Cardiac Rehabilitation for Patients With Coronary Artery Disease: A Practical Guide to Enhance Patient Outcomes Through Continuity of Care

Cardiac Rehabilitation for Patients With Coronary Artery Disease: A Practical Guide to Enhance Patient Outcomes Through Continuity of Care

Clinical Medicine Insights: Cardiology
Volume 11: 1–7

DOI: 10.1177/1179546817710028

Catherine Giuliano[1], Belinda J Parmenter[2], Michael K Baker[3], Braden L Mitchell[4], Andrew D Williams[5], Katie Lyndon[6], Tarryn Mair[7], Andrew Maiorana[8,9], Neil A Smart[10] and Itamar Levinger[1,11]

[1]Institute of Sport, Exercise and Active Living (ISEAL), Victoria University, Melbourne, VIC, Australia. [2]Department of Exercise Physiology, School of Medical Sciences, Faculty of Medicine, University of New South Wales, Sydney, NSW, Australia. [3]Australian Catholic University School of Exercise Science, Strathfield, NSW Australia. [4]Alliance for Research in Exercise, Nutrition and Activity (ARENA), Sansom Institute for Health Research, University of South Australia, Adelaide, SA, Australia. [5]School of Health Sciences, University of Tasmania, Launceston, TAS, Australia. [6]Exercise & Sports Science Australia, Albion, QLD, Australia. [7]Division of Medicine, Exercise Physiology Department, ACT Health, Canberra, ACT, Australia. [8]School of Physiotherapy and Exercise, Science, Curtin University, Perth, WA, Australia. [9]Allied Health Department and Advanced Heart Failure and Cardiac Transplant Service, Fiona Stanley Hospital, Perth, WA, Australia. [10]School of Science and Technology, University of New England, Armidale, NSW, Australia. [11]Australian Institute for Musculoskeletal Science (AIMSS), Victoria University and Western Health, St. Albans, VIC, Australia.

ABSTRACT: Coronary artery disease (CAD) is a leading cause of disease burden worldwide. Referral to cardiac rehabilitation (CR) is a class I recommendation for all patients with CAD based on findings that participation can reduce cardiovascular and all-cause mortality, as well as improve functional capacity and quality of life. However, programme uptake remains low, systematic progression through the traditional CR phases is often lacking, and communication between health care providers is frequently suboptimal, resulting in fragmented care. Only 30% to 50% of eligible patients are typically referred to outpatient CR and fewer still complete the programme. In contemporary models of CR, patients are no longer treated by a single practitioner, but rather by an array of health professionals, across multiples specialities and health care settings. The risk of fragmented care in CR may be great, and a concerted approach is required to achieve continuity and optimise patient outcomes. 'Continuity of care' has been described as the delivery of services in a coherent, logical, and timely fashion and which entails 3 specific domains: informational, management, and relational continuity. This is examined in the context of CR.

KEYWORDS: Continuity of care, cardiac rehabilitation, models of care, coronary artery disease

RECEIVED: January 22, 2017. **ACCEPTED:** April 16, 2017.

PEER REVIEW: Six peer reviewers contributed to the peer review report. Reviewers' reports totalled 858 words, excluding any confidential comments to the academic editor.

TYPE: Perspective

FUNDING: The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: I.L. was supported by Future Leader Fellowship (ID: 100040) from the National Heart Foundation of Australia.

DECLARATION OF CONFLICTING INTERESTS: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

CORRESPONDING AUTHOR: Itamar Levinger, Institute of Sport, Exercise and Active Living (ISEAL), Victoria University, PO Box 14428, Melbourne, VIC 8001, Australia. Email: itamar.levinger@vu.edu.au

Introduction

Coronary artery disease (CAD) remains the leading cause of disease burden in Australia and continues to cost the health care system more than 1.3 billion dollars annually.[1] Cardiac rehabilitation (CR) provides a cost-effective therapy[2] that aims to accelerate recovery following an acute event and reduce the risk of recurrent events through structured exercise prescription, education, and risk factor modification.[3] Referral to CR is a class I recommendation for all patients with CAD[4–7] based on a growing body of evidence that participation can reduce hospital bed usage, cardiovascular mortality, as well as improve functional capacity and quality of life.[8] In Australia, the provision of CR is guided by key documents[9,3] which describe an integrated pathway spanning the continuum of care, commencing during the inpatient period after an acute coronary event (phase I), continuing through the post-discharge period, often in an outpatient setting (phase II) and subsequently to a community-based maintenance programme for ongoing adherence to exercise and healthy lifestyle (phase III). However, CR is commonly underused throughout this process: only 30% to 50% of eligible patients are typically referred to outpatient CR, with fewer still completing programmes.[10–13] Consequently, many patients do not achieve long-term risk factor targets.[14] The aims of this document are to (1) apply a framework to CR, (2) identify where continuity of care is at risk, and (3) provide recommendations for improvement in the delivery of CR.

