

Access to Cardiac Rehabilitation



Official publication of
Canadian Association of Cardiac Rehabilitation &
British Association for Cardiovascular Prevention
and Rehabilitation

Presidents' Welcome

Bob Reid and John Buckley, Presidents of CACR and BACPR

Dear Members of CACR and BACPR
Welcome to this "pilot" special International Edition of Current Issues in Cardiovascular Rehabilitation and Prevention (CICRP). We look forward to receiving your comments and feedback on this publication. For members in the UK, the BACPR is delighted to be able to contribute to this publication specially written for front-line practitioners working in cardiovascular disease prevention and rehabilitation, which has been a feature of the CACR's services for many years.

This pilot is hoped to eventually develop into a

publication that has contributions from a wide array of associations around the globe. So far keen interest to participate in future publications has already been expressed from our colleagues in Australia, New Zealand, the USA, Ireland, and India.

For this current issue the theme of "Access to Cardiovascular Prevention and Rehabilitation Services" is a shared challenge between Canada and the UK and in fact many of the Commonwealth and European countries who have state-run health services. Some of the key shared challenges include getting leading medical professionals to value, promote, recommend and refer their patients with the same level of commitment they give to pursuing the provision of their diagnostic services/facilities, medical and pharmaceutical treatment and invasive revascularisation procedures. Furthermore, is the challenge of being able to reach those patients who need our services the most and not just those who can immediately appreciate the need to take up a programme to change his/her lifestyle upon the diagnosis of cardiovascular disease.

We note this edition comes soon after the name change in Britain from the British Association for Cardiac Rehabilitation to the British Association for Cardiovascular Prevention and Rehabilitation. There are exciting opportunities in both regions to use the disease prevention and management skills and resources resident in our respective members to reach new cardiovascular and prevention populations.

We do hope you find the articles enclosed, by our respective experts in the field, valuable and with a take home message to enhance your daily practice.

With shared best wishes to all members on both sides "of the pond."

Inside

President's Welcome.....1

Feature Articles:

National Survey of Cardiac Specialists on Patient Access to Cardiac Rehabilitation; Survey Feedback Highlights.....2

Home-Based Cardiac Rehabilitation and the Heart Manual.....4

Overview of the New Cardiac Rehabilitation Commissioning Pack for England.....7

Research in Progress

Design, Implementation and Evaluation of a Reduced Cardiac Rehabilitation Program.....11

References & Reviews.....14

Case Studies

Trillium Health Centre's Experience with Automatic Referrals.....16

Program Profiles

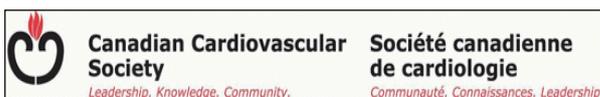
Access to Cardiac Rehabilitation.....17

National Office News:

From the Office.....20

National Survey of Cardiac Specialists on Patient Access to Cardiac Rehabilitation: Survey Feedback Highlights

Canadian Cardiovascular Society



Background

In 2010, the CCS requested that CACR conduct a survey as part of their Access to Care project under the umbrella of the Canadian Medical Association and as follow-up on two national surveys conducted in 2007 and 2008.

CACR surveyed 765 cardiac rehabilitation (CR) centers across Canada to:

- Better understand the issue of access to CR care and wait times, and
- Identify actions moving forward.

Survey Methods and Responses

Online survey emailed to all CCS members in spring 2010. Of the 765 centres sent, 71 (9%) surveys were completed and returned. Eighty percent responses were received from cardiologists. 87% (62/71) respondents speak English. 97% (69/71) of respondents are located in an urban area.

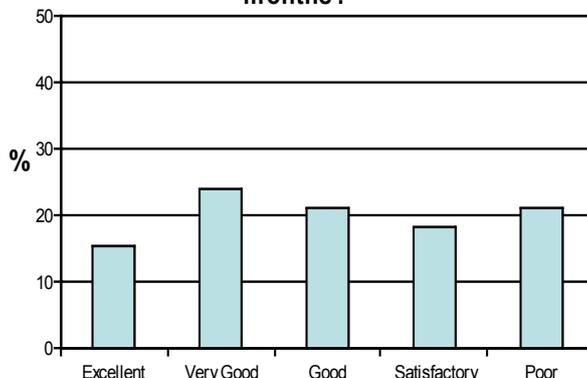
We are not there yet

Despite monitoring wait times for more than five years, less than one-half respondents rated access to CR over the past 12 months as 'Excellent' or 'Very Good'.

Most respondents report themselves as aware of the benefits of CR quite well (92% rated 'Extensive' or 'Very Good'), and their colleagues are not quite aware of it (42% rated 'Extensive'

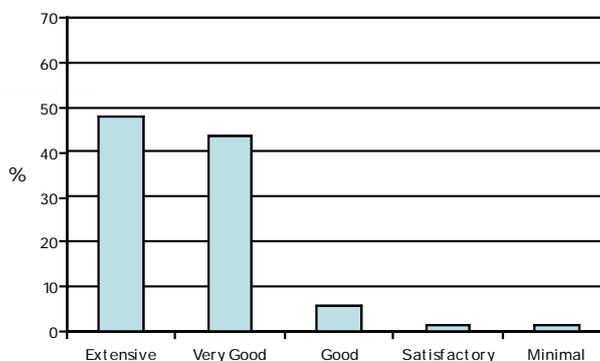
or 'Very Good').

How would you rate your patients' access to cardiac rehabilitation over the past 12 months?



“Despite monitoring wait times for more than five years, less than one-half respondents rated access to cardiac rehabilitation over the past 12 months as ‘Excellent’ or ‘Very Good’.”

Please indicate your level of awareness of the benefits of cardiac rehabilitation



Canadian Association of Cardiac Rehabilitation

1390 Taylor Ave, Winnipeg, MB
R3M 3V8

Website: www.cacr.ca

Fax: (204) 928-7873

Tel: (204) 488-5854 or 928-7870

CICRP Editorial Team

Lea Carlyle, Editor
E-mail: lea.carlyle@albertahealthservices.ca

Katie Gibson, Associate Editor
E-mail: hhearts@healthy.uwaterloo.ca

Marilyn Thomas, Executive Director
E-mail: mthomas@cacr.ca

Scott Lear, Associate Editor
E-mail: slear@providencehealth.bc.ca

Tracey Colella, Associate Editor
E-mail: colella.tracey@torontorehab.on.ca

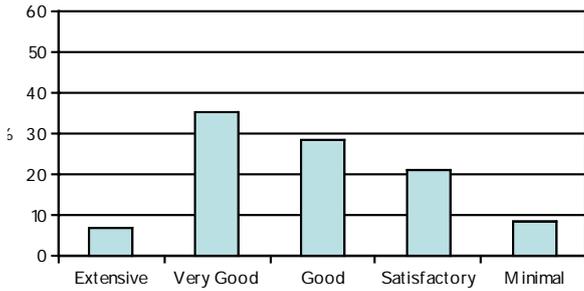
Kerseri Scane, Associate Editor
E-mail: Scane.Kerseri@TorontoRehab.on.ca

Paul Oh, Associate Editor
E-mail: oh.pauldr@torontorehab.on.ca

Disclaimer

The materials contained in the CICRP publication are the views/findings of the author(s) and do not represent the views/findings of CACR. The information is of a general nature and should not be used for any purpose other than to provide readers with current research in the area.

