple State jurisdictions. The NSRI project will provide the Commission with an opportunity to assess how the Principles and Standards support or impact implementation differently between States and Territories.

The full Registry lifecycle within the 13 month period of the pilot. The NSRI project will successfully allow testing and validation of the principles and standards during Registry design, build, implementation and steady state operations.

The benefits derived from the establishment of a national cardiac procedures registry and national stroke registry include; supporting the application of clinical guidelines, allowing clinicians to compare clinical outcomes and contributing to better planning of services and improved efficiency of the healthcare system.[11] They also assist in patients decisions about treatment options through the provision of better information.

Registries contribute to the evidence base for better practice through the collection and review of real life data on outcomes from clinical procedures. This information within registries complements gold standard evidence gathering such as Random Controlled Trials (RCTs).

There are numerous international examples where Registries have contributed to the body of knowledge around clinical procedures or devices. Registries can be particularly valuable where RCTs are inappropriate or numbers of presentations are too low to comprise a significant sample[12]. In these cases, access to real life data about treatments and outcomes can be of great value to clinicians and patients.[13] Data from registries is assisting in evaluation of specific treatments, for example a multicentre registry in the USA has provided data to assess the prognosis from a specific intervention[14] or compare outcomes between different devices.[15]

In the Australian context, it will be particularly important to collect data on interventions and outcomes for Indigenous Australians. There is currently insufficient data on current services and outcomes for Indigenous people. Strategies to improve this will need to include identification of Aboriginal and Torres Strait Islander origin when collecting patient data and engagement with ACCHOs in research and data collection.[16]

Stakeholder consultation and cardiac research indicates clinical registries have the highest degree of compliance and use when they are perceived to be owned by the relevant clinicians, therefore it will be important to ensure clinician engagement in the development of the registries.

F4. Develop an implementation plan for general practice to support the implementation of Absolute Risk Assessments (ARA) to identify people at risk of heart disease, stroke, diabetes, and kidney disease and then address their risk factors through a program involving on-going management.

Stakeholder consultations and current literature have identified the importance of promoting the routine assessment of absolute risk within the primary health care sector.[17] Evidence supports early identification of risk in order to put in place appropriate cost effective prevention and management strategies and this is currently being reflected in the treatment guidelines in both Britain and the US. The School of Public Health and Community Medicine at the University of NSW is currently undertaking a study to assess the impact of absolute risk assessment in general practice on prescribing and adherence to guidelines. The Cochrane Collaboration, funded by the National Heart Foundation, identified and analysed available evidence on ARA

[11] Tonkin A, *Why Australia Needs a Cardiac Procedures Database*, Heart, Lung and Circulation, 2001:10
[12] Basso C, Wichter B, Danieli G, Corrado D, Czarnowska E, Fonataine G. McKenna W, Nava, A, Protonotarius N, Antoniades L, Wlodarska K, D'alessi F, Thiene G, *Arrythmogenic right ventricular cardiomyopathy: clinical registry and database, evaluation of therapies, pathology registry, DNA banking,* European Heart Journal 2004 25(6):531-534;
[13] Kpodonu J, Tshibaka C, Massad M, *The Importance of Clinical Registries for Pulmonary Epithelioid Hemangioendothelioma*, Chest, May 2005, Vol 127 (5), pp 1870 - 1
[14] Shaw L, *Utility of Normal Perfusion Studies: results from a Multicenter Clinical Registry*, Medscape, 2002
[15] Chong E; Shen L; Soon C; Ong H; Poh K; Teo S; Lee R; Low A; Tan H, *Two Years Clinical Registry Follow Up of Endothelial Progenitor Cell Capture Stent versus Sirolimus-Eluting Bioabsorbable Polymer-Coated Stent versus Bare Metal Stents in Patients Undergoing Primary Percutaneous Coronary Intervention for ST Elevation Myocardial Infarction*, **Circulation. 2008; 118:S_1043**
[16] Communications from Professor Wendy Hoy and Dr Alex Brown.
[17] Tonkin A, Lim S, Schirmer H, *Cardiovascular Risk Factors – When Should we treat?,* MJA 2003 178 (3): 101-102

to guide practice and this work is being used as the basis for CVD risk assessment guidelines recently endorsed by the NHMRC and expected to be released in March 2009[18]. The guidelines use an AR approach and will be released with an Australian version of the NZ paper based tool, and an online calculator.

Risk assessment tools have been available for more than a decade but are still not routinely used. Stakeholders advise that ARA requires a significant shift in practice for most GPs as well as some structural changes. Successfully undertaking an ARA with a patient requires a collaborative approach to interactions and significant negotiation with the patient around possible lifestyle changes. This is a complex interaction that does not fit well within a standard short consultation. Advice from key general practice stakeholders is that achieving implementation of ARA across general practice and other primary health care providers will require a sustained long term strategy (5 years or more) with a number of underpinning elements, including:

- effective use of existing MBS items and consideration of additional items to cover those not currently covered by existing MBS items, particularly those under 40; this should be coupled with processes to make use of MBS items simpler for general practice;
- access to MBS items for risk assessment and early intervention by other practitioners such as exercise physiologists, nurses and allied health professionals;
- continued evaluation of suitable risk assessment tools for the Australian context, including for younger Australians (under 45), with new evidence being Incorporated into the ARA tools;
- integration of the various existing guidelines for the management of CVD based on an absolute risk assessment approach;
- the engagement of Divisions of General Practice to support general practice in making the necessary changes;
- education and support for clinicians, including role pays and practice sessions;
- shifts in the roles of practice staff, including practice nurses and practice managers;
- access to appropriate software;
- implementation support; and
- workforce strategies to enhance the availability of appropriate services for GP referral, for example exercise physiologists.

It will be important to integrate the strategy within existing chronic care management and funding initiatives such as the Australian Primary Health Care Collaboratives, the Well Persons Health Check and appropriate MBS items.

Building on the success of the existing Australian Primary Care Collaborative initiative has been suggested as the logical way to systematically engage General Practice through their local Division of General Practice. However, the successes of the collaborative methodology thus far have been greatest where changes are small and build on existing structures.

A new methodological approach may need to be devised to support this much larger and complex change. The National Primary Health Care strategy may provide guidance in this matter, particularly in relation to increasing the attention paid to chronic disease in current health education curricula, supporting team-based models of care, investigating new workforce models and improving clinical information to support integrated care. [19]

F5. Hospitals to be required to undertake and report the results of biennial audits of CVD services, in particular heart attack and stroke, in acute and post-acute care.

Work undertaken in Queensland has achieved some significant improvements in the treatment of acute cardiac events, using a collaborative methodology. However, the authors note that there are still opportunities for further improvements, particularly in relation to the *timeliness of thrombolysis, provision of in-hospital cardiac counselling, referral to cardiac rehabilitation, and use of non-invasive stress testing to identify reversible ischaemia in patients with ACS, along with objective assessment of left ventricular*

[18] Source: email communication from the NSF 13/02/09

[19] *Towards a National Primary Health Care strategy – A Discussion Paper from the Australian Government*, 2008, Australian Government, Canberra

function and more aggressive use of second-line vasodilators, β-blockers and warfarin in patients with CHF.[20]

There is evidence from the UK that regular independent audits of services assist them to improve performance. Auditing of services will link with strategies to improve implementation of clinical guidelines; it will assist with monitoring the quality and performance of stroke units and highlight clinical issues for services to act on. Audits can focus on structures, processes and outcomes of care.

The National Stroke Foundation commenced the National Stroke Audit Program in 2007. The Foundation seeks to extend the current audit of acute services to cover post-acute services as well. The approach needs to continue to be supportive and with a primary aim of assisting services to improve.

Jurisdictions might choose how they undertake audits, with standardised indicators in place through accreditation programs or performance agreements to support audit processes. A set of agreed indicators should be developed to ensure consistency in auditing. These might be taken from existing audit processes and refined in conjunction with key clinical stakeholders. Indicators must be able to be collected easily; examples might include the % of people with stroke admitted to a stroke unit; the % of people provided with appropriate treatment following a TIA; number of people referred to cardiac rehabilitation.

NICS is currently working with a Stroke Reference Group to develop and trial a care bundle to support evidence-based care for stroke presentation in the hospital emergency department[21]. Care bundles are effectively used as part of the Collaboratives methodology as defined by the Institute for Health Improvement; stroke audits could be undertaken against the components of care bundles where they exist.

F6. Investigate the benefits of including CVD risk factors in a national health survey and investigate the benefits and costs of including biomedical risk assessments such as blood and urine collection and analysis.

The Australian Government is initiating a National Nutrition and Physical Activity Survey Program, which will collect self-reported and objective population level data on nutrition, physical activity and physical measurements through an ongoing series of national surveys covering adults, children and Indigenous Australians. It is anticipated that the first survey of the Program will collect data from a representative sample of Australian adults aged 17 years and over with results available from 2012/13. The last survey to collect detailed data on food intake from a representative sample of Australian adults was the 1995 National Nutrition Survey.

The National Preventative Health Taskforce recommends the establishment of a national surveillance system, focusing on biomedical, environmental and behavioural risk factors. It suggests the expansion of the National Nutrition and Physical Activity Survey to include biomedical risk factors[22]. Biomedical surveys are used in a number of countries and have been undertaken within the Australian context[23]. They can be used to monitor and compare disease risk factors at the population level; information which builds up a bank of information against which long term population health strategies can be measured.

The sampling criteria for collection of biomedical indicators from Indigenous Australians need to accommodate the wide variations in health profiles between different communities and different levels of remoteness.[24] This requirement should not reduce the emphasis on measuring risk in Indigenous populations as the risk factors are generally higher within groups with higher levels of socioeconomic disadvantage including many Indigenous Australians.

There is a range of economic, logistical and ethical issues associated with the implementation of a biomedical survey and these issues would need to be fully considered prior to the inclusion of biomedical factors in a national survey. The NHMRC Statement 1999 provides direction on issues such as consent for collection of human tissue samples however such issues as collection, storage and use of samples need to be comprehensively addressed.

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[20] Scott I, Darwin I, Harvey K, Duke A, Buckmaster N, Atherton J, Harden and Ward M, for the CHI Cardiac Collaborative, Multisite quality improvement collaboration to optimise cardiac care in Queensland public hospitals, MJA , 2004, 180 (8), pp392 – 397.
[21] NICS Update, November – December 2008
[22] National Health Preventative Taskforce, *Australia: the healthiest country by 2020 A discussion paper*, Commonwealth of Australia, 2008
[23] Hetzel D. (2003) *A National Biomedical Risk Factor Survey for Australia: Issues for consideration.* AHMS Working Paper Series No. 1. Public Health Information Development Unit, Adelaide.
[24] Communication from Professor Wendy Hoy

There are international experiences that Australia can draw on. For example, the Health Survey for England 2003[25] took saliva and urine samples from a sub-group of survey participants, in addition to undertaking interviews.

F7. Include specific CVD indicators, including ARA, in datasets for national and jurisdictional performance accountability frameworks.

As an outcome of the recent COAG, the Commonwealth and the jurisdictions have agreed to a range of outcomes from the Australian health system, including the following:

- *children are born and remain healthy;*
- *Australians manage the key risk factors that contribute to ill health;*
- *Australians have access to the support, care and education they need to make healthy choices;*
- *the primary health care needs of all Australians are met effectively through timely and quality care in the community;*
- *people with complex care needs can access comprehensive, integrated and coordinated services;*
- *Australians receive high-quality hospital and hospital related care;*
- *older Australians receive high-quality, affordable health and aged care services that are appropriate to their needs and enable choice and seamless, timely transitions within and across sectors;*
- *Australians have positive health and aged care experiences which take account of individual circumstances and care needs;*
- *Australia's health system promotes social inclusion and reduces disadvantage, especially for Indigenous Australians; and*
- *Australians have a sustainable health system.*

Agreed performance measures to address these outcomes include:

- *preventable disease and injuries;*
- *timely access to GPs, dental and other primary health care professionals;*
- *life expectancy, including the gap between Indigenous and non-Indigenous Australians;*
- *waiting times for services; and*
- *net growth in the health workforce*.[26]

There is an opportunity to incorporate specific CVD indicators into the datasets for performance accountability frameworks being developed between commonwealth and jurisdictional bodies. Accountability frameworks for general practice and private health care should be included in this recommendation.

4.1.2 Additional recommendations

G1.1. Develop a government/industry/NGO partnership to achieve population wide reductions in saturated fat and dietary salt intake in the Australian context.

Support work commenced by the National Heart Foundation to develop a partnership between government, the food industry and peak bodies to achieve population wide reductions in saturated fat, trans fats, sugar and dietary salt intake and portion reductions where appropriate.

The National Heart Foundation has been working with the Australian Food and Grocery Council to establish a forum for discussion on how fat, sugar and salt reductions could be achieved in Australia. This work should be supported and progressed.

A diet high in saturated fats can contribute to developing a range of serious illnesses including cardiovascular disease. In addition to improving community awareness a key factor in reducing saturated fat intake is the development of partnerships with industry. These partnerships could involve reducing the amount of saturated fat in foods, increasing the range of healthy options and decreasing portion size. There is clear evidence to support this recommendation in UK studies and some US studies from 2006-2008 to support this.

[25] NHS, *Health Survey for England 2003*, Vol 3, Methodology and Documentation
[26] Council of Australian Governments Meeting Communique, 29 November 2008, Canberra

The Australian Division of World Action on Salt and Health (AWASH) is actively working with key stakeholders to reduce Australian intake of salt, currently at 9.0g per day to 6g per day.[27]

A salt reduction campaign in the UK has resulted in a significant improvement in reduced salt intake. The Foods Standards Agency (FSA) recently published figures which showed that the UK's average daily salt consumption has fallen from 9.5g to 8.6g since 2000.[28] The UK government has set a salt intake target of 6 g per day, potentially preventing 20,200 premature deaths a year.

The reduction in salt consumption in the UK was achieved through the food industry voluntarily reformulating products, in addition to achieving behavioural changes in consumers. The evidence from the UK indicates that there are opportunities within in the Australian context for similar gains in fat and salt reductions.

This recommendation links closely with one of the key priorities of the National Preventative Health Taskforce, "*Reshape industry supply and consumer demand towards healthier products*". The Taskforce could facilitate further work on government/NGO/industry partnerships with saturated fat and salt reduction targets a first priority.

G1.2. Support the work of the National Preventative Health Taskforce in developing national policy and strategy to improve nutrition and reduce alcohol and tobacco consumption, with a focus on reducing lifestyle related risks in socially and economically disadvantaged populations.

Higher consumption of tobacco and alcohol and low-level consumption of fruit and vegetables are among the top seven preventable risk factors that influence the burden of disease. Modifiable risk factors make up 32% of the burden of disease in Australia. [29] The World Health Organisation (WHO) identifies the key lifestyle risk factors for CVD as increases in high energy, low nutrient diets, reduced physical activity and increased tobacco consumption.[30]

The National Preventative Health Taskforce was established by the Federal Minister for Health in April 2008 to advise on preventative health action for Australia, in particular strategies to improve action on obesity, tobacco and alcohol. A National Health Preventative Strategy will be announced in June 2009 and will for the blueprint for preventative health reform.

The taskforce has released a discussion paper entitled "*Australia the healthiest country by 2020 – a discussion paper*", which outlines a range of suggested policy and strategic directions to be taken to develop a strong preventative health framework for Australia.

The Taskforce has identified the increased risk of CVD in populations with higher social disadvantage. This is supported by international studies which also demonstrate increased risk of CVD in groups with higher socioeconomic disadvantage.[31] There are a number of reasons for this difference, including poorer access to good nutrition and higher smoking rates. Strategies to reduce smoking rates, lower consumption of alcohol and improve access to good food should include specific actions aimed at improving outcomes for populations with higher social disadvantage, including Indigenous Australians.

G2.1. Implement culturally oriented and effective CVD rehabilitation within Indigenous communities, within mainstream and Aboriginal specific health services.

Utilise the outcomes of work undertaken by the NHMRC[32] and other Indigenous Health stakeholders, in particular the development of rehabilitation and secondary prevention guidelines, to support Aboriginal Community Controlled Health Services and mainstream health services develop appropriate rehabilitation programs. In particular utilise the guidelines for cultural competency within mainstream services. Establish performance indicators and enhanced funding agreements or consider the use of accreditation programs to achieve better practice.

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[27] AWASH, www.awash.org.au

[28] Food Standards Agency, United Kingdom, http://www.food.gov.uk/news

[29] National Preventative Health Taskforce, *Australia, the healthiest country by 2020 – a discussion paper*, Commonwealth Government of Australia, 2008

[30] WHO, Global Strategy on Diet, Physical Activity and Health, *Cardiovascular Disease Prevention and Control*, www.who

[31] Davey Smith G & Hart C, *Life-Course Socioeconomic and Behavioral Influences on Cardiovascular Disease Mortality: The Collaborative Study* , American Journal of Public Health, August 2002, Vol 92 (8) , pp1295-1298

[32] NHMRC, *Strengthening Cardiac Rehabilitation and secondary Prevention for Aboriginal and Torres Strait Islander Peoples; A guide for health professionals*, Australian Government, 2005

Issues regarding access to CVD rehabilitation exist for Indigenous Australians living in urban, rural and remote settings. However, CVD outcomes for Indigenous Australians living in remote communities are worse.[33] The existence of groups, who are relatively worse off within a population group that has generally poorer outcomes, should be considered in the planning of action strategies for this recommendation and the next.

A lack of understanding of Aboriginal and Torres Strait Islander culture, concepts of health and history, and Western-dominated models of care can result in Indigenous Australians feeling disempowered and less likely to use health services (Bailey 2005). According to Anderson et al (2004), Aboriginal and Torres Strait Islander peoples may need a different approach when consulting a GP, because of differences in how Indigenous people respond to illness and how they interact with health care providers.[34]

Difficulties in communicating with service providers may also affect treatment choices and treatment outcomes. Around 11% of Indigenous adults reported that they had difficulty understanding and/or being understood by service providers. Indigenous people living in remote areas were more likely than those in non-remote areas to report experiencing difficulty (19% compared with 8%) (ABS & AIHW 2005).

Cardiac rehabilitation is designed to minimise functional, psychological and social disability, while stroke rehabilitation aims to improve function and/ or prevent the deterioration of function and facilitate the highest possible level of independence.

The Framework notes that Indigenous Australians die from heart, stroke and vascular disease *at twice the rate of other population groups* [35]and are less likely to access Cardiac rehabilitation programs than non indigenous Australians.

Models of care that focus on self management and coordination through General Practice are probably not the most appropriate for Aboriginal & Torres Strait Islander people, instead flexible methods are needed.

Key elements of an effective Indigenous rehab program include:

- cultural competency within the organisation;
- involvement of Aboriginal Health Workers and family, community involvement;
- incorporation of elements within existing community activities;
- specialist education for staff; and
- specific planning for Aboriginal & Torres strait Islander people in the planning and delivering of mainstream services.[36]

This recommendation and the following recommendation are heavily dependent on strategies to improve the number and capacity of the health workforce generally and in particular the workforce supporting services to the Indigenous community. Currently there are significant shortfalls in the health workforce, especially in remote areas.

G2.2. Support the implementation within jurisdictions of national strategies and guidelines to address low intervention rates for Indigenous people presenting to hospital with heart disease and stroke.

COAG's National Indigenous Reform Agenda (NIRA) provides an overarching summary of action being taken in the commitment to closing the gap in Indigenous disadvantage. COAG has also agreed to an Indigenous Health NP worth $1.6 million over four years. This proposal includes expanded primary health care and targeted prevention activities to reduce the burden of chronic disease.

Indigenous Australians have higher rates of illness and death from cardiovascular diseases. The average life expectancy for Indigenous Australians is 17yrs less than other Australians. They are more likely than other Australians to have a major coronary event and to die afterwards. Their health care needs are also more complex when they present to hospital. [37]

[33] Communication from Professor Wendy Hoy
[34] ABS & AIHW: The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2008,
[35] National Health Priority Action Council (NHPAC) (2006), *National Service Improvement Framework for Heart, Stroke and Vascular Disease,* Australian Government Department of Health and Ageing, Canberra
[36] Hayman, N, Wenitong,M, Zangger,J, Hall,E, Strengthening cardiac rehabilitation and secondary prevention for Aboriginal and Torres Strait Islander peoples, MJA, vol 184, No 10, May 2006
[37] AIHW CVD series number 26 *Aboriginal & Torres Strait Islander people with coronary heart disease report summary report* , Sept 2006, Australian Government, Canberra

Of major concern is the fact that Indigenous Australians are less likely to receive coronary procedures to treat their coronary heart disease when they do present to a hospital. The AIHW advises that in 2002 - 03 Indigenous Australians admitted to hospital with chronic heart disease were 40% less likely than other Australians to receive percutaneous coronary interventions (PCI) and 20% less likely to receive coronary artery bypass grafts (CABG) as other Australians.[38] The AIHW further advises that "*Compared with other Australians, in 2002 – 2003 Indigenous Australians were 3.0 times as likely to suffer a coronary event such as a heart attack, 1.4 times as likely to die it without being admitted to hospital, and 2.3 times as likely to die from it if admitted hospital.*[39] *In hospital they were less likely to be investigated by angiography and receive coronary angioplasty, stenting or coronary bypass surgery.* " This information builds a driving argument for improving access and intervention rates.

The particular strategy arising out of this recommendation should include the development of clinical protocols and guidelines to support culturally appropriate better practice in the hospital environment. The application of targeted performance measures will support accountability. This strategy should contribute to and be informed by foundation elements relating to collection of clinical data to guide clinical practice and track clinical outcomes.

G2.3 Develop specific strategies to address poorer outcomes and lower intervention rates for people with higher levels of social and economic disadvantage.

Many studies show that people or groups who are socially and economically disadvantaged have reduced life expectancy, premature mortality, increased disease incidence and prevalence, increased biological and behavioural risk factors for ill health, and lower overall health status. Results from the 2004- 05 National Health Survey (NHS) indicate that people with lower socioeconomic status are more likely to smoke, exercise less, be overweight and/or obese, and have fewer or no daily serves of fruit. These are risk factors for a number of long-term health conditions such as respiratory diseases, lung cancer and cardiovascular disease.[40]

The AIHW advises that *if everyone experienced the same hospitalisation rate as that in the least disadvantaged areas, around 16% of all CVD hospitalisations, and 38% of emergency CHD and 24% of stroke hospitalisations, would have been avoided in 2003–04. This translates to almost 45,400 CVD hospitalisations, which includes over 22,500 for CHD emergencies and just over 3,400 for stroke.*[41]

There is also evidence to indicate that intervention rates are lower for people from the more disadvantaged groups. The AIHW advises that, although CVD mortality and morbidity are higher in the more disadvantaged groups, coronary procedures are lower, particularly for coronary angioplasty. In addition drug-eluting stents are more likely to be used with less disadvantaged groups and base metal stents with more disadvantaged groups.[42] Although these observations are based on limited data, this indicates an area where further research and specific strategy development is required.

Strategies should be developed in consultation with the relevant cultural groups and link to best practice guidelines.

G3.1. Test a range of linked strategies to improve the management of patients with cardiovascular disease, involving all health sectors (General Practice, public health services, NGO's, other private providers) within identified communities.

Within Australian jurisdictions there are a number of initiatives already in place to develop integrated models of care within a community and across general practice, publicly funded primary health care services and private providers. Examples include the HealthOne NSW strategy and GP Plus in South Australia. These models are based on international research that indicates improved outcomes for a range of conditions through the application of co-ordinated clinical care within integrated health services.

An example is the "medical home", a concept that originated in the USA, in response to shortages in primary health care physicians and the increasing rates of chronic disease. The medical home is a model of

[38] AIHW, *Aboriginal and Torres Strait Islander People with Coronary Disease – summary report*, Australian Government, 2006
[39] Australian Institute of Health and Welfare, Australia's Health 2008, Australian Government, Canberra: AIHW.
[40] Ibid
[41] AIHW Bulletin 37, *Socioeconomic Inequalities in Cardiovascular Disease in Australia – Current Picture and Trends Since 1992*, August 2006, Canberra
[42] Ibid

care that is grounded in primary health care and offers a care co-ordination model, which ensures people with chronic illness access the appropriate levels and types of care for their conditions at all stages of their disease, including preventative and primary, secondary and tertiary care, within a framework of integrated interprofessional care management. The model delivers on improved quality of care and reductions in errors but it requires health professionals to make changes to their practices in order for it to work effectively.43 44

This can be a challenge. For example, a 2006 survey indicates Australian GPs were less likely than primary health care doctors in the UK, Netherlands, Germany or New Zealand to use a multidisciplinary team approach to the management of chronic conditions. They were also less likely to identify their practice as well prepared to manage chronic conditions than their counterparts on the UK, Germany and the Netherlands.45

A potential vehicle through this recommendation could be implemented is the Australian Primary Care Collaboratives initiative, which has, according to a number of stakeholders, become a viable and effective means by which general practice can apply evidence based models of care and measure their performance to improve practice. The Collaboratives would need to be broadened to include primary health care partners such as community health services and NGO's.

Coronary Heart Disease (CHD) is the largest single cause of death in Australia and people who have had a heart attack are at high risk of experiencing a future heart attack46. People who have experienced a stroke and their families are in need of ongoing specifically tailored rehabilitation, care and support. 47. Therefore it is important to ensure that people who have experienced a cardiac event or a stroke are effectively followed up within primary care

Improving the co-ordinated management of people with CVD in General Practice-led models will not only maximise quality of life but will also assist with reducing hospital readmissions and reducing the risk of further disability or death from a recurrent cardiovascular event. A specific CVD program would complement the risk assessment and management strategy, particularly if it focused on the following initiatives:

Developing or enhancing existing multidisciplinary teams to co-ordinate CVD care, especially in rural areas by utilising existing regional strategies (led by general practice or by jurisdictions) to integrate care across the system.

Coordinated multidisciplinary team care is widely considered to be essential in the effective treatment of people with chronic disease. It has been demonstrated to improve the quality of care and economic analysis indicates that well planned and comprehensive multidisciplinary strategies are cost effective.

Specifically, in relation to heart failure it has been demonstrated that Chronic Care programs that engage multidisciplinary teams in the delivery of patient care result in a decrease in hospital readmissions for heart failure patients. [48]

A key element in successful programs is the development of written and individualised shared management plans developed by the client and their Health professional and care provider. Other essential components include shared information systems, clinical review by a General Practitioner and appropriate ongoing follow up and support by the team.

Addressing low rates of participation in rehabilitation and on-going prevention programs for people who have suffered a stroke, heart attack or unstable angina.

Cardiac rehabilitation involves individual assessment, holistic goal setting, treatment, review, planning & follow up by an interdisciplinary team of health professionals with specialist knowledge of cardiac disease.

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[43] Rosenthal TC, The Medical Home: Growing Evidence to Support a New Approach to Primary Care, *The Journal of the American Board of Family Medicine* 21 (5): 427-440 ,2008

[44] . Berenson A, Hammons T, Gans D N et al., A House Is Not a Home: Keeping Patient at the Center of Practice Redesign, *Health Affairs*, September/October 2008 27(5):1219–30

[45] Schoen C, Osborn R, Trang Huynh P et al. (2006 Nov 2). On the front lines of care: Primary care doctors' office systems, experiences, and views in seven countries. Health Affairs; Web Exclusive: w555–w571. in Health Council of Canada Annual Report to Canadians, 2006

[46] NHF, NSF, Submission on the 2009-10 Federal Budget A National Action Plan for Cardiovascular Disease, Nov 2008.

[47] Lindley R, Community Care After Stroke, reprinted from Australian Family Physician, Vol 36, No 1, Nov 2007.accessed at www.racgp.org.au on 23/01/09

[48] Mc Alister,F, Stewart,S Ferrua, S, McMurray, J, Multidisciplinary Strategies for the Management of Heart Failure Patients at High Risk for Admission, Journal of the American College of Cardiology, vol 44, No 4, 2004

Effective rehabilitation services help to support self management and independence and assist people with cardiac disease to achieve optimal function through encouraging lifestyle modification, addressing psychosocial risk factors and improving the use of medication. While cardiac rehabilitation is a well recognised as an effective secondary prevention measure, participation rates are low. It has been identified that this is due to both a lack of initial referral and failure of the person to attend once referred.[49] [50] Key factors that contribute to this include; lack of rehabilitation programs particularly in rural and remote areas, transport difficulties, work commitments, lack of knowledge about risk factors and the value of rehabilitation to a person's quality of life.