Continuity of Care in Contemporary Medicine

With increasing specialisations in clinical care, patients are no longer treated by a single practitioner, but rather by an array of health professionals, across multiple specialities and health

Table 1. The continuity of care framework.

INFORMATIONAL CONTINUITY	MANAGEMENT CONTINUITY	RELATIONAL CONTINUITY
Information transfer	Consistency of care	Consistency of personnel
Accumulated knowledge	Flexibility and accessibility	Ongoing patient-provider relationship

Adapted from Reid et al.[17]

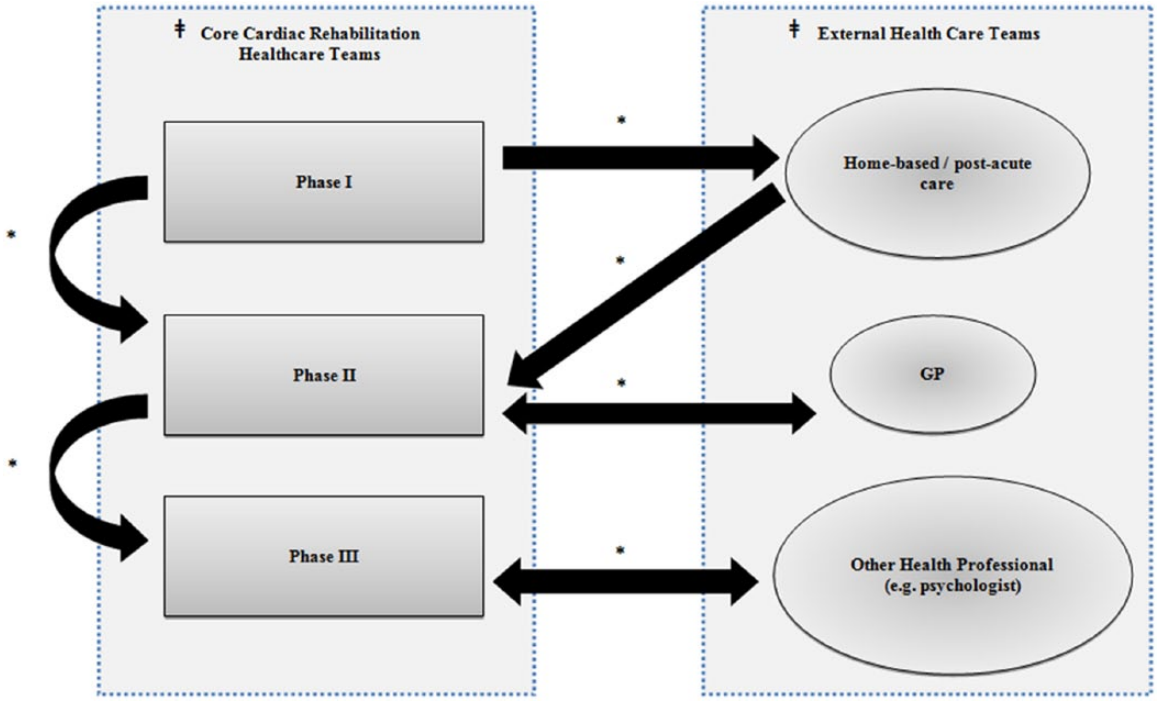

Figure 1. Current 3-phase model of cardiac rehabilitation. *Communications to ensure continuity of care including referral and clinical handover. For specific recommendations for management and informational continuity, refer to Table 2 summary. ‡Opportunities for improved relational continuity between health care professionals. For recommendations for relational continuity, refer to Table 2 summary.

care settings. This paradigm shift has increased the risk of fragmentation of care. Accordingly, a concerted approach is required to achieve continuity in contemporary models of health care, to eliminate division and maintain positive patient outcomes. Several approaches have been employed to achieve this, including organised discharge planning, integrated care, and case management. The unified term 'continuity of care' has been defined,[15] described as the delivery of services in a coherent, logical, and timely fashion which entails 3 specific domains: informational, management and relational continuity. Reid et al[16] further delineated the domains into sub-categories, as shown in Table 1. We will apply this framework to CR, identify instances where continuity of care is at risk, and provide recommendations on how it can be enhanced to improve patient outcomes.

