



Effective ways to prevent recurrence of acute coronary syndrome

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Key points

- The evidence for preventing recurrent acute coronary syndrome (ACS) is compelling and deliverable in primary care.
- Primary health professionals play a vital role in secondary prevention of ACS by ensuring patients receive optimal guideline-advocated care and are supported early and lifelong.
- Management includes evidence-based pharmacotherapy, lifestyle advice, psychosocial support where indicated and ongoing engagement with secondary prevention strategies.
- New technologies are providing contemporary methods of increasing access to evidence-based therapy, co-ordination of care and self-management with support.

More people are now returning to the community and resuming their lives after an ACS event but many of these have suboptimal access to and engagement with secondary prevention strategies. Primary care is the ideal environment for supporting lifelong management of such people.

Coronary heart disease (CHD) is a major cause of morbidity and mortality now and will be into the future.¹ Acute coronary syndrome (ACS) events, comprising myocardial infarction (MI) and unstable angina, are the leading cause of mortality in Australia and account for more than 300,000 years of life lost due to premature death (i.e. when aged younger than 65 years).² A recent report estimates that there were about 75,000 hospital separations due to ACS in Australia in 2010, and this figure is expected to be over 100,000 by 2020.³ Importantly, about half of the cardiovascular events in Australia occur in people who have had a prior hospital episode for CHD.^{4,5} The corresponding cost of repeat ACS events in 2010 was over \$8 billion.³ Therefore, prevention of secondary events via access to evidence-based and optimal ACS

management in both the acute and long-term periods is of great importance.

In the context of this paper, secondary prevention refers to health care that aims to prevent the recurrence of cardiovascular events (e.g. heart attack or stroke) or complications of cardiovascular disease (CVD) in people already diagnosed with ACS. Secondary prevention can be delivered in various settings and involves medical care, modification of behavioural risk factors, psychosocial care, education and support for self-management (including adherence to prescribed medicines).⁶

Secondary prevention strategies that target individuals at highest risk (the 10% of the population that contribute 40 to 50% of all cardiovascular events) with proven treatments are theoretically the most effective and efficient

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1. PILLARS OF SECONDARY PREVENTION PROGRAMS IN ACS¹²

- Assessment
 - objective measurement of risk factors, health literacy and psychosocial issues (including depression)
- General education
 - provision of basic and personalised health information (e.g. causes, risks and prevention of heart disease, responding to another attack)
- Risk factor modification
 - evidence-based pharmacotherapy, management of biomedical risk factors (dyslipidaemia, hypertension and hyperglycaemia), management of behavioural risk factors (smoking, low physical activity, unhealthy eating, weight loss), addressing of psychosocial issues and establishment of support and self-management strategies
- Reassessment and ongoing support
 - repeat measurement of risk profile, revision of the risk factor management action plan and continuation of specific strategies that are individually appropriate

means of preventing future cardiovascular events.^{4,5,7} The benefits of blood pressure-lowering, cholesterol-lowering and anti-platelet medications, smoking cessation, exercise therapy and cardiac rehabilitation have been clearly shown in clinical trials, and the prescription of these treatments and interventions to those at high cardiovascular risk is universally recommended in treatment guidelines.⁸ However, at present, adherence rates to lifestyle modification are around 30%, and to recommended medicines can be as low as 50% after six months of therapy.^{9,10} Overall, contemporary studies have demonstrated failure to adequately implement effective strategies aimed at lowering cardiovascular risk.

CHANGING FACE OF MEDICAL CARE

In recent years, advancements in diagnosis, revascularisation, pharmacotherapy and

overall more successful treatment of acute illness have contributed to a reduction in mortality due to heart disease. Modern cardiology interventions and treatments ultimately mean more people are surviving their initial events, and these patients are having shorter hospital stays and more day procedures such as angiography and percutaneous coronary intervention. This has resulted in more people returning to the community and resuming their lives after an ACS.

One-quarter of survivors of an ACS, however, will be readmitted to hospital within one year of the index event, and a significant number of recurrent events will result in death.^{4,5} Consequently, the demand for effective care after the event and after discharge from hospital is intensifying, and the availability of structured management strategies that complement standard medical care is now a priority.^{11,12} Health professionals working in primary care have an increasingly vital role to play in the implementation of these strategies.