Stroke rehabilitation is a comprehensive program which is developed to address the specific disabilities of each individual and focuses on improving functioning to the maximum possible. It addresses a range of functional disabilities including limb weakness, communication difficulties, swallowing, cognitive functioning, bladder and bowel function as well as the psychosocial impacts of the stroke. Stroke rehabilitation occurs initially in the acute setting but can then be provided in inpatient, outpatient or community settings. In both cases, it is best provided by multidisciplinary teams to address the complex care requirements. Evidence indicates increased patient satisfaction with rehabilitation within the community, where general practice and other primary health care provider have a critical role. There is evidence that rehabilitation can continue to improve outcomes several years after, so ongoing assessment and access to rehabilitation is important for people who have experienced a stroke.[51] There are clear clinical practice guidelines for care after a stroke.

Unfortunately people with the most need for services and potential to benefit from rehabilitation services are often unable to access them. It is essential that rehabilitation programs are easy for people to access as early as possible.

Strategies to address low participation rates need to include addressing the system factors such as the adoption of rehabilitation guidelines, discharge planning, communication between hospitals and primary care, rural and remote access and the treating physician's attitude to cardiac or stroke rehabilitation. In addition a national audit of CVD rehabilitation programs and routine and inclusive referral procedures to an effective rehabilitation program are recommended.

Establishing a CVD co-ordination and support function within communities. This may be located within existing health services, NGOs or community-based organisations according to best or most suitable models.

CVD co-ordination and support roles might range from dedicated positions in specialist units to clearly defined and supported roles for new or existing staff in NGO's, community-based organisations, community hospitals, primary health care centres, Divisions of General Practice or GP surgeries.

People with CVD have complex care needs and must interact with many different services and individuals, at a time when they are probably least equipped to do so. Carers also need support and advice to continue in a highly stressful role. The health, social support and community care systems available to patients and their carers are complex and poorly co-ordinated. For individuals with complicated and multi-faceted care needs these systems can become virtually unnavigable.

Australian CVD co-ordination and support models need to be developed and evaluated for urban and rural settings as the environment and resources available in these two settings are very different. CVD co-ordination and support should at the least include assistance with coordination of ongoing care, liaison between various service providers and the provision of information about community and support services.

There are some excellent national examples available, for example Heart Support, which is a volunteer, not-for-profit organisation and provides support information and encouragement for people with a heart condition and their families, has branches in most states and territories[52]. Heart Support supports self-management and rehabilitation for people with a heart condition. Trained members, who have been heart patients themselves, provide support to other heart patients in their area.

[49] Bunker, S, Goble, A, Cardiac Rehabilitation: under referral and underutilization, MJA, vol179, Oct 2003

[50] Sochalaski, T, Jaarsma, T, Krumholz, H et l., What Works in Chronic Care Management: The Case of Heart Failure, Health Affairs, 2009

[51] Pollack M & Disler P, *Rehabilitation of patients after stroke*, MJA, 2002, 177 (8), pp452 - 6

[52] www.heartnet.org.au

The National Stroke Foundation is rolling out a research-based Self Management Program in Melbourne to assist stroke survivors get their lives back on track after stroke.[53] The program is run by a health professional and a trained volunteer and is co-facilitated by a stroke survivor or carer from the local community.

G4.1 Establish comprehensive stroke services covering acute, post-acute and rehabilitation care at every hospital admitting more than 200 acute stroke patients per year and in relevant smaller hospitals and strengthen networked access to Stroke Care Units for rural hospitals.

Access to stroke care units or alternate models (for rural and remote communities) is a critical intervention point in the NSIF. Stroke units are already in place in many major hospitals throughout Australia; however research indicates that there is some variability in the capacity of some stroke care units to deliver evidence-based therapeutic interventions for stroke within required time frames;[54] this is supported by anecdotal information from jurisdictional representatives, which also indicates some variability between units.

Half the survivors of stroke are left with a level of disability that leaves them dependent on people for activities of daily living.[55] The benefits of care within a stroke unit are now well recognised and there is clear evidence of improved outcomes for stroke patients in stroke units[56]. At present only 1 in 2 stroke patients receive stroke unit care, which is defined as "*dedicated, coordinated care for stroke patients in hospital under a multidisciplinary team who specialise in stroke management in a stroke unit*".[57] The NSF advises if 80% of strokes were treated in stroke units, health gains could be improved by 7, 200 DALY's.

The NHMRC advises that stroke patients who receive care in a stroke unit have better outcomes than those who do not.[58] This is supported by a Cochrane systematic review. Ideally stroke units include a dedicated inpatient ward and a service which combines acute, post-acute and rehabilitation services within the one unit, providing multidisciplinary care from a team of doctors, nurses and allied health. Specific features contributing to improved outcomes include access to diagnostic and scanning, continuity of care, ongoing education for multidisciplinary team members, clear clinical protocols which are followed by the team and early access to rehabilitation.

The NHMRC (NICS) further advises that *"based on numbers needed to treat (NNT) [6], if all patients in Australia experiencing a stroke were treated in a stroke unit, 900more people would survive, 1,500 more people would regain their independence and a further 1,500 people would return home"*[59]

Currently not all hospitals with over 200 stroke presentations have dedicated stroke units. Variability in service scope and standards could be managed through the development of specific service standards and performance measures.

The current Australian Guidelines recommend all people should be admitted to a comprehensive stroke unit.[60] This recommendation is consistent with international recommendations and is based on high level evidence.

The NSF has developed a set of defining criteria and recommended services for the different levels of stroke services that should be made available in different size hospitals.[61] The NSF recommends comprehensive stroke units with advanced functions such as capacity to manage complex strokes and delivery of intravenous tissue plasminogen activator (tPA) in hospitals with greater than 200 stroke patients admitted per year (120 in rural areas). In hospitals with less than 100 stroke patients admitted per year (80 in rural areas) stroke units may not be viable and the recommendation is to transfer to a hospital with a stroke unit.

[53] www.strokefoundation.org.au
[54] Anderson C, *Clinical stroke guidelines – where to now?,* MJA, 2008, 189 (1), pp4 – 5.
[55] National Health Priority Action Council (NHPAC) (2006), *National Service Improvement Framework for Heart, Stroke and Vascular Disease*, Australian Government Department of Health and Ageing, Canberra
[56] *Optimising Care for Stroke Patients*, NICS, Evidence – Practice Gaps Report, Vol 2, 2005
[57] National Heart Foundation & National Stroke Foundation, Submission on the 2009-10 Federal Budget: A National Action Plan for Cardiovascular Disease, Nov 2008
[58] NHMRC, NICS, *Optimising Care for Stroke Patients*, Experience – Practice Gaps Report, Vol 2, 2005
[59] Ibid
[60] National Guideline Clearinghouse, Clinical Guidelines for Acute Stroke Management, www.guideline.gov
[61] National Stroke Foundation, *Acute Stroke Services Framework Summary 2008,* www.strokefoundation.com.au

While there is some discussion regarding the value of alternate approaches, such as mobile stroke services,[62] in the absence of a dedicated stroke unit, this approach is not supported by the NSF or the current Australian guidelines.

G4.2. Support public education campaigns to help people recognise the warning signs of CVD and seek emergency treatment.

It is important that the community has ongoing access to information that is evidence based, consistent and culturally appropriate in order to increase awareness of appropriate responses to a CVD event.

Information needs to be widely distributed through a variety of communication mechanisms at levels that have been demonstrated to be effective. An analysis of results of a range of programs suggests that to be effective, programs need to be ongoing, culturally appropriate, focused and targeted to high risk groups.[63]

A range of government and non government organisations currently provide information about risk factors and risk reduction to the general population. The National Stroke Foundation has developed the FAST campaign, which describes symptoms and delivers the following message:

Face - Can the person smile, has their mouth drooped?
Arms - Can the person raise both arms?
Speech - Can the person speak clearly and understand what you say?
Time - Act FAST and call 000 immediately.

If you answer yes to any of these questions, act FAST and call 000. Stroke is always a medical emergency. Remembering the signs of stroke and acting FAST could mean saving a life. [64]

Public information about stroke should include information on the importance of seeking treatment after a transient ischaemic attack (TIA) as TIA is a high risk factor for a stroke in the near future.

Advice from the National Heart Foundation is that the most recent Warning Signs activity by Heart Foundation in Australia was a short-burst, PR led campaign during Heart Week 2007. The key platform was **Chest Pain. Call 000 - every minute counts**. The objective was to reduce the length of time Australians wait between onset of heart attack warning signs and calling triple zero for an ambulance. The key campaign messages were :

- *Chest pain and other warning signs of heart attack are serious and life threatening*
- *Warning signs of heart attack vary*
- *Call triple zero ((000) and ask for an ambulance if you, or someone near you, is experiencing warning signs of a heart attack*
- *Immediate actions by patients, bystanders and health professions will save lives*

The Heart Foundation is currently in the process of developing a longer term strategic communications campaign relating to warning signs of heart attacks, which is a key initiative of the foundation's 2008 - 2012 strategic plan.

G5.1 Support an adequately resourced education campaign to increase awareness of high blood pressure and the importance of Absolute Risk Assessment (ARA) in the community and encourage people to seek ARA from their GP.

Prior to commencing action on this recommendation, DoHA should be confident that the service system is configured correctly and can cope with additional demand. Current concerns, regarding the availability of evidence-based and timely treatment indicate system capacity building should be an area of focus first.

It will be important to undertake research to determine the required investment required to achieve significant benefits from a public education campaign. Evidence seems to suggest that there is a minimum amount of exposure to media below which the effectiveness of campaigns drops off. Particular attention should be paid to the information needs of vulnerable and high risk groups to ensure public education is targeted and effective for those groups.

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[62] Van der Wait A, Gillgan A, Cadhilac D, Brodtmann A, Pearce D & Donnan G, *Quality of stroke care within a hospital: effects of a mobile stroke service*, MJA, 2005, 182 (4), pp 160 – 3.
[63] Finn J, Bett J, Shilton T, Cunningham C, Thompson P, on behalf of the National Heart Foundation of Australia *Chest Pain Every Minute Counts Working Group, Patient delay in responding to symptoms of possible heart attack: can we reduce time to care*? MJA (2007); 187 (5): 293-298
[64] Hunter New England Area Health Service, New South Wales Government, http://www.hnehealth.nsw.gov.au/news

G6.1 Use standards defined under the National Palliative Care Strategy to review existing palliative care services in order to assess and improve their capacity to provide appropriate care and timely access to those with end stage CVD.

While palliative care services exist across all jurisdictions, they are often structurally and philosophically based within the framework of cancer care. Palliation is a service need, particularly for people with chronic heart failure, yet this is often overlooked by both referrers and service providers. Linkages between CVD specialists and palliation specialists may not always be strong.

There are a number of existing strategies and programs to support appropriate palliative care, including:

- National Palliative Care strategy
- Rural Palliative Care Program
- Palliative Care for People Living at Home Initiative
- Palliative Care Research Program

Undertaking a review of existing palliative care services within the context of chronic disease, and particularly chronic heart disease will focus the attention of jurisdictions on capacity of this important end-of-life care service. Jurisdictions can then use their reviews to develop service improvement plans, based on the critical intervention points in the National Service Improvement Framework. Of particular concern will be the end-of-life care provided to Indigenous Australians, in the context of their spiritual and cultural needs.

4.2 Summary of recommendations

Recommendations are summarised in the following table.

	Recommendation	NSIF	Linked Strategies or Reform Initiatives	Accountable Bodies
Foundation Recommendations				
F1	Use the National Health and Medical Research Council (National Institute of Clinical Studies) to manage the development and review of new and existing national clinical practice guidelines for CVD.	All components		Australian Government National Health and Medical Research Council (NHMRC)
F2	Work strategically with the National Institute of Clinical Studies (NICS) within NHMRC to improve uptake of nationally standardised clinical guidelines across general practice, acute and community care.	All components	e-Health	Australian Government NHMRC/NICS NEHTA Jurisdictions Health Services Professional & Peak bodies
F3	Support the work of the Australian Commission for Safety and Quality in Health Care (ACSQHC) to validate its draft Operating Principles and Technical Standards for Australian Clinical Quality Registries.	All components	National Primary Health Care Strategy National Health and Hospitals Reform Commission	Australian Government ACSQHC Jurisdictions Professional bodies Private health insurers
F4	Develop an implementation plan for general practice to support the implementation of Absolute Risk Assessments (ARA) to identify people at risk of heart disease, stroke, diabetes, and kidney disease and then address their risk factors through a program involving on-going management.	Reduce Risk Early detection, care and support of people with heart, stroke and vascular disease.	National Primary Health Care Strategy National Health and Hospitals Reform Commission	Australian Government GP Peak bodies and related organisations
F5	Hospitals to be required to undertake and report on the results of audits of CVD services, in particular heart attack and stroke, in both acute clinical care and post-acute care so that each is occurring once every two years.	All components	Review of accreditation processes through the ACSQHC	Jurisdictions Private health insurers Private Hospitals Hospital accreditation bodies
F6	Investigate the benefits of including CVD risk factors in a national health survey and investigate the benefits and costs of including biomedical risk assessments such as blood and urine collection and analysis.	All components	National Preventative Health Taskforce	Australian Government Australian Institute of Health and Welfare Australian Bureau of Statistics
F7	Include specific CVD indicators, including ARA, in datasets for national and jurisdictional	Reduce Risk	National Health and Hospitals	Australian Government

Recommendation		NSIF	Linked Strategies or Reform Initiatives	Accountable Bodies
	performance accountability frameworks.		Reform Commission	Jurisdictions
Group 1 Primary Prevention				
1.1	Develop a government/industry/NGO partnership to achieve population wide reductions in saturated fat and dietary salt intake in the Australian context.	Reduce Risk	National Primary Health Care Strategy National Health and Hospitals Reform Commission National Preventative Health Taskforce	Australian Government NGO's Australian Food and Grocery Council
1.2	Support the work of the National Preventative Health Taskforce in developing national policy and strategy to improve nutrition and reduce alcohol and tobacco consumption, with a focus on reducing lifestyle related risks in socially and economically disadvantaged populations.	Reduce Risk	National Preventative Health Taskforce	Australian Government Jurisdictions
Group 2 Addressing Indigenous health and socio-economic disadvantage				
2.1	Implement culturally oriented and effective CVD rehabilitation within Indigenous communities, within mainstream and Aboriginal specific health services.	Best long term care and support	National Primary Health Care Strategy COAG National Indigenous Reform Agenda	Australian Government Jurisdictions Aboriginal health peak bodies
2.2	Support the implementation within jurisdictions of national strategies and guidelines to address low intervention rates for Indigenous people presenting to hospital with heart disease and stroke.	Best care and support for acute episodes	National Health and Hospitals Reform Commission	Jurisdictions Aboriginal health peak bodies
2.3	Develop specific strategies to address poorer outcomes and lower intervention rates for people with higher levels of social and economic disadvantage.	Early detection, care and support of people with heart, stroke and vascular disease. Best care and support for acute episode Best long term care and support	National Health and Hospitals Reform Commission	Australian Government Jurisdictions
Group 3 Primary Health Care & Community Support				
3.1	Test a range of linked strategies to improve the management of patients with cardiovascular disease, involving all health sectors (General Practice, public health services, NGO's, other private providers) within identified communities.	Early detection, care and support of people with heart, stroke and vascular disease. Best care and support for acute episodes Best long term care and support	National Health and Hospitals Reform Commission National Primary Health Care Strategy	Australian Government Australian General Practice Network (AGPN) Australian Primary Care Collaboratives Jurisdictions Private Health Insurers
Group 4 Acute Care				
4.1	Establish comprehensive stroke services covering acute, post-acute and rehabilitation care at every	Best care and support for acute episodes		Jurisdictions

Recommendation		NSIF	Linked Strategies or Reform Initiatives	Accountable Bodies
	hospital admitting more than 200 acute stroke patients per year and in relevant smaller hospitals and strengthen networked access to Stroke Care Units for rural hospitals.			Hospital Accreditation Bodies
4.2	Support public education campaigns to help people recognise the warning signs of CVD and seek emergency treatment.	Early detection, care and support of people with heart, stroke and vascular disease.		Australian Government Jurisdictions NGO's
Group 5 Community Awareness of Risk				
5.1	Support an adequately resourced education campaign to increase awareness of high blood pressure and the importance of Absolute Risk Assessment (ARA) in the community and encourage people to seek ARA from their GP.	Reduce Risk	National Preventative Health Taskforce	Australian Government NGO's
Group 6 End of Life Care				
6.1	Use standards defined under the National Palliative Care Strategy to review existing palliative care services in order to assess and improve their capacity to provide appropriate care and timely access to those with end stage CVD	Best care in the advanced stages	National Health and Hospitals Reform Commission	Jurisdictions

4.3 Other Issues for consideration

4.3.1 National Leadership for CVD

It should be noted that, while not listed as a recommendation for action, there is strong support across jurisdictional and non-government stakeholders for the formulation of a National Action Plan for CVD. This reflects concerns that the implementation of the NSIF was compromised by the lack of a cohesive implementation plan which clearly committed the different levels of government. The following structures would underpin national leadership in CVD reform:

- Australian Health Minister's Council, the Australian Health Ministers' Advisory Council (AHMAC) and AHMAC's Principal Committees such as Health Workforce, Australian Population Health Development and Health Policy Priorities;
- National Health and Hospital Reform Commission;
- Role of non Government Organisations;
- Australian Government agencies;
- Council of Australian Government (COAG); and
- Individual jurisdictions.

4.3.2 Integrated Clinical Information

It should also be noted that while there is a strong case for the development of integrated electronic clinical information systems for CVD, this has not been included as a recommendation as this is part of the Australian Government's broader eHealth strategy.

This review recognises that electronic integrated clinical information is a foundation for good health care across the entire system and disease groups. There is a significant body of literature that describes the importance of linked clinical information in safety, improving health outcomes and reducing inefficiencies in health care. Most key reform documents currently being developed in Australia make reference to the need for integrated electronic health records.

There are international examples of successful integration of clinical records across systems. In the USA Kaiser-Permanente has recently introduced an electronic clinical record to assist in co-coordinating care information for patients across the health delivery system. [65]

[65] Kaiser Permanente, www.kaiserpermanente.org

For co-ordinated care models to work effectively there must be the capacity to share clinical information between service providers. A UK study of the success factors for shifting care from hospital to community settings identifies clinical information and access to clinical guidelines as essential success factors in sustaining the shift.[66]

Stakeholders advise that the current inconsistency in collection of data relating to Aboriginal and Torres Strait Islander origin hampers the capacity to effectively research and report on health outcomes for Indigenous Australians. This is an issue that can be imparted to the relevant branch in DoHA and to NEHTA along with specific issues related to improving the integration of clinical information for CVD.

4.3.3 Reducing smoking rates and increasing CVD funding through Tobacco Tax

Throughout the review there was considerable discussion regarding the importance of reducing smoking rates. Smoking is a key risk factor for coronary heart disease, stroke and lung cancer and in Australia is the single largest cause of preventable death. Reductions in the use of tobacco reduce healthcare costs.[67] There has been extensive economic research that demonstrates that increasing the price of tobacco products significantly reduces the use of tobacco in the population[68] .

"Evidence shows that a 21% increase in price through excise would prompt 130,000 adults to quit and prevent 35,000 children from taking up smoking, while boosting federal revenue by $ 1.03 billion per annum."[69] The National Preventative Health Taskforce supports a 2.5% per stick increase in cost. The WHO recommends a 5% annual taxation increase.[70]

Increasing the cost of tobacco through increases in taxation would result in decreased consumption of harmful tobacco products and increased revenue that would then be available for investment in public health initiatives. This is consistent with the National Preventative Health Taskforce target to reduce the prevalence of daily smoking to 9% or less[71]and an essential strategy if this target is to be achieved. Ernst & Young strongly suggests that this policy issue be given consideration by the Australian Government.

4.3.4 Addressing workforce shortages in Indigenous health care

70% of Indigenous Australians live outside of major cities, but this statistic is not matched by an appropriate health workforce response. Stakeholders have identified serious workforce shortages impacting on the delivery of health care to Indigenous Australians. This problem becomes progressively works as remoteness increases. In 2004 the Australian Medical Association (AMA) identified a shortfall of 250 primary health care practitioners in the workforce delivering health care to Indigenous Australians.[72]

Significant recruitment and retention issues have been identified for Remote Area Nurses (RANs), who provide primary health care in many remote Indigenous communities. Issues identified in research on this issue include a sense of being treated as second-class workers within a system that is itself second-class.[73] Strategies to reduce the rate of attrition from the profession include improving managerial practices and staff support (leadership, communication and professional development) and providing better infrastructure (buildings and equipment).

There are strategies in place to try to improve the retention of primary health care providers in remote communities. For example, in the Northern Territory, a comprehensive orientation program has been developed to support registrars planning to work in general practice in remote Indigenous communities. The program includes cultural safety training; clinical skills; population health and strategies for self-care.[74]

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[66] Singh D, *Making the Shift: Key Success Factors*, University of Birmingham/NHS, July 2006
[67] Hurley S, Scollo M, Younie S, English D, Swanson M, The Potential for Tobacco Control to Reduce PBS Costs for Smoking related Cardiovascular Disease, MJA, Vol 181, No 5, Sept 2004.
[68] , Durkin,S, Spittal,J, Siahpush,M, Scollo,M,Simpson,J, Chapman,S,White,V, Hill,D, Impact of Tobacco Control Policies and Mass Media Campaigns on Monthly Adult Smoking Prevalence, American Journal of Public Health, Aug 2008, Vol 98, No. 8
[69] National Heart Foundation, Cancer Council Australia, Taxation reform and tobacco excise: best practice for a sustainable future, Submission to the Australian Tax review.
[70] Preventative Health Taskforce, 2008. Available at http://www.preventativehealth.org.au/internet/preventativehealth/publishing.nsf/Content/discussion-healthiest
[71] Australian Labor Party media statement Oct 10 2008
[72] Arkles R, Hill P, Jackson Pulver L, *Overseas-trained doctors in Aboriginal and Torres Strait Islander health services: many unanswered questions*, MJA 2007, Vol 186, pp528-530
[73] Weymouth S, Davey C, Wright J, Nieuwoudt L, Barclay L, Belton S, Svenson S, Bowell L, *What are the effects of distance management on the retention of remote area nurses in Australia?*, Rural and Remote Health 7: 652 (online) 2007, www.rrh.org.au
[74] Morgan S, *Orientation for general practice in remote Aboriginal communities: A program for registrars in the Northern Territory*, Australian Journal of Rural Health, Vol 14 (5) pp202 - 208

Organisations such as the Central Australian Rural Practitioners Association (CARPA) work to support primary health care practice and practitioners in remote areas.[75]

Recommendations on workforce issues for Indigenous health are outside the scope of this review. Ernst & Young suggests existing bodies tasked with workforce issues be advised of the impact that rural and remote workforce shortages are having on the system's capacity to improve CVD outcomes for Indigenous Australians.

[75] www.carpa.org.au

5. The current environment

The Review of CVD Programs has been undertaken within the context of a number of influencing factors. Key amongst these is the Australian Government health reform agenda. Other influencing factors include:

- an ageing population;
- a predicted rapid rise in chronic diseases;
- rising health costs;
- enhanced technology and increasing evidence about the value of specific interventions;
- the rising cost of drugs;
- predicted workforce shortages; and
- a renewed focus on the economic impacts of ill health.

5.1 Ageing population

According to the 2006 census, on 31 December 2006 the Australian population was 20,701,488, 13% of whom were aged 65 and over, and 18% of whom were aged 50-64 years. Australians enjoy one of the highest life expectancy rates in the world, and a significant proportion of people in Australia are now aged 75 years and older (6.2%).

Population ageing in Australia has been supported by an increasing life expectancy and sustained low fertility levels. **Table 1** shows the projected growth in the size of older population in absolute terms from 2006 to 2036. In the 30 years to 2036, the number of people aged 65 years and over is expected to more than double, and will represent 24% of the total Australian population.

The number of older Australians aged 85 and over, among whom the need for services and assistance is greatest, has doubled over the past 20 years and is predicted to increase more rapidly than other age groups: from 333,000 in 2006 to 1.1 million in 2036.[76]

Population aged 65 and over, by age and sex, 2006 to 2036

Age (years)/sex	2006[(a)]	2016[(b)]	2026[(b)]	2036[(c)]
65-74	1,430,000	2,147,000	2,663,000	2,922,000
75-84	972,000	1,160,000	1,806,000	2,264,000
85+	333,000	521,000	690,000	1,108,000
Total persons 65+	2,735,000	3,829,000	5,159,000	6,294,000
Total persons	20,555,000	22,808,000	24,873,000	26,536,000

(a) Census-adjusted estimated resident population, 30 June 2006.
(b) Projections based on 2001 Australian census data.

Source: Australian Institute of Health and Welfare 2007. Older Australia at a glance: 4th edition. Cat. no. AGE 52. Canberra: AIHW.

Table 1: Population aged 65 and over, by age and sex, 2006 to 2036

5.2 Increasing chronic disease

Chronic diseases are now responsible for over 70% of Australia's overall burden of disease. Much of the economic burden of chronic disease could be relieved through systematic and targeted investment in programs to address a number of preventable risk factors for chronic disease. Up to one third of all health problems are attributed to preventable risk factors such as smoking, physical inactivity, obesity, poor nutrition and high blood pressure.[77]

Strategies to improve outcomes in CVD and stroke will also act to enhance general lifestyle outcomes and reduce incidence of other chronic diseases such as diabetes.

[76] Australian Institute of Health and Welfare 2007. Older Australia at a glance: 4th edition. Cat. no. AGE 52. Canberra: AIHW.
[77] Australian Chronic Disease Prevention Alliance, 2004. Chronic Illness: Australia's Health Challenge. http://www.kidney.org.au/LinkClick.aspx?fileticket=YhiHBCGoMfc%3D&tabid=635&mid=907 , accessed 18 December 2008.

5.3 Rising health costs

As prices rise generally, the cost for health care items in particular can rise. Health inflation in Australia has outpaced general inflation in most years during the last decade. From 1995-96 to 2005-06, the average rate of health inflation was 3.1% a year, whilst general inflation was 2.7%.

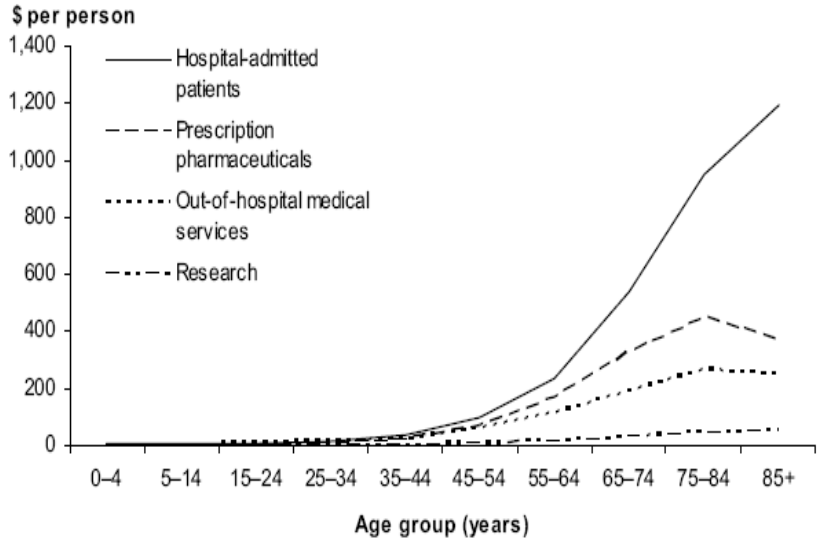
Many health reviews conducted across Australia suggest that due to increased life expectancy, an ageing population and advances in medical technology, health care costs are increasing out of proportion with government's ability to pay. Population-based prevention of illness rather than individual treatment, particularly for chronic diseases, is the most economically-viable approach to maintaining the health of a population as we age.