In your opinion, what is the level of awareness of the benefits of cardiac rehab among your medical colleagues

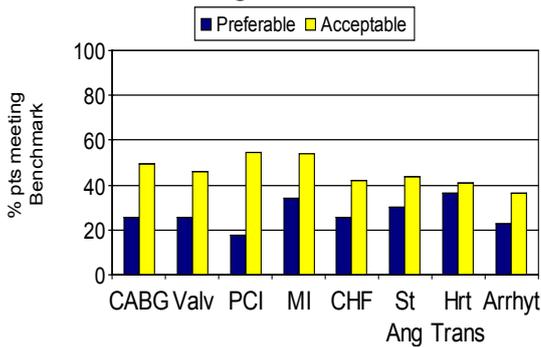


Wait Time Benchmarks

CCS CR wait time benchmarks have a moderate level (41%) of awareness across Canada.

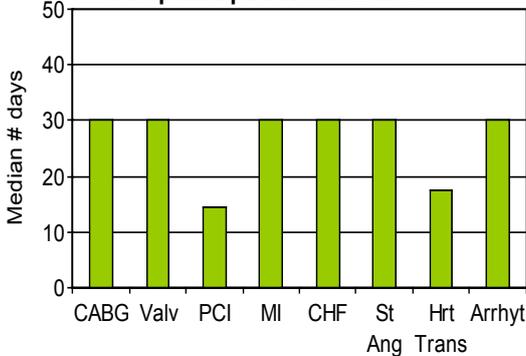
Respondents also report only 27% of patients meet the preferable benchmark, while about 46% patients meet the acceptable benchmark. This information demonstrates that about one-half of outpatients waiting in the community already exceeded recommended CCS benchmarks.

Estimated percentage of your patients meeting benchmarks



Most respondents perceive the CCS benchmarks (30 days) as appropriate.

Your perception of appropriate days wait for optimal patient outcomes



Cardiac Rehabilitation is Patient Centered or Family Centered

Respondents report the most barriers that

specialists do not refer patients to CR are those as follows, in order of severity:

- Patients decline,
- Patients live far from CR or there is no home-based CR, and
- Lack of transportation to CR.

Implications and Recommendations

As outlined, the distribution of existing CR programs is concentrated in urban areas with a limited number of programs in rural areas. However, it is unclear whether access to CR services is adequate even in urban areas.

It is clear that there is considerable scope for improving access to CR in Canada. One solution is to involve community-based and home-based CR programs. CR programs involve not only patients but their families, care-takers and communities. Further, the development of a series of comprehensive workshops about CR for community workers and family members by CCS will present a framework within which to develop the skills base to effectively support a community-based and home-based rehabilitation approach.

For more information:
Canadian Cardiovascular Society

www.ccs.ca
 (877/613) 569-3407

Home-Based Cardiac Rehabilitation and the Heart Manual

Dr. Hasnain Dalal MD, Peninsula College of Medicine and Dentistry, Universities of Exeter & Plymouth, Truro, UK; Professor Bob Lewin MPhil, British Heart Foundation Care and Education Research Group, University of York, UK.

Offering patients with coronary heart disease (CHD) home-based cardiac rehabilitation (CR) was suggested as long ago as 1983.¹ Despite this, in most countries, the uptake of CR remains suboptimal and home-based CR has largely failed to take off. In the past this may have been due to a lack of evidence; however, over the last few years systematic reviews have shown that home-based rehabilitation and exercise programmes are as effective as hospital-based CR and may have better long-term compliance.^{2,3} The most recent Cochrane review of home vs. hospital CR found 12 randomized controlled trials (RCTs) involving nearly 2,000 patients and concluded that: “Home- and centre-based cardiac rehabilitation appears to be equally effective in improving the clinical and health-related quality of life outcomes in acute myocardial infarction (MI) and revascularisation patients.”⁴ This finding has been reinforced by the latest RCT of home vs. hospital-based CR from Denmark.¹²

In the United Kingdom (UK), as in most countries, a substantial number of patients decline the offer of CR; offering patients a choice of venue may improve uptake. Evidence that it can do so is provided by an audit study carried out by one of the authors (HD). Of 106 patients offered the choice of a home based programme, the *Heart Manual*, or a hospital-based programme, 44% chose the *Heart Manual* and 33% chose the hospital-based programme, the remainder were too ill for either and had individual support.⁵ Offering a choice meant that, in that part of the UK, the national target, that 85% of MI patients discharged from hospital should be offered CR²¹, was met: something no other areas of the UK achieved.

The same group of researchers conducted a preference RCT, the Cornwall Heart Attack Rehabilitation Management Study (CHARMS), comparing the outcomes from the hospital and *Heart Manual* CR programmes; the benefits recorded by each programme were the same but, as in previous studies, significantly more patients completed the *Heart Manual* programme than the hospital-based programme.⁶

Why patients prefer a home or a hospital-based programme has been examined in qualitative

studies.^{7,8} The answers vary, although there are some similarities and differences in the reasons why patients chose a particular CR programme; these include: temperament and personality, wanting the programme to fit in with their life and not the other way round, wanting to include their family, not liking group activities, wanting to move at their own pace and overcoming barriers of time and distance. On the other hand, patients choosing hospital-based CR were quite clear that they need the discipline of a group to exercise, that they want to meet ‘people like me’ or that they would prefer to exercise in a ‘safe’, supervised medical environment.

“On the other hand, patients choosing hospital-based CR were quite clear that they need the discipline of a group to exercise, that they want to meet ‘people like me’ or that they would prefer to exercise in a ‘safe’, supervised medical environment.”

The Heart Manual

The *Heart Manual* was developed in Scotland in the late 1980s by a multi-disciplinary team of CR specialists and patients in a three-year project led by one of the authors (BL).⁹

The key component is the facilitator, a rehabilitation professional who has had a brief training in the *Heart Manual*'s behaviour change techniques. He or she works with the patient to determine their health needs and to arrive at a shared set of goals. These goals are recorded in a workbook and scheduled for regular practice. They almost always include a walking programme, a relaxation and stress management component and attention to reducing the patients' risk of CHD. The facilitator contacts the patient at set intervals, either face-to-face or by telephone, to check on progress and help the patient re-set the goals and add new ones. The behaviour change methods are cognitive-behavioural, such as motivational interviewing, goal setting and increasing confidence in small steps. An important element is examining the patient's and -if possible- the immediate carer's or family's

beliefs about heart disease: what they think about its causes, its most likely course and the most appropriate actions to avoid further problems. Some beliefs, known as cardiac misconceptions, have been shown to affect the degree to which the patient will change their behaviour, unless they are discussed and corrected.¹⁰ The educational component is delivered through discussion with the facilitator, backed up by written and DVD-based materials for all of the family to share. All of the aspects of a full multi-disciplinary programme are addressed. The physical activity programme uses a daily walking programme but also builds on and extends the patient's own favoured physical activities or hobbies.