PROGRAMS AND PILLARS

Since the 1960s, early prevention programs, termed cardiac rehabilitation, have been the traditional model for delivery of secondary prevention for patients with CHD.¹³ The early programs focused on supervised exercise to counter deconditioning following coronary artery bypass surgery and aimed to improve exercise capacity after MI.¹³ These programs evolved to include an educational component (usually in a group format) aimed at educating patients about the importance of lowering multiple risk factors, including smoking, unhealthy eating and impaired psychosocial wellbeing.¹⁴

Good quality systematic reviews and meta-analyses of randomised controlled trial data since the 1980s demonstrate participation in cardiac rehabilitation results in significant reductions in mortality, hospital readmissions and risk factors.¹⁵⁻¹⁷ Contemporary data suggest that around 70% of secondary prevention programs offered in Australia continue to follow the traditional cardiac rehabilitation six- to

eight-week group-based model.^{18,19} However, utilisation of facility-based preventive interventions remains unacceptably low at 15 to 30% of those eligible.^{20,21} Further, levels of modifiable risk factors at follow up are unacceptable, and non-attendees are less likely to believe that rehabilitation is necessary yet have higher baseline risk than those who attend.²²⁻²⁵

Barriers to the uptake of cardiac rehabilitation are multifactorial and include failure of clinicians to refer, lack of flexibility, geographical distance and fragmented funding.^{26,27} Therefore, despite evidence for the effectiveness of facility-based rehabilitation, in terms of attenuating risk, cardiac rehabilitation is limited by incomplete uptake and completion. In parallel, health systems are seeking ways to provide secondary prevention to more people for the same or less money. The development of contemporary models that increase the role of primary care, have inherent flexibility and utilise existing community services may be an alternative.²⁸

Contemporary secondary prevention programs for patients with CHD include four major pillars of:

- assessment
- education
- individualised risk factor modification
- ongoing support and periodic follow up (Box 1)¹².

Ultimately, care across the secondary prevention continuum should respond to the individual's needs and can involve:

- education and support to manage medicines
- psychosocial assessment and support
- assessment and modification of the home environment
- referral to ongoing community-based maintenance programs
- development of a personalised care plan
- referral to various services as needed.

Medicare-funded schemes such as Chronic Disease Management Plans and the Better Access to Mental Health Care Initiative can provide financial support where appropriate.

IMPORTANCE OF PRIMARY CARE IN ACS MANAGEMENT

Primary care is an important setting for the care of people with chronic and/or complex care needs, including the secondary prevention of ACS.⁶ Health professionals in primary care settings have a pivotal role to play in identifying eligible people, referring people to prevention programs and managing patients according to guideline recommendations.⁶ However, people at high risk of a cardiovascular event, including people with ACS, remain undertreated in Australian general practice.²⁹

The National Heart Foundation of Australia's review of management gaps for the treatment of patients with CHD in general practice found significant disparities between guideline recommendations and actual clinical practice in Australia.³⁰ Modelling has previously shown that improved interventions in general practice for patients in Australia with CHD could reduce coronary events by as much as 15% and coronary deaths by 17%.³¹ Therefore, the National Heart Foundation recommends the implementation of a national comprehensive approach to secondary prevention in primary care.⁶

In Australia, there has been a substantial shift in the payment system for GPs towards incentives that encourage evidence-based care of patients with chronic diseases in line with a disease management framework that emphasises systematic, co-ordinated care and self-management. The Australian Government's commitment to a National Primary Health Care Strategy provides an opportunity to establish primary care systems and funding models to enable people who are at high risk of a cardiovascular event (e.g. heart attack or stroke) to be identified early for preventive care.³² The National Heart Foundation maintains that a well-developed primary care framework for secondary prevention will increase referral and access rates to secondary prevention services, enhance continuity of care and improve co-ordination of services between hospitals and the community.⁶

ROLE OF PRIMARY CARE IN SECONDARY PREVENTION

Patients with ACS require lifelong management and hence the primary care environment is ideally positioned to provide this care.³³ However, in Australia the discharge management of patients with ACS has been identified as an area for improvement.^{34,35} In addition, effective communication of management plans and discharge summaries to the GP and to patients or carers have been identified as particular problems.^{34,35} In one study, about 20% of patients did not have a discharge summary forwarded to their GP and only 68% of GPs rated the information in the summaries they received as 'very good' to 'excellent'.³⁴ Focus is needed to ensure ongoing prescribing of evidence-based medicines, ongoing support and risk factor modification, and referral to available and appropriate secondary prevention programs (Box 2).^{34,35}

NPS MedicineWise highlights the following five key areas that GPs should be actively engaged in when implementing secondary prevention in patients who have had an ACS:³⁶

- being aware of current guidelines
- ensuring medication prescription and adherence
- enrolling patients in secondary prevention programs
- consideration of psychosocial issues
- actively engage in ongoing lifestyle management and patient education.