Cardiovascular diseases generate a greater cost burden that any other disease group in Australia. AIHW estimates that in 2004-05, allocated direct health care expenditure on cardiovascular diseases totalled $5.94 billion, which was 11% of total allocated expenditure. These estimates do not include the indirect costs of CVD, such as costs related to the social and economic impacts of CVD on individuals, their families and communities. Expenditure on cardiovascular diseases has been increasing: from 2001-02 to 2004-05 expenditure increased, in real terms, by 18%.

Expenditure per person for CVD increases with age, with those aged 85 and over being responsible for the highest expenditure. Spending on hospital-admitted patients accounted for approximately half of all expenditure on cardiovascular diseases, with prescription pharmaceuticals being the next most expensive area of expenditure (28%). Out of hospital medical services account for 19% of expenditure, and research 3%.

Source: *Australian Institute of Health and Welfare 2008. Health care expenditure on cardiovascular diseases 2004–05. Cardiovascular disease series no. 30. Cat. no. CVD 43. Canberra: AIHW.*

Figure 1 illustrates the CVD expenditure per person and clearly illustrates the proportion of expenditure across different components of the health system.



Source: Australian Institute of Health and Welfare 2008. Health care expenditure on cardiovascular diseases 2004–05. Cardiovascular disease series no. 30. Cat. no. CVD 43. Canberra: AIHW.

Figure 1: Health care expenditure for all cardiovascular diseases, per person, by age and area of expenditure

Expenditure is likely to increase into the future, despite the decreasing rates of cardiovascular disease in Australia. The main causes of this increase are the ageing population, and population growth.

As noted below, expenditure on cardiovascular diseases is projected to increase by $8.3 billion (105%) in the 30 years to 2032-33.[78]

Projected health expenditure[(a)] 2002-03 dollars, 2002-03 to 2032-33

	Expenditure (billions of 2002-03 dollars)				Percent change 2002-03 to 2032-33
	2002-03	2012-13	2022-23	2032-33	
Cardiovascular diseases	7.91	10.28	13.00	16.18	105

(a) Includes expenditure on high-level residential aged care facilities.

Source: Australian Institute of Health and Welfare 2008. Health care expenditure on cardiovascular diseases 2004–05. Cardiovascular disease series no. 30. Cat. no. CVD 43. Canberra: AIHW.

Table 2: Projected Health expenditure[(a)] 2002-03 dollars, 2002-03 to 2032-33

5.4 Enhanced technology and new drugs

A review undertaken of OECD countries indicates technology is one of the main causes of increased health spending as a proportion of GDP.[79] Innovations such as biopharmaceuticals, implantable materials and devices, surgical aids and diagnostic tools are likely to increase costs of diagnosis and treatment but can then reduce longer term costs of poorly managed care and increased admissions.[80]

Technological advances may also increase costs by increasing demand for healthcare, e.g. by expanding the potential treatment group or reducing risks to the extent that a particular procedure becomes more attractive.

There have been significant medical advances in assessment and treatment for CVD, particularly acute CVD. These include improved drug treatments and interventions such as arterial grafts, stents, angiography and angioplasty.

While many new technologies increase up front treatment expenses they can, if used within a cost benefit framework, reduce long term costs associated with increased morbidity or higher level interventions. There is a risk that new technologies are adopted without adequate assessment of evidence and used in situations where they do not significantly contribute to improved outcomes.

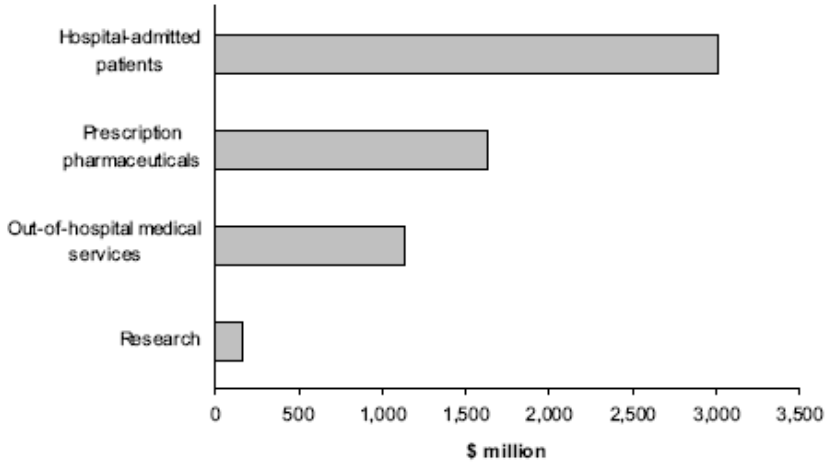
The development and maintenance of an ongoing evidence base is critical to support sound decision-making around prioritised investment in new technologies.[81],[82]

The value of new drug treatments for specific conditions must likewise be balanced against cost and compared with the effectiveness of existing treatments.

The cost of drugs to treat cardiovascular disease is increasing out of proportion to the overall cost of care. While overall expenditure on cardiovascular disease increased by 18% between 2000-01 and 2004-05, the cost of prescription pharmaceuticals increased by 21%.

[78] Australian Institute of Health and Welfare 2008. Health care expenditure on cardiovascular diseases 2004–05. Cardiovascular disease series no. 30. Cat. no. CVD 43. Canberra: AIHW.
[79] Docteur E & Oxley H, Health Care Systems: Lessons from the reform experience, OECD Health Working Paper, 2003, Directorate for Employment, Labour and National Affairs, France
[80] Adelaide Health Technology Assessment National Horizon Scanning Unit, Emerging Technology Bulletin, February 2007
[81] Scott, I., Why we need a national registry in interventional cardiology, MJA, Vol 189, No. 4, August 2008.
[82] Tonkin, A., Why Australia Needs a Cardiac Procedures Database, Heart, Lung and Circulation, 10 (Suppl), 2001.

As noted in Figure 2 below, prescription pharmaceuticals are the next most expensive sector, after acute care, for cardiovascular disease, with per person expenditure increasing with age.[83] As with technologies, the cost of using more expensive drug treatments now should be balanced against the longer term costs of increased morbidity.



Source: Australian Institute of Health and Welfare 2008. Health care expenditure on cardiovascular diseases 2004–05. Cardiovascular disease series no. 30. Cat. no. CVD 43. Canberra: AIHW.

Figure 2: Health care expenditure on cardiovascular disease, by area of expenditure, 2004-05 ($ million)

5.4.1 Telehealth and remote monitoring

Remote monitoring and self-monitoring of patients with chronic conditions appears to be a significant factor in self-management strategies and in reducing exacerbations and hospitalisation. Most nations are attempting some form of remote care. In the UK, the NHS has installed simple-to-use biometric equipment in patients' homes, so they can monitor their own blood pressure, blood sugar and blood oxygen levels and avoid unnecessary hospitalisation.

Canadian provinces have utilised Telehealth strategies to fulfil a commitment to improve 24 hour 7 day a week access to primary health care for its populations. The New Brunswick Extra-Mural Program (Canada) has piloted and is rolling out the use of technology to remotely monitor patients with chronic conditions. Patients use a portable device to monitor specific indicators, such as blood pressure, weight and oxygen levels. Once a day this information is sent remotely to a nurse who then follows up if there are concerns. The pilot for this program resulted in 85% fewer admissions in the pilot population and 55% fewer emergency department visits.[84]

In NSW, the Home Telecare system was piloted in a rural and a metropolitan centre.[85] The system monitors physical signs, provides medication reminders, a daily log and health promotion information. The article referenced notes that the system was received well by consumers and examples were provided of cases where it led to avoidance of hospital admission.

Initially Telehealth in Australia was primarily a means by which remote and isolated rural communities could receive access to clinical care. It continues to fulfil this important function; however it has as much applicability in the metropolitan context for supporting home-based care.

5.5 Workforce

With predicted shortages and poor distribution across the health workforce, there is a pressing need for new ways of working to deliver care within the framework of new models of practice. This is especially the case with CVD and chronic disease, where evidence for the benefits of multidisciplinary, co-ordinated care is strong.

[83] Australian Institute of Health and Welfare 2008. Health care expenditure on cardiovascular diseases 2004–05. Cardiovascular disease series no. 30. Cat. no. CVD 43. Canberra: AIHW

[84] Health Council of Canada, Fixing the Foundation: An Update on Primary Health Care and Home Care Renewal in Canada, January 2008

[85] Celler B, Lovell N, Basilakis J, Using information technonlogy to improve the management of chronic disease, MJA, Vol 179, 2003.

Making the best use of a scarce workforce is particularly important in the rural setting, where recruitment and retention of health professionals is challenging. For Indigenous communities, particularly those in remote areas, alternative ways of delivering services such as cardiac rehabilitation are dependent on new approaches to recruitment, employment, training and supporting Indigenous and non-Indigenous health workers. These issues are recognised by the Australian Government and are being considered as part of the wider health reform agenda.

A key theme in the Australian reform literature relates to the need to break down existing professional silos and develop a health workforce that is structured around the needs of consumers rather than institutions or professions. This is particularly relevant for models of care which rely on care co-ordination and integrated care teams. To do this requires a rethink of what health professionals currently do and how we can better use their particular skill sets.

Australia has opportunities to extend the practice capacity and payment models for existing professions or introduce new professions, which are being developed or trialled nationally and internationally. There are a number of international examples that are being adapted to the Australian context.

In the UK, research has shown that substituting nurses for doctors in delivering care for chronic conditions, other low acuity presentations and preventative health care results in equal care outcomes and a general increase in patient satisfaction, although not necessarily a reduction in cost. [86] The key word here is *substitution* rather than *duplication*; if this process is structured properly it can free up doctors for higher complexity care, hence making better use of their specific skills. With GPs and other doctors becoming extremely scarce in rural and remote areas, this approach can deliver real benefits.

Australian jurisdictions have been developing the role of allied health assistants, who work across a number of allied health professions. This could support the delivery of more accessible and flexible cardiac rehabilitation by using allied health assistants supported by allied health therapists.

Queensland is currently trialing an adapted version of physician assistant positions, which were initially developed in the USA and are also being trialed in Scotland and Canada and provide medical care under the supervision of a licensed physician. Frossard, et. al., note that a number of other countries are also considering the introduction of physician assistants.[87]

Pharmacists' scope of practice has been extended in Alberta, Canada to include prescription of specified drugs, administration of some injections, assessment of patients and prescription of drugs without, in some cases, physician authorisation.[88]

In a program aimed at improving the coordination of patient care and utilising hospital beds more effectively, NSW Health recently created the position of Hospitalist, a cross specialty doctor who provides care under the delegation of specialty units. The use of Hospitalists originated in the US, and the driving factor behind the rationalisation of the medical workforce within the acute hospital setting.[89].

Nurse Practitioners are nurses trained and accredited for advanced and extended practice, including defined diagnostic and prescribing functions, capacity to refer and management and clinical care of patients. Nurse Practitioners work in emergency care, primary health care and in specialist clinical areas such as diabetes or renal care.

Nurse Practitioners are already working in most Australian states and territories. Nurse Practitioners for Cardiac Care already exist in SA with positive feedback about their role and function in teaching hospitals.

[86] Sibbald B, Should Primary care be Nurse Led? Yes, BMJ 2008;337:a1157

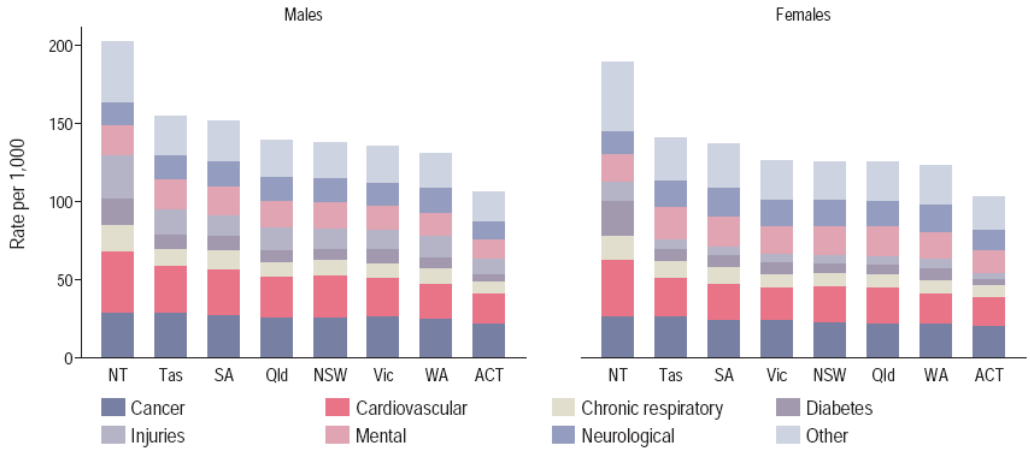
[87] Frossard L, Liebich G, Hooker R, Brooks P and Robinson L, Conference Report - Introducing physician assistants into new roles: international experiences, MJA, Vol188, No 4, February 2008.

[88] Health Council of Canada Annual Report to Canadians 2006

[89] Hillman, K, 2003, The hospitalist: a US model ripe for importing?, MJA 2003 178 (2): 54-55

5.6 Economic impacts of ill health

The economic impacts of ill health in Australia go beyond the direct costs to health services. An unhealthy population reduces workforce participation and productivity, and negatively affects living standards within the community. An economic analysis of public health programs in Australia over 30 years from 1970[90], found significant economic net benefits in reduced tobacco-related diseases, coronary heart disease, HIV/AIDS, road accident trauma and vaccine preventable diseases. Figure 3 provides details of the age adjusted Disability Adjusted Life Years (DALY) rates for a selected number of conditions across Australia.



Source: The Burden of Disease and Injury in Australia 2003. AIHW; May 2007

Figure 3: Disability Adjusted Life Years (DALY) rates for selected conditions

5.7 Australian Government health reform

There are a number of high level reviews occurring nationally, which will shape the future of health and health care delivery in Australia and directly impact on strategies for CVD. Ernst & Young has analysed several key reports/discussion papers related to these review processes, which comment on and/or may influence future health strategy. These include:

- Towards a National Primary Health Care Strategy[91]
- Beyond the Blame Game: Accountability and performance benchmarks for the next Australian Health Care Agreements[92]
- Australia: The healthiest country by 2020[93]
- Social Inclusion – Origins, concepts and key themes [94]

The reports/discussion papers are consistent in their key themes of:

- Prevention and self-management
- Health information and accountability
- Workforce
- Equity and Social Inclusion

[90] Department of Health and Ageing 2003
[91] Department of Health and Ageing, 2008. Available at http://www.health.gov.au/internet/main/publishing.nsf/Content/PHS-DiscussionPaper
[92] National Health and Hospitals Reform Commission, 2008. Available at http://www.nhhrc.org.au/internet/nhhrc/publishing.nsf/Content/commission-1lp
[93] Preventative Health Taskforce, 2008. Available at http://www.preventativehealth.org.au/internet/preventativehealth/publishing.nsf/Content/discussion-healthiest
[94] Hayes A, Gray M, Edwards B, AIHW, for Social Inclusion Unit, Department of Prime Minister and Cabinet, Australian Government, 2008.

5.7.1 Prevention

Prevention is identified as a priority in each report/discussion paper. It is generally recommended that the government identify at risk population groups and target these groups through population wide interventions. The report *Beyond the Blame Game* advocates the use of social marketing to make unhealthy products less attractive and to promote an active lifestyle. The reports all agree on the need for further research into factors such as obesity, alcohol use and smoking to inform policy.

5.7.2 Health information and accountability

The discussion paper, *Towards a National Primary Health Care Strategy*, supports the development of an individual Electronic Health Record (EHR) to improve continuity of care across the complex range of service providers and different health sectors. The report *Beyond the Blame Game* proposes that care should be redesigned so that there is increased accountability if the care does not meet certain standards and fails to achieve required outcomes. Also recommended is a series of indicators to track progress in this area with responsibilities being divided between the Commonwealth and the States, based on financing and policy responsibility.

5.7.3 Workforce Reform

Workforce strategies proposed in the discussion paper *Towards a National Primary Health Care Strategy* include developing flexible working and training arrangements and expanding current opportunities for health professionals to become multi skilled. Funding is also being called for to assist in clinical trials and to ensure a continuous learning and research culture. These recommendations are reinforced in the report *Beyond the Blame Game*.

5.7.4 Equity and social inclusion

Consistent throughout the reports/discussion papers has been the issue of poorer health outcomes for Indigenous and specific groups of non-Indigenous Australians and the need to close the gap. The reports/discussion papers identified a lack of research and information about the health care patterns of Indigenous Australians and that this is should be addressed before further interventions can be planned. Also highlighted is the issue of equity for those who are geographically, mentally, physically or socially excluded or have other barriers to participation.

Social exclusion has a number of aspects, such as locational disadvantage, lack of employment, poverty, intergenerational disadvantage, homelessness, cultural and language barriers and disability. Families and individuals who experience some or many of these manifestations of social exclusion also experience poorer health outcomes.

People from culturally and linguistically diverse (CALD) backgrounds may experience social exclusion as a result of language or cultural barriers. The ability to acquire knowledge about health enables a person to recognise health problems (in themselves or others), make choices about behaviours, and access health services when required and some members of CALD communities within the wider community may have difficulty accessing, understanding or using information about health. They may not assimilate new information as quickly and may therefore retain traditional beliefs and use traditional health treatments.[95]

Migrants bring to Australia their own unique health profiles – the 'healthy migrant' effect. Migrants often less exposed to harmful risk factors for CVD and other non-communicable diseases in their countries of origin, before they move to Australia. Despite these advantages, certain health risk factors and diseases are more common among some country-of-birth groups in Australia, reflecting diverse socioeconomic, cultural and genetic influences.[96]

Social inclusion agendas have been implemented internationally, including in the United Kingdom and the European Union. The Australian Government's *Social Inclusion* paper highlights the importance of Australia learning from international experiences to build on what has worked and avoid some of the pitfalls. One of the central insights of social inclusion/exclusion agendas internationally is that interventions have to be developed to respond specifically to the needs of particular groups. The process of identifying the needs and challenges of disadvantaged groups needs to be specific to the Australian context.

[95] Australian Institute of Health and Welfare, *Australia's Health 2008*, Australian Government, Canberra: AIHW, p 131
[96] Ibid, p 91

Social Inclusion aspirations and approaches for Australia are spelt out in the Australian Social Inclusion Board's Principles for Social Inclusion.[97] They are listed below:

5.7.4.1 Aspirations

- *Reducing disadvantage - Making sure people in need benefit from access to good health, education and other services;*
- *Increasing social, civic and economic participation - Helping everyone get the skills and support they need so they can work and connect with the community, even during hard times; and*
- *A greater voice, combined with greater responsibility - Governments and other organisations giving people a say in what services they need and how they work, and people taking responsibility to make the best use of the opportunities available.*

5.7.4.2 Approaches

- *Building on individual and community strengths - Making the most of people's strengths, including the strengths of Aboriginal and Torres Strait Islander peoples and people from other cultures;*
- *Building partnerships with key stakeholders - Governments, organisations and communities working together to get the best results for people in need;*
- *Developing tailored services - Services working together in new and flexible ways to meet each person's different needs;*
- *Giving a high priority to early intervention and prevention - Heading off problems by understanding the root causes and intervening early;*
- *Building joined-up services and whole of government(s) solutions - Getting different parts and different levels of government to work together in new and flexible ways to get better outcomes and services for people in need;*
- *Using evidence and integrated data to inform policy - Finding out what programs and services work well and understanding why, so you can share good ideas, keep making improvements and put your effort into the things that work;*
- *Using locational approaches - Working in places where there is a lot of disadvantage, to get to people most in need and to understand how different problems are connected;*
- *Planning for sustainability - Doing things that will help people and communities deal better with problems in the future, as well as solving the problems they face now.*

The Australian Government's social inclusion agenda is influencing how policies and programs are developed; requiring them to be considered in the light of their impact on reducing aspects of social exclusion. One of the key factors influencing access to health care continues to be ability to pay. It is recommended through a number of reform strategy reports and discussion papers that a system be devised so that health care is received based on the need for care, not ability to pay.

[97] Australian Social Inclusion Board, *Principles for Social Inclusion*, Australian Government Canberra.

6. The CVD Health of Indigenous Australians

Indigenous Australians generally have poorer health than other Australians. Of particular concern is the continued high mortality rate from cardiovascular disease for Aboriginal and Torres Strait Islander people. Table 3below describes mortality rates for Indigenous Australians which, in some cases, are up to three times that of non-Indigenous Australians.[98]

Average annual deaths from cardiovascular disease for Aboriginal and Torres Strait Islander peoples[(a)], 2002-2005[(b)]

	Indigenous Australian males	Indigenous Australian females
	SMR[(d)]	SMR[(d)]
Coronary heart disease	3.3	2.8
Cerebrovascular disease	2.1	1.8
Heart failure	2.1	2.4
Rheumatic fever and rheumatic heart disease	15	23
Total cardiovascular diseases	**3.1**	**2.7**

(a) Data are for Indigenous deaths for usual residents of Qld, WA, SA and NT.
(b) Deaths are based on year of occurrence of death for 2002-2004 and year of registration of death for 2005.
(c) The number of deaths has been averaged over the period 2002-2005.
(d) SMR (standardised mortality ratio) is the ratio of the observed number of deaths to the number of expected deaths if Indigenous Australians had experienced the same age- and sex-specific death rates as non-Indigenous Australians

Source: *Australia's Health 2008* Australian Institute of Health and Welfare

Table 3: Average annual deaths from cardiovascular disease for Aboriginal and Torres Strait Islander peoples

Interviews with the Indigenous branch of the Baker IDI, Northern Territory and other jurisdictions and with the National Aboriginal Community Controlled Health Organisation highlighted specific risk points in the care continuum for Aboriginal and Torres Strait Islander Australians. Anecdotal information received in interviews supports known evidence and indicates clear inequities compared to non-Indigenous Australians. The largest contributor to the mortality gap between Indigenous and non-Indigenous Australians is CVD. This differs from contributors to morbidity, such as Sexually Transmitted Diseases, Mental Health and Oral Health.

While there are enhanced MBS items to support screening for disease, stakeholder consultation indicates that the system does not necessarily have the capacity to deliver treatment, particularly in the case of Indigenous Australians. Access issues are critical for Indigenous Australians, particularly access to services that are configured to address spiritual and cultural issues around health and well-being. This is an issue across urban, rural and remote Indigenous communities.

Although there have been improvements, Aboriginal and Torres Strait Australians are still sicker when they initially present to a health service with symptoms of CVD; they tend to stay in hospital longer and have more repeat admissions. Survival rates are lower as there is a lower likelihood that Indigenous Australians will make it to hospital within the optimal window for treatment.

Stakeholders note that if Indigenous Australians do survive their first CVD event they are less likely than non-Indigenous Australians' to gain access to rehabilitation and angiography, coronary bypass and other invasive management. This is reflected in the poorer post-acute CVD survival rates for Indigenous Australians.

People with access to the private health system are more likely to receive specialist cardiology interventions than those reliant on the public sector. In the Northern Territory people from Alice Springs must travel to Adelaide for a specialist public procedure, which is personally difficult and an additional expense due to the cost of travel and accommodation. This is a particular burden for Indigenous Australians; strategies to improve access need to take these issues into account.

[98] Australian Institute of Health and Welfare, *Australia's Health 2008*, Australian Government, Canberra: AIHW

Access to rehabilitation is a significant contributor to reduced mortality; rehabilitation following a CVD event can reduce subsequent events and suffering by 30%. However traditional rehabilitation methods are not working for Indigenous Australians, particularly rehabilitation programs offered in the hospital setting and those based on rigid and inflexible programs. Stakeholder advice is that flexible family-based rehabilitation programs and risk reduction programs would be more effective than individually focused programs. An anecdotal example provided is that of a Cairns-based CVD rehabilitation program, run from the Wuchopperen Health Service by nurses, which has a 70 – 80% participation rate.

Aboriginal and Torres Strait Islander Australians have higher smoking rates; advice from stakeholder consultation is that in the Northern Territory approximately 50% of Indigenous people smoke.

Aboriginal and Torres Strait Australians have poorer access to health care generally, including poorer access to appropriate medicines exacerbated by a lack of systems to support medication compliance. Stakeholders advise that assertions about the lack of compliance of Indigenous Australians with treatment regimes mask a failure to provide clear information, support good choices and solve access problems. A project undertaken for the National Heart Foundation on Quality Use of Medicines for Indigenous Australians identifies the importance of tailoring CVD management programs for Indigenous Australians.[99]

In November 2008, COAG agreed to the National Indigenous Reform Agreement (NIRA), which captures the objectives, outcomes, outputs, performance measures and benchmarks that all governments have committed to achieving through their various National Agreements and National Partnerships (NPs) in order to close the gap in Indigenous disadvantage. COAG has asked for advice on how the National Agreements and NPs will collectively lead to a closing of the gap and what further reforms are needed. COAG will work to develop a further reform proposal for consideration at the Closing the Gap COAG meeting to be held in 2009.

In addition, the Commonwealth and the States agreed to an Indigenous Health NP worth $1.6 billion over four years, with the Commonwealth contributing $806 million and the States $772 million. This proposal will contribute to addressing the COAG-agreed closing the gap targets for Indigenous Australians, closing the life expectancy gap within a generation and halving the mortality gap for children under five within a decade. The proposal includes expanded primary health care and targeted prevention activities to reduce the burden of chronic disease.[100]

A number of the issues confronting Indigenous Australians also confront Australians from low SES and remote areas. This issue is noted in the work currently being undertaken by the Australian Government on Social Inclusion where poverty, deprivation and social exclusion are all identified as contributors to poor health outcomes.

[99] National Heart Foundation of Australia (Brown, A on behalf of the Heart Foundation Pharmaceutical Roundtable). *Ensuring the quality use of medicines among Indigenous Australians: key directions for policy, research and practice for cardiovascular health*. Melbourne, Victoria, 2007.
[100] Council of Australian Governments Meeting Communique, 29 November 2008, Canberra

7. National Service Improvement Framework for Heart, Stroke and Vascular Disease (the Framework)

7.1 The Framework

The National Service Improvement Framework for Heart, Stroke and Vascular Disease (the Framework) was endorsed by the Australian Health Ministers' Advisory Council in 2005.

The Framework describes the evidence base for the management of cardiovascular disease, covering prevention and risk identification, early identification and intervention, critical care, ongoing management and palliation. It then identifies critical interventions points across this spectrum (listed at Appendix A). It is an enabling document which can be used to both shape and monitor CVD strategies.

The Critical Intervention points in the Framework are divided into:

- Reduce Risks
- Early detection, care and support
- Best care and support for acute episodes
- Best long term care and support
- Best care in advanced stages

The Framework was developed through lengthy consultation with a range of stakeholder groups including leading clinicians, consumers, health organisations, non-government organisations, and policy makers at both the federal and jurisdictional level. This scope of government and industry input assisted the identification of the health service needs of the Australian community, and it is on these needs that the principles of the Framework are based.

The Framework is intended as a high level guide for health services, and can assist in the development of effective programs for targeting CVD. While the Framework was not designed to directly replace clinical guidelines, it can be used for direction in developing future guidelines, processes and benchmarks.

The Framework is designed to reflect the continuum of care, from reducing risk before the diagnosis, through to the application of care in the advanced stages of illness. CVD and its related conditions are Australia's largest health problem, though much of the burden of disease is preventable. The Framework highlights the importance of the identification and management of the risk factors for these conditions. Identification of multiple risk factors in an individual reduces life expectancy and increases health care costs. Management of the individual in recognition of the risk factors is critical to reducing the burden of disease.

7.2 Time for Action

Together the NSF and the NHF have published *Time for Action – A national plan to reduce the burden of cardiovascular disease*. This document makes 34 recommendations, many of which relate directly to the critical intervention points contained in the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*. The recommendations contained in *Time for Action* have been further refined into a list of 15, contained in a submission on the 2009-10 Commonwealth Budget.