The simple nature of the walking and activity component has often led to scepticism about the *Heart Manual's* ability to improve physical fitness sufficiently. The first large scale multi-centred RCT to examine this, by comparing the *Heart Manual* with hospital physiotherapy-led programmes, was conducted by Professor Andrew Coates and exercise physiologist Dr. Jenny Bell.¹¹ They found no difference between those that attended 6 weeks of twice weekly exercise in the hospital programmes and the *Heart Manual* patients: both groups demonstrated an increase in exercise tolerance by an average of 2 METs.

These findings were replicated in another large multi-centred trial funded by the UK Government, the BRUM study.¹³ This included 525 MI and coronary revascularisation patients, including 17% from the South Asian community. The results showed: "... significant improvements in total cholesterol, smoking prevalence, in the Hospital Anxiety and Depression Scale anxiety score, in self-reported physical activity and diet in both arms between baseline and the 6-month follow-up."

The *Heart Manual* was superior in one aspect, as reported by the CHARMS investigators there was a much lower 'dropout' rate: A significantly larger number (241)(96%) of the home-based participants received 5 or more contacts (by visit or telephone) with a CR nurse, whereas only 147 (56%) of the centre-based participants attended this number of CR classes ($p < 0.001$).¹³

"There is increasing evidence that patients who take part in home-based exercise and activity programmes are more likely to still be exercising up to two years later than those who have exercised in a hospital setting."³

There have been many published studies of the *Heart Manual*, both quantitative and qualitative and many more local evaluations,¹⁴ making it by far the most researched home-based rehabilitation programme. Its evidence base has been extensively reviewed and is recommended for routine clinical use by numerous expert guideline committees, including the UK's National Institute for Health and Clinical Excellence (NICE)¹⁵ and the 2010 NHS Commissioning Guide for Cardiac Rehabilitation.¹⁶

The *Heart Manual* is based on a cognitive-behavioural understanding of disability. Does it bring extra benefits when used in addition to 'conventional' CR? An interesting study, carried out in an area of high social deprivation in the UK, randomised patients to routine care which included an offer of a hospital-based CR programme, or the same offer plus the *Heart Manual*. Regardless of whether the patients attended the hospital programme or not, those who had used the *Heart Manual*, reported lower anxiety and depression scores and the authors reported that people over 80 benefitted equally to younger patients.¹⁷

How does the cost of the *Heart Manual* compare to hospital-based programmes? Both the BRUM and CHARMS trials included an economic evaluation. Overall costs were similar with the mean cost for the home-based CR programme reported at £198 versus £182 (including patient costs) to the hospital-based patients in BRUM¹³ and £170 (home-based CR) and £200 (hospital-based CR) in CHARMS. Costs in CHARMS were measured in British pounds for 2002–3 (currency conversion rate of £1.00=Canadian \$2.35, 2003).¹⁸ Both interventions were deemed cost-effective.^{13,18}

The *Heart Manual* is the most widely researched and implemented home based rehabilitation programme in the UK and has been available since 1998. It is managed by NHS Lothian in Edinburgh¹⁹. Currently around 15,000 patients a year in the UK use it. That's equivalent to 20% of the number of people who take part in CR in England, Northern Ireland and Wales each year, but still only 9% of the number of people surviving an MI having CABG or PCI in a year in those countries.²⁰

The *Heart Manual* is also in use in several other countries including the Republic of Ireland, New Zealand, Italy, the Falkland Islands, Australia and Canada. In Canada, the *Heart Manual* has been

'Canadianised' by Impact Health Improvement Action Society of BC (Impact BC). Around 100 Canadian facilitators have been trained since 2005, predominantly in Alberta and British Columbia and over 1,200 manuals disseminated. In the Northern Health Authority of BC, 50 facilitators are currently active and aiming to meet a local target of rehabilitating 80% of MI patients using the *Heart Manual*.²¹

See www.impactbc.ca.

Conclusions

There is no longer any reason to believe that hospital-based programmes have an advantage over evidence-based home programmes for the majority of the patients we see in post-MI or post-revascularisation rehabilitation. There is evidence to suggest that we should be routinely offering all patients a choice between these two methods. A reasonable case could be made that until we do offer such a choice, we will fail to engage a significant number of people who might otherwise have had their lives extended.

As the authors of the 2010 Cochrane Review said: "This finding, together with an absence of evidence of difference in healthcare costs between the two approaches, would support the extension of home-based cardiac rehabilitation programmes such as the *Heart Manual* to give patients a choice in line with their preferences, which may have an impact on uptake of cardiac rehabilitation in the individual case."⁴

It may also lead to more satisfied and more compliant patients. Why evidence-based rehabilitation programmes such as the *Heart Manual*, despite twenty years of evidence and availability, are not being more widely used would form an interesting research question.

References

1. WHO. Cardiac rehabilitation and secondary prevention: long term care for patients with ischaemic heart disease. Briefing letter 1993, Copenhagen, Denmark: Regional Office for Europe.
2. Jolly K, Taylor RS, Lip GY, Stevens A. Home-based cardiac rehabilitation compared with centre-based rehabilitation and usual care: a systematic review and meta-analysis. *Int J Cardiol* 2006;111(3):343-51.
3. Ashworth NL, Chad KE, Harrison EL, Reeder BA et al. Home versus center-based physical activity programs in older adults. *Cochrane Database Syst Rev*. 2005 Jan 25;(1):CD004017. Review. PubMed PMID: 15674925.
4. Taylor RS, Dalal H, Jolly K, Moxham T, et al. Home-based versus centre-based cardiac rehabilitation. *Cochrane Database Syst Rev*. 2010 Jan 20;(1):CD007130. Review. PubMed PMID: 20091618.
5. Dalal H, Evans PH. Achieving national service framework standards for cardiac rehabilitation and secondary prevention. *BMJ*. 2003;326(7387):481-4.
6. Dalal H, Evans PH, Campbell JL, et al. Home-based versus hospital-based rehabilitation after myocardial infarction: A randomized trial with preference arms--Cornwall Heart Attack Rehabilitation Management Study (CHARMS). *Intern J Cardiol*. 2007;119(2):202-11.
7. Wingham J, Dalal HM, Sweeney KG, Evans PH. Listening to patients: choice in cardiac rehabilitation. *Eur J Cardiovasc Nurs*. 2006;5(4):289-94. Epub 2006 Mar 20. PubMed PMID: 16545616.
8. Madden M, Furze G, Lewin RJ. Complexities of patient choice in cardiac rehabilitation: qualitative findings. *J Adv Nurs*. 2011 Jan 7. doi: 10.1111/j.1365-2648.2010.05509.x. [Epub ahead of print] PubMed PMID: 21214614.
9. Lewin B, Robertson I.H., Cay E.L., Irving J.B. et al. 'Effects of self-help post-myocardial-infarction rehabilitation on psychological adjustment and use of health services' *Lancet* 1997; 339: 1036-40.
10. Furze G, Lewin RJ, Murberg T, Bull P, et al. Does it matter what patients think? The relationship between changes in patients' beliefs about angina and their psychological and functional status. *J Psychosom Res*. 2005;59(5):323-9. PubMed PMID: 16253623.
11. Bell, JM. A comparison of a multidisciplinary home based cardiac rehabilitation programme with comprehensive conventional rehabilitation in post-myocardial infarction patients. PhD thesis 1998: University of London. .
12. Oerkild B, et al. Home-based cardiac rehabilitation is as effective as centre-based cardiac rehabilitation among elderly with coronary heart disease: results from a randomised clinical trial. *Age Ageing* 2011;40. 78-85.
13. Jolly, K, Taylor R, Lip GYH, Greenfield S, et al. The Birmingham Rehabilitation Uptake Maximisation Study (BRUM). Home-based compared with hospital-based cardiac rehabilitation in a multi-ethnic population: cost-effectiveness and patient adherence, *Health Technology Assessment* 2007;11(35): 1-118.
14. Clark M, Kelly T, Deighan C. A systematic review of the *Heart Manual* literature. *Eur J Cardiovasc Nurs*. 2010 May 5. [Epub ahead of print] PubMed PMID: 20451459.
15. National Institute for Health and Clinical Excellence UK (NICE), (2007) Clinical Guideline: Secondary prevention in primary and secondary care for patients following a myocardial infarction. May2007 [online] Available at: <<http://www.nice.org.uk/guidance/index.jsp?action=byID&co=11008>> [Accessed 26 January 2011]
16. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_117504
17. Lacey EA., Musgrave RJ, Freeman JV, Tod AM et al. Psychological morbidity after myocardial infarction in an area of deprivation in the UK: evaluation of a self-help package. *Eur. J. Cardiovasc. Nurs*. 2004; 3(3): 219-24.
18. Taylor RS, Watt A, Dalal HM, et al. Home-based cardiac rehabilitation versus hospital-based rehabilitation: a cost effectiveness analysis. *Intern J Cardiol*. 2007; 119(2): 196-201.
19. National Audit of Cardiac Rehabilitation Annual Report 2010. University of York, www.cardiacrehabilitation.org.uk
20. Personal communication, Catherine North, Impact Health Improvement Action Society of BC, cnorth@patientvoices.ca
21. Department of Health. Coronary Heart Disease: National Service Framework. 2000. London, DoH.