Informational Continuity

Informational continuity refers to the availability and transferability of patient information between and across health care providers and settings which, over time, lead to the accumulation of knowledge about a patient. Information transfer is often the first element connecting services and linking health professionals and medical events and is fundamental to coordinating patient-centred care. Failure of informational continuity can pose risks to patient safety, lead to repetition or unnecessary testing, cause delays in treatment, and can ultimately lead to poor patient-centred practice.

Information transfer

Effective handover requires transfer of patient information between health care providers. Both basic and detailed information is required with each new referral, on progression to each successive CR phase and between health care professionals external to the CR team (eg, health psychologist or general practitioner). Figure 1 displays these likely time points that require referral. A key objective of CR handover is for the receiving clinician to be able to easily determine patient progress to date and plan ongoing care accordingly.

The rate of progression through each CR phase can be highly variable between patients and is determined by individual circumstances such as disease severity, complications, hospital length of stay, and sociodemographic and sociocultural factors. To account for this variability, a thorough

Table 2. Summary of opportunities to facilitate continuity of care within CR.

CONTINUITY OF CARE DOMAIN	SUB-CATEGORY	STRATEGIES TO FACILITATE CONTINUITY OF CARE WITHIN CARDIAC REHABILITATION
Information continuity	Information transfer	• Referrals to CR should be accompanied by a discharge summary which include the following minimum data sets: ○ Patient contact details ○ Assessments conducted and results ○ Short-term, medium-term, and long-term goals and progress towards achieving these ○ Barriers and enablers ○ Special considerations and circumstances • CR staff should maintain organised patient files with clear and consistent reordering
	Accumulated knowledge	• There should be clear pathways of communication between phase I, II, and III staff using a range of communication methods including case conferences or verbal handover • Regular clinical team meetings can also encourage informational continuity for complex case patients
Management continuity	Consistency of care	• There are numerous, evidence-based clinical practice guidelines detailing care pathways for cardiac rehabilitation • Organisational collaboration is required for future development of CR guidelines • Participation in phase I CR is highly influential on participation in phase II, and therefore, enrolment in phase I should be a priority
	Flexibility and accessibility	• A collaborative approach to CR referral is required • Administrative or scheduling delays may be overcome by early automated referrals while the patient is still in hospital • Patients should be involved in decision making and be made aware of referral to CR • Referrals should be physician endorsed and involve the cardiologist • CR staff should be knowledgeable about the range of flexible CR models offered including home-based, telephone-based, and centre-based programmes • Practices need a responsive system for enrolling patients
Relational continuity	Consistency of personnel	• CR requires a dedicated, connected, and consistent team of professionals • Programme directors should seek to establish an affiliation with the nearest CR programme • A co-ordinated effort is needed to achieve referral and enrolment in CR
	Ongoing patient-provider relationship	- Staffing structures require flexibility to extending patient-clinician relationships across the phases - Affiliation between members of the CR team extends beyond the 3 phases and should also include home-based bridging programmes or similar linking care pathways

Abbreviation: CR, cardiac rehabilitation.

clinical handover is required to ensure that care provision remains individualised.

An effective handover requires detailed summaries on discharge and referral. However, there has been a lack of standardisation in reporting practices to document a patient journey through inpatient, outpatient, and community settings. The development of national health database such as the *My Health Record* in Australia[17] will provide an opportunity for patient information to be accessed by multiple health services. However, these systems are relatively new in many sectors and are not fully used by all patients or providers where they are available. Informational continuity, therefore, continues to lack automation and remains highly dependent on local practices. When there is a failure of informational continuity, there is likely to be unnecessary repetition of assessments, and care provision may be generalised. Cardiac rehabilitation phases may operate as independent programmes, despite sharing common overall objectives. This is an inefficient and costly practice, and may also create a poor experience for the patient, ultimately restricting the capacity to individualise treatment and achieve the best clinical outcomes. Furthermore, missed or inadequate medical information can pose serious risks, particularly in the setting of exercise training.

Accumulated knowledge

Accumulated knowledge refers to information that gradually accrues over extended patient-provider relationships, usually of a personal or non-medical nature such as likes, dislikes, social supports, personality, and other personal characteristics or preferences.[16] Such information is important for behaviour change interventions and can assist in identifying barriers to attendance.[18] In the primary care setting, relationships have been found between longitudinal care and the doctors' sense of responsibility towards their patients[19] and likewise on patient satisfaction.[20,21] Accumulated knowledge is heavily influenced by a sustained patient-provider relationship and is often challenging in instances involving multiple care providers, such as in CR.