8. Current Programs

8.1 Peak Bodies

Peak bodies are not-for-profit non-government organisations, whose activities are funded from a range of sources, including states and territories, the Australian Government, bequests, donations and fund raising activities.

8.1.1 National Stroke Foundation (NSF)

NSF is the peak body in Australia for stroke, and supports specific activities to improve the identification and treatment of stroke. These include:

- *Clinical Guidelines for Acute Stroke Management* – the 2003 guidelines were reviewed and updated in 2007.
- *The 2007 National Stroke Audit* – undertaken in 2007 to determine the nature of stroke services across Australia, how they are monitored and to identify where resources might be inadequate for service delivery. The first-ever post acute stroke audit took place in 2008, and will be repeated in 2009.
- *Acute Stroke Service Framework* – a framework to enable the delivery and monitoring of optimal acute stroke care across Australia.
- *National Stroke Week* – the basis for continuing public education about stroke awareness and prevention in the community.
- *strokesafe Seminars* – seminar kits provide health professionals with the necessary resources to organise and deliver an educational presentation about stroke prevention in the community. The *strokesafe* awards recognise the efforts of health professionals and community groups who support the awareness campaign.
- *Know your numbers* – an annual blood pressure awareness campaign. The program aims to make people aware of the importance of regular blood checks and aware of the link between blood pressure and stroke. Pressure stations are established in the local community to encourage people to check their blood pressure and to provide them with information about how to keep their blood pressure low and reduce their risk of stroke. This will be rolled out in Queensland from 2009 as an ongoing program through pharmacy.
- *FAST* – the NSF's ongoing campaign to educate the general public about the signs of stroke, emphasising stroke as a medical emergency and the highlighting the need for people to call '000' if they experience the signs of stroke in the themselves or someone else.
- *Hospital Peer Support Program* – a pilot program that provided information to stroke survivors preparing to leave hospital and return home. This program has not yet been permanently rolled out. NSF provides some peer support programs through stroke support groups in Western Australia and Tasmania and will be delivering phone peer support and an online forum in 2009.
- *Friends of NSF* - the National Stroke Foundation has also established the Friends of NSF program to keep stroke support group facilitators informed about new programs, resources and funding for National Stroke Week activities. The program also provides community grants to stroke support groups to assist in National Stroke Week activities.
- *strokelink* - a QA program that links the evidence with practice through the audit process. Hospitals work with the *strokelink* team to evaluate gaps in their services as identified through audit, then develop and implement action plans to improve adherence to recommendations of care. The impact of the program at a local level is evaluated with a repeat of the stroke audit.
- *GP education program* – developing and delivering modules that educate GPs about evidence based practice. The first module on transient ischaemic attack (TIA) was released in 2008, with modules on antiplatelets, and a trial fibrillation is to be released next year.
- *strokeline* – a '1800' telephone service providing education and information to the public about stroke prevention and stroke recovery. NSF receives calls about both prevention and recovery, but the majority are from people in the community who have had a stroke (or their families) who require more information/support.

- *The Australian Stroke Coalition (ASC)* – NSF co-chairs and provides secretariat support and funding for the coalition, which brings together professional organisations (such as RACP, AFRM, colleges of physiotherapists, occupational therapists, speech pathologists, state stroke networks and consumers) to coordinate activities in the stroke space in Australia. The ASC has five working groups looking at acute stroke, stroke units, education and workforce, community care and rehabilitation.
- NSF funds research into stroke and quality of life, and will be providing funding to increase stroke research capacity in Australia in 2009.
- Next year NSF will also be developing programs for exercise instructors and counsellors to be more informed about the needs of people who have experienced stroke, as part of the stroke support strategy.

Ernst & Young has met with key representatives of the NSF individually and in a workshop held on the 15th December 2008. In addition Ernst & Young has considered a number of documents provided by the NSF.

8.1.2 National Heart Foundation (NHF)

NHF is the peak body in Australia for cardiac disease and undertakes a range of activities to reduce death and suffering from cardiac disease. These include funding medical and scientific research, public education, promoting lifestyles that improve cardiovascular health, developing clinical guidelines and conducting programs that improve heart health, including the following:

- ***Research-*** The Heart Foundation will provide $13.5m for cardiovascular research in 2009 through its research program. Since it was formed in 1959, the Heart Foundation has funded CVD research totalling nearly $200m.
- ***Heart Health Information Service*** - Since 1998, the Heart Foundation has provided a dedicated telephone information service (1300 36 27 87) staffed by trained professionals, providing information about heart health issues for the cost of a local call. Some 30,000 callers are helped with advice and printed resources each year.
- ***Clinical Guidelines*** - The Heart Foundation produces a number of clinical guidelines including guidelines on hypertension, blood lipids, acute rheumatic fever and rheumatic heart disease, heart failure and acute coronary syndromes.
- ***Consumer Resources*** - Consumer resources developed and published by the Heart Foundation include resources on living well with chronic heart failure, children with heart problems, coronary angioplasty and stent implantation, how to be smoke-free, losing weight the healthy way and nutrition and physical activity advice for parents and carers.
- ***Heart Foundation Tick*** - The Heart Foundation Tick program was launched in 1989 and has now been extended to food eaten out of the home, including restaurants and caterers.
- ***Heart Foundation Programs*** - The Heart Foundation runs a number of state/territory and national programs designed to help prevent cardiovascular disease and improve the quality of life for those living with CVD. Examples include:
  - Heart Foundation Walking, partly funded by the Federal Government;
  - Heartmoves;
  - Jump Rope for Heart; and
  - Heart Foundation Nurse Ambassador program (South Australia).
- ***'Warning signs' campaign*** - The Heart Foundation has conducted campaigns to raise awareness of the warning signs of heart attack and the importance of dialling 000 and getting help fast. The Heart Foundation has made the warning signs campaign a major priority under the current five year strategic plan, 'Championing Hearts'.
- ***Go Red for Women*** - The Go Red for Women campaign raises awareness about the heavy toll CVD takes on women.
- ***Heart Week*** - In May each year, the Heart Foundation runs Heart Week, a national week of activity to raise awareness about CVD prevention. Public education campaigns are also conducted on key priorities such as women and heart disease, the importance of healthy weight and warning signs of heart attack.
- ***Indigenous Programs*** - The Heart Foundation has an Aboriginal and Torres Strait Islander CVD program supporting initiatives such as cardiac rehabilitation programs for Indigenous people and developing and promoting the implementation of acute rheumatic fever/rheumatic heart disease

guidelines. The Heart Foundation has participated in the NATSINSAP nutrition initiative and has developed healthy food purchasing guidelines for remote community store managers. The Heart Foundation is working to reduce Indigenous smoking rates and reduce the gap for Indigenous in-hospital CVD intervention rates.

- ***Tobacco Control*** – **The** Heart Foundation activities include public awareness campaigns on smoking, the development of consumer resources, strong advocacy, the provision of expert advice to government and close cooperation with other public health organisations. The Heart Foundation also provides support and funding for Action on Smoking and Health.
- ***Healthy Spaces and Places*** - The Heart Foundation is working in partnership with the Australian Local Government Association and the Planning Institute of Australia on the 'Healthy Spaces and Places Project', with funding assistance from the Federal Government. The project aims to promote ongoing development and improvement of built environments to facilitate lifelong active living and promote good health outcomes for Australians.
- ***Local Government Awards*** - The Heart Foundation Local Government Awards were established in 1992 to provide an opportunity for Local Governments to celebrate their achievements in creating heart healthy communities. They recognise initiatives that encourage communities to be physically active, be smoke free and make healthy food choices.
- ***Advocacy*** - The Heart Foundation advocates for improved prevention, treatment and care of people with CVD, promoting the need for a greater investment of resources to improve outcomes and reduce death and suffering. Outcomes include the introduction of the emergency '000' number in the 1980s. A long-held advocacy goal of the NHF is the establishment of a national cardiac procedures register.

Ernst & Young has met with key representatives of the NHF individually and in a workshop held on the 15th December 2008. In addition Ernst & Young has considered a number of documents provided by the NHF.

8.2 Jurisdictions

This section provides an overview and summary of the policy context within each jurisdiction and of the programs and strategies that contribute to the critical intervention points, as specified in the National Service Improvement Framework for Heart, Stroke and Vascular Disease.

The jurisdictional information outlined in this section is based on a reporting template, developed by Ernst & Young and completed by each jurisdiction. Northern Territory and Tasmania were unable to respond to the survey.

8.2.1 Overview of State and Territory activity in relation to the critical intervention points

There are a large number of policies, programs and strategies across the states and territories that are aligned to the critical intervention points. From the information available, this alignment is dispersed across the five groupings of critical intervention points: reduce risks; early detection, care and support; best care and support for acute episodes; best long-term care and support; and best care in the advanced stages; with an increased concentration of individual programs and strategies in the reduce risk and acute episode groupings. Table 4 provides an overview of the types of policies and strategies across the states and territories.

Table 4 Overview of strategies and polices across states and territories

Critical Intervention Points	Overview of programs and strategies	
	Specific (primarily targeted to specific critical intervention points)	**General (contribute across critical intervention points)**
Reduce risks	► Health and well-being plans ► Healthy lifestyle (including physical activity and diet) ► Tobacco control strategies ► Healthy weight ► Education	► Primary care partnerships ► Clinical guidelines and pathways ► Chronic disease prevention and management ► Chronic care programs ► Training programs, up-skilling, scholarships and workforce development ► Cardiology services/networks
Early detection	► Disease registers ► Outreach programs	
Acute episode	► Stoke units ► Cardiac investigation services ► Coronary care units ► Cardiac rehabilitation ► Chronic disease self-management ► Heart failure clinics/services	
Long term	► Disease management programs ► Cardiac rehabilitation ► Chronic disease self-management ► Care planning	
Advanced stages	► Advanced care planning ► Palliative care strategies	

Detailed information on programs and policies within each jurisdiction is contained in Appendix D

9. Stakeholder Consultation

Ernst & Young undertook consultations with representatives from peak bodies and sought specific information from state and territory jurisdictions. The purpose of the consultations was to assess the degree to which the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* was understood and utilised across the system, to gain an understanding of programs in place and to discuss gaps or areas for greater attention moving forward.

9.1 Review Advisory Group

To ensure access to expert guidance during the course of the Review, a Review Advisory Group was established. The Review Advisory Group membership list is contained in the Terms of Reference at Appendix B. Proposed Review Advisory Group members were contacted and alternatives chosen where initial nominees were unable to participate.

The Review Advisory Group met twice by phone; at the first meeting, held on the 15th January 2009 a draft Progress Report was discussed and at the second meeting on the 12th February 2009 the draft Final Report was discussed. Out of session feedback from some Review Advisory Group members was sought on their specific areas of expertise.

9.2 Meetings

The Ernst & Young team has consulted with representatives of the following key stakeholders:

- Departments of Health/Human Services in States/Territories
- The National Heart Foundation (NHF)
- The National Stroke Foundation (NSF)
- The National Aboriginal Community Controlled Health Organisation (NACCHO)
- The Australian General Practice Network (AGPN)
- The Royal Australian College of General Practitioners (RACGP)
- The Australian Health Insurance Association (AHIA)
- Kidney Health Australia
- The Australian Diabetes Society
- The Baker IDI Heart and Diabetes Institute (Indigenous Division)
- Australian Primary Care Collaboratives
- Australian Commission on Safety and Quality in Health Care
- National Institute of Clinical Studies
- Members of the Review Advisory Group

Details of consultations are contained in Appendix C.

9.3 Workshop

On the 15th December 2008, a workshop was held in Melbourne with representatives from and clinical advisors to the NSF and the NHF. The workshop was to discuss the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*, the recommendations contained in *Time for Action* and the high priority recommendations contained in a joint budget submission of the NSF and NHF to the Australian Government. With clinical and health economics input, the Ernst & Young team worked with participants to analyse and cross reference these documents with information received from jurisdictions and other stakeholders, considering evidence, relevance, equity, ease of implementation and acceptability of recommendations.

10. Framework for recommendations

10.1 Principles

Foundation elements were identified as the highest priority. They are followed by logical groupings of additional recommendations listed in priority order. For example Group 1 is the highest priority in the additional recommendations, followed by Group 2 and so on. Recommendations have been developed using the framework described below. The prioritised order of groups of recommendations indicates the order in which stakeholders might consider commencing implementation of strategies.

It should be noted that some Foundation recommendations may have an immediate commencement but a long lead time to full implementation, due to the complexities associated with their implementation. Investments would need to reflect this, with staged investment planned for some recommendations.

The principles that have guided the priority recommendations are as follows:

- Strategies should support equity, access and social inclusion principles.
- Strategies should allow for disease specific variations.
- Recommendations should not exclude "good ideas or improvements" solely on the basis of incomplete evidence. There is also a weighting which should be placed upon consumer feedback and experience.
- Strategies which develop capacity within the system and improve service quality and outcomes should be implemented before strategies which increase demand.
- There should be a high priority placed upon early identification of CVD, early intervention and prevention
- Accountability should be appropriately allocated across levels of government and the service system.
- Recommendations should offer value for money.

The following steps make up the framework used to develop recommendations for consideration:

- Mapping the CVD journey
- Overlaying sample journeys for stroke and cardiac failure
- Identifying accountability for recommendations
- Reviewing the evidence base
- Considering value for money
- Linking with key themes identified in consultations

10.2 Mapping the CVD journey

First the CVD journey is mapped, from the perspective of the individual and the service system.

The map of the CVD journey is not disease specific but rather describes the example pathways that might be taken by an individual experiencing CVD. It recognises that for some people the first interaction with the health system for CVD is through an emergency presentation, while for others the GP may be their starting point for the CVD journey.

Not all people with CVD will touch all points of this journey and each individual's experience of their disease is unique. For example not all people who have experienced a cardiac event require palliation for their disease. Stroke survivors may experience a long period with significant but stable disability levels rather than become increasingly ill to the point of requiring palliation. Nevertheless for a significant proportion of people experiencing the CVD journey, palliation will be a necessary service.

A key element of the map of the CVD journey is the identification of those foundation elements that need to be in place to support a sound, well-governed and supported system. They relate to all stages of the CVD journey and have been identified as a frontline priority in the recommendations.

Using this model, logical groupings of recommendations that will work together to improve different stages of the journey have been identified.

10.2.1 The CVD Journey

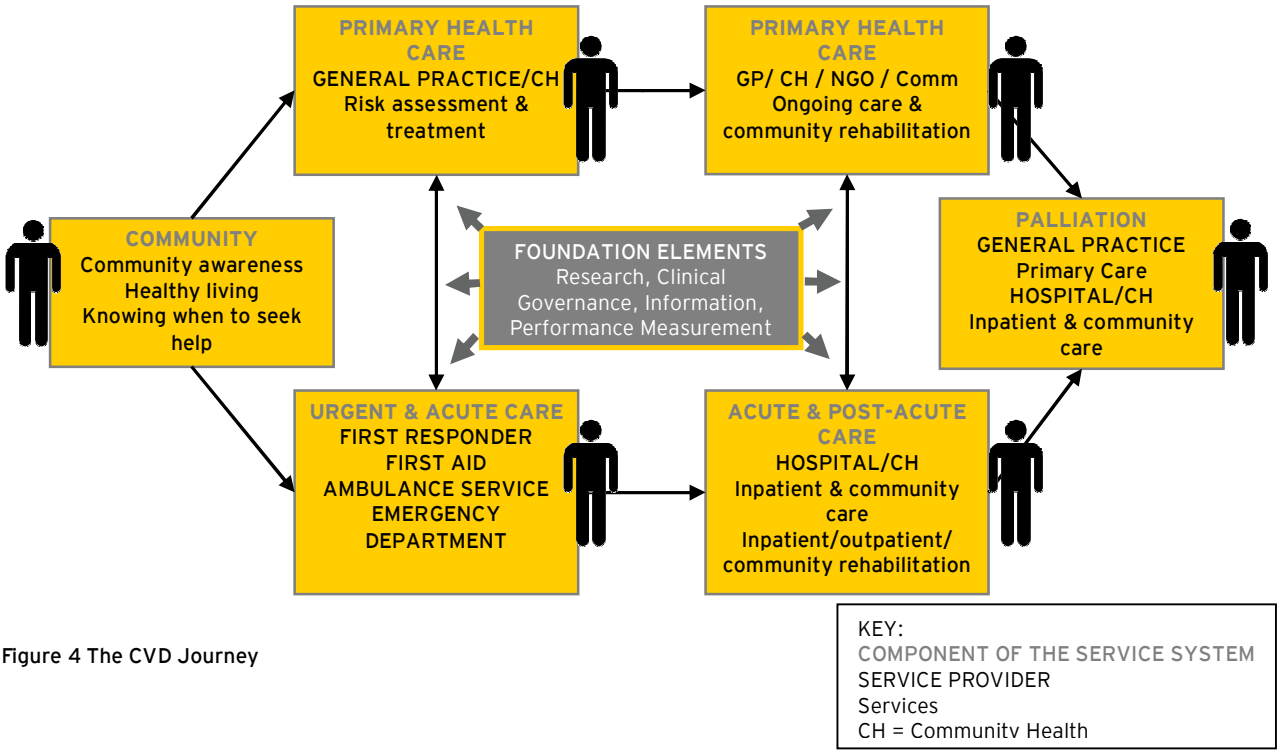


Figure 4 The CVD Journey

10.3 Overlaying disease specific journeys for stroke and cardiac disease in rural and urban settings

Mapping sample journeys for specific diseases allow testing of grouped recommendations against some of the distinct differences experienced within the spectrum of CVD and across different settings. By mapping specific journeys, specific interventions are taken into account; which may make a significant difference even though it is to a sub-section of the broader population experiencing CVD.

The following diagrams map out a sample cardiac and sample stroke journey. While these journeys may differ from individuals' specific experiences, they highlight some of the key differences between these two major diseases within the CVD group of diseases.

The sample journey describes CVD pathways, rather than providing examples of where the system is failing people with CVD.

10.3.1 Sample CVD journey

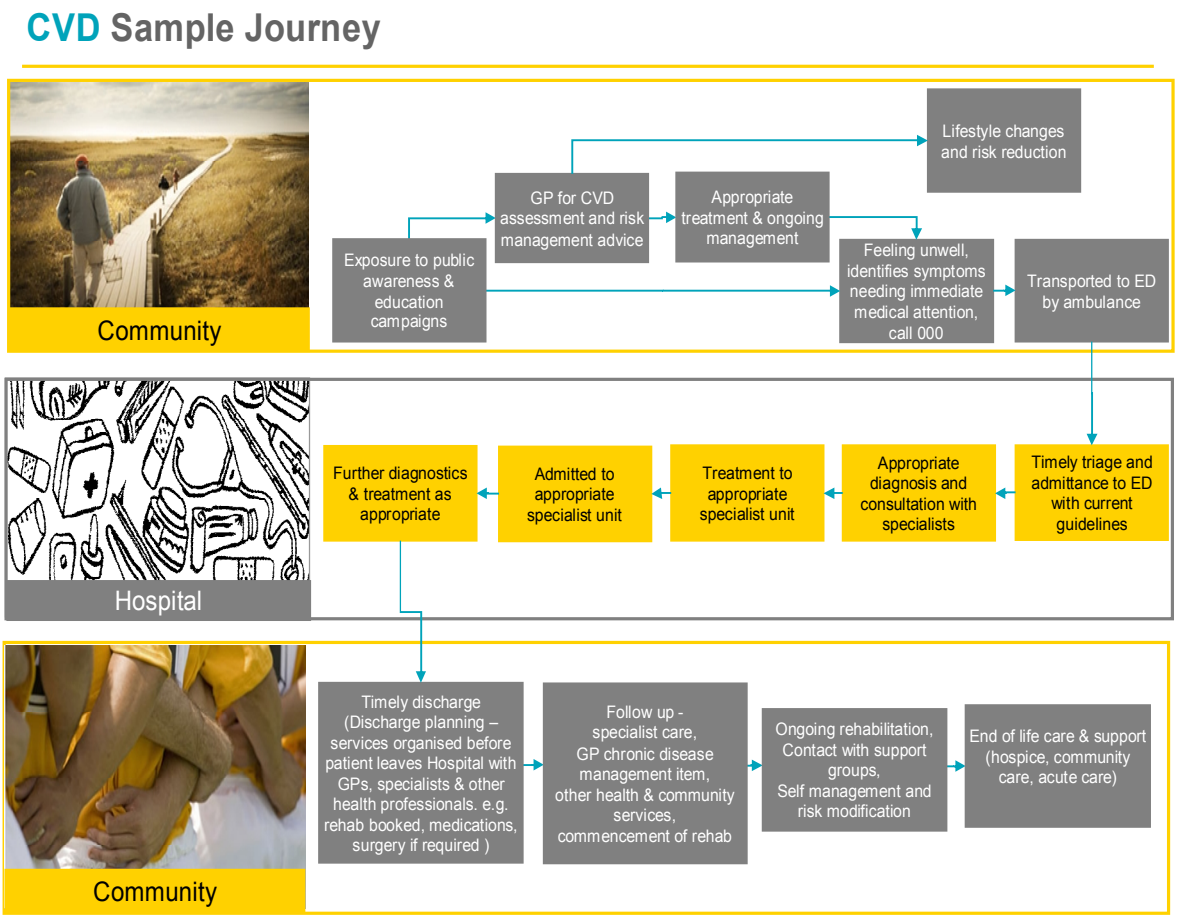


Figure 5 CVD Journey

It is important to note that this diagram represents an ideal journey. For individuals experiencing CVD, this journey has infinite variations, many of them linked to less than ideal outcomes and indicative of past and current inadequacies in the existing service system for CVD.

10.4 Identifying linked components of the CVD journey

Using the model of the CVD, components of the CVD journey that logically link together or overlap have been mapped. These form part of the rationale for the prioritisation and grouping of recommendations.

10.4.1 Foundation elements

Foundation elements (highlighted below) underpin the entire CVD system, covering the triad of clinical governance, information (including research) and performance measurement. A strong and well-functioning system requires:

- sound clinical governance;
- collection, access to and ongoing use of reliable information (at individual and system level); and
- application of key performance measures to support optimal system performance.

Foundation recommendations ("F") are considered essential to build strong foundations and support capacity building throughout the CVD service system. Although some recommendations relating to these elements will take considerable time to fully implement, consideration should be given to commencing work on them immediately.

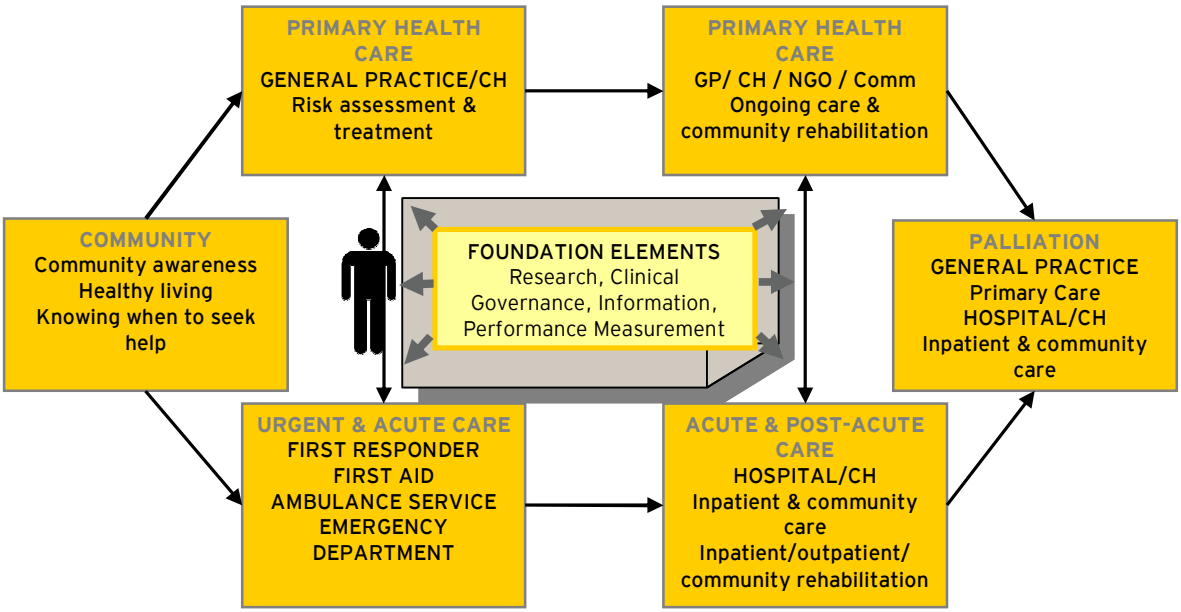


Figure 6 Foundation elements of the CVD journey

10.4.2 Population health

Population health initiatives effect change at a population level and must be considered as a part but not the whole of a system improvement strategy. These initiatives will not necessarily improve individual outcomes; their success is measured against population-wide demographic data. The impact of population health actions can take time to become evident, which translates into a long lead time before a return on investment is noted. For this reason, it makes sense to evaluate the success of early stages of population health strategies through the use of secondary indicators.

The diagram below highlights the point in the CVD journey at which community awareness and healthy living strategies are most effective (highlighted). These can both support individual change and impact on population morbidity and mortality. There is an argument about whether public education strategies are foundation elements of any high quality CVD program. In principle this argument is valid. However, the evidence base around marketing and promotion of CVD lifestyle indicators suggests that very significant investments need to be made to achieve a behavioural change and these investments are more effective if some or all of the foundation priorities are already in place.

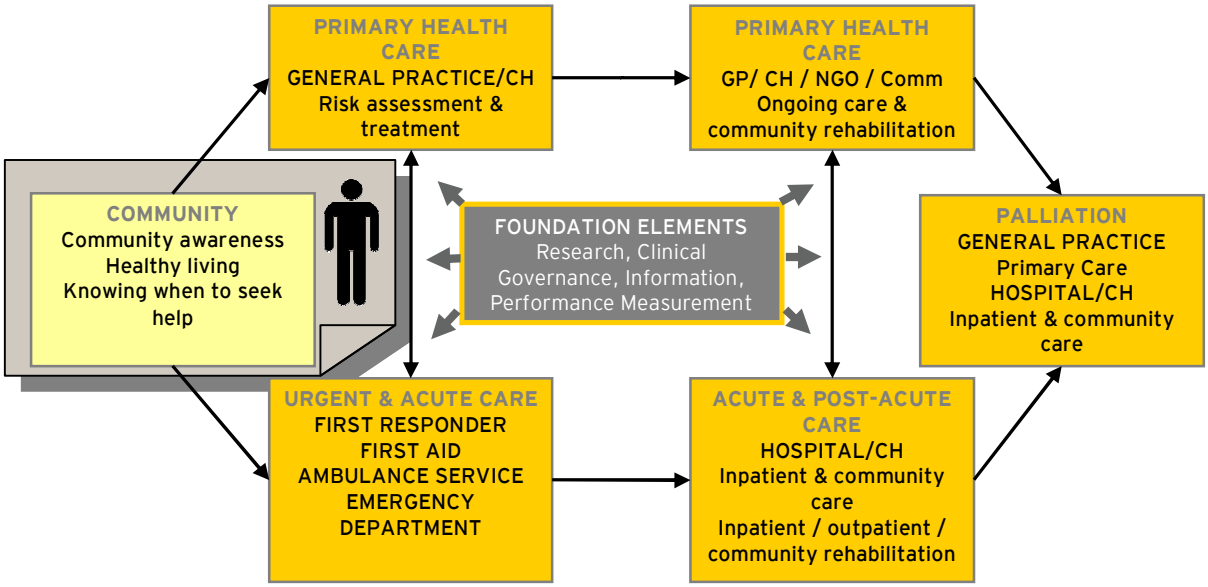


Figure 7 Population health

10.4.3 Reducing risk through general practice and primary health care

Primary health care includes primary prevention, often community-based, and secondary prevention, more often provided in clinical settings. General Practice is a key element of the primary health care service system and GPs have traditionally been the first contact for many people experiencing illness. There is now an increasing emphasis on the role General Practice plays in primary and secondary prevention of chronic disease, particularly early identification and management of chronic conditions. The diagram below highlights the two points in the CVD journey where implementation of targeted strategies will improve risk reduction in CVD.