Overview of the New Cardiac Rehabilitation Commissioning Pack for England

Prof Patrick Doherty, National Clinical Lead for Cardiac Rehabilitation, National Health Services (NHS) Improvement (Heart); Faculty of Health and Life Sciences; York St John University, York, UK

Introduction

Cardiac rehabilitation (CR) is known to be clinically effective at reducing mortality and morbidity, improves quality of life^{1,2} and is highly cost effective.³⁻⁵ Despite overwhelming evidence from over fifty RCTs and numerous meta-analyses concluding in favour of CR less than half of all eligible patients with acute coronary syndrome (ACS) attended CR programmes in the UK during 2009.⁶ The evidence also points to clear benefits for patients with heart failure (HF) and considerable service efficiencies, such as reduced hospital readmissions,^{2,3} yet fewer than 5% of patients attend CR in the UK.⁶ There is no doubt that cardiology has been instrumental in saving many more lives in the last ten years but by not offering CR as part of cardiology management we are simply letting patients down. Saving lives is fundamentally important but repeatedly saving the same life is far from best practice. CR is a proven intervention that reduces mortality and morbidity yet too few patients receive it.

Two of the main barriers, in the UK, to improving uptake and completion rates in CR are the lack of referral and less than optimal commissioning. It is estimated that approximately 55% of programmes are significantly under-resourced.⁶ Recent research and focus group findings from commissioners confirms there is a need for greater knowledge and expertise in developing CR service specifications and a strong desire to translate the underpinning evidence into meaningful commissioning outcomes.⁷ Coupled with changes in how the NHS now operates, in delivering cost effective high-quality care in an efficient way, there is an urgent need to develop commissioning guidance for CR.

“There is no doubt that cardiology has been instrumental in saving many more lives in the last ten years but by not offering CR as part of cardiology management we are simply letting patients down.”

The New Cardiac Rehabilitation Commissioning Pack

In order to ensure that the new CR commissioning approach was fit for purpose, three specialist groups were convened by the Department of Health for England;

1. A reference group of leaders from rehabilitation, cardiology and GPs designed the clinical service specification (group details available from Department of Health)⁸
2. Pricing and economic team (pricing tool and case for change)
3. Contracting and procurement team (legal aspects of contracting and quality assurance)

The commissioning pack has a dual focus that aims to support commissioners and providers and includes the following sections:

- Definition of CR and in-scope patients
- Guidance on planning, agreeing and monitoring CR services
- Templates: business case, case for change and a CR service specification
- Costing tool for the CR specification pathway

The primary focus of this paper was to clarify in-scope patients, CR specification and CR outcomes. Comprehensive details are available from the Department of Health (2010).⁸

In-scope patients

High priority shall be given to the primary diagnosis of:

1. ACS including STEMI, NSTEMI and unstable angina. This category should include all patients undergoing reperfusion (e.g., CABG, PCI or PPCI)
2. Chronic HF (new diagnosis or following a step change in clinical presentation)

As CR services develop then CR services should be extended to include:

3. Heart transplant patients and patients with ventricular assist devices
4. Patients that have undergone surgery for implantable cardioverter defibrillator or cardiac resynchronisation therapy for reasons other than ACS or HF

5. Heart valve replacement patients for reasons other than ACS or HF
6. Patients with a confirmed diagnosis of exertional angina

of CR tends to vary slightly between different regions of the country as a consequence of local service costs and traditional staffing arrangements.

The Cardiac Rehabilitation Service Specification

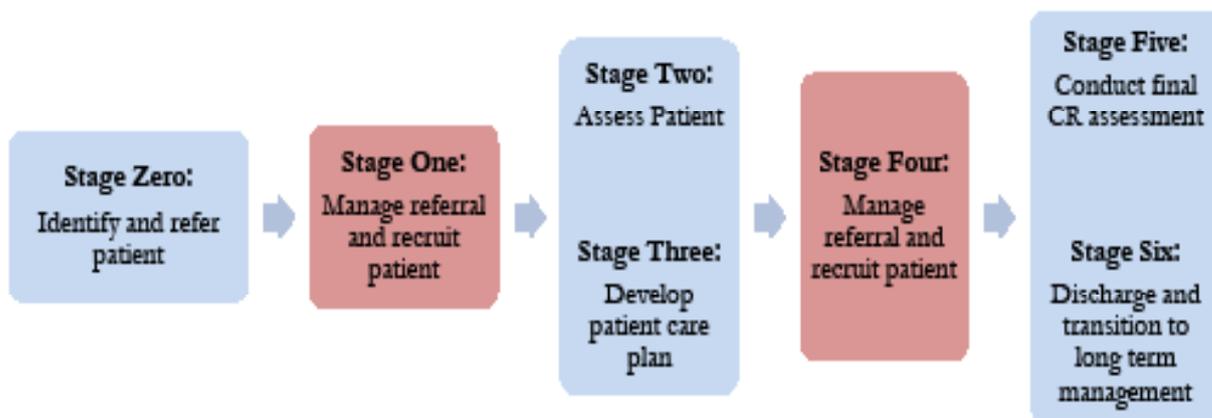
(1) The case for change and costing tool

An evidence-based business case was developed that included all relevant NICE guidance and detail on expected clinical outcomes.⁹⁻¹¹ The business case provides decision support for commissioners and providers to identify the financial, economic and health related costs and benefits of CR services.⁸ A costing tool, based on clinician time per core component, national Payment by Results data and national audit data, is available to commissioners to aid accurate estimation of CR service costs. The final price

(2) Cardiac rehabilitation care pathway

Traditionally, in the UK, CR has been split into four phases: phase I (inpatient management), phase II (early post discharge intervention), phase III (8 to 12 weeks of intervention) and phase IV (long term maintenance).⁶ However, the new CR service specification does not use “phases” but instead sets out a patient care pathway with seven key stages to be delivered across primary and secondary care (Figure 1). Stage zero exists to accommodate the situation where the acute provider is not the CR provider. This situation is more likely to occur now that the NHS has moved to an ethos of ‘any willing provider’ as part of GP commissioning.