Being aware of guidelines

Guidelines for the management of CVD, including CHD and ACS, are readily available and highlight the importance of adherence to both medicines and lifestyle advice.⁸ In the initial phase after ACS and unless contraindicated, patients should be taking aspirin, a second antiplatelet (such as clopidogrel, prasugrel or ticagrelor), a β -blocker, an ACE inhibitor or angiotensin receptor blocker and a statin.^{8,37} If a patient has not been prescribed one of the indicated medicines at discharge, primary care providers should investigate further by liaising with the treating specialists as appropriate and

2. PRIMARY CARE MANAGEMENT OF PATIENTS POST ACS

- Evidence-based pharmacotherapy
- Lifestyle advice
- Psychosocial support where indicated
- Ongoing engagement with secondary prevention strategies
- Referral to available and appropriate secondary prevention programs

prescribing appropriate medicines as necessary.

Ensuring medication use

Many medicines for ACS are required for an extended period, or for life.³ Analysis of adherence to cardiovascular medicines in Australia shows that up to 25% of patients stop taking them after six months, and up to 47% of patients stop after two years.^{3,38} Barriers to adherence may occur if the condition is asymptomatic, if there is inadequate follow up or discharge planning, high cost, a lack of patient education, complex treatment or side effects.³⁹ Studies have confirmed a positive relation between poor adherence and long-term mortality after acute MI.⁴⁰ Premature cessation of antiplatelet therapy has been associated with increased risk of secondary events.⁴¹

Enrolling patients in programs

Educating patients about the proven benefits of participating in secondary prevention or cardiac rehabilitation programs is an important aspect of care. Encouragement to complete the programs and continue the secondary prevention behaviours is also of great importance.

Psychosocial issues

Depression is common after an MI and patients with major depression or elevated depressive symptoms have a worse prognosis.⁸ Depression is also associated with poorer adherence and decreased chances of successful lifestyle modification.⁸ The National Heart Foundation recommends that all patients who have had an MI be assessed for depression using a validated

assessment tool and if necessary managed accordingly by referral to appropriate services and pharmacological management.⁸

Actively engage in management

It is important that GPs and other health professionals working in primary care reinforce the secondary prevention messages. The need for weight management, appropriate physical activity, cholesterol management, facilitation of smoking cessation and management of comorbidities such as diabetes should be emphasised.⁸ Up to 50% of patients report that they have not been given treatment goals, treatment choices or self-management plans, and that they received no explanation of medicine side effects.³¹ Patient education about the potential for certain side effects and the risks associated with nonadherence can help remove unnecessary barriers to treatment and may be important in ensuring patients remain on therapy and reduce their chance of secondary events.

NEW TECHNOLOGIES

New technological developments have seen a rapid rise in devices and trials aimed at managing CVD risk factors, medication adherence and providing co-ordinated care. A key goal of these contemporary e-health strategies is to provide evidence-based services to more people at lower cost. A systematic review has demonstrated that telehealth strategies for the prevention of heart disease, including telephone-based interventions, are beneficial and add new promise.⁴²

There have also been qualitative studies investigating the needs of consumers. Examples of e-health approaches include the use of text messaging, telephone-delivered care and the development of websites and smartphone applications as well as remote monitoring and remote delivery of programs.^{43,44} This is an area that requires ongoing work during all phases of development.

CONCLUSION

The uptake of proven secondary prevention strategies in patients with CVD is

suboptimal. Primary care is best placed to lead the delivery of such care and thereby improve patient outcomes. Improving access to and equity of services is vital to intensifying our efforts to prevent disease recurrence. Secondary prevention management of patients with ACS includes evidence-based pharmacotherapy, lifestyle advice, psychosocial support where indicated and ongoing engagement with secondary prevention strategies. The availability of flexible models of ongoing prevention, delivered in primary care, is likely to improve access and equity and ultimately ensure the ongoing evolution of cardiac rehabilitation. Ongoing research is needed to determine the impact of factors such as place, population and programs on respective effect sizes and in terms of clinical benefit, cost-effectiveness and uptake. **MT**

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A list of references is included in the website version (www.medicinetoday.com.au) and the iPad app version of this article.

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