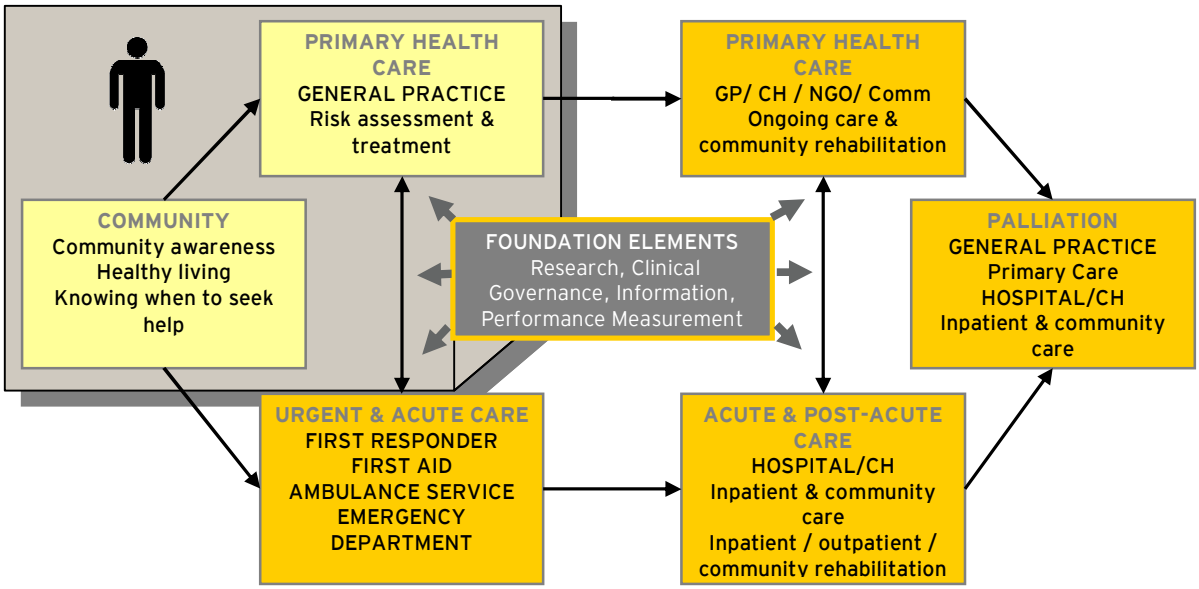


Figure 8 Reducing risk in the CVD journey through primary health care

10.4.4 Improving the CVD journey through acute and urgent care

For some, their first contact with the health service system and the first indication that something is wrong is an acute event such as heart attack, TIA or stroke. Others, even if their risk has been identified and is being properly managed, may still experience an acute event. Acute events are life threatening and treatment can determine the survival and/or longer term disease trajectory for an individual. Acute assessment and treatment is specifically tailored for the specific acute event. Assessment and treatment of an acute cardiac infarct requires different action to that of a stroke. Appropriate and timely acute and post-acute care can maximise quality of life and long term functioning.

The diagram below highlights the points in the CVD journey which can make a difference to the long term outcomes for individuals as a result of an acute event.

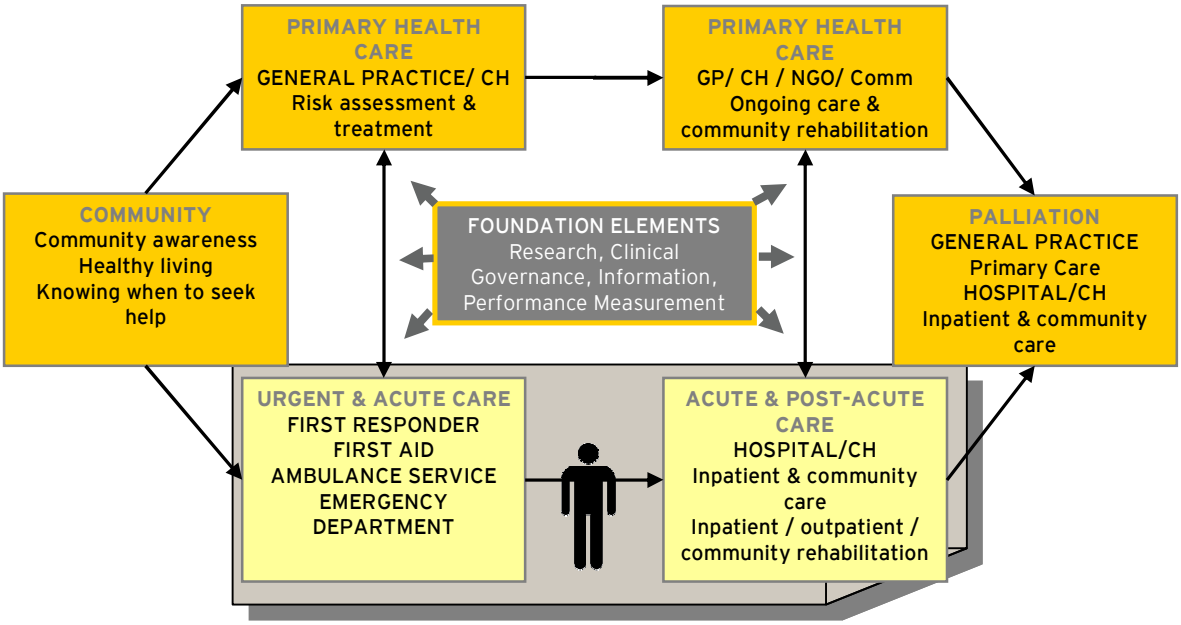


Figure 9 CVD journey through acute and post-acute care

10.4.5 Improving morbidity and quality of life on the CVD journey though post-acute care, general practice and primary health care

Ongoing care for people with CVD occurs in a variety of settings dependent on the progress of their disease. Diseases have different prognoses and can include acute or sub-acute exacerbations and/or a gradual decline in functioning and increase in illness and disability. Effective strategies to improve outcomes for this component of the CVD journey must be linked across the range of service system elements in order to achieve maximum efficiency and effectiveness. The value of integrating care across multidisciplinary teams and in the community setting wherever possible is supported by research and international experience, and is being tested through a number of initiatives at jurisdictional level, for example HealthOne NSW and GP Plus (SA). These initiatives integrate primary care through General Practice with primary health care through the broader community care sector.

The diagram below highlights those stages of the CVD journey that link for the better ongoing care.

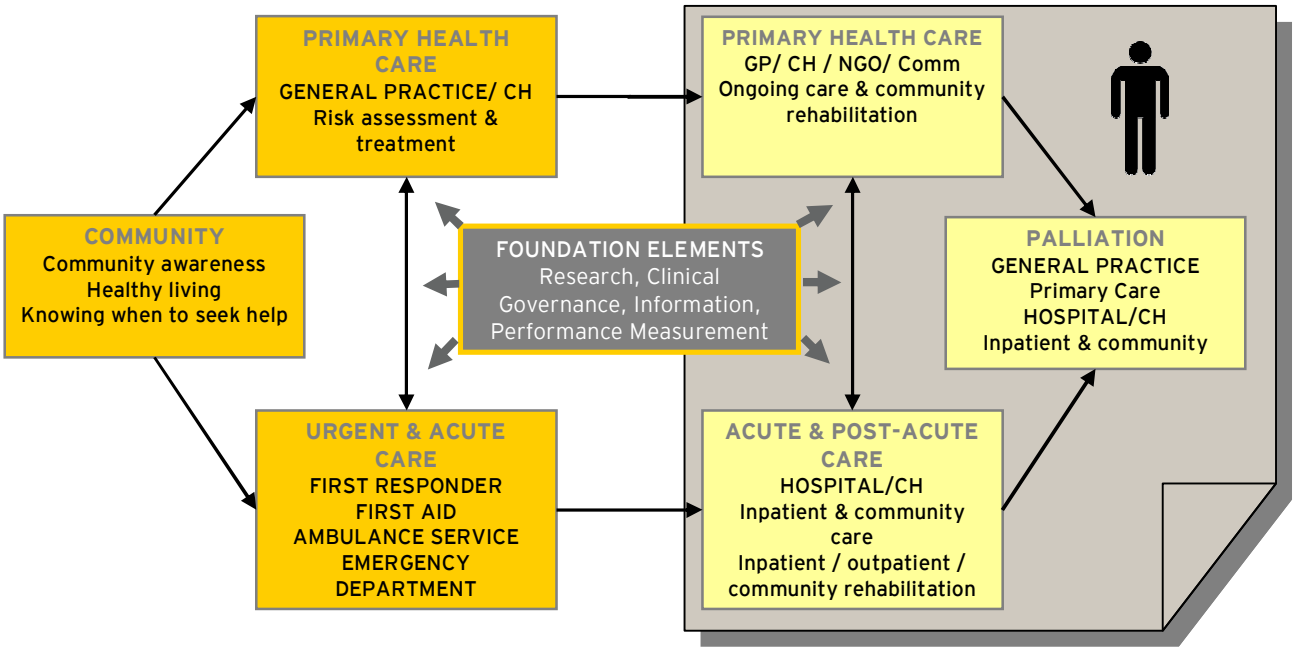


Figure 10 CVD journey through post-acute to long term care

10.4.6 Better end-of-life care

For some people experiencing CVD, the disease will progress to the point where they require end-of-life care and support. Currently, palliative care services are more likely to be configured to meet the specific needs of patients with cancer than the broader range of people with chronic disease. End of life care occurs across and within a number of environments, including in-patient and community settings, often co-ordinated through general practice. The diagram below highlights the part of the CVD journey and the linkages between services that relate specifically to end-of-life care.

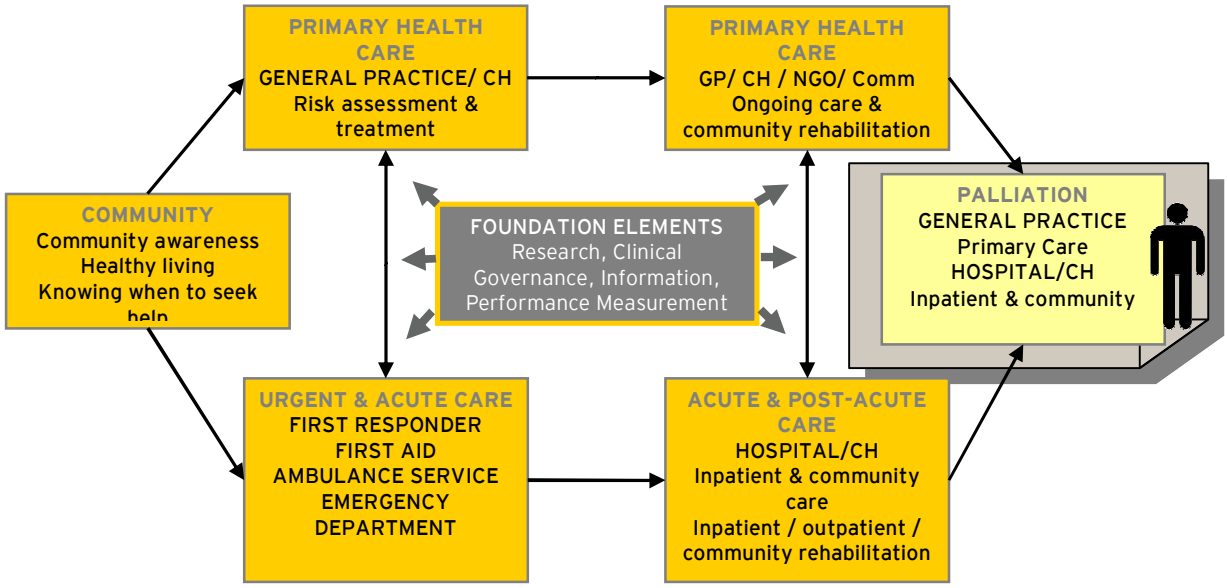


Figure 11 Better end-of-life care

10.5 Accountabilities

Some actions lie clearly within the ambit of the state/territory or federal governments; others are opportunities for shared initiatives across government within the private sector (including private health insurers) or with NGOs. Our assessment of where the primary accountability lies for each stage of the CVD journey has been used to determine both the nature of recommendations and the proposed method for measuring performance.

Where the Australian Government will be relying on actions by jurisdictions or general practice to achieve strategies, performance measures and key performance indicators (KPIs) have been identified as potential accountability measures.

10.6 Using the evidence base to determine how recommendations should be implemented.

Not all recommendations have a solid evidence base relevant to the Australian context. Some of the recommended strategies are currently in practice in Australia or internationally but have not been formally evaluated, while others have been implemented and reviewed in environments that are not fully applicable to the Australian context. Therefore some recommended strategies should be implemented as research projects or require testing and evaluation prior to future consideration of full implementation.

Generally speaking, where there is a solid evidence base which is relevant to the Australian context, the report recommends implementation. Where strategies are in practice in Australia or elsewhere but the evidence base is limited or a strategy is not well tested n the Australian environment, testing is suggested. Where there is a strategy that has not been evidenced or where there are identified issues which need further consideration, ongoing investigation is recommended.

10.7 Value for Money

The selection of recommendations has occurred with consideration of value for money for government. Central to this selection, has been the identification of the 'best' mix of, and level of investment in, recommendations. There are a number of recommendations that have limited supporting information on their costs and consequences and this means that there is a degree of uncertainty on returns. In addition, with the limited pool of funds available to invest in implementing recommendations, not all recommendations are likely to be funded, or funding will be below the desirable amount. This implies that choices need to be made about the recommendations that will best achieve the objectives of government. The decision about the mix of recommendations therefore needs to occur within a framework that allows assessment of the marginal costs and consequences of recommendations.

In addition, there is also a need to ensure that sufficient monitoring and evaluation of any implementation occurs, to assess the actual impacts and consequences of recommendations and to inform the future decision making process.

10.7.1 Options for funding strategies

Discussions with stakeholders have identified two means by which new strategies could potentially be funded. These are:

1. Utilising a proportion of the funds raised from the increase in tax on pre-mixed spirits to fund preventative health strategies for CVD.
2. Using the revenue from the recommended increase in tax on tobacco, the primary purpose of which is to reduce smoking rates, to fund some of the recommended CVD programs. .

Both these options have significant political and policy implications and are offered for consideration and discussion rather than as formal recommendations.

10.8 Linking with key themes

Recommendations link to the key themes identified throughout the project;

- the current inequities in health status and access to timely and appropriate care for disadvantaged Australians, particularly Indigenous Australians;
- the role that prevention strategies have in reducing the overall and individual burden of disease;
- the value of supporting general practice and primary health care in CVD risk assessment, early detection and ongoing management of CVD;
- the importance of improving care processes at presentation to and throughout acute and immediate post-acute episodes of care;
- the need to improve uptake and support of clinical guidelines across all settings and at all stages of CVD;
- the importance of key performance indicators within an accountability framework against specific performance measures to monitor and improve acute, sub-acute and primary care performance for CVD;
- the importance of regularly monitoring and evaluating the impact of national strategies at a population level;
- the requirement for adequate information systems, research and data to support clinical care and outcomes measurement; and
- a desire for identified national leadership for CVD moving forward, through the development of a National Action Plan for CVD or similar.

11. Summary recommendations

	Recommendation	NSIF	Linked Strategies or Reform Initiatives	Accountable Bodies
Foundation Recommendations				
F1	Use the National Health and Medical Research Council (National Institute of Clinical Studies) to manage the development and review of new and existing national clinical practice guidelines for CVD.	All components		Australian Government National Health and Medical Research Council (NHMRC)
F2	Work strategically with the National Institute of Clinical Studies (NICS) within NHMRC to improve uptake of nationally standardised clinical guidelines across general practice, acute and community care.	All components	e-Health	Australian Government NHMRC/NICS NEHTA Jurisdictions Health Services Professional & Peak bodies
F3	Support the work of the Australian Commission for Safety and Quality in Health Care (ACSQHC) to validate its draft Operating Principles and Technical Standards for Australian Clinical Quality Registries.	All components	National Primary Health Care Strategy National Health and Hospitals Reform Commission	Australian Government ACSQHC Jurisdictions Professional bodies Private health insurers
F4	Develop an implementation plan for general practice to support the implementation of Absolute Risk Assessments (ARA) to identify people at risk of heart disease, stroke, diabetes, and kidney disease and then address their risk factors through a program involving on-going management.	Reduce Risk Early detection, care and support of people with heart, stroke and vascular disease.	National Primary Health Care Strategy National Health and Hospitals Reform Commission	Australian Government GP Peak bodies and related organisations
F5	Hospitals to be required to undertake and report on the results of audits of CVD services, in particular heart attack and stroke, in both acute clinical care and post-acute care so that each is occurring once every two years.	All components	Review of accreditation processes through the ACSQHC	Jurisdictions Private health insurers Private Hospitals Hospital accreditation bodies
F6	Investigate the benefits of including CVD risk factors in a national health survey and investigate the benefits and costs of including biomedical risk assessments such as blood and urine collection and analysis.	All components	National Preventative Health Taskforce	Australian Government Australian Institute of Health and Welfare Australian Bureau of Statistics
Group 1 Primary Prevention				
1.1	Develop a government/industry/NGO partnership to achieve population wide reductions in saturated fat and dietary salt intake in the Australian	Reduce Risk	National Primary Health Care Strategy	Australian Government NGO's

Recommendation		NSIF	Linked Strategies or Reform Initiatives	Accountable Bodies
	context.		National Health and Hospitals Reform Commission National Preventative Health Taskforce	Australian Food and Grocery Council
1.2	Support the work of the National Preventative Health Taskforce in developing national policy and strategy to improve nutrition and reduce alcohol and tobacco consumption, with a focus on reducing lifestyle related risks in socially and economically disadvantaged populations.	Reduce Risk	National Preventative Health Taskforce	Australian Government Jurisdictions
Group 2 Addressing Indigenous health and socio-economic disadvantage				
2.1	Implement culturally oriented and effective CVD rehabilitation within Indigenous communities, within mainstream and Aboriginal specific health services.	Best long term care and support	National Primary Health Care Strategy COAG National Indigenous Reform Agenda	Australian Government Jurisdictions Aboriginal health peak bodies
2.2	Support the implementation within jurisdictions of national strategies and guidelines to address low intervention rates for Indigenous people presenting to hospital with heart disease and stroke.	Best care and support for acute episodes	National Health and Hospitals Reform Commission	Jurisdictions Aboriginal health peak bodies
2.3	Develop specific strategies to address poorer outcomes and lower intervention rates for people with higher levels of social and economic disadvantage.	Early detection, care and support of people with heart, stroke and vascular disease. Best care and support for acute episode Best long term care and support	National Health and Hospitals Reform Commission	Australian Government Jurisdictions
Group 3 Primary Health Care and Community Support				
3.1	Test a range of linked strategies to improve the management of patients with cardiovascular disease, involving all health sectors (General Practice, public health services, NGO's, other private providers) within identified communities.	Early detection, care and support of people with heart, stroke and vascular disease. Best care and support for acute episodes Best long term care and support	National Health and Hospitals Reform Commission National Primary Health Care Strategy	Australian Government Australian General Practice Network (AGPN) Australian Primary Care Collaboratives Jurisdictions Private Health Insurers
Group 4 Acute Care				
4.1	Establish comprehensive stroke services covering acute, post-acute and rehabilitation care at every hospital admitting more than 200 acute stroke patients per year and in relevant smaller hospitals and strengthen networked access to Stroke Care Units for rural hospitals.	Best care and support for acute episodes		Jurisdictions Hospital Accreditation Bodies
4.2	Support public education campaigns to help people recognise the warning signs of CVD and seek	Early detection, care and support of people		Australian Government

Recommendation		NSIF	Linked Strategies or Reform Initiatives	Accountable Bodies
	emergency treatment.	with heart, stroke and vascular disease.		Jurisdictions NGO's
Group 5 Community Awareness of Risk				
5.1	Support an adequately resourced education campaign to increase awareness of high blood pressure and the importance of Absolute Risk Assessment (ARA) in the community and encourage people to seek ARA from their GP.	Reduce Risk	National Preventative Health Taskforce	Australian Government NGO's
Group 6 End of Life Care				
6.1	Use standards defined under the National Palliative Care Strategy to review existing palliative care services in order to assess and improve their capacity to provide appropriate care and timely access to those with end stage CVD	Best care in the advanced stages	National Health and Hospitals Reform Commission	Jurisdictions

12. Conclusion

The recommendations in this report are the result of consultation with key stakeholders, analysis of literature and current Australian health reforms and review of the National Service Improvement Framework. The highest priority recommendations are intended to improve capacity in the system through the establishment of a strong foundation based on the elements of clinical governance, information and performance.

Many elements of the recommendations link with strategic directions for major reforms, such as the National Primary Health Care Strategy or the Health and Hospitals Reform Committee. In many cases there are existing processes, such as the Primary Health Care Collaboratives, that have demonstrated success in achieving change and could be used to assist implementation.

Implementation of recommendations will require consideration of all these factors to ensure that the strategies are firmly embedded within existing frameworks for action.

Appendix A NSIF Critical Intervention Points

Reduce Risks	
1	Adopt national, state/territory, and local plans to further reduce rates of smoking using evidence based public health strategies and government actions.
2	Adopt national, state/territory, and local plans and school based education strategies to promote awareness of heart, stroke and cardiovascular risk factors, healthy eating and living, including healthy weight, in collaboration with other national health priorities and policies.
3	Establish and implement national state/territory, and local plans and incentives to Increase opportunities for physical activity through open space and urban planning norms.
4	Investigate national, state/territory economic and legislative strategies to reduce pollution exposure to known risk factors for heart, stroke and vascular disease.
5	Establish and encourage the development of systems and tools to enable absolute risk estimation in people without overt cardiovascular disease.
6	Investigate the feasibility and the benefits of achieving population-wide reductions of saturated fat and dietary salt intake in the Australian context.
Early detection, care and support	
7	Promote awareness of the need for regular monitoring of blood pressure, cholesterol and of the symptoms of diabetes.
8	Promote awareness of early symptom heart, stroke and vascular disease and associated conditions, and emergency response where required.
9	Develop systems that include absolute risk measurements in prescribing and treatment algorithms to help people to understand their individual risk.
10	Improve detection systems so that all people with transient ischemic attacks, attril fibrillation, suspected rheumatic heart disease, and CKD are referred appropriately and assessed promptly and effectively.
11	Ensure information about cardiovascular disease symptoms and appropriate responses will be developed and disseminated to GPs and primary care providers to be given to people with cardiovascular disease and stroke.
12	Develop effective and integrated programs to increase early detection of asymptomatic CKD in people at high risk.
13	Ensure that people will have timely and appropriate access to services including echocardiography, for the diagnosis of heart, stroke and vascular disease.
14	Provide people with appropriate information about the disease, treatment options and expected outcomes, follow-up and support services to facilitate self management of physical, psychosocial and economic impacts of their condition.
15	Processes will be in place to assess the extent to which clinical practice guidelines are adopted and to encourage their implementation.
16	Improve access to self management education programs and support groups to help people develop the knowledge, skills and confidence to self manage.
17	Establish systems of care to reinforce importance of risk reduction in people with established heart, stroke and vascular disease.
Best care and support for acute episodes	
18	Develop systems to improve coordinated multidisciplinary care for people with heart, stroke and vascular disease, including appropriate care plans, defined referral pathways and designated coordinators of care.
19	All people with stroke receive stoke receive stroke unit care or in rural or remote areas alternative models of organised stroke care.
20	People attending hospital with suspected or confirmed coronary heart disease will receive timely and appropriate treatment to relieve their symptoms and reduce the risk of subsequent coronary events.

21	People who develop symptoms of stroke will have timely access to CT scanners for accurate diagnosis.
22	Improve access to treatment services for all Australians, particularly those living in regional and remote areas and Aboriginal and Torres Strait Islander people.
23	Develop approaches to monitoring all aspects of heart, stroke and vascular disease control, including safety and quality, and ensure that all agreed indicators are aligned with heart, stroke and vascular disease plans at national, state/territory, and local levels.
Best long term care and support	
24	Develop and implement strategies to support a multidisciplinary team approach which promotes continuity of care.
25	People with CKD will have access to appropriate specialist care.
26	Current barriers to organ donation in Australian hospitals should be addressed.
27	Implement policies to encourage the safe and quality use of medicines.
28	Access to rehabilitation services for people with heart, stroke and vascular disease.
29	Ensure that the psychosocial needs of people with heart, stroke and vascular disease are met across the patient journey.
30	Improve access to culturally appropriate care and support for all Australians with the conditions, and in particular Aboriginal and Torres Strait Islander people, people with diverse language and literacy needs, and people in rural and remote areas.
Best care in advanced stages	
31	Services will adequately inform people and caregivers about course of the illness and pathways of care.
32	People will be informed about advance directives and receive appropriate support.
33	Programs will be in place to provide information and support to caregivers and reduce caregiver and patient health problems.
34	Improve timely and appropriate access to adequate palliative case services which are integrated with treatment services.

Source: The Department of Health and Ageing, 2005. National Service Improvement Framework for Heart, Stroke and Vascular Disease, available at http://www.health.gov.au/internet/main/publishing.nsf/Content/pq-ncds-cardio (Accessed 15 December 2008)

Appendix B Review Advisory Group TOR

To ensure access to expert guidance during the course of the Review, the Consultant commissioned by the Department of Health and Ageing to undertake the Review of Cardiovascular Disease Programs will establish a Review Advisory Group.

Role of the Review Advisory Group.

Review Advisory Group members will provide expert advice, within their areas of expertise, as required, including on:

- the extent to which specific cardiovascular disease programs meet the critical intervention points in the National Chronic Disease Strategy and the National Service Improvement Framework for Heart, Stroke and Vascular Disease;
- mechanisms to evaluate the effectiveness of program strategies and interventions.
- best practice strategies and interventions in relation to prevention, care, and management across the continuum of care for cardiovascular disease including its complications and associated conditions; and
- other matters identified during the course of the Review

In doing so, it is expected that members of the Review Advisory Group will:

- provide ad hoc advice on specific matters related to their areas of expertise;
- provide comments out of session on the draft project Progress Report and the draft final project report; and
- participate in two Review Advisory Group teleconferences during the course of the project.
- canvas relevant issues from the draft reports with their constituents in order to receive and provide informed feedback to the review.

Copies of draft reports are not to be circulated outside of the Review Advisory Group.

Meetings

It is anticipated that the Group will meet by teleconference to be held in mid December 2008 and early February 2009.

Timelines

The draft project Progress Report will identify options for implementation in the short term. This report is expected to be available in the first week of December 2008.

The draft final project report will identify options for both short term and medium term implementation. This report is expected to be available in the week beginning 2 February 2009.

Two teleconferences will provide an opportunity to clarify discuss advice provided in relation to the draft reports. It is expected that the teleconferences will be held in mid December 2008 and the first week of February 2009.

Review Advisory Group Governance and Secretariat Support

The Review Advisory Group will be chaired by the Assistant Secretary, Chronic Disease Branch in the Department of Health and Ageing, with Secretariat support provided by the Consultant.

	Review Advisory Group membership
1.	Department of Health and Ageing **Ms Jennie Roe** Assistant secretary Chronic Disease Branch Primary and Ambulatory Care Division
2.	National Heart Foundation **Prof Garry Jennings** Director Baker Heart Research Institute

3.	National Stroke Foundation **Dr Erin Lalor CEO** National Stroke Foundation
4.	Cardiac Surgeon Cardiac Society of Australia New Zealand President **Dr Leo Mahar** Cardiovascular Investigational Unit Royal Adelaide Hospital
5.	Research Stroke Society of Australasia **Dr David Dunbabin** Study Investigator Stroke Research Centre
6.	Consumer expert **Mr Richard McCluskey AM** Heart Support – Australia
7.	Consumer Expert **Mr Michael Hill**
8.	Indigenous expert **Dr Alex Brown** Indigenous Health Baker IDI
9.	Primary care / general practice **Dr Lynne Davies** Emergency Medicine Chair of the Expert Reference Panel for Coronary Heart Disease for the Australian Primary Care Collaboratives
10.	State / Territory representative **Ms Catherine Katz** Tasmania
11.	State / Territory representative **Dr Andrew Wilson** Queensland

Appendix C Stakeholder Consultation

Ernst & Young undertook consultations with representatives from peak bodies and from state and territory jurisdictions. The purpose of the consultations was to assess the degree to which the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* was understood and utilised across the system, to gain a first level understanding of programs in place and to discuss gaps or areas for greater attention moving forward.