Department of Health (2010): Cardiac Rehabilitation Pathway



Supported by a multidisciplinary cardiac rehabilitation (CR) team across primary & secondary care

Figure 1. Cardiac Rehabilitation Care Pathway

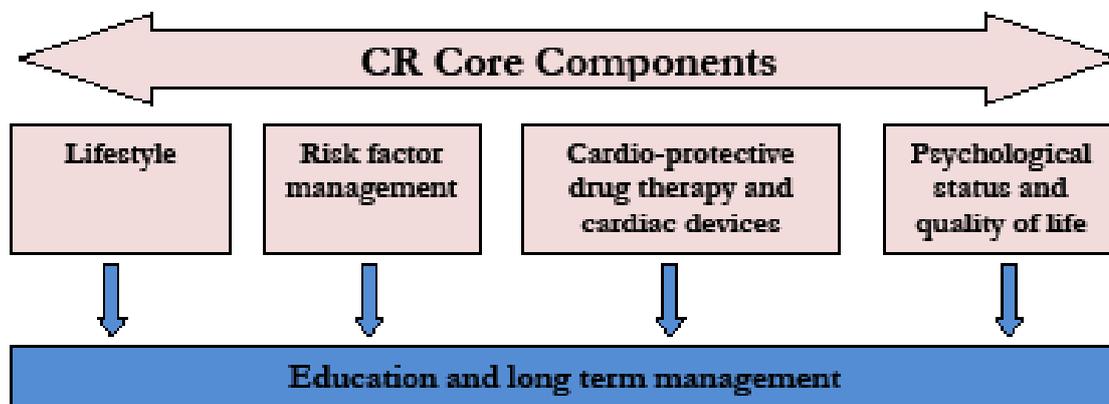


Figure 2: Core Components of Cardiac Rehabilitation Assessment

The stages in the CR care pathway highlight particular points that require a systematic approach to achieve optimal uptake and high completion rates. Although all stages are likely to occur for each patient the duration of each stage will be influenced by the patient assessment and agreed rehabilitation goals. There is growing evidence from rehabilitation audits and clinical guidance that most patients will undertake certain key components.¹²⁻¹³ The components set out in the commissioning pack (Figure 2) are based on the British Association for Cardiac Rehabilitation (BACR) core components developed in 2007.¹³

The CR commission pack approach is broader than traditional exercise and education alone and includes detailed information on a menu based, choice-driven, approach that emphasises physical activity advice; exercise training; healthy eating; smoking cessation; optimal medication; patient specific education and psychological interventions.¹⁴⁻¹⁹ Evidence based interventions aligned with patient choice and preference are known to deliver desirable health outcomes which suggests that a range of hospital, community and home based options should be offered.²⁰

Patient set goals are continuously reviewed against the care plan and reset as required. As the patient achieves notable progress, CR professionals are encouraged to discuss ongoing support and agree on the final assessment date. The transition to long term management is a key stage where patients are supported to move into lifestyle initiatives run by local authorities or primary healthcare. A discharge letter is sent to the GP with ongoing needs defined.

“Evidence based interventions aligned with patient choice and preference are known to deliver desirable health outcomes which suggests that a range of hospital, community and home based options should be offered.”²⁰”

Planned Outcomes Used to Assess the Impact of the CR Commissioning Pack

The expected high level outcomes for CR services are:

1. There will be an increase in the number of patients offered CR
2. There will be an increase in the number of patients completing CR
3. Within certain patient groups (e.g., HF),

- there should be a reduction in patient re-admissions in the 12 months following successful completion of a CR programme
4. More patients will be satisfied with the service they receive as part of CR.

Patient assessment results and dialogue should lead to clearly defined patient needs and agreed goals that are likely to be achieved during a tailored intervention delivered at a time and in a location suited to the patient.⁸ Patient goals should be continually reassessed and adjusted during the intervention period and a final post-intervention assessment should be carried out within three months of commencing the programme. This assessment will act as the main point to ascertain the extent of change between baseline and intervention completion. Clinical measures include:

- Psychological well being
- Functional capacity (fitness)
- BMI and waist circumference measures
- Quality of Life
- Smoking cessation
- Compliance with medication
- Compliance with a healthy eating plan

The National Audit of Cardiac Rehabilitation (NACR)⁶ is recommended for data collection and this approach is being tested for utility as part of the NHS Improvement pilot work.⁷

Major differences between the new CR pathway and the traditional approach are:

- Phases are replaced by a pathway of key stages across primary and secondary care
- No set time frames for patients although the cost is based on twenty 2-hour sessions
- Genuine patient choice and support for patient preference within the approach
- The success of CR is based as much on patient outcome as it is on process completion
- Where relevant CR is linked to primary care services to avoid replication of provision e.g., smoking cessation clinics.

How will Change be Achieved and Monitored?

The clinical burden at local and regional levels is identified by Hospital Episodes Statistics (HES) data linked to acute admissions which is built into the commissioning pack. This data is also

available to commissioners to investigate trends in readmission which is known to be an additional burden in select patient groups.^{2,8} The CR service specifications can be adapted to reflect local needs and can be used to support the development and agreement of contracts between service providers and commissioners. To support the implementation of the CR commissioning pack the NHS has set up a specialist operational group via NHS Improvement (Heart) to support a number of project sites and establish the utility of the commissioning pack in real life settings. The aim of the work is to improve uptake and ensure quality and efficiency of CR services for patients and staff by meeting the QIPP (Quality, Innovation, Productivity and Prevention) agenda.⁷ It is envisaged that savings made within QIPP will be reinvested in NHS services. Although there is potential for commissioners to introduce incentive based models, where funds are allocated based on achievement of locally agreed thresholds for uptake and completion rates, this is only possible if patient outcomes and patient satisfaction are clearly evident.

Conclusion

The CR commissioning pack will give commissioners and providers a modern guide to ensure cost effective high-quality services are aligned with patient preferences. The big difference comes in the form of a new pathway that strives for measurable patient outcomes within an efficient system. Time and accurate evaluation will tell if this approach works but without significant change CR is unlikely to thrive in these financially challenging times.