Recommendations: Informational continuity. In view of these risks to informational continuity, the following recommendations are proposed:

- Clinical handover should include a comprehensive medical history with specific details about the patient's presenting conditions and prior management, as well as

individual preferences, sociocultural, and sociodemographic contexts, which play an influential role in chronic disease management.[22] Importantly, clinicians should be mindful of the overarching goals of CR and provide sufficient information regarding progress. All referrals should be accompanied by a discharge summary and the following minimal data set is proposed:
  - Patient contact details;
  - Assessments conducted and results;
  - Short-term, medium-term, and long-term goals and progress towards achieving these;
  - Barriers and enablers to participation;
  - Personal preferences, special considerations, and circumstances;
- Staff should maintain organised patient files with clear and consistent recording of patient information and follow clinical documentation protocols.
- There should be clear, established pathways of communication between phase I, II, and III staff using a range of communication methods including case conferences, written, and/or verbal handover.
- For patients with complex needs, case conferences should be considered for clinical handover.

Management Continuity

Management continuity is a largely unifying dimension for each of the continuity domains and relates to organisational and logistical practices that enable timely and organised care. Management continuity includes 'consistency of care' which describes planned care pathways to ensure continuity in treatment and 'flexibility' to adapting care to suit individual patient needs and circumstances.[16] Elements of management continuity in CR include flexibility of the CR model, referral processes, handling of appointments, and programme availability.

Consistency of care

Integrated care pathways provide secure and predictable processes for the management of CAD, enabling multiple professionals to provide a unified and evidence-based approach over the duration of the illness.[23] The CR pathway commonly consists of 3 phases connecting acute care to chronic disease self-management.

Phase I. Phase I takes place while the patient is still an inpatient and occurs over a variable time frame (usually 1-14 days) that depends on the severity of the cardiac event and the length of time that the patient remains an inpatient. Phase I programmes should be based on recommendations contained within the National Heart Foundation of Australia framework document for CR[9] and practice guidelines developed by the Department of Human Service Victoria.[24] Phase I incorporates a combination of supportive counselling and reassurance for risk factor modification, medication adherence and education on when and how to resume daily living activities. This is complemented by early mobilisation to prevent the deleterious effects of bed rest and to initiate a progressive increase in activity to allow for, at the minimum, basic self-care at discharge from the hospital. Evidence suggests that active engagement in CR at an inpatient stage may improve uptake of phase II programmes by as much as 93%.[25,26]

Phase II. Phase II usually involves patients attending a hospital-based programme as an outpatient, weekly or twice weekly over a 6- to 12-week period,[9,27] although flexible modes of service delivery have been used to cater for the requirements of a broader range of patients (see Such modes have included centre or home-based services, as well as telephone, mobile and internet-based services.[3] Phase II programmes provide initial physical, psychological, and social assessments to facilitate return to everyday function, and education regarding cardiovascular disease risk factors, and exercise and lifestyle changes that may have long-term cardioprotective effects.[3]

Phase III. Phase III is community-based and aims to maintain activity beyond the period of subacute care to provide long-term benefits of exercise and minimise the risk for secondary events (secondary prevention). Current evidence suggests that participation in phase III is highly beneficial in reducing major adverse cardiac events.[28] Although the improvements in cardiorespiratory fitness, haemodynamic, and muscle functions during early rehabilitation are clear, it is essential to continue with lifelong exercise training as these benefits are all but lost within 3 months of training cessation.[29]

Alongside this triphasic model, there is a wealth of additional recommendations by National and International Guidelines for patients with CAD.[4,9–13,30,31] However, this has created a challenging paradox; the number of guidelines and variation in the information they offer can make interpretation and application challenging for clinicians. For example, the Australian Cardiovascular Health and Rehabilitation Association core components[3] provide a thorough review of referral and recruitment strategies, models of service delivery, and a detailed summary of key performance indicators for CR; however, information regarding programme content, such as exercise programming and lifestyle management, although mentioned, is only brief, whereas the National Heart Foundation of Australia and Australian Cardiac Rehabilitation Association–recommended framework provides more details on exercise prescription, testing, and patient monitoring.[9] The differences between documents may increase the risk of missed information and may ultimately reduce the likelihood of achieving evidence-based practice. Astley et al[32] highlighted a lack of inter-organisational collaboration in the preparation of CR publications, including 3 recent documents[3,33,34] which focus on varying features of CR but without reference to one another. Greater collaboration between organisations in future CR publications will help provide a more unified and consistent message for clinicians and enhance management continuity.