Meetings

The Ernst & Young team has consulted with the following key stakeholders:

- Departments of Health/Human Services in States/Territories
- The National Heart Foundation (NHF)
- The National Stroke Foundation (NSF)
- The National Aboriginal Community Controlled Health Organisation (NACCHO)
- The Australian General Practice Network (AGPN)
- The Royal Australian Colllege of General Practitioners (RACGP)
- The Australian Health Insurance Association (AHIA)
- Kidney Health Australia
- The Australian Diabetes Society
- The Baker and International Diabetes Institute (Indigenous Division)
- Australian Primary Care Collaboratives
- Australian Commission on Safety and Quality in Health Care
- National Institute of Clinical Studies
- Members of the Review Advisory Group

The table below outlines stakeholders contacted.

Organisation	Contact Name	Position
Australian Capital Territory	Mr Ross O'Donoughue	Executive Director, Policy Division
Australian Commission on Safety and Quality in Health Care	Chris Baggoley	Chief Executive
Australian Diabetes Service	Dr Stephen Tick	Dr Tick spoke from his professional perspective, not on behalf of the ADS
Australian General Practice Network	Ms Liesel Wett	Deputy CEO
Australian Health Insurance Association	Dr Michael Armitage	Chief Executive Officer
Baker Heart and International Diabetes Institute	Dr Alex Brown	Physician, Centre for Indigenous Vascular and Diabetes Research
Kidney Health Australia	Assoc Prof Tim Mathew	CEO
NACCHO	Dr Sophie Couzos	Public Health Medical Officer
New South Wales Government	Ms Clare Gardiner	Area Performance Manager and Project Director, Health Service Performance Improvement Branch, NSW Health
Northern Territory Government	Dr Christine Connors	Head of Chronic Disease Strategy, Health Services Division
Queensland Government	Ms Deborah Hill Ms Jane Levy	Principal Project Officer, Clinical Networks Team Co-ordinator, Stroke Clinical Network
Royal Australian College of General Practice	Professor Mark Harris	Professor of General Practice, School of Public Health and Community Medicine, UNSW
South Australia Government	Dr David Panter	Executive Director, Statewide Service Strategy, SA Health

Tasmania Government	Dr Kelly Shaw	Chief Health Officer and Acting Medical Officer, DHHS
University of Queensland	Professor Wendy Hoy	Director, Centre for Chronic Disease
Victoria	Ms Kylie Mayo	Manager, Clinical Networks and Service Development, DHS
Western Australia	Dr Stephen Bloomer	Lead, Cardiovascular Health Network, WA Health

Workshop

The NHF and NSF have jointly published a document *Time for Action,* which contains 34 recommendations, based on the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* for improving cardiovascular health.

On the 15th December 2008,a workshop was held in Melbourne with representatives from and clinical advisors to the NSF and the NHF. The workshop was to discuss the *National Service Improvement Framework for Heart, Stroke and Vascular Disease,* the recommendations contained in *Time for Action* and the high priority recommendations contained in a joint budget submission of the NSF and NHF to the Australian Government. With clinical and health economics input, the Ernst & Young team worked with participants to analyse and cross reference these documents with information received from jurisdictions and other stakeholders, considering evidence, relevance, equity, ease of implementation and acceptability of recommendations.

The workshop participants engaged in considerable discussion and debate about key priorities from *Time for Action* and the budget submission; these cover all the domains of the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*.

During this debate it became clear that to gain maximum benefit from any future investments, there should be bundling of related recommendations into logical packages. For example, there could be real gains in bundling improvements to the absolute risk assessment process with implementation strategies for clinical guidelines in general practice. It would make sense to invest in these two key capacity building initiatives, which strengthen the system's ability to respond effectively, prior to undertaking actions that would increase demand on the system.

Workshop participants took the concept of bundling and applied it to the priority recommendations contained in the key documents. As the workshop progressed it became clear that there were a number of frameworks on which bundling of priorities could be based. The development of an agreed framework for bundling of priorities will now continue in the development of the draft Final Report.

Some of the key areas for discussion at the workshop were:

1. There may be potential to fund CVD investments through revenue gained from the ALCOPOP tax and through possible increases in taxation on tobacco to bring Australia into line with the Framework Convention on Tobacco Control (WHO). It is recognised that this is an issue that will require policy consideration by the Australian and State Governments.
2. There are different standards of evidence available for different options. Some options are supported by practice but not by evidence. Where evidence is strong, this provides confidence in investment. Where evidence is patchy or weaker, this may signal the requirement for a pilot or demonstration project. Where there is no evidence this may signal an opportunity for research. Notwithstanding, evidence should not be the only lens through which the viability and desirability of options is viewed.
3. Where options will require investment and action by a third party (for example, jurisdictions or general practice) the use of targeted KPI's and performance measures was consistently raised as a means of improving adherence. National consistency in standards for CVD care was supported. The concept of stick and carrot methods to improve compliance was discussed.
4. While some options can be built up from lower levels of initial investment, under-investing for other options will result in marginal improvement and is therefore a suboptimal investment. For example, the metrics for social marketing define the minimum amount that should be invested to achieve adequate coverage and influence. Detailed costing of all options will need to be undertaken as part of the process of deciding where to invest future funds.
5. There are clear differences between cardiac events and stroke, particularly in the acute stages of these conditions. While recognising that many of the preventative and risk assessment options and

some of the post-acute options cover CVD broadly, participants were concerned that the specific clinical interventions related to stroke and cardiac were not lost in this review.

Attendees at the workshop are listed in the table below.

Attendees	Position, Organisation
Rohan Greenland	National Heart Foundation
Dr Andrew Boyden	National Heart Foundation
Dr Erin Lalor	CEO, National Stroke Foundation
Prof Derek Chew	Department of Cardiovascular Medicine, Flinders Medical Centre
Prof Rob Carter	Chair in Health and Human Service Economics, Deakin University
Dr Dominique Cadilhac	Head of Public Health Division, National Stroke Research Institute
Facilitators	**Position, Organisation**
Jim Birch	Partner, Health and Human Services, Ernst & Young
Karen Edwards	Associate Director, Business Advisory Services, Ernst & Young
Teresa Comacchio	Consultant, Business Advisory Services, Ernst & Young

Summary of early consultations (for Progress Report)

These consultation as well as others undertaken after development of the Progress Report have been used to inform the content of the final report.

National Stroke Foundation (NSF)

NSF is the peak body in Australia for stroke, and supports specific activities to improve the identification and treatment of stroke. Ernst & Young has met with key representatives of the NSF individually and in a workshop held on the 15th December 2008. In addition Ernst & Young has considered a number of documents provided by the NSF.

National Heart Foundation (NHF)

NHF is the peak body in Australia for cardiac disease. The organisation provides support for professionals in key areas such as research and the development of clinical guidelines. NHF also coordinates a range of programs to improve cardiovascular health. A long-held advocacy goal of the NHF is the establishment of a national cardiac procedures register. Ernst & Young has met with key representatives of the NHF individually and in a workshop held on the 15th December 2008. In addition Ernst & Young has considered a number of documents provided by the NHF.

Time for Action

Together the NSF and the NHF have published *Time for Action – A national plan to reduce the burden of cardiovascular disease*. This document makes 34 recommendations, many of which relate directly to the critical intervention points contained in the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*. The recommendations contained in *Time for Action* have been further refined into a list of 15, contained in a submission on the 2009-10 Commonwealth Budget.

These 15 recommendations were considered in a workshop with the NSF and NHDF held on the 15th December, 2008, in the context of *Time for Action* and information received from other peak bodies and jurisdictions.

Kidney Health Australia

Kidney Health Australia is the peak body for kidney disease in Australia. Although vascular disease is only one cause of kidney disease, this disease is grouped with other vascular diseases as a health priority covered by the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*.

Kidney Health Australia considers that the sections in the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* related to kidney disease remain current. Kidney disease is described by Kidney Health Australia as a "silent disease" which needs to be detected through identification of risk before symptoms become obvious. Identified risks should then translate into management strategies.

Key issues for Kidney Health Australia are:

1. The perceived lack of recognition of kidney disease as separate from the bundle of CVD, which was managed by inputting kidney disease priorities into the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*.
2. The lack of implementation of the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*
3. The need to find incentives to encourage GPs to identify, assess and treat CVD, kidney disease and diabetes. The creation of an MBS item number to cover CVD screening for ages 59 – 75 was suggested.

State and Territory Health Departments

Initial consultations have been undertaken with most jurisdictions to assess the high level strategic directions being taken for CVD. Queensland has elected to provide written information rather than by interview.

Information regarding jurisdictions has been gathered by internet search and interview. Appendix C contains the contact details of individuals interviewed in each jurisdiction. A request for further information is being sent to the jurisdictions and this further information will be analysed and provided within the content of the draft Final Report. As information gathering from jurisdictions is still in progress, this draft Progress Report contains a summary of key themes and issues, rather than a full analysis per jurisdiction.

Generally the jurisdictions held the view that the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* was a good document, which had not been fully implemented because it was released without accompanying mandates and resources. This view was held despite the document having been signed off by Health Ministers (with the implied commitment this suggests) at the time.

Jurisdictions are at various stages of developing and implementing strategies that relate to CVD, but within an overall chronic disease framework. Key themes that are emerging from discussion with jurisdictional representatives include:

1. The benefits of national level direction in relation to building blocks such as clinical guidelines, clinical registers, clinical networking and KPI's.
2. The need to integrate and improve transitions between primary, long-term and acute care services for patients. This encompasses care planning processes but also establishment of integrated clinical information (an electronic health record).
3. The need to improve "in-time" access to appropriate emergency and acute care in both rural and metropolitan settings. For example, several jurisdictions spoke of the benefits of taking ECGs in ambulance and transmitting data to emergency departments to reduce time between an event and appropriate treatment.
4. Ongoing issues in achieving adherence to existing clinical guidelines within the acute and community-based settings, including emergency departments.
5. The need to focus care around the patient and to understand the patient experience, for example, the ACT is working with the NHF to improve the availability of useful written information to patients who have had a cardiac event.
6. The lack of information systems that enable the collection and analysis of data and support reporting on outcomes, compliance with KPI's and clinical trends.
7. The benefits of focussing on the prevention and assessment of risk for CVD. For example, the ACT is working with the local Division of General Practice and the NHF to implement Heart Moves in accredited gyms. Victoria is working with the NSF to run the FAST campaign in Victoria and reports anecdotal evidence that younger patients are presenting with symptoms of stroke because they recognise the FAST symptoms.
8. Concern regarding the current capacity of general practice with regards to management of CVD. In particular, a number of jurisdictional representatives noted resource issues (scarcity of GPs) and a lack of adherence to existing guidelines (also a problem in the acute setting).
9. The need to make system changes to support better management of chronic disease generally. These changes included some form of patient enrolment and alterations to MBS items to expand the eligible providers and to increase flexibility of use.

10. The ongoing gap in health outcomes for Indigenous Australians compared to non-Indigenous Australians.

Australian Health Insurance Association (AHIA)

The AHIA is the peak body for health insurance agencies in Australia and represents the interests of its Health Insurer members. These members are impacted on by the hospitalisation and treatment costs of preventable CVD. The AHIA advises that its members invest in preventative strategies where they are permitted under current legislation. The Association has an interest in improving the effectiveness of CVD management on behalf of its members.

Although not having used the *National Service Improvement Framework for Heart, Stroke and Vascular Disease*, the AHIA had key priorities that link with the critical intervention points.

1. A key interest to the AHIA is improving the use of clinical guidelines. The AHIA believes there would be improvements in outcomes for CVD if the application of current clinical guidelines was enforced. The AHIA suggests legislation so that medical indemnity cover will only apply where it is proved that existing guidelines were used or that variation from guidelines was evidence based and defensible. The AHIA would encourage the adoption of a pilot program to make an electronic decision support tool available to GPs, for example, through existing GP systems (such as Medical Director) a pop up is activated when certain drugs are prescribed that asks key questions based on current guidelines and suggests actions also based on current guidelines.
2. The value of mass media campaigns where they are not part of a broader multifactorial campaign and advises the cost-benefit should be carefully considered.
3. The development of small but potentially effective localised and locally controlled activities to improve CVD health for Indigenous Australians.

National Aboriginal Community Controlled Health Organisation (NACCHO)

NACCHO is the peak body for Aboriginal and Torres Strait Islander Community Controlled Health Services in Australia. Aboriginal Community Controlled Health Services are managed by Aboriginal and Torres Strait Islander people are locally focussed and provide a range of primary health care services to Aboriginal and Torres Strait Islander Australians. The death rate from CVD is up to 3 times higher for Aboriginal and Torres Strait Islander Australians than for non-Indigenous Australians and equity to suitable early identification, intervention and ongoing care is a major concern.

NACCHO was involved in the development of the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* and considers the critical intervention points and the underlying evidence to still be sound. Like most stakeholders consulted, NACCHO believes the *National Service Improvement Framework for Heart, Stroke and Vascular Disease* has not been more comprehensively adopted due to a lack of resources associated with its release.

NACCHO expressed concern regarding:

1. What it sees as disconnect between the NSIF and policy/program development for Aboriginal and Torres Strait Islander health.
2. Resource issues for Aboriginal and Torres Strait Islander health, including access to GPs, limited outreach capacity to isolated individuals and communities and access to preventative and treatment services for CVD.

Australian General Practice Network (AGPN)

The Australian General Practice Network is the peak body for Divisions of General Practice in Australia. Divisions of General Practice provide a range of supports to General Practice and advocate on behalf of general practice at regional, state and national levels.

Divisions of General Practice are also funded to support services for high priority disease groups, including chronic disease. They may employ or contract allied health or nursing clinicians to run complementary programs with general practice or to provide a direct clinical service, to which GPs can refer patients. The AGPN has links with the NHF, NSF, the Pharmacy Guild and Diabetes Australia.

The AGPN has not been particularly aware of the National *Service Improvement Framework for Heart, Stroke and Vascular Disease* and has not been using it. Key concerns for the AGPN with regards to CVD include:

1. The development of strategies and guidelines that directly impact on or depend on general practice but have not considered the practicalities of implementation within the general practice environment. This can lead to difficulties in implementation of clinical guidelines within general practice, including the absolute risk assessment guidelines.
2. The importance of making clinical guidelines available and user friendly though electronic support tools embedded in existing programs.
3. The value of the Primary Care Collaborative in assisting general practice to use data and evidence to challenge current practice.
4. The importance of contextualising strategy for general practice within the GP's framework for care, which revolves around individual patient needs, considers the patient as a whole person rather than a specific disease and is still largely focused on the ill patient rather than the well patient. General practice is now moving into primary prevention as a core role.
5. The importance of running initiatives to GPs through the Divisions of General Practice, which are generally seen as a key resource and credible source by GPs.

Australian Diabetes Society

The Australian Diabetes Society provides leadership in diabetes through Diabetes Australia. This includes providing algorithms and guidelines for diabetes clinical care. The president of the Australian Diabetes Society is Associate Professor Stephen Twigg. Associate Professor Twigg provided input into the review from his professional perspective as an endocrinologist.

Assoc Professor Twigg notes the strong correlation between Diabetes and CVD, with most people with diabetes dying from CVD. In addition pre-diabetes appears to increase risk of CVD mortality. The added complications diabetes require a different approach to risk assessment, diagnosis and treatment of CVD for those with diabetes or pre-diabetes and Associate Professor Twigg notes this should be taken into account when considering options to improve CVD management.

Particular areas of concern discussed include:

1. The value of evidence in informing management of diabetes and CVD.
2. The development and use of assessment guidelines that take into account the specific risks associated with diabetes and CVD.
3. Targeting of protective medicines to the right people
4. The importance of preventative strategies and the need for public policy to support these, for example improving access to physical activity opportunities.

Appendix D Jurisdictional Responses

Jurisdictions provided responses to survey document requesting a summary of programs and policies run at the jurisdictional level that related to CVD and to the critical intervention points in the NSIF. Northern Territory and Tasmania were unable to respond.

12.1.2 New South Wales

The following table provides an overview of the reported programs and strategies.

Table 5. Overview of jurisdictional programs and strategies

Programs / Strategies	Overview	Critical Intervention Points
Clinical Services Redesign program - State-wide Cardiology Redesign Project	To implement strategies that enable timely and equitable access to effective and appropriate care for adult acute cardiology patients across NSW. Solutions include 1. Chest Pain Evaluation Areas and 2. Cardiology Bed Management. http://www.archi.net.au/e-library/build/moc/cardio	► Acute episode (18,20)
Implementing the Chest Pain Evaluation Area (CPEA) Model of Care	Chest Pain Evaluation Areas to improve processes for managing patients presenting to hospital with chest pain. As a result of this project, patients with chest pain are spending less time in the Emergency Department and having more readily available access to diagnostic testing. More patients with chest pain are now receiving timely access to relevant diagnostics and treatment; and spending a minimum amount of time in the Emergency Department.	► Acute episode (18,20)
Cardiology Bed Management Strategy	Cardiology Bed Management strategies to optimally utilise bed capacity for cardiology patients. The majority of solutions have been implemented at 12 Cardiac Catheter Laboratory hospitals enabling the optimal utilisation of their resources to deal with demand from cardiac patients. http://www.archi.net.au/e-library/build/moc/cardio	► Acute episode (18,20)
Cardiac Rehabilitation	All Area Health Services report to the Department of Health monthly regarding Cardiovascular rehabilitation activity. The Rehabilitation for Chronic Disease Model of Care which underpins the State approach to rehabilitation is loaded on the ARCHI website http://www.archi.net.au/e-library/build/moc/rehab	► Early detection (17) ► Acute episode (24) ► Long term (28,29)
Advance Care Planning	The Advance Care Planning (ACP) model works to improve the journey of patients through the health system. ACP takes into account the patient's wishes, values and beliefs about medical treatment in order to prepare for end-of-life situations. In essence, ACP aims to reach a clear and agreed understanding between the individual, their 'person responsible' (if appropriate) and treating medical practitioner. A crucial component of successful ACP is that the individual understands that they have choices. As such, discussion is a focus of the model. http://www.archi.net.au/e-library/build/moc/acp	► Advanced care (32)
The Chronic Care for Aboriginal People	The Chronic Care for Aboriginal People (Walgan Tilly) Clinical Services Redesign project is the first Aboriginal Redesign project and was developed from a number of established NSW Health initiatives in an attempt to address the disparities in health care and improve access to and utilisation of chronic care services for Aboriginal people in NSW. The Walgan Tilly Program concerns the integration of services to improve access to chronic care services by Aboriginal Peoples. http://www.archi.net.au/e-library/service/chronic/chronic_resources/walgan-tilly	► Early detection (14)
Chronic Disease Self Management Support Model of Care	The Chronic Disease Self Management Support Model of Care provides information and supporting documentation to facilitate the inclusion of Self management strategies in Area Health Service rehabilitation approaches. Patients would benefit from case management with a self management component. Illawarra and GWAHS have incorporated Flinders training into the management of patients with chronic disease. http://www.archi.net.au/documents/e-library/blocks/models/self_management/Self_Management_MoC_Final.pdf	► Acute episode (18)
NSW Policies on Organ Donation	NSW Health has policies on organ donation including NSW Organ Donation after Cardiac Death Guidelines 2007. Draft NSW Organ and Tissue Donation Service Plan is currently being developed for implementation in 2009.	► Long term (26)
Rural Emergency Clinical Guidelines for Adults	Guidelines outline care processes of care for acute conditions including cardiac conditions. Chest pain clinical pathways utilised to facilitate early intervention and coordinated care. Processes for assessment of competencies in place.	► Early detection (15) ► Acute episode (18,20)

Programs / Strategies	Overview	Critical Intervention Points
Cardiac Catheterisation Laboratories in Rural NSW	NSW Rural Health Plan provided for the establishment of Cardiac Catheter services at Tamworth, Wagga Wagga, Orange, Mid North Coast and Lismore.	► Early detection (13)
Specialised Stroke Services	Specialised stroke units have been established in metropolitan areas (23 units) and specialised stroke services in 8 sites in rural NSW. The rural service models include stroke care coordinators (all sites) and specialised stroke units (4 sites)	► Acute episode (18,19,22)
Renal Services	The NSW Renal Dialysis Services Plan to 2011 considers service planning and delivery issues such as projected service requirements; planning parameters; patient and staff education, facility guidelines for the establishment of new satellite dialysis units; and, data management and procurement of equipment, consumables and services. Since 2002, renal services have expanded across the state including dialysis services and home based training services	► Long term (25)
Live Life Well Get Healthy - Information and Coaching Service	Aims to provide individualised information, advice and behaviour change coaching in relation to physical activity, healthy eating and weight management for NSW adults; and encourage and support adults to change their behaviour to achieve recommended levels of daily physical activity eat a healthier diet and achieve or maintain a healthy weight. Service to launch in February 2009.	► Reduce risks (5,6)
Live Life well	The Live Life Well Program is joint initiative of the Australian Better Health Initiative (Australian, State and Territory Government). It focuses on prevention and promotion of health lifestyle. A current initiative is the Prevent Diabetes Live Life Well program which is being run through three Divisions of General Practice in collaboration with the Sydney South West Area Health Service. It is the largest community-based diabetes prevention trial in NSW. This Program began in mid 2008 and will continue through to 2010. www.livelifewell.nsw.gov.au	► Reduce risks (2,6) ► Early detection (7,8)

12.1.3 Victoria

A number of policies were outlined as being relevant to the critical intervention points, these include:

1 Cardiac Services Framework for Victoria
This document is predominantly refers to management of Acute Coronary Syndromes in the acute settings addressing Intervention point 3 "Best care and support for the acute episodes" with the major emphasis on interventional cardiology. There is some mention of cardiac rehabilitation and heart failure and assumes that care will be delivered in the same manner in 10 years time as it is today. The website link for this framework is
http://www.health.vic.gov.au/clinicalnetworks/downloads/cardiac_framework.pdf

2 The Metropolitan Health Strategy
The aim of this document was to further develop a public health system that provides optimal level , distribution and mix of services to meet growing unchanging demand while ensuring : patient focused; safe , high quality appropriate services: timely access to services and sustainability of service provision and discusses care of the patient along the continuum of care. Doesn't talk about critical intervention point but does discuss general chronic disease management.

3 Improving care for older people: a policy for health services 2003
A policy framework for the effective care of older people by health services, which focuses on integrating care across settings to ensure people have the appropriate care in the appropriate place.
www.health.vic.gov.au/older/improvingcare.pdf

4 From hospital to home: Victoria's Pathways Home program report 2003-2008
The pathways home program focused on ambulatory care development, specifically home-based and centre-based rehabilitation services, and establishing Centres Promoting Health Independence. The implementation of the plan has enabled treatment and care to be increasingly delivered by health services in ambulatory and community-based settings. www.health.vic.gov.au/subacute

5 Promoting health independence: a framework for better care
The Health independence programs framework has been developed to enable a better client journey

across the care continuum in transition from hospital to home or preventing hospitalisation. www.health.vic.gov.au/subacute

6 Health independence programs guidelines
The Health independence programs guidelines have been developed to provide direction for, and facilitate the alignment of, post-acute care services (PAC), sub-acute ambulatory care services (SACS), and hospital admission risk programs (HARP). Integrated PAC, SACS and HARP guidelines have been developed to enable a better client journey across the care continuum in transition from hospital to home or preventing hospitalisation.

7 Care in your community: A planning framework for integrated ambulatory health care (2006)
A policy and planning framework for ongoing development of Victorian health services. The framework encompasses all community-based, ambulatory care services. The vision is for a modern, integrated and person-centred health system aimed to meet the future needs and expectations of communities and individual users of health care services, and to provide integrated and accessible services in local communities.

8 Advance care planning
Advance Care Planning (ACP) draft policy to inform, guide and support its implementation across Victoria has been developed, guided by an expert advisory group, and extensive consultation. The policy communicates the broad direction of the Victorian Government for improving access to ACP in health services. The main population focus of the policy is older adults and adults with life threatening and serious chronic and complex illnesses, and their carers - including carers of people who currently lack decision-making capacity. ACP program development is continuing, as is the development of an ACP evaluation framework for health services. Victoria is also represented on the AHMAC CTEPC National Advance Care Planning Working Group that is facilitating a national framework and guidelines for advance care directives and related matters, within the broader context of advance care planning, and to advise on how the guidelines could best be implemented.

9 Hospital admission risk program (HARP): Chronic heart failure working party report (2003)
This report provides recommendations for the development of programs that address chronic heart failure that provide opportunities to have a significant impact on preventing the avoidable use of hospitals.

10 Directions for your health system: Metropolitan Health Strategy (2003)
A policy and planning framework for providing health care services across metropolitan Melbourne, including an expanded role for ambulatory care services as a cornerstone in the configuration of health care services.

11 Rural directions for a better state of health (2005)
A policy and planning framework for developing rural health services in Victoria. Three broad directions have been identified: promote the health and wellbeing of rural Victorians; foster a contemporary health system and models of care for rural Victoria; and strengthen and sustain rural health services.

12 Early Intervention in Chronic Disease Prevention Initiative
The Early Intervention in Chronic Disease (EliCD) Initiative provides care to people with chronic diseases and complex needs who may progress towards requiring hospitalisation in the medium to long term. EliCD services provide multidisciplinary care including assessment, care planning, self-management support and clinical intervention based on best practice guidelines. The initiative has a focus on working in partnership with the client (and carer) and other providers including general practice to best meet the needs of the client and support behaviour change. The initiative is supported by the Primary Care Partnership strategy.

13 HARP-CDM (Chronic Disease Management) Initiative
Hospital Admission Risk Program–Chronic Disease Management (HARP-CDM) service framework, which provides care to people with chronic diseases or complex needs who are at risk of avoidable

hospitalisation. HARP-CDM services provide more appropriate and timely care for people in the community and provide assessment, monitoring, education, self-management, service coordination and a flexible service response through brokerage. The target group for HARP-CDM is people who are at risk of avoidable hospitalisation with chronic respiratory disease, chronic heart failure, complex needs, complex psycho-social needs and complications as a result of diabetes.

14 Primary Care Partnerships - Strategic directions 2004-07
The aim of this strategy is to ensure an integrated health care system, based on partnerships, where providers see planning and working together to better meet the needs of their communities. The strategy has a focus on the following four areas partnership, service coordination (incorporates access to appropriate services in a timely manner), integrated health promotion and integrated chronic disease management (focus on systems redesign).

15 Other reported strategies include:

15.1 Revised Chronic Disease Management Program guidelines for Primary Care Partnerships and Primary Health care Services October 2008
http://www.health.vic.gov.au/communityhealth/downloads/cdm_program_guidelines.pdf

15.2 Improving care for older people: a policy for health services 2003
http://www.health.vic.gov.au/older/principles.htm

15.3 Care in your Community
http://www.health.vic.gov.au/ambulatorycare/careinyourcommunity/

15.4 Hospital demand strategy
http://www.health.vic.gov.au/archive/archive2006/hdms/index.htm

15.5 Review of Adult Emergency Retrieval and Coordination Service Model
http://www.health.vic.gov.au/retrieval/retrieval.pdf

15.6 Healthy Communities Victoria
http://www.goforyourlife.vic.gov.au/

15.7 The Metropolitan Health Strategy
http://www.health.vic.gov.au/metrohealthstrategy/

15.8 Rural directions for a better state of health
http://www.health.vic.gov.au/ruralhealth/hservices/directions.htm

15.9 Statewide emergency program
http://www.health.vic.gov.au/emergency/refcom.htm

15.10 Outpatient Innovation and Improvement Program
http://www.health.vic.gov.au/outpatients/index.htm

15.11 Stroke Care Strategy for Victoria
http://www.health.vic.gov.au/clinicalnetworks/stroke.htm

The following table provides an overview of the reported programs and strategies.