References

- Joliffe J, Rees K, Taylor R, Thompson D, Oldridge N, Ebrahim S. Exercise-based rehabilitation for coronary heart disease. *Cochrane Database Sys Rev*, 2000(4): CD001800
- Davies E, Moxham T, Rees K, Singh S, Coats A, Ebrahim S, Lough F, Taylor R. (2010) Exercise based rehabilitation for heart failure (Review) Issue 4, The Cochrane Library, The Cochrane Collaboration. JohnWiley & Sons, Ltd.
- Taylor R.S and Kirby B., The evidence base for the cost effectiveness of cardiac rehabilitation. *Heart* 1997 ;78:5-6
- Fidan, D, Unal B, Critchley J, et al. Economic analysis of treatments reducing coronary heart disease mortality in England and Wales, 2000-2010. *QJM*, 2007;100:277-89.
- Beswick A, Rees K, Griebisch I, et al. Provision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups. *Health Technol Assess* 2004;8:2-13.
- NACR (2010). The National Audit of Cardiac Rehabilitation: Annual Statistical Report 2010 [Online] Available at :<http://www.cardiacrehabilitation.org.uk/nacr/docs/2010.pdf>
- NHS Improvement (2010) National Cardiac Rehabilitation Projects 2010-2011. Available at: <http://www.improvement.nhs.uk/heart>
- Department of Health (2010). Cardiac Rehabilitation Commissioning Pack http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_117504
- NICE Clinical Guideline 48 (2007), MI: secondary prevention in primary & secondary care for patients following a myocardial infarction. www.nice.org.uk/nicemedia/pdf/CG48NICEGuidance.pdf
- NICE Clinical Guideline 94 (2010), Unstable Angina and NSTEMI, www.nice.org.uk/nicemedia/pdf/CG94NICEGuidance.pdf
- NICE Clinical Guideline 108 (2010), Chronic heart failure, Diagnosis and management in primary and secondary care www.nice.org.uk/nicemedia/live/13099/50526/50526.pdf
- Balady G, Williams M, Ades P, et al. Core Components of Cardiac rehabilitation & Secondary Prevention Programs. *Circulation* 2007;115:2675-2682
- British Association for Cardiac Rehabilitation (2007) Standards & Core Components http://www.bcs.com/pages/page_box_contents.asp?navcatID=49&PageID=625
- Belardinelli R, Ivana Paolini I, Cianci G, Piva R, Georgiou D, Purcaro A, Exercise training intervention after coronary angioplasty: the ETICA trial, *J Am Coll Cardiol* 2001;37:1891-900
- Lavie, CJ, Milani, RV Benefits of cardiac rehabilitation and exercise training programs in elderly coronary patients. *Am J Geriatr Cardiol* 2001;10:323-327
- Lisspers, J, Sundin, O, Hofman-Bang, C et al. Behavioural effects of a comprehensive, multifactorial program for lifestyle change after percutaneous transluminal coronary angioplasty: a prospective, RCT. *J Psychosom Res* 1999;46:143-154
- Kobashigawa, JA, Leaf, DA, Lee, N et al. A controlled trial of exercise rehabilitation after heart transplantation. *N Engl J Med* 1999;340:272-277
- Fitchet A, Doherty P, Bundy C, et al. Comprehensive cardiac rehabilitation programme for implantable cardioverter-defibrillator patients: a randomised controlled trial. *Heart*, 2003;89(2):155-60
- Wilson SR, Givertz MM, Stewart GC, Mudge GH. Ventricular assist devices: the challenges of outpatient management. *J Am Coll Cardiol*. 2009;54:1647-59.
- Dalal H, Zawada A, Jolly K, Moxham T, and Taylor R. Home based versus centre based cardiac rehabilitation: Cochrane systematic review and meta-analysis. *BMJ* 2010; 340:b5631

Design, Implementation and Evaluation of a Reduced Cardiac Rehabilitation Program

Alejandra Farias Godoy, MSc, MD, PhD candidate¹; Scott A. Lear, PhD^{1,2,3}

¹Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Vancouver, British Columbia; ²Healthy Heart Program, St. Paul's Hospital, Providence Health Care, Vancouver, British Columbia; ³Faculty of Health Sciences, Simon Fraser University, Vancouver, British Columbia

Background

Ischemic heart disease (IHD) is the most important cause of death within cardiovascular disease (CVD), which in turn is the leading cause of death in Canada.¹ The number of 'IHD survivors' is increasing, enhancing the importance of secondary prevention services¹. The current cardiac rehabilitation program (CRP) model in Canada is an evidence-based, cost-effective intervention that encompasses a multidisciplinary team to modify IHD risk factors and lifestyle behaviours.^{2,3} However, their use is limited due to hospital's and patient's barriers.⁴ Standard CRP (sCRP) require an attendance of two to three in-hospital exercise/educational sessions per week for three to four months, each session holding a restricted number of patients, limiting the program's overall intake capacity. Although these programs include primary and secondary prevention patients, all receive a similar intervention in a "one size fits all" fashion.² Additionally, attendees face the challenges of distance, transportation and lack of time since these sessions are held during regular working time, which explains the program's high drop-out rates of 25-40%.⁵ Patients at low and moderate risk, may be treated with more flexible programs, allowing them a more flexible schedule and increasing the hospital's patient intake capacity enabling crucial resources to be directed to those at high risk that need in-hospital supervision the most.

Home-based CRP have been compared to in-hospital CRP in an attempt to diversify program delivery. They have reported better sustainability of exercise capacity, which might be explained by the possibility that those who achieve healthy behavioural changes within their own environment are able to better maintain these gains.⁶ However, these interventions have focused on low-risk patients only and exercise-based outcomes with minimal assessment of metabolic variables (of critical importance for patients with IHD).

Our purpose is to investigate whether a reduced CRP (rCRP), which in the same period of time requires a lower number of supervised sessions, is as effective or better than the sCRP for improving exercise capacity, adherence and IHD risk factors immediately after completion and at one-year. The following questions will be addressed: 1) Is the rCRP "not worse" or better than the sCRP for improving exercise capacity and IHD risk factors at four and 16 months following baseline? 2) Will the rCRP have better adherence than the sCRP?

Study Methods

This is a two group randomized controlled trial. Primary and secondary prevention patients referred to the St. Paul's Hospital CRP were screened for eligibility. Those at high risk, according to the American Association of Cardiovascular and Pulmonary Rehabilitation risk stratification criteria were excluded (i.e., heart failure, poor exercise capacity).⁷ Eligible and consenting patients signed an informed consent and underwent a baseline assessment of medical history, exercise capacity, lipid profile, blood pressure (bp), anthropometric measurements, lifestyle behaviours and psychosocial measures. Patients were randomized to either the sCRP or the rCRP following their first cardiac rehabilitation (CR) class. The same assessment was done at program graduation (4 months) and again one-year later to assess the immediate and sustainable effects, respectively (Figure 1).