Flexibility and accessibility

Easy access, timely response to processing referral, and mode of programme delivery are important elements of flexibility and accessibility. Poor referral practices, such as inadequate referral procedures, and poor programme organisation contribute to the lack of attendance at CR.[35,36] There are at least 3 referrals required across the continuum of triphasic CR, and the responsibility for making and managing these referrals may fall on a variety of health professionals, including inpatient nursing staff, coordinators, allied health professionals, or physicians.

Barriers to CR referrals have been studied previously, and several strategies have been successfully employed. Research has shown that automatic referrals,[37,38] combined with a patient discussion[39] and physician-endorsed programmes, achieve higher attendance. Furthermore, the lack of standardised administrative processes is perceived as a barrier to referral by primary care physicians.[37,40]

Waiting lists for phases II and III are also common with few CR providers achieving targets for time to enrolment following discharge from acute care. This delay in proceeding to phase II has been shown to impact on clinical outcomes[41] and may depend on a range of factors including administrative processes involved in informing and enrolling patients, high demand and, in some patients, the need to schedule symptom-limited exercise testing prior to commencing exercise training.[9] However, these delays may be easily overcome. An uncomplicated hospital admission is quite predictable in terms of length of stay; similarly, the date of discharge from phase II outpatient programmes is foreseeable at 8 to 12 weeks after the initial commencement date. As such, referrals could be automated for uncomplicated admissions, which has been shown to result in greater attendance than physician referral.[15,16] Similarly, facilities which do not have a systematic approach to referrals, but rather adopt an ad hoc approach, tend to have lower enrolment than those that use formal referral systems,[25] especially when this occurs while the patient is still in hospital.[42] Patients admitted to large-volume hospitals,[43] or to hospitals offering CR,[44] are also more likely to be referred. For example, experience from a tertiary hospital identified that patients referred to their own organisation's CR programme were more than 4 times as likely to attend compared with those referred to an external programme.[31,25,42]

Recommendations: Management continuity. To optimise management continuity, the following recommendations are proposed:

- Participation in phase I influences participation in phase II, so phase I should be considered for all patients with CAD.
- Providers of CR should be familiar with evidence-based guidelines and use these in practice to ensure consistency of care. Collaboration across professional organisations in the future updates of CR guidelines should be undertaken to avoid a saturation of detached documents.
- To overcome administrative or scheduling delays, referrals should be made early while the patient is still in hospital, and where possible, should be automated. Patients should also be involved in the decision making related to CR and be made aware of referral to CR.
- There should be general endorsement of the referral process by a senior cardiologist; however, referrals need not be reliant on physician 'sign-off', except in cases where relative contraindications to exercise require a medical opinion. However, verbal endorsement of CR by a physician improves uptake. Providers of CR need a responsive system for enrolling patients.
- Staff should be well informed about available modes of service delivery including home-based, telephone-based, and centre-based programmes, both within and outside of their own organisation and be well connected to these services to offer alternative referrals to patients. It is important for staff to understand factors that influence patient's choices; the simple act of offering an alternative delivery mode may improve uptake.[45]

Relational Continuity

Relational continuity refers to the relationship between a health care professional and the patient, where the rapport is strengthened with time and over multiple illnesses or episodes.[16] Relational continuity is most clearly exemplified by the role of family physicians, who often have longstanding relationships with their patients. Continuity in patient-provider relationships can bridge past care to current care and involves both consistencies of personnel, as well as ongoing patient-provider relationships.

Consistency of personnel

Cardiac rehabilitation is a specialised field that requires a dedicated, connected, and consistent team of professionals. The team may comprise a range of health care professionals, including nurses, exercise physiologists, dieticians, physiotherapists, and physicians.[46] Although this provides a breadth of expertise, clinicians must ensure that they achieve connectedness and coherency in the care they provide. Inconsistent staffing is a common issue affecting continuity. Although it is mostly unavoidable, most professionals have other clinical responsibilities which sometimes take precedence over CR, such as general nursing duties, patient loads on other wards, and non-cardiac–related caseloads. Staff changes and bed changes are also frequent in the inpatient setting and can greatly disrupt continuity of care. Nursing staff, who are often primarily responsible for education in the immediate time after a cardiac event, are particularly affected by these elements. A Science Advisory from the American Heart Association urges all personnel to implement a co-ordinated effort to achieve referral and enrolment in

CR[47] and stresses that every member of the health care team plays a valuable role in promoting CR.

Ongoing patient-provider relationship

Cardiac rehabilitation presents a number of challenges to maintain ongoing relational continuity due to the multiphase model. In many cases, staffing structures are determined by systems which separate teams into inpatient and outpatient, and a patient might encounter entirely different teams for each of the CR phases which may not be conducive to effective chronic disease management and/or lifestyle behaviour change. Networking between phases is therefore critical in maintaining relational continuity. In a qualitative review of system-level factors that influence CR attendance in the United States, Gurewich et al[25] found that the relationship of CR facilities to a hospital and to hospital personnel had higher rates of attendance. Several advantages are gained when there are close working relationships between phases; the inpatient health care team holds great power to increase participation in outpatient rehabilitation, and the outpatient team has responsibility with the affiliated inpatient programme enabling rapport building early in a patients inpatient stay, even before their first outpatient appointment.

Recommendations: Relational continuity. In the light of these risks to relational continuity, the following recommendations are proposed:

- Cardiac rehabilitation requires a dedicated, connected, and consistent team of professionals who hold *primary responsibilities* for referral and implementation of the programme.
- Programme directors should seek to establish a strong affiliation with other nearby CR programmes, as well as with home-based therapy programmes or similar linking care pathways.
- Staffing structures require flexibility to maximise the duration of patient-clinician relationships across the phases. Where possible, managers should consider staffing structures that allow the same staff to work across both phases I and II.

Summary and Conclusions

The 3-phased CR model relies on continuity of care to increase the potential for long-term benefits and reduce the risk for a secondary event (secondary prevention). We hypothesise that applying the recommendations for informational continuity will reduce repetition or unnecessary testing which may delay treatment and/or increase the potential for patients dropping out from the exercise programmes. Improving clinical handover practices will ensure that critical information is not lost and that care remains patient centred across the care continuum. Optimising management continuity practice will help overcome scheduling delays, optimise enrolment, and improve service access to all patients with CAD. It will provide a uniform treatment approach using easy-to-access, collaborative, and inter-organisational evidence-based guidelines. Finally, enhancing relational continuity will make a difference to patient engagement by providing a dedicated and familiar health care team, with a devoted attention to patients' long-term cardiac health.

Author Contributions

CG wrote the first draft of the manuscript. BJP and MKB contributed to the writing of the manuscript. CG and IL jointly developed the structure and arguments for the paper. IL and AM made critical revisions and approved final version. All the authors agree with manuscript and reviewed and approved the final manuscript.

Disclosures and Ethics

As a requirement of publication, author(s) have provided to the publisher signed confirmation of compliance with legal and ethical obligations including but not limited to the following: authorship and contributorship, conflicts of interest, privacy and confidentiality, and (where applicable) protection of human and animal research subjects. The authors have read and confirmed their agreement with the ICMJE authorship and conflict of interest criteria. The authors have also confirmed that this article is unique and not under consideration or published in any other publication, and that they have permission from rights holders to reproduce any copyrighted material. Any disclosures are made in this section. The external blind peer reviewers report no conflicts of interest.

REFERENCES

1. Australian Government. *Health-Care Expenditure on Cardiovascular Diseases 2008-09* (Cat. no. CVD 65). Canberra, ACT: Australian Institute of Health and Welfare Canberra; 2014.
2. De Gruyter E, Ford G, Stavreski B. Economic and social impact of increasing uptake of cardiac rehabilitation services – a cost benefit analysis. *Heart Lung Circ.* 2016;25:175–183.
3. Woodruffe S, Neubeck L, Clark R, et al. Australian Cardiovascular Health and Rehabilitation Association (ACRA) core components of cardiovascular disease secondary prevention and cardiac rehabilitation. *Heart Lung Circ.* 2014;24:430–441.
4. Anderson JL, Adams CD, Antman EM, et al. 2011 ACCF/AHA focused update incorporated Into the ACC/AHA 2007 guidelines for the management of patients with unstable Angina/Non-ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines developed in collaboration with the American Academy of Family Physicians, Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons. *Circulation.* 2011;123:e426–579.
5. Antman EM, Hand M, Armstrong PW, et al. 2007 focused update of the ACC/AHA 2004 guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2008;51:210–247.
6. Hillis LD, Smith PK, Anderson JL, et al. 2011 ACCF/AHA Guideline for Coronary Artery Bypass Graft Surgery: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2011;124:e652–e735.

7. Fihn SD, Blankenship JC, Alexander KP, et al. 2014 ACC/AHA/AATS/PCNA/SCAI/STS focused update of the guideline for the diagnosis and management of patients with stable ischemic heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines, and the American Association for Thoracic Surgery, Preventive Cardiovascular Nurses Association, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. *Circulation*. 2014;130:1749–1767.
8. Anderson L, Oldridge N, Thompson DR, et al. Exercise-based cardiac rehabilitation for coronary heart disease: cochrane systematic review and meta-analysis. *J Am Coll Cardiol*. 2016;67:1–12.
9. National Heart Foundation of Australia, Australian Cardiac Rehabilitation Association. Recommended framework for cardiac rehabilitation. https://www.heartfoundation.org.au/images/uploads/publications/Recommended-framework.pdf. Published 2004. Accessed October 3, 2016.
10. O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: executive summary: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2013;61:485–510.
11. Hamm CW, Bassand JP, Agewall S, et al. ESC guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: the Task Force for the management of acute coronary syndromes (ACS) in patients presenting without persistent ST-segment elevation of the European Society of Cardiology (ESC). *Eur Heart J*. 2011;32:2999–3054.
12. Kolh P, Windecker S, Alfonso F, et al. 2014 ESC/EACTS Guidelines on myocardial revascularization: the Task Force on Myocardial Revascularization of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS). Developed with the special contribution of the European Association of Percutaneous Cardiovascular Interventions (EAPCI). *Eur J Cardiothorac Surg*. 2014;46:517–592.
13. Steg PG, James SK, Atar D, et al. ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J*. 2012;33:2569–2619.
14. Kotsev K, Wood DA, De Bacquer D, Heidrich J, De Backer G. Cardiac rehabilitation for coronary patients: lifestyle, risk factor and therapeutic management. Results from the EUROASPIRE II survey. *Eur Heart J*. 2004;6:J17.
15. Haggerty JL, Reid RJ, Freeman GK, Starfield BH, Adair CE, McKendry R. Continuity of care: a multidisciplinary review. *BMJ*. 2003;327:1219–1221.
16. Reid RJ, Haggerty J, McKendry R; Canadian Health Services Research Foundation, the Canadian Institute for Health Information, and the Advisory Committee on Health Services of the Federal/Provincial/Territorial Deputy Ministers of Health. Defusing the confusion: concepts and measures of continuity of healthcare. Final report, Canadian Health Services Research Foundation. http://www.cfhi-fcass.ca/Migrated/PDF/ResearchReports/CommissionedResearch/cr_contcare_e.pdf. Published 2002. Accessed October 3, 2016.
17. Australian Government. My health record. https://myhealthrecord.gov.au/internet/mhr/publishing.nsf/content/home. Accessed October 19, 2016.
18. Williams MA, Fleg JL, Ades PA, et al. Secondary prevention of coronary heart disease in the elderly (with emphasis on patients ≥75 years of age): an American Heart Association Scientific Statement from the Council on Clinical Cardiology Subcommittee on Exercise, Cardiac Rehabilitation, and Prevention. *Circulation*. 2002;105:1735–1743.
19. Hjortdahl P. Continuity of care: general practitioners' knowledge about, and sense of responsibility toward their patients. *J Fam Pract*. 1992;9:3–8.
20. Hjortdahl P, Laerum E. Continuity of care in general practice: effect on patient satisfaction. *BMJ*. 1992;304:1287.
21. Saultz JW, Albedaiwi W. Interpersonal continuity of care and patient satisfaction: a critical review. *Ann Fam Med*. 2004;2:445–451.
22. AIHW. *Key Indicators of Progress for Chronic Disease and Associated Determinants: Data Report* (Cat. no.PHE 142). Canberra, ACT: AIHW. http://www.aihw.gov.au/publication-detail/?id=10737419245. Published 2011. Accessed October 27, 2016.
23. Campbell H, Hotchkiss R, Bradshaw N, Porteous M. Integrated care pathways. *BMJ*. 1998;316:133–137.
24. Goble A, Worcester M. *Best Practice Guidelines for Cardiac Rehabilitation and Secondary Prevention*. Forrest, VIC: Department of Human Services; 1999.
25. Gurewich D, Prottas J, Bhalotra S, Suaya JA, Shepard DS. System-level factors and use of cardiac rehabilitation. *J Cardiopulm Rehabil Prev*. 2008;28:380–385.