Table 6. Overview of jurisdictional programs and strategies

Programs/Strategies	Overview	Critical Intervention Points
Cardiac Clinical Network	The establishment of a cardiac clinical network is in it s infancy stages but aims to address the patient journey through the cardiac continuum of care. Currently developing a fully costed Cardiac Services Strategy to build a truly integrated cardiac service to ensure that all Victorians have access to high quality cardiac services. Initially the network will address the care of the patient in the acute episode and referrals to cardiac rehabilitation.	► Early detection (14,15,16,17) ► Acute episode (18,20,21,23) ► Long term (24,27,28)
Renal Health Clinical Network	The Renal Health Clinical Network (RHCN) was recently established to provide a new focus across all clinical disciplines towards prevention of illness and injury and maintenance of health, and to bring about an improvement in the delivery of sustainable health services. The RHCN Leadership Group has identified that the development of a Renal Health Strategic Plan for Victoria will be a key priority and the first major piece of work to be undertaken by the clinical network. It is possible that the Renal Health Strategic may identify programs in the relevant critical intervention points highlighted	► Reduce risks (5) ► Early detection (7,8,9,10,12) ► Acute episode(22) ► Long term (25,26,29) ► Advanced care (31,32,33,34)
Public Health	*Social Marketing* - The Government has committed $5.622 million dollars (for the three years 2007-2010) to the Quit Social Marketing program. *Legislation* – the government is currently examining the following legislative amendments to the Tobacco Act 1987 as part of the Victorian Tobacco Control Strategy 2008-2013 (VTCS) through: reform of point-of-sale displays in retail outlets; a ban on smoking in cars carrying children; a ban on smoking on government school grounds; and a ban on the sale of tobacco from temporary vendors.	► Reduce risks (1)
Public Health	The Heart Foundation has been funded $492,471 by the Department for the *Go for your life Just Add Fruit & Veg* project, which is due for completion in February 2009. Increasing fruit and vegetable consumption is one of the Go for your life objectives with inadequate consumption of contributing to poor health, obesity and a range of chronic diseases. The Victorian Government through VicHealth fund a project entitled *Food for All* which aims to promote improved access to nutritious food and ensuring food security in partnership with local government. Eight councils covering nine municipalities are involved.	► Reduce risks (2)
Public Health	The Victorian government recognises that physical activity levels and the eating habits of Victorians are influenced by the surrounding environment. This includes access to local services, shops, workplaces and community facilities as well as walking tracks, transport links, bike paths and sport and recreational facilities including open space. The 'Environments for Health' policy framework for municipal public health planning developed in 2001 explicitly acknowledges the role of the built and natural environments in influencing health, and over the past several years the Department of Human Services has supported local governments to take up the Heart Foundation's 'Healthy by Design' guidelines. This has included targeted small grants to selected local governments to embed 'Healthy by Design' principles in their local planning activities.	► Reduce risks (3)
Public Health	The 2006-2010 'Go for your life' Strategic Plan' acknowledges structural changes to the built environment and activity is occurring across government departments to deliver structural changes to support healthy eating and physical activity. For example, the Department of Sustainability and Environment's East Gippsland 'Go for your life' community partnership implements a range of public land projects with a focus on accessibility for all. 'Go for your life' also collaborates with the Department of Transport who has committed to a $100 million package of improvements to cycling infrastructure as part of the Victorian Transport Plan recently launched by the Premier. The Department of Planning and Community Development is also progressing a range of initiatives to link planning with community development and build active, confident and inclusive communities	► Reduce risks (3) ►
Primary Health Branch	The Primary Health branch has endorsed a range of strategies and initiatives that aim to improve the care provided to clients and carers and meet identified needs. These include specific initiatives to address chronic disease (including cardiovascular disease) such as Early Intervention in Chronic Disease services, Aboriginal Health Promotion and Chronic Care Partnerships and Community Health program. Services provided include a range of allied health and nursing	► Early detection (14,15,16,17) ► Acute episode (24,29,30)

Programs/Strategies	Overview	Critical Intervention Points
	services, education, self-management support, exercise and rehabilitation programs and access to (referral) to other services as required.	
Hospital admission risk program (HARP)	The HARP commenced in 2001 as a pilot and was rolled out across the state in 2005. There are 22 health services across Victoria with HARP services. HARP services manage people with chronic disease, aged and/or complex needs who frequently use hospitals or are at risk of hospitalisation. The two streams of care provided by HARP are chronic disease (including chronic heart disease) and aged and complex care. The HARP model of care is described in the Health independence programs guidelines (2008). Specifically for chronic heart disease the HARP model of care includes: All patients with established CHF require: ► seamless progression through each stage of education, management and support ► optimal pharmacological management, directed by national and international guidelines ► non-pharmacological management in the form of an integrated disease management program, supported or managed by a heart failure (nurse) co-ordinator ► a continuing program of activity and exercise based upon walking and maintenance of muscle strength for activities of daily living ► all patients and carers require education and support in achieving and maintaining a program of self care, based on self management principles and includes telephone coaching.	► Early detection (14,16,17,18) ► Acute episode (20,22,23) ► Long term (24,27,28,29,30) ► Advanced care (31,32,33,34)
Sub-acute ambulatory care services (SACS)	Sub-acute ambulatory care services are available to people of all ages and may follow a hospital stay, hospital day attendance, or may be accessed directly from the community. SACS extend and complement inpatient services. SACS can be delivered in a client's home or at an ambulatory care centre. There are 35 health services that deliver SACS from 53 sites across Victoria.	► Early detection (14,16,17) ► Acute episode (18,22) ► Long term (24,27,28,29,30) ► Advanced care (31,33,34)
Post acute care (PAC)	Post-acute care services aim to assist people discharged from a public hospital, including emergency departments, acute services and sub-acute services, who have been assessed as requiring short-term, community-based supports to assist them to recuperate in the community and to ensure a safe and timely discharge. Admission to PAC is based on an assessment of the person's need for short-term community-based services and takes into account the person's health care needs and psychosocial factors that may impact on their capacity to safely recuperate in the community. There are 27 PAC services across the state. The key features of PAC are to: ► provide a rapid response to referrals for services to facilitate safe and timely discharge from a public hospital ► purchase and coordinate short-term, community-based services in response to individually assessed needs ► facilitate referral to longer term service providers where required.	► Early detection (16) ► Acute episode (18,22) ► Long term (24,27,28,29,30) ► Advanced care (31,32,33,34) ►
Hospital in the home (HITH)	Hospital in the home is the provision of hospital care in the comfort of the persons own home, or other suitable environment. Patients are regarded as hospital inpatients and remain under the care of their treating doctor in the hospital. Patients receive the same treatment that they would have received had they been in an inpatient hospital bed. Patients may be able to receive all their hospital care in HITH or they may have a stay in hospital then receive HITH in the latter part of their treatment. There are 47 participating hospitals who provide HTIH.	► Acute episode (18, 20, 22) ► Long term(24,27,29,30) ► Advanced care (31,32,33,34)
Transition Care Program (TCP)	A partnership agreement between the Australian Government and the State and Territory Governments, resulted in the establishment of a national Transition Care Program (TCP) in 2005. The program complements existing sub-acute services and is designed to help older people leaving hospital return home rather than inappropriately enter residential care. The TCP is time-limited, goal oriented and therapy focused, providing older people with a package of services that includes low intensity therapy (such as physiotherapy, occupational therapy and social work), case management and either nursing support and/or personal care. It helps older people complete their restorative process and optimise their functional capacity, while assisting them and their family or carer to make long-term care arrangements.	► Early detection (14,16,17) ► Acute episode (18) ► Long term (24,25,28,29,30) ► Advanced care (31,33)

Programs/Strategies	Overview	Critical Intervention Points
	Victoria has 570 places operational of the 2,228 places currently available nationally. By the end of 2011-12, there will be 4,000 transition care places nationally, of which 1,000 will be operational in Victoria.	
Primary Health Branch	The Primary Health branch has endorsed a range of strategies and initiatives that aim to improve the care provided to clients and carers and meet identified needs. These include specific initiatives to address chronic disease (including cardiovascular disease) such as Early Intervention in Chronic Disease services, Aboriginal Health Promotion and Chronic Care Partnerships and Community Health program.	► Early detection (14,15,16,17) ► Acute episode ► Long term (24,29,30)
Stoke Network	In 2007 the Victorian Government released the Stroke Care Strategy for Victoria which included28 recommendations. Implementation of this strategy is supported by a commitment of $5 million over three years	► Reduce risks (2) ► Early detection (8,9,10,11,13,14,15,16,17) ► Acute episode (18,19,20,21,22,23) ► Long term (24,28,29,30) ► Advanced care (31,32,33,34)

12.1.4 Queensland

The following table provides an overview of the reported programs and strategies.

Table 7. Overview of jurisdictional programs and strategies

Programs/Strategies	Overview	Critical Intervention Points[101]
ProActive Heart Trial	Pilot. An evidence-based telephone delivered disease management program for the secondary prevention of coronary heart disease to reduce hospital utilisation in patients with coronary heart disease.	► Reduce risks
Go for 2 & 5	A 4 year fruit and vegetable social marketing campaign which commenced in October 2005. It aims to help reduce the risks of obesity, poor nutrition and chronic disease through the state. Partners from the fruit and vegetable industry and non-government sector have licensed into the campaign, extending its reach and impact. In addition, a dedicated Aboriginal and Torres Strait Islander Go for 2&5 campaign will start in late 2008. To achieve this, the multi-faceted campaign incorporates advertising, promotional activity, online information, media and local community initiatives. Final evaluation data not available until mid 2010.	► Reduce risks
Lighten Up to a Healthy Lifestyle	A 2 month group program for adults at risk of chronic disease. The program promotes healthy eating, physical activity, self esteem, stress management and long-term weight management. The program comprises six two-hour group workshops and three individual appointments for measurements and goal setting.	► Reduce risks
Living Strong People for Aboriginal and Torres Strait Islander Communities	Living Strong is a healthy lifestyle group-based program for Aboriginal and Torres Strait Islander communities, formerly known as the Healthy Weight Program. The Program encourages participants to seek a healthy lifestyle through good nutrition and physical activity and teaches them life skills to be able to do this in their daily lives. Living Strong includes optional health screenings and up to 12 workshops developed to suit community and local needs.	► Reduce risks
Rheumatic Heart Disease Register and Control Program in Queensland	Funding proposal for a Rheumatic Heart Disease Register and Control Program in Queensland submitted to Australian Government's Department of Health and Ageing Chronic Disease Branch on Friday, 21/11/08. The register supports the monitoring and recall of patients with or at risk of Acute Rheumatic Fever / Rheumatic Health Disease; and to develop and implement ongoing initiatives to improve program coordination, improve patient self management, primary care worker training and community education and health promotion activities.	► Reduce risks ► Early detection

[101] Inferred from provided information.

Programs/Strategies	Overview	Critical Intervention Points[101]
Medical Specialist Outreach Program	Multidisciplinary cardiac teams visit multiple rural and regional sites monthly to quarterly to run cardiac outpatient clinics and conduct staff training.	► Early detection ► Acute episode ► Long term
Medical support for heart failure services	This program is designed to improve patient access to heart failure speciality advice and to train and support local staff in providing the best evidence care. The pilot site was at Nambour, with additional sites at Roma and Bundaberg. Plans are to use this model at other sites.	► Acute episode
Inpatient Cardiac Rehabilitation Programs	This program is designed to assist patients understand the disease process, identify their modifiable risks for heart disease and begin to focus on modifying risks, assist in return to active lifestyle and help patients deal with the event.	► Early detection
Field Triage Program	This program was initiated by Queensland Ambulance Service for patients with chest pain symptoms to identify individuals with ST elevation myocardial infarctions. This triage identifies individuals who would be candidates for field thrombolysis or immediate transfer to alerted participating cardiac catheter laboratories so that the primary Percutaneous Coronary Intervention (PCI) for the management of acute myocardial infarction can be undertaken. Trialled at Gold Coast, Royal Brisbane & Women's Hospital and The Prince Charles Hospital.	► Acute episode
Exercise benefits for patients in a heart failure disease management program	This is a Random Controlled Trial evaluating the benefits of exercise on readmissions, mortality and depression.	► Long term
Heart Failure Disease Management Programs	22 Heart Failure Disease Management Programs have been established in Queensland. Specialised heart failure nurse and allied health in the hospital and the community work together to provide care that involves: patient education, medication titration facilitation, self-management strategies, pharmacy review and improved communication between community services and general practitioners.	► Acute episode ► Long term
Happy Hearts	Phase 3 cardiac rehabilitation	► Long term
Cardiac Rehabilitation	Phase 2 and 3 cardiac rehabilitation	► Long term
Cardiac Rehabilitation	Phase 1 and 2 cardiac rehabilitation	► Long term
Cardiac Rehabilitation Outpatient Programs	45 Multidisciplinary programs are running out of Public Community Health and hospitals and 7 programs run out of private facilities. The model of care varies to suit the location and client group eg: exercise and education, education only, fast track, rural home type programs. Programs are based on the Australian Cardiovascular Heath and Rehabilitation Association (ACRA) Guidelines for Cardiac Rehabilitation.	► Long term
Chest Pain Attack Media Campaign	$350,000 to Heart Foundation Queensland for Chest Pain Attack Media Campaign	► Acute episode
Heart Failure telehealth clinic between Nambour and TPCH Pilot	Trial of a heart failure telehealth clinic between Nambour Hospital and The Prince Charles Hospital in Brisbane. The rationale of the clinic is to test the concept of providing medical services remotely. Currently seeing about 8 clients per clinic. Now includes Roma and Princess Alexandra Hospital.	► Acute episode
Improved Primary Health Care Initiative	Multidisciplinary cardiovascular / chronic disease outreach clinics addressing prevention and treatment of chronic disease.	► Reduce risks ► Early detection ► Acute episode ► Long term
Telephone Based Self-Management Approach Project	This project is in the process of developing a telephone-based approach to self-management, targeting avoidable admissions to public hospital. Telephone-based cardiac rehabilitation will be a key component of this service.	► Long term
Indigenous Health Worker positions for cardiology and cardiac rehabilitation	Indigenous Health Worker positions for cardiology and cardiac rehabilitation have been created for Thursday Island, Cairns Base Hospital, Townsville Hospital and Mt. Isa. These positions develop stronger partnerships with the Indigenous health sector, improve inpatient education, discharge planning and coordination of ongoing follow-up care.	► Reduce risks ► Early detection ► Acute episode ► Long term
Referral to Cardiac Clinics	Entry for non acute cardiac patient referral to cardiology services.	► ► Early detection ► Long term
Cardiac Investigation Service	Referral point for cardiac investigations (ie. echo, exercise stress test).	► Acute episode

Programs/Strategies	Overview	Critical Intervention Points[101]
Electrophysiology Service	Five hospitals provide onsite electrophysiology service - Royal Brisbane & Women's, Princess Alexandra, Logan, The Prince Charles and Gold Coast Hospitals.	► Acute episode
Cardiac Catheter Laboratories	Diagnostic and interventional procedures performed include: Coronary Angiogram; Percutaneous Coronary Intervention; Right & Left Heart Studies; Insertion of temporary and permanent pacemakers; and Insertion of Intra Aortic Balloon Pumps. There are Cardiac Catheter Laboratories located at Cairns, Townsville, Princess Alexandra (3), The Prince Charles and Royal Brisbane & Women's, and Gold Coast Hospitals (1)	► Acute episode
Queensland Centre for Congenital Heart Disease	The Queensland Centre for Congenital Heart Disease provides diagnosis and treatment for neonates, infants, children and adolescents with congenital heart disease.	► Early detection
Statewide Heart Failure Service	RBWH and TPCH joined forces in 2006 to establish this service to better serve the needs of these patients and reduce unnecessary readmission to hospital. The Service takes a multidisciplinary team approach including input from three specialised heart failure nurses; 2 exercise specialists, pharmacists and administration support. The service offers inpatient review, phone follow up, outpatient clinics, medication titration clinics in liaison with consultant physicians and cardiologists, home visits and a 12-week multidisciplinary rehabilitation program. An optional 12-week maintenance program is an additional service available to patients to provide ongoing monitoring and to further enhance physical improvements made.	► Acute episode ► Long term
Phase 2 cardiac rehabilitation and education service	Queensland Health has a Deed with the University of Sunshine Coast to provide Phase 2 cardiac rehabilitation and education service and to undertake research in this field. Students of the University participate in the Service.	► Long term
Indigenous cardiac rehabilitation services / programs	Cardiac rehabilitation services/programs have been established for Aboriginal and Torres Strait Islander people at Wuchopperen Aboriginal Health Service in Cairns and in the Aboriginal community of Yarrabah. Wuchopperen has Australia's first Indigenous Cardiac rehabilitation coordinator. Partnership between Queensland Health and community controlled health services.	► Long term
Palliation of heart failure	The project is using a combined cardiology and palliative care model to support patients in the last year of life.	► Long term ► Advanced care
Education scholarships for post graduate training (nursing and allied health)	6 scholarships for nurses funded per year.	► Reduce risks ► Early detection ► Acute episode ► Long term ► Advanced care
Pilot Cardiac Rehabilitation for Indigenous Communities (CRIC)	4 Pilot training workshops were conducted for multidisciplinary staff working in Indigenous communities in the Cairns, Cape and Torres regions. Follow up support was provided to facilitate the implementation of models of cardiac rehabilitation for each pilot site.	► Long term
Cardiac training program for Indigenous Health Workers	Cardiac training program for Indigenous Health Workers through Cunningham Centre, Toowoomba	► Reduce risks ► Early detection ► Acute episode ► Long term ► Advanced care
Cardiac Scientist up-skilling and training	Training for and up-skilling of Cardiac Scientists	► Acute episode
Transition Program for Registered Nurses	Transition to tertiary education or a professional development tool, utilised by nursing staff.	► Reduce risks ► Early detection ► Acute episode ► Long term ► Advanced care
Cardiac education and training initiatives	One-off funding ($150,000) to the Heart Foundation for a number of cardiac education and training initiatives, to be delivered across the state, including development of a training and education package for health professionals' use of resources integral to patient management. Includes developing a training and education package for health professionals in how My Heart My Life, Managing My Heart Health and Living Well with Chronic Heart Failure are integral to patient management.	► Reduce risks ► Early detection ► Acute episode ► Long term
Hospital to Home	This program is designed to support the heart failure disease management	► Acute episode

Programs/Strategies	Overview	Critical Intervention Points[101]
Heart Failure Training Program	programs.	
St. Andrews Cardiac Rehabilitation Training Facilitators Course (3 days)	This program is designed to assist those setting up outpatient programs and covers areas such as exercise prescription, funding, etc.	► Long term
Cardiac Rehabilitation Training Course (7 days)	This extensive cardiac rehabilitation course is the primary training course for those working in cardiac rehabilitation.	► Long term
Cardiac Rehabilitation Workshop	This 2 day workshop was the first for Princess Alexandra Hospital and aimed to be an education and/or refreshers well as a networking opportunity for those people working in regional, rural and remote areas as well as within the city of Brisbane.	► Long term
Heart Failure Allied Health education	PAH heart failure team ran courses at Roma & Charleville. RBWH ran course at Bundaberg and Rockhampton.	► Acute episode
Heart Failure Training programs	Local training of nurses, allied health and GPs in 16 sites across Queensland.	► Acute episode
Statewide Cardiac Clinical Network	The Network was initiated in June 2006 and consists a multidisciplinary collaboration of clinicians who share a common goal for a coordinated statewide approach to identify gaps between evidence and practice in order to improve patient care. The Network addresses service improvement, planning and delivery of services and associated workforce issues. It is an advocate to promote consistency of Queensland Health strategies and plans with other key initiatives and to collaborate and negotiate with senior stakeholders to facilitate the implementation of statewide clinical service changes.	► Reduce risks ► Early detection ► Acute episode ► Long term ► Advanced care
Clinical Services Capability Framework - Cardiac Services Module	Development of a cardiac services module for 'Queensland Health Clinical Services Capability Framework (CSCF) for Public and Licensed Private Health Facilities 2005' by Planning and Coordination Branch. The CSCF provides a standard set of capability requirements for public and private hospitals, provides consistent services planning descriptors and encourages explicit risk management procedures where services do not meet minimum patient safety requirements. This cardiac services module will include review of minimum requirements for Coronary Care Units, cardiac medical services, cardiac surgical services, cardiac intervention/radiology services adaptations within the six levels and cardiac rehabilitation.	► Acute episode ► Long term ► Advanced care
Heparin Intravenous Infusion Order and Administration form	A standardised Heparin Intravenous Infusion Order and Administration form has been developed and implemented state-wide in Queensland Health hospitals.	► Acute episode
Guidelines for anticoagulation using Warfarin	Standardised guidelines for anticoagulation using Warfarin has been developed and implemented state-wide in Queensland Health hospitals.	► Acute episode
Warfarin Section of the National Inpatient Medication Chart	Standardised Warfarin section of the National Inpatient Medication Chart developed and implemented state-wide in Queensland Health hospitals.	► Acute episode
Generic Skills Competency Assessment Tool for Cardiac Nurses	Development and implementation of Generic Skills Competency Assessment Tool for nurses in cardiac areas	► Acute episode
State-wide Chest Pain and Acute Coronary Syndrome Pathways	State-wide Chest Pain and Acute Coronary Syndrome Pathways have been developed by Clinical Practice Improvement Centre. These pathways are standardised, evidence-based multidisciplinary management plans which identify an appropriate sequence of interventions, timeframes, milestones and expected outcomes for a homogenous patient group.	► Acute episode
Heart Failure Pathway	Currently being developed by the State-wide Heart Failure Services Steering Committee.	► Acute episode
Primary Clinical Care Manual	The Primary Clinical Care Manual (PCCM) provides clear and concise clinical care guidelines and health management protocols in accordance with the Health (Drugs and Poisons) Regulation 1996, especially for endorsed Registered Nurses, Authorised Indigenous Health Workers, Nurse Practitioners and Isolated Practice Area Paramedics, Sexual and Reproductive Health endorsed health professionals.	► Reduce risks ► Early detection ► Acute episode ► Long term ► Advanced care

Programs/Strategies	Overview	Critical Intervention Points[101]
Chronic Disease Guidelines	The Chronic Disease Guidelines (CDG) has been developed to guide the health practitioner in providing best practice prevention, early detection and management of chronic disease. The PCCM and CDG are developed through partnership between the Royal Flying Doctor Service (Queensland) and Queensland Health.	► Reduce risks ► Early detection ► Acute episode ► Long term ► Advanced care
Audit Best Practice for Chronic Disease (ABCD)	National action research framework supporting health services to develop continuous improvement approaches to strengthen systems for prevention and management of chronic illness.	► Acute episode ► Long term ► Advanced care

12.1.5 Western Australia

The Cardiovascular, Diabetes Endocrine, Neurosciences & the Senses and Renal Health Networks have developed condition specific overarching Models of Care that provide a statewide policy framework for the delivery of cardiovascular healthcare. The Models of Care have been developed with reference to and are informed by the National Service Improvement Framework for Heart, Stroke and Vascular Disease. They cover strategies across the continuum of disease from Primary Prevention (the Well Population), Early Detection (Population at Risk), Secondary Prevention (Minimising the progression and consequences of disease), Specialist Services (Co-ordinated management of the advanced established condition) to End Stage Disease (e.g. Dialysis and Transplant services, amputation or palliation).

The following table provides an overview of the reported programs and strategies.

Table 8. Overview of jurisdictional programs and strategies

Programs/Strategies	Overview	Critical Intervention Points
Diabetes Model of Care		► Reduce risks (3) ► Early detection (7,16,17) ► Acute episode (18,22) ► Long term (24,30) ► Advanced care (31,33)
Chronic Kidney Disease Model of Care		► Early detection (10,12) ► Long term(25)
Heart Failure Model of Care		► Reduce risks (4) ► Early detection (7,8,9,11,13,14) ► Acute episode (18,22,23) ► Long term (24,28,29,30) ► Advanced care (31,33,34)
Model of Stroke Care		► Early detection (8,16) ► Acute episode (18,19,23) ► Long term (24,28,29) ► Advanced care (31,32,33,34)
There are models of care are in development that deal with other aspects of cardiovascular health: Acute Coronary Syndromes (in progress), Optimising Vascular Health (prevention), Diabetic High Risk Foot, Peripheral Arterial Disease of the Lower limb.		► Reduce risks (1,2,3,5) ► Early detection (7,8,9,11,14,16) ► Acute episode (18,20,22,23) ► Long term (24,27,28,29,30) ► Advanced care (31,32,33,34)

12.1.6 South Australia

A number of policies were outlined as being relevant to the critical intervention points, these include:

1 South Australia's Strategic Plan (SASP)
This plan launched in 2004 and outlined a medium to long-term course for the whole of South Australia. It set out six interrelated objectives: Growing Prosperity, Improving Wellbeing, Attaining Sustainability, Fostering, Creativity and Innovation, Building Communities, Expanding Opportunity. Eighty-four targets, the majority with a 10-year or longer timeframe, were grouped under these six objectives. SASP has two important, complementary roles. First, it is a means for tracking progress statewide, with the targets acting as points of reference that can be assessed periodically. Second, it provides a framework for the activities of the South Australian Government. Reducing the prevalence of tobacco smoking amongst the SA population has been prioritised as a target of the Plan. http://www.stateplan.sa.gov.au/

2 SA Health Care Plan 2008-2016
The plan outlines the most significant single investment in health care in South Australia's history. The government will build the 800-bed Marjorie Jackson-Nelson Hospital, a state-of-the-art facility in Adelaide's city centre that will become Australia's most advanced hospital. The 10-year plan also proposes new investment in other major hospitals, promotes healthy lifestyles and illness prevention through new GP Plus Health Care Centres, and makes South Australia the best place for health professionals to work. SA's Health Care Plan will mean, better coordinated hospital services, a responsive health workforce for the future, GP Plus Health Care Centres, with more primary health care services, more elective surgery, less pressure on emergency departments and improved management of chronic diseases. https://www.library.health.sa.gov.au/Portals/0/south-australias-health-care-plan-2007-2016.pdf

3 SA Health Strategic Plan 2008-2010

SA Health will lead and deliver a comprehensive and sustainable health system that aims to ensure healthier, longer and better lives for all South Australians. We will achieve our aims by: strengthening primary health care, enhancing hospital care, reforming mental health care and improving the health of Aboriginal people. We are committed to a health system that produces positive health outcomes by focussing on health promotion, illness prevention and early intervention. We will work with other government agencies and the community to address the environmental, socioeconomic, biological and behavioural determinants of health and to achieve equitable health outcomes for all South Australians. http://www.health.sa.gov.au/DesktopModules/SSSA_Documents/LinkClick.aspx?tabid=46&table=SSSA_Documents&field=ItemID&id=864&link=T%3a%5c_Online+Services%5cWeb+Admin%5cIndividual_site_correspondence%5cProject+Correspondence%5cSASP%5cStrategic-P

4 Eat well be active Healthy Weight Strategy for South Australia 2006-2010

SA Health has lead responsibility for the South Australian Strategic Plan Target 2.2 Healthy Weight (to increase the proportion of South Australians 18 and over with healthy weight by 10% points by 2014). In 2006 42.5% of adults were in the healthy weight range with the target requiring 52% by 2014. A supplementary measure relates to the weight of four year olds; currently 20% are overweight or obese. Target 2.2 is very closely aligned with Target 2.3 Sport and Recreation (to exceed the Australian average for participation in sport and physical activity by 2014) and some physical activity strategies relate to both targets. A number of other targets are inter-related with Target 2.2 including: T2.6 increase the health status of people living with chronic disease; T2.4 increase healthy life expectancy; T2.5 reduce morbidity rates of Aboriginal South Australians; and T3.6 increase the use of public transport (which requires incidental activity). In addition the eat well be active Healthy Weight Strategy for South Australia 2006 – 201 supports South Australia's Health Care Plan 2007 – 2016 by adopting a population health approach to promote healthy lifestyles and illness prevention. http://www.health.sa.gov.au/PEHS/branches/health-promotion/hp-eat-well-be-active.htm

5 South Australian Alcohol Action Plan 2009-2012

The South Australian Alcohol Action Plan 2009-12 will encourage a whole of government approach to addressing the problems associated with excessive alcohol consumption in South Australia and will set down strategies for reducing harm and promoting responsible consumption of alcohol. The South Australian Alcohol Action Plan 2009-12 will support the goals outlined in the National Alcohol Strategy 2006-2009 and will reflect the priorities outlined in that strategy. The Plan is expected to be completed by June 2009.