The sCRP is a four-month intervention, with an initial evaluation by a cardiologist, nurse, exercise specialist and dietitian. Patients attend 32, twice weekly in-hospital exercise/educational sessions, nutritional counselling, medical care, psychological screening and smoking cessation if needed. The rCRP only differs from the sCRP in the number of in-hospital exercise sessions during the same program duration (10 sessions in four months). In an attempt to compensate for the decreased in-class information and motivation, rCRP

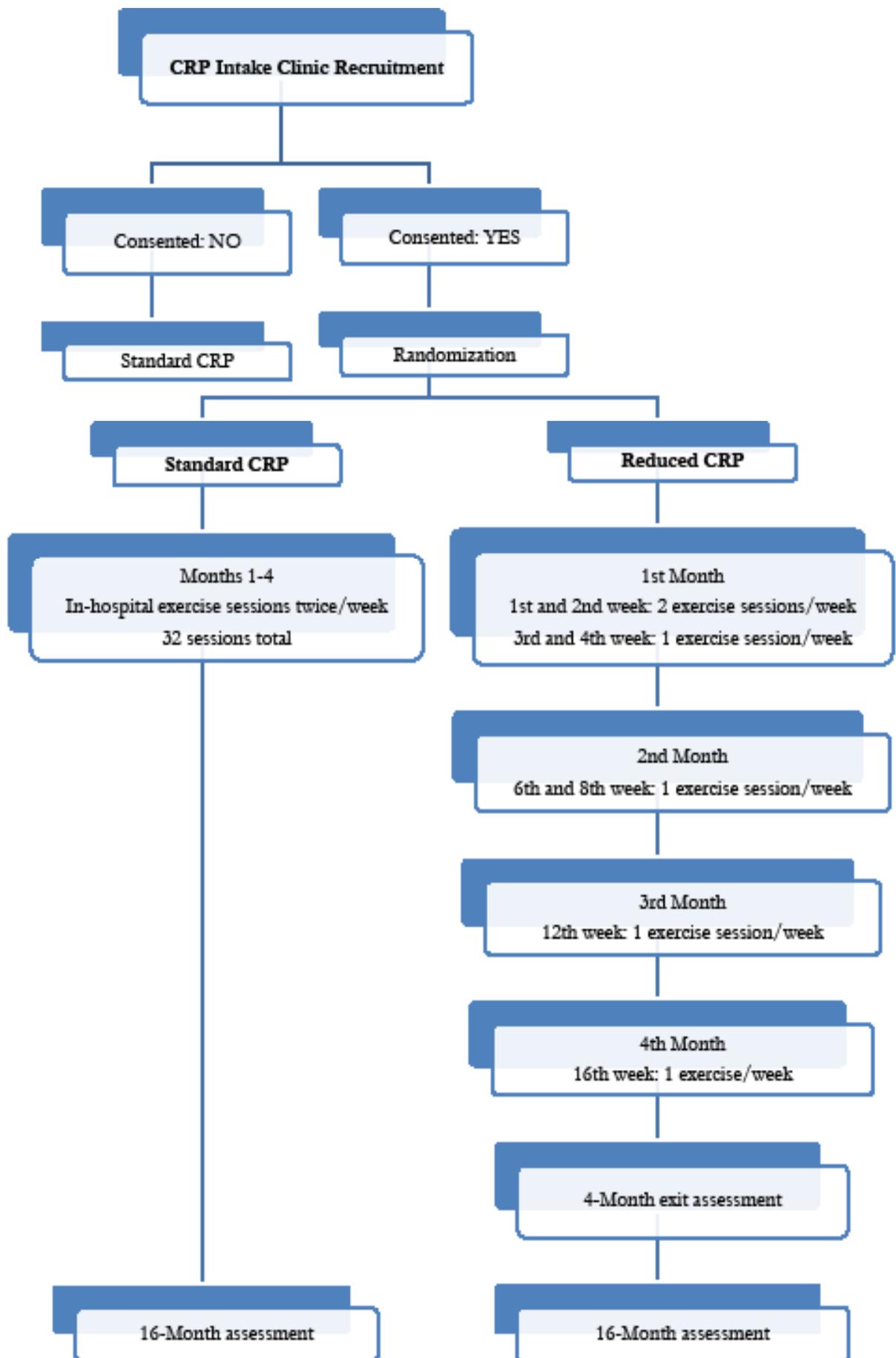


Figure 1: Recruitment and follow-up algorithm

participants received a package that provided educational information, and a logbook to record their exercise sessions which would serve as a self-motivation/self-monitoring system. The CRP clinical staff had the discretion to move patients in the rCRP to the sCRP in cases of **patient safety only** following a pre-designed algorithm (not shown).

The primary outcome is the difference in exercise capacity measured as total time in the treadmill from baseline to program completion and at 16 months compared between the two groups, assessed by a symptom limited stress test using the Bruce protocol.⁸ Secondary outcomes include fasting glucose, lipids, bp, body mass index, waist circumference, global CVD risk, lifestyle (physical activity, diet), psychosocial measures (quality of life, self-efficacy) and CRP adherence (percent attendance and leisure time physical activity). These outcomes were measured at CRP intake (baseline), at CRP completion (4 months) and will be measured at 16 months following baseline. Changes for continuous and categorical variables between the two groups will be tested using a two by three repeated measures ANOVA and Pearson chi square, respectively. Using a non-inferiority power calculation, based on preliminary data on the primary outcome and considering a 25% drop-out rate, the sample size was calculated as a total of 118 participants.

Current Status

Recruitment lasted 42 months and was finalized on May, 2010. A total of 2016 charts were screened of which 65% (1310 patients) were non-eligible. The main reason for non-eligibility was a history of or current congestive heart failure and low baseline exercise capacity. From the 706 eligible patients, 75% refused to participate and 15% consented but did not show up to the first class, therefore were not randomized. The main reasons for refusal to randomization were: 1) a preference to be in the standard program (60%) due to anxiety and/or a perceived “lack of self-discipline” and 2) a preference to be in the reduced program (40%) due to time restraint or geographical barriers. With 25 participants still to complete their 1-year follow-up assessment, data collection will be complete in September of 2011.

Conclusion

Given the importance of providing CR for

the growing population of CVD patients it is imperative to achieve higher hospital intake, while having flexible programs for the diverse population of potential CRP attendees. Currently, there is a mismatch between the types of CRP offered and demand. The reduced CRP aims to maintain the comprehensive nature of a standard program, providing much needed support for patients to achieve and maintain behavioural changes with less hospital supervision, allowing to increase CRP openings for high risk patients. Of relevance is that 40% of patients refused to be randomized due to a preference for a reduced program, which exposes a gap in the current CRP model.

References

1. Heart and Stroke Foundation of Canada. The Growing Burden of Heart Disease and Stroke in Canada 2003. Ottawa: Heart and Stroke Foundation of Canada.
2. CACR, Canadian Guidelines for Cardiac Rehabilitation and Cardiovascular Disease Prevention. Second edition. 2004.
3. Taylor RS, Brown A, Ebrahim S, et al. Exercise-based rehabilitation for patients with coronary heart disease: Systematic review and meta-analysis of randomized controlled trials. *Am J Med* 2004;116(10):682-92.
4. Daly J, Sindone AP, Thompson DR, et al. Barriers to participation in and adherence to cardiac rehabilitation programs: A critical literature review. *Prog Cardiovasc Nurs* 2002; 17(1):8-17.
5. Sanderson BK, Phillips MM, Gerald L, et al. Factors associated with the failure of patients to complete cardiac rehabilitation for medical and nonmedical reasons. *J Cardiopulm Rehabil* 2003;23(4):281-9.
6. Jolly, K, Taylor RS, Lip GY, et al. Home-based cardiac rehabilitation compared with centre-based rehabilitation and usual care: A systematic review and meta-analysis. *Intern J Cardiol.* 2006; 111(3):343-51.
7. Balady GJ. ACSM's guidelines for exercise testing and prescription. Sixth edition.
8. Myers J, Prakash M, Froelicher V, et al. Exercise capacity and mortality among men referred for exercise testing. *N Engl J Med* 2002;346(11):793-801.

References & Reviews

Kerseri Scane, BPHE, ACSM Exercise Specialist Certified, CK

Toronto Rehabilitation Institute, Cardiac Rehabilitation and Secondary Prevention Program,
Toronto, ON

Access to Cardiac Rehabilitation among South Asian Patients by Referral Method: A Qualitative Study

Grewal K et al. Rehabil Nurs 2010;35:106-12

There is an increased prevalence of coronary artery disease (CAD) in people of South-Asian origin. They are a group who could benefit the most from participating in cardiac rehabilitation (CR), however they are among the least likely to participate. The referral process to this service could be an area for improvement in order to increase the uptake of CR in this patient population. Referral methods to CR have been previously identified and include physician referral, automatic referral and liaison referral.

This study qualitatively examined whether CR referral knowledge, access and attendance were influenced by different methods of referral to CR among South Asians. Sixteen patients from 11 hospitals in Ontario were enrolled into the study and underwent a telephone semi-structured interview with open-ended questions and probes in order to highlight relevant issues including knowledge of their referral, beliefs about why they were or were not referred and discussions with hospital staff about CR as well as their intentions to participate. Participants from each referral method described above were interviewed to capture themes. Themes that emerged for this South Asian group included poor pre-discharge CR discussions with healthcare providers (HCPs), patient's limited CR knowledge, ease of referral process as a facilitator of CR attendance, and the need for personal autonomy for this group over decisions to attend CR. Regardless of referral method, participants identified that there was a lack of discussion with HCPs about CR while in hospital. After analysis of themes, the study concluded that the liaison referral method (where an allied health professional discusses CR with cardiac patients) was the most suitable for South-Asian cardiac patients. This method provides communication between patients and providers which enables better understanding of CR and its benefits, clarifies misconceptions and addresses perceived barriers of this group. This study is to be commended for not only

addressing the important issue of access to CR, but for examining the issue with respect to an ethnic group who are at high risk for developing CAD.

Grewal et al have set the stage for a possible quantitative study that could analyze the effectiveness of a liaison referral process within this population. Although this study has identified the most appropriate referral method for this ethnic group, to effectively implement such a referral process universally, careful thought and planning is required to determine how to institute this organizational change effectively within a busy hospital setting.

The Canadian Heart Health Strategy and Action Plan: Cardiac Rehabilitation as an Exemplar of Chronic Disease Management

Arthur HM et al. Can J Cardiol 2010;26:37-41

The Canadian Heart Health Strategy and Action Plan (CHHS-AP) www.chhs.ca/en was developed in 2006 by the Minister of Health to address cardiovascular disease (CVD) in Canada. Within this Action Plan are recommendations for cardiac rehabilitation (CR) set within the context of the Chronic Care Model (CCM). This paper provides an overview of the process a dedicated working group took, to develop strategies and recommendations for this action plan. The paper reviews the Canadian and International strategies for CR delivery.

Final recommendations for CR delivery in Canada are presented and outlined in the paper which is set within the CCM's components of 1) the health care system, 2) delivery system design 3) decision support, 4) clinical information systems, 5) self-management support, and 6) the community. Of interest, is the component of the "health care system," which indicates that CR should be accessed in a timely manner by patients and should address issues of age, sex, income and geographical issues that may act as barriers for participation. It continues on to promote the need for a systematic approach for a universal referral process for patients.

The paper appropriately highlights that many

countries including the UK, Australia, Finland, and Canada have identified similar strategies for CR delivery; however, it remains that progress of implementing these strategies and evaluating the outcomes continue to fall short. Now, with the Action Plan developed by the HHS in Canada, the paper concludes that this blueprint is the first step toward reducing CVD in Canada. How and when the implementation of these recommendations is to take place were not revealed in the paper. The second step may be dependent on appropriate Government Funding.

Trends in Referral to Outpatient Cardiac Rehabilitation in the Hunter Region of Australia, 2002-2007

Johnson NA et al. Eur J Cardiovasc Prev Rehabil 2010;17:77-82

There is a common international problem of underutilization of cardiac rehabilitation (CR) services. In an effort to help inform strategies that best address the problem, this Australian study has provided cross-sectional survey data. The data serves to determine whether the proportion of patients referred to outpatient CR in a specific region of Australia increased between 2002 and 2007. During this time, new CR programs were implemented, there was an expansion of existing CR programs and quality improvement strategies for referral to CR were observed throughout the region. The survey included 4,971 patients who had been discharged from hospital. They were asked to complete a questionnaire 5-months later about their referral to CR as well as information regarding their diagnosis and coronary risk factors. To meet their study objective, the researchers specifically asked patients “since your hospital admission have you been advised by a medical person to attend an outpatient cardiac rehabilitation program?” If they answered yes, they were considered referred and if no, they were classified as not referred.

This research group revealed an interesting trend between 2002 and 2007 which showed no increase in the proportion of patients referred to CR. Only half of the eligible patients were being referred: 47% in 2002, 53% in 2003, 50% in 2004, 48% in 2005, 49% in 2006, and 46% in 2007. The proportion of patients referred stratified by age, sex, and type of disease; procedure; hospital type; and health sector residence did not change during the study, $\chi^2 = 0.64$; $df=1$; $P=0.42$. Consistent with current literature, factors associated with

referral in this study were age less than 70 yrs, male sex, being married and urban health sector of residence.

The study posits that the lack of increase in referral during this time period, despite the systematic changes seen within the Region, were due to under-referral and not service provision. They continue to recommend that automatic referral is recommended in Australia and should be a standard of practice.

This study was able to confirm that necessary efforts are needed to implement an automatic referral process and is consistent with Canadian recommendations. The self-report questionnaire given to patients may not have provided the most accurate reflection of referral in this study group, as patient’s recollection during that time may have been affected. However, the study does confirm that continued efforts in designating clinical staff in hospital to discuss CR with patients are warranted. There is also the potential for further benefit, if hospital settings can support the necessary organizational change processes required for automatic referrals to occur. This will ensure referral discussions are occurring and that patients understand the importance of the service.

Effect of Cardiac Rehabilitation Referral Strategy on Utilization Rates

Grace SL et al. Arch Intern Med 2011;171:235-41

Data from Canada, the United States, and the United Kingdom demonstrate that 70% to 80% of eligible patients receiving treatment for cardiac disease do not receive cardiac rehabilitation (CR) after hospital discharge. A key reason for CR underutilization is failure to refer the patient.

Grace et al set out to determine the optimal strategy to maximize CR referral, enrollment, and participation. This prospective, controlled study included 2635 inpatients from 11 hospitals in Ontario, Canada and evaluated three referral strategies compared to usual care. These included: “automatic” only via discharge order or electronic record, health care provider liaison only, or combined automatic and liaison approach. Eligible patients completed an initial sociodemographic survey and were mailed a follow-up survey 1 year later, assessing self-reported CR referral, enrollment, and participation. The follow-up survey was completed by 1809 individuals. Clinical data was

extracted from medical records.