26. Ting P, Chong T, Ho S, et al. Early inpatient engagement improves cardiac rehabilitation enrollment of patients with coronary artery disease [Abstract]. *Eur J Prev Cardiol*. 2014;21:S104.
27. Abell B, Glasziou P, Briffa T, Hoffmann T. Exercise training characteristics in cardiac rehabilitation programmes: a cross-sectional survey of Australian practice. *Open Heart*. 2016;3:e000374.
28. Onishi T, Shimada K, Sato H, et al. Effects of phase III cardiac rehabilitation on mortality and cardiovascular events in elderly patients with stable coronary artery disease. *Circ J*. 2010;74:709–714.
29. Volaklis K, Douda H, Kokkinos P, Tokmakidis S. Physiological alterations to detraining following prolonged combined strength and aerobic training in cardiac patients. *Euro J Cardiovasc Prev Rehab*. 2006;13:375–380.
30. Heidenreich P, Trogdon J, Khavjou O, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation*. 2011;123:933–944.
31. Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC guideline for the management of patients with non–ST-elevation acute coronary syndromes: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2014;64:e139–e228.
32. Astley CM, Neubeck L, Gallagher R, et al. Cardiac rehabilitation: unraveling the complexity of referral and current models of delivery. *J Cardiovasc Nurs*. 2016;32:236–243.
33. Heart Foundation. Improving the delivery of cardiac rehabilitation in Australia. https://www.heartfoundation.org.au/images/uploads/publications/Improving-the-delivery-of-cardiac-rehabilitation.pdf
34. Redfern J, Chow CK. Secondary prevention of coronary heart disease in Australia: a blueprint for reform. *Med J Aust*. 2013;198:70–71.
35. Bunker SJ, Goble AJ. Cardiac rehabilitation: under-referral and underutilisation. *Med J Aust*. 2003;179:332–333.
36. Scott IA, Lindsay KA, Harden HE. Utilisation of outpatient cardiac rehabilitation in Queensland. *Med J Aust*. 2003;179:341–345.
37. Grace SL, Scholey P, Suskin N, et al. A prospective comparison of cardiac rehabilitation enrollment following automatic vs usual referral. *J Rehabil Med Suppl*. 2007;39:239–245.
38. Grace SL, Grewal K, Stewart DE. Factors affecting cardiac rehabilitation referral by physician specialty. *J Cardiopulm Rehabil Prev*. 2008;28:248–252.
39. Wenger NK, Froelicher ES, Smith LK, et al. Cardiac rehabilitation as secondary prevention. Agency for Health Care Policy and Research and National Heart, Lung, and Blood Institute. *Clin Pract Guidel Quick Ref Guide Clin*. 1995;17:1–23.
40. Gallagher R, Neubeck L, Du H, et al. Facilitating or getting in the way? The effect of clinicians' knowledge, values and beliefs on referral and participation. *Eur J Prev Cardiol*. 2016;23:1141–1150.
41. Fell J, Dale V, Doherty P. Does the timing of cardiac rehabilitation impact fitness outcomes? An observational analysis. *Open Heart*. 2016;3:e000369.
42. Dunlay SM, Witt BJ, Allison TG, et al. Barriers to participation in cardiac rehabilitation. *Am Heart J*. 2009;158:852–859.
43. Harrison RW, Simon D, Miller AL, de Lemos JA, Peterson ED, Wang TY. Association of hospital myocardial infarction volume with adherence to American College of Cardiology/American Heart Association performance measures: insights from the National Cardiovascular Data Registry. *Am Heart J*. 2016;178:95–101.
44. Cortes O, Arthur HM. Determinants of referral to cardiac rehabilitation programs in patients with coronary artery disease: a systematic review. *Am Heart J*. 2006;151:249–256.
45. Wingham J, Dalal HM, Sweeney KG, Evans PH. Listening to patients: choice in cardiac rehabilitation. *Eur J Cardiovasc Nurs*. 2006;5:289–294.
46. Balady GJ, Ades PA, Bittner VA, et al. Referral, enrollment, and delivery of cardiac rehabilitation/secondary prevention programs at clinical centers and beyond: a presidential advisory from the American Heart Association. *Circulation*. 2011;124:2951–2960.
47. Arena R, Williams M, Forman DE, et al. Increasing referral and participation rates to outpatient cardiac rehabilitation: the valuable role of healthcare professionals in the inpatient and home health settings. *Circulation*. 2012;125:1321.