6 South Australian Tobacco Control Strategy 2005-2010

South Australian Tobacco Control Strategy 2005-2010 has the goal of improving the health of South Australians by reducing the harm caused by tobacco smoking, especially among high prevalence groups (young people, people living with mental illness and Aboriginal people). The South Australian Tobacco Control Strategy 2005-2010 supports the goals of the National Tobacco Strategy 2004-2009 and South Australia's Strategic Plan (2004-2014) target T2.1 of reducing smoking prevalence in young people (15-29 years) by 10% between 2004 and 2014.
http://www.tobaccolaws.sa.gov.au/Default.aspx?tabid=136

7 SA Drug Strategy 2005 - 2010

The goal of this South Australian Drug Strategy is to improve the health and wellbeing of all South Australians by preventing the use of illicit drugs and the misuse of licit drugs. This goal was set in response to the recommendations of the 2002 SA Drugs Summit. The Drugs Summit brought together representatives from the community, non-government organisations, government departments and agencies and elected members of Parliament and local government. A continuing partnership between the community, service providers and Government is essential to achieving the goal. To build the future that we all want requires changing the present. To achieve the goals of the Drugs Strategy key areas of change have been identified: increase the ability of all South Australians, especially young people, to make healthy choices; reduce the availability of harmful drugs, including reducing access to settings where drug related harm occurs; increase the prevention focus of all drug and alcohol policies and programs; increase the opportunities to: link people into treatment; and support them through difficult times in their lives; increase access to treatment and treatment options; and increase the

focus on the needs of specific groups and communities at risk of social exclusion, particularly Aboriginal communities. http://dassa.sa.gov.au/webdata/resources/files/SA_Drug_Strategy.pdf

The following table provides an overview of the reported programs and strategies.

Table 9. Overview of jurisdictional programs and strategies

Programs/Strategies	Overview	Critical Intervention Points
Eat Well Be Active Community Education	The provision of information and education to assist community to make healthy lifestyle choices complemented by school and community programs.	► Early detection (8,10)
School and community programs eg Eat well be active Primary Schools program, Active Transport in schools initiatives, be active playtime, Crunch and Sip.	Health promoting school approaches integrating curriculum activities, policy and environment changes to support healthy eating, physical activity and healthy body image in education and child care settings.	► Reduce risks
Policy and legislation to support healthy eating and physical activity in community settings including workplace and education.	Examples include: Healthy foods in South Australian Health facilities, development and implementation of health in planning policies, integration of active and healthy by design principles in urban and built form.	► Reduce risks
Workforce development	To support the health and other sectors to implement evidence based approaches to healthy weight in community settings.	► Reduce risks
Research and evaluation	Training and professional learning initiatives to support the health, education and care workforce to implement evidence based healthy weight health promotion activities. Including; Healthy Weight short course, Aboriginal Health Worker Training.	► Reduce risks
Alcohol, Smoking & Substance Involvement Screening Tool (ASSIST) Training Program for Primary Health Care Workers	ASSIST is focused on identification and early intervention. ASSIST was developed by DASSA as part of a WHO project for use by primary health care workers who may have limited knowledge of alcohol, tobacco and other drugs issues. SA Health's "Do It For Life" Coordinators, employed throughout South Australia to help clients modify their behaviours to minimise risk of chronic disease, have received this training. Training programs are also being developed with allied health workers, the mental health and youth sectors.	► Reduce risks (1,2)
Hospitality First Responder Training	The Hospitality First Responder Training program, launched in July 2006. The program is a modified first aid course designed specifically for the hospitality industry to provide relevant training to assist staff to manage medical emergencies (including those related to alcohol or drug consumption) that may be experienced by patrons.	► Reduce risks (2) ► Early detection (8)
Remote Aboriginal Tobacco Project	This aims to build capacity within Aboriginal Health Service and communities in order to reduce tobacco smoking and passive smoking exposure among Aboriginal people living in regional and remote communities in the northern and far western area of South Australia. The Project focuses on two main target groups; Aboriginal Health Workers (AHW) and Aboriginal communities.	► Reduce risks (1,2)
Aboriginal Tobacco Control Coordinator Project	DASSA currently funds an Aboriginal Coordinator based at Aboriginal Health Council of SA to coordinate Aboriginal tobacco control efforts among Aboriginal Health Services. The role includes providing SmokeCheck training and support to Aboriginal health workers to use this training in their work settings. A Project Officer has been employed in this role and is currently working with Aboriginal community controlled health services to develop initiatives to address smoking.	► Reduce risks (1,2)
Smoke-free Pregnancy Project Stage 4	The Project aims to increase the incidence of smoke-free pregnancy among Aboriginal women and their families. Based at Quit SA, this involves training Aboriginal and mainstream health professionals to routinely deliver brief smoking cessation interventions, assisting in the development of supportive policy, working with services to increase referrals to the Pregnancy Quitline and increase uptake of Nicotine Replacement Therapy.	► Reduce risks (1,2)
Tobacco Cessation Campaigns	DASSA works with Quit SA to implement campaigns aimed at reducing the uptake of tobacco smoking and increasing quit smoking attempts.	► Reduce risks (1,2)
Aboriginal Reference Group	This group has representation from key Aboriginal policy and programs officers from both Government and non-government organisations. The Committee meets regularly to provide advice and guidance on broad policy	► Reduce risks (1) ► Long term (24)

Programs/Strategies	Overview	Critical Intervention Points
	direction and specific Aboriginal tobacco control projects, identify gaps in the evidence for the effectiveness of strategies, advocate for commitment and resources to improve the capacity of Aboriginal people to reduce smoking, monitor the implementation of specific actions from the South Australian Tobacco Control Strategy 2005-2010 relevant for Aboriginal people and provide advice to the Ministerial Reference Group on Tobacco on relevant issues affecting the Strategy's progress.	
Young people and smoking	Develop an implementation plan drawing on evidence from the Youth Friendly Literature Review, focus groups and other literature to identify a number of strategies that would improve our engagement with young people. There have been adaptations to existing procedures within Quit SA and Quitline to better orient services to the needs of young people and the continuation of existing work to train and support youth health workers to provide brief advice within their settings. This includes providing appropriate support, developing relationships with youth health providers , linking young people to younger advisors, providing a modified Quit Pack, including a flyer outlining the web based options that are currently.	► Reduce risks (1,2)
Tobacco and Mental illness project	The Tobacco and Mental Illness Project has been funded since 1998 to address the high rates of smoking among people living with a severe and disabling mental illness. The Project is based within Mental Health Services, Central Northern Adelaide Health Service (CNAHS). The Project focuses on three key areas: raising awareness among those involved with mental health services, supporting policy and practice change within mental health services in South Australia, and conducting tobacco smoking cessation and reduction programs for people with a mental illness.	► Reduce risks (1,2)
Controlled Substances Advisory Council	The Controlled Substances Advisory Council is a South Australian body and has been established under the Controlled Substances Act 1984.	► Long term (27)
Smoke-free Health Services	SA Health is planning to develop a comprehensive policy to prohibit smoking at all public hospitals and health services in South Australia. This will include prohibiting smoking across all health premises and developing supporting policy to assist staff and clients to quit smoking.	► Reduce risks (1)
Home Nursing Heart Failure - Southern Adelaide Health Service	The Heart Failure Service provides a patient focused service, which facilitates best practice, continuity and cost effective management of the heart failure patient in order to achieve optimal patient outcomes at all stages of the disease continuum. It is an out-of-hospital service, employing an additional 2 Heart Failure Nurse Practitioners (HFNPs) in order to increase complex case management capacity within General Practice. The HFNPs integrate with current and emerging community-based complex case managers and provide an Outreach Home Visit Program, with nurse-led drop in clinics x2-3 times per week at GP-PLUS facilities and coordinating Heart Failure Exercise Programs as part of the Chronic Disease Community Programs.	► Acute episode (18,22) ► Long term (24,27,29)
Regional Chest Pain Assessment and Referral - Central Northern Adelaide Health Service	Provides expert acute cardiac assessment, management and coordination of patients presenting to the emergency department primarily with chest pain. Promotes streamlined care and hospital avoidance by initiating expert investigations, treatments and interventions as required and providing support and education to patients, staff, PHC providers and significant others. Significant outcomes have been achieved in hospital avoidance through processes such as immediate ED stress testing as well as earlier initiated specialist treatment and the resultant streamlined admissions and LOS savings through more efficient treatment regimes and PHC follow up.	► Early detection (13,14) ► Acute episode (18,20,24)
Integrated Cardiovascular Clinical Network SA	The Integrated Cardiovascular Clinical Network South Australia (iCCnet SA) aims to provide a state-wide provider clinical network which supports the practice of evidence based medicine and continuous quality improvement in the management of cardiovascular disease in diverse settings across regional, rural and remote South Australia covering a population in excess of 400,000.The fundamental aim of iCCnet SA is to remove barriers to access necessary, safe cardiovascular care and to improve clinical outcomes. The success of the network is based on comprehensive collaboration and integration of services between rural and remote health workers, iCCnet SA, Country Health SA and the other service providers across all health sectors concerned with cardiovascular health.	► Acute episode (18, 20, 22)

12.1.7 Tasmania

Tasmania was unable to return the request for information in time for the completion of this report. Information in this section is derived from semi-structured interview.

Although DHS Tasmania is aware of the National Service Improvement Framework, planning for chronic disease management is focussed around the Tasmania Health Plan, rather than the NSIF. Tasmania DHS is planning for system reform that supports service delivery across a range of chronic conditions including CVD. This relates to the National Chronic disease Framework and will look similar to the Queensland chronic disease strategy. There is however, synergy with the NSIF, particularly in relation to the focus on:

- Person centred care
- Integration of services
- Reduction of variations in clinical care.

DHS TAS notes unique characteristics of the Tasmanian population. After the Northern Territory, the population of Tasmania is the oldest and sickest in Australia, with a larger than average burden of disease and a small critical mass, which compounds the problems associated with delivering quality care. CVD hospitalisation and mortality is higher in the lower SES groups and even worse for Aboriginal and Torres Strait Islander Australians.

DHS Tasmania supports GP-centric models of care, which are generalisable across the range of chronic disease.

DHS Tasmania notes that there are difficulties in monitoring and surveillance for CVD as there is no national review of survey in place and no national risk factor monitoring. For example, there is no routine national monitoring that will allow us to assess how we are going with reducing obesity through the use of regular and objective measures.

DHS Tasmania considers the uptake of clinical guidelines is generally poor unless associated with incentives, measures and/or routine audits. DHS Tasmania discussed the use of the Map of Medicine to improve access for clinicians to clinical pathways. This system takes a pathway and translates it into a series of steps and instructions and is a communication tool to clinicians, provides referral advice and is a tool for audit. DHS Tasmania believes this model could be applied nationally as part of a national approach and national leadership for CVD. Guidelines would need to be NHMRC endorsed.

DHS Tasmania considers there needs to be less downstream investment and better utilisation of GPs to improve early intervention and prevention in CVD programs.

CVD Rehabilitation is delivered through nursing services from within the budget for cardio and cardiothoracic units; a state-wide approach is not feasible.

DHS Tasmania advises that, due to the size of the jurisdiction and the ongoing workforce shortages; the state looks for alternative models of care that will deliver the required patient outcomes. For example, where they are delivering mainstream care they seek to incorporate the elements of a stroke unit, through transitional care, rehabilitation units and aged care

12.1.8 Northern Territory

The Northern Territory was unable to respond to the information request in time for inclusion in this report. Information contained this section was derived from a semi-structured interview.

The approach to CVD in the NT is as a component of an overall chronic disease program. NT Health has focussed on an organised systematic approach to chronic disease, with a focus on diabetes (with co-morbidities) because of the high incidence of the disease.

NT Health considers the principles and critical intervention points and the literature referenced in the NSIF are completely applicable to Aboriginal and Torres Strait Islander Australians. The main issue for NT in the management of CVD relates to addressing the acknowledged high morbidity and mortality from this condition in an environment with low resources (financial and workforce).

NT considers there would be significant health gains if the system shifted to a systematised, integrated, co-ordinated model of care using integrated care teams and evidence-based guidelines.

The NT has welcomed the investment by the Australian Government into primary health care in the NT and will be using this investment to focus on chronic disease. Up to now NT Health advises the focus has been on treatment and management.

Partnerships are in place between Aboriginal Community Controlled Health Services and the NT Government. Due to the focus on improving health to the indigenous population for the specific chronic diseases and auditing of outcomes and processes, NT Health considers there are now good levels of care being provided through indigenous and mainstream primary health care services.

Strategies implemented include:

- Training of health care staff
- The use of recall and registers
- Using data and regular auditing
- A focus on CQI across the whole sector

Outcomes measured include:

- Gains in the life expectancy of Aboriginal women of 3.2 years
- Improved survival from infarct in remote areas due to patients being bought to treatment better shape and to them then getting the right care

Every health centre has a disease register. Primary health nurses work with clusters of communities and undertake on-site training and assistance with clinical systems.

As a result of poor mortality rates for Indigenous Australians in the 6 – 12 months following a cardiac event, NT Health advises they are scoping up a model for how to apply rehabilitation care in the Aboriginal and Torres Strait Islander setting. They have commissioned a literature review from the NHMRC and are reviewing the work of networks in NSW and Qld.

NT Health supports the use of guidelines but observes that there have to be practical ways of putting them into practice or they will not be used. NT Health refers to the Central Australian Rural Practitioners Association (CARPA) guidelines which cover acute, primary health care and chronic disease presentations. Reviewed guidelines will include an absolute risk assessment and combined chronic disease guidelines (not separated out for different diseases) with specific tests for particular conditions.

12.1.9 Australian Capital Territory

A number of policies were outlined as being relevant to the critical intervention points, these include:

1 ACT Chronic Disease Strategy 2008 -2011
This provides an overarching framework for the provision of appropriate programs and supports aimed at addressing the increasing prevalence of people at risk of, or living with, chronic disease in the ACT. The Strategy recognises the demands placed on the ACT health system and community by chronic diseases, including cardiovascular disease. A number of initiatives are included that aim to improve the prevention, detection and management of cardiovascular disease in the ACT. It is anticipated that implementation of the Strategy will positively impact on all Critical Intervention Point categories. (http://health.act.gov.au/c/health?a=dlpol&policy=1190165949)

2 ACT Palliative Care Strategy 2007-2011
The ACT Palliative Care Strategy 2007-2011 provides overarching direction for the delivery of palliative care services across the ACT, in the context of the national palliative care standards drafted by Palliative Care Australia. The Strategy will have a particular positive impact upon Critical Intervention Point 34, which aims to improve timely and appropriate access to adequate palliative care services which are integrated with treatment services.
(http://health.act.gov.au/c/health?a=dlpol&policy=1186452168)

3 Stroke Unit - Admission and Discharge of Patients
This policy outlines procedures for the admission and discharge of acute stroke patients to and from the Stroke Unit at The Canberra Hospital. This policy assists in timely facilitation and co-ordinated care by the multidisciplinary Stroke Team and the planned discharge to an appropriate facility after the acute phase of care. (http://cid/c/healthintranet?a=da&did=5000151)

4 Coronary Care unit Acute Bed Admission and Discharge Criteria Protocol
This protocol defines the processes for identifying patients that require acute coronary care and for decision making to facilitate safe and timely admission to, and discharge from, an acute CCU bed. This protocol applies to cardiologists, cardiology registrars and staff in the Demand Management Unit,

Coronary Care Unit and the Emergency Department, and Medical Services management. (http://cid/c/healthintranet?a=da&did=5000081)

5 A New Way: The ACT Aboriginal and Torres Strait Islander Health and Wellbeing Plan 2006-2011
Developed in response to the National Strategic Framework for Aboriginal and Torres Strait Islander Health (NSFATSIH), A New Way embodies the Framework's objective of achieving coordinated, collaborative and multi-sectoral action. The Plan establishes a sound basis for truly collaborative action and provides context for the work ACT Health does. (http://www.health.act.gov.au/c/health?a=dlpol&policy=1153889980)

6 ACT Primary Health Care Strategy 2006-2009
This strategy aims to provide direction for the efficient and effective delivery of primary health care services in the ACT, including health promotion, early intervention and chronic disease management. The Strategy includes a number of initiatives that will positively impact upon cardiovascular disease prevention, early detection and management, and will assist in attaining a number of Critical Intervention Points under all categories. (http://health.act.gov.au/c/health?a=dlpol&policy=1159322632)

The following table provides an overview of the reported programs and strategies.

Table 10. Overview of jurisdictional programs and strategies

Programs / Strategies	Overview	Critical Intervention Points
Health Promotion Sponsorship Funding Round	$350,000 available annually for sporting, recreational, cultural and arts organisations to promote healthy messages Smoke free, Find Thirty, Go for 2 & 5, Sun smart. www.health.act.gov.au/hpgrants	► Reduce risks (1,2,4)
Community funding round	$1.2 Million available annually to fund activities related to the promotion of good health and the prevention early detection and support of chronic disease. Priority is given to projects that focus on physical activity, healthy nutrition and chronic disease prevention. www.health.act.gov.au/hpgrants	► Reduce risks (1,2,3,4)
Health Promoting Schools Funding Round	$200,000 available annually to schools and early childhood centres to adopt the Health Promoting Schools Framework. Priority is given to projects that increase the awareness of the health benefits of improved nutrition and increase participation in physical activity. www.health.act.gov.au/hpgrants	► Reduce risks (2,4)
Measure up campaign	ACT Health coordinates the ACT component of the national Measure Up campaign, which aims to raise awareness of the importance of healthy weight in the prevention of chronic disease. In the ACT the Measure Up Campaign is being supported by a direct mail out of campaign resources to ACT residents aged 45-49. www.australia.gov.au/measureup	► Reduce risks (2,5,6)
Go for 2&5® fruit	ACT Health delivers the ACT component of the Go for 2&5® fruit and vegetable campaign. The objectives are to increase awareness of the need to eat more fruit and vegetables; and knowledge of the daily recommended minimum consumption levels of fruit and vegetables. Adults, who are the main food buyers and meal preparers, are the main target audience of the campaign. www.gofor2and5.com.au.	► Reduce risks (2)
School Canteen Managers' Accreditation Program	ACT Health is working with the ACT Department of Education and Training (DET) and the Canberra Institute of Technology (CIT) to develop a new ACT Schools Canteens Accreditation Course and Manual which will be piloted with canteen managers in February 2009. DET will require all ACT Government schools to comply with new accreditation system by end of 2009.	► Reduce risks (2)
ACT Early Childhood Active Play and Eating Well Project	This is a locally developed project which aims to create supportive environments in ACT Early Childhood services and related organisations to promote active play and healthy eating to families of children aged birth to 5 years in the ACT. The five key messages of the project focus on promoting breastfeeding, reducing screen time, promoting tap water and limiting sweet drinks, promoting vegetable and fruit consumption, and encouraging active play. www.kidsatplay.act.gov.au	► Reduce risks (2,5,6)
Find Thirty Campaign	he Find Thirty campaign, adopted from WA and localised, aims to increase awareness among adults of the type and frequency of physical activity necessary for good health (thirty minutes of moderate-intensity physical activity on most, preferably all, days of the week), and demonstrate how this can be incorporated into daily life. www.health.act.gov.au/findthirty	► Reduce risks (2)
Cardiac Rehabilitation	The Cardiac Rehab Program provides inpatient and outpatient education and an outpatient exercise program for medical (heart failure) and surgical (CABGs, Valve	► Reduce risks

Programs / Strategies	Overview	Critical Intervention Points
Program	replacements and interventional cardiology procedures) cardiac patients. The exercise program is a 6 week multidisciplinary exercise and education program.	(1,2,3,4,6) ► Early detection (7,8,9,10,11,12,13,14,15,16,17) ► Acute episode (18) ► Long term (24,29,30) ► Advanced care (31,32)
Coronary Care Unit	The Coronary Care Unit provides specialised care to patients with acute myocardial infarction, acute coronary syndrome, heart failure, dysrhythmias and patients requiring cardiological interventional procedures.	► Reduce risks (1,3,5,6) ► Early detection (7,8,9,10,11,12,13,14,15,16,17) ► Acute episode (18,20,23) ► Long term (24,25,26,27,28,29,30) ► Advanced care (31,32,33,34)
Chronic Care Program	The Chronic Care Program (CCP) was introduced to target ACT residents with Chronic Heart Failure (CHF) and/or chronic obstructive pulmonary disease (COPD) who are frequent users of the acute care system to coordinate their care. The HF CNC and COPD CNC roles were established in late 2007 to provide patient centred care and includes individualised care coordination across health settings, individualised patient management plans, patient and family education.	► Reduce risks (1,2) ► Early detection (7,8,10,13,14,15,16,17) ► Acute episode (18,22,23) ► Long term (24,27,28,29,30) ► Advanced care (31,32,33,34)
Cardiology Department	Provide Cardiovascular Care, diagnosis and treatment.	► Early detection (7,8,9,10,11,12,13,14,15,16,17) ► Acute episode (18,20,20,22,23) ► Long term (24,25,27,28,29,30) ► Advanced care (31,32,33,34)
Winnunga Nummityjah Aboriginal Medical Service	Winnunga Nimmityjah Aboriginal Medical Service does not conduct programs specifically related to cardio-vascular issues; however they do offer a number of related programs. Diabetes clinics are conducted by Winnunga throughout the year – 1 day per month – and include training provided by a General Practitioner, a dietician and a podiatrist. Winnunga provides a 'quit smoking' program called "No Bundah". It aims to support Aboriginal and Torres Strait Islander people who are ready to stop smoking.	► Acute episode (22) ► Long term (30)
Stroke Unit	The Stroke Unit at the Canberra Hospital enables early recognition of stroke symptoms, coordinated intervention and prevention of associated complications. The Unit includes a team of dedicated nurses, doctors and allied health professionals. All patients are fully monitored for the first 48 hours after admission for high temperature and oxygen levels in their blood. A Stroke Liaison nurse is involved with the patient from admission to discharge.	► Early detection (13,14,17) ► Acute episode (18,19,21,23) ► Long term (24,28,29) ► Advanced care (31)
Acute Rehabilitation Unit	The Acute Rehabilitation Ward at the Canberra Hospital involves the specialised techniques and interactions of members of the Rehabilitation Team. An individual care plan is developed for each patient in the Acute Rehabilitation Ward.	► Acute episode (18) ► Long term (24,28,29)
The Rehabilitation and Independent Living Unit	RILU is an inpatient rehabilitation unit which aims to assist patients to relearn living and social skills after illness of injury. Based on a 'wellness' model, it provides early rehabilitation in a home-like environment.	► Long term (24,28,29)

Appendix E Early Themes

In a Progress Report prepared for the Department of Health and Ageing in December 2008, a number of early and emerging themes were identified. These helped to inform the development of recommendations for the Final Report. Themes are described below.

National Leadership in CVD

This is an area where the Australian Government has direct influence.

It appears the uptake of the National Service Improvement Framework for Heart, Stroke and Vascular Disease as a means of shaping service planning and delivery for CVD has been limited. The level of penetration of the Framework appears to have been light, with contacts in several peak bodies interviewed not aware of and not using the Framework at all.

Jurisdictional representatives were all aware of the framework and had utilised the information within it to varying degrees however it was not seen as an action document. A common comment was that the Framework was released without resources attached and without a mandatory requirement to deliver on the critical intervention points, which allowed other priorities to overtake it.

The need for national leadership in CVD and/or co-ordination of particular elements of the identification and management continuum was quite strongly expressed by a number of key stakeholders. This is of particular concern to the NHF and the NSF; both organisations strongly support the establishment of a National Action Plan for CVD, similar to the National Action Plans for Mental Health. A number of jurisdictions also described the need for some form of national leadership for CVD in Australia.

National leadership is considered particularly important in the areas of clinical guidelines, standards, health monitoring, health information and measuring performance.

Themes by setting

Primary Health Care and General Practice

This is an area where the Australian Government has direct influence.

The role of GPs and the wider primary health care sector in early identification, ongoing management and end of life care is significant. Primary care, in particular, has been highlighted as an area of great opportunity. Emerging priorities and possible solutions that could be addressed within primary health care and general practice include:

- support for greater uptake of absolute risk assessment for CVD in general practice;
- broadening of criteria for some MBS items to include CVD specific activities; and
- incentives to increase use of clinical guidelines.

Hospitals and emergency departments

This is an area for joint strategy between the Australian Government and jurisdictions.

In the area of acute care, the options for stroke and heart disease can be quite different. The considerations of jurisdictions and peak bodies were closely aligned with regards to key themes for acute or critical care. These included:

- improving compliance with current guidelines for management of presentations to Emergency Departments with symptoms related to cardiac or stroke;
- improving care for people with stroke (for example in stroke units);
- improving after-care for people with cardiac events; and
- reducing the time between symptom onset and appropriate treatment (for example ECGs in ambulance).

Themes by action

Risk Assessment

This is an area where the Australian Government has significant influence (in Primary Care).

CVD risk assessments, particularly absolute risk assessment, have been identified by most stakeholders as a critical enabling factor in early identification of vascular diseases. An absolute risk assessment, measures the probability of a person developing a CV event over a particular time, usually 5 or 10 years. Once a risk is identified, it can be actively managed with a set of interventions tailored to the individual's risk profile. These interventions might include lifestyle changes, pharmacotherapy and/or clinical treatments.

The logical setting for most risk assessment is the primary care setting; however there has been limited uptake of absolute risk assessment as a clinical tool in general practice or other community health settings. Research has identified that improving the use of absolute risk assessment as a routine clinical tool in general practice may need action on a number of fronts, which might include:

- improving access to electronic decision support tools which support the use of a CVD absolute risk assessment;
- increasing patient awareness of the value of an absolute risk assessment; and
- identifying existing/new incentive payments for undertaking CVD absolute risk assessments.

Clinical Guidelines

This is an area where the Australian Government and jurisdictions can act.

Clinical guidelines are in place to cover many areas of CVD. While most focus on the clinical treatment of different forms of CVD, there is a particularly comprehensive set of guidelines for stroke, which cover the psychosocial and community support as well as clinical treatment.

Implementation of clinical guidelines has been identified as an issue by a number of stakeholders. Apart from the issue of establishing a process for developing standardised and evidence-based guidelines, there are also issues related to low levels of compliance with guidelines and ease of access to current guidelines in the clinical setting.

Clinical guidelines are applicable across all health delivery settings and at all stages of CVD management – from risk reduction, through early detection, care and support, acute care, long term care and advanced care.

Reports from stakeholders, including jurisdictions, indicate that compliance with current evidence-based guidelines for CVD is patchy in all settings.

Themes by measurement

Key Performance Measures

This is an area where the Australian Government and jurisdictions can act.

A consistently emerging theme from peak bodies is the need for national KPI's that will measure performance and incentivise both jurisdictions and General Practice to deliver on identified actions to improve CVD outcomes. These can then be measured by data and audit. The National Health And Hospitals Reform Commission has identified a range o performance measures, some of which are applicable to CVD.

Population Monitoring

This is an area where the Australian Government has direct influence.

A number of jurisdictions and peak bodies have identified the lack of a national population monitoring process (for example a biomedical survey) that focuses on indicators of risk, such as obesity, which objectively measures our national progress through repeat biennial surveying.

Similarly action to investigate the feasibility and the benefits of a healthy food partnership with industry to drive food reformulation and reduce saturated fats, trans-fats and salt in the food supply, increase fruit and vegetables and promote portion control has been strongly promoted by the National Heart Foundation.

Data

This is an area where the Australian Government and jurisdictions can act.

Many of the emerging priorities identified in this Review rely on high quality information. Data has been an emerging theme in most interactions with stakeholders and is clearly identified in current reform reports for the Australian Government.

Good information is required for access to clinical guidelines, for learning from the results of clinical interventions (for example through the establishment of clinical registers), for monitoring health status and for measuring system performance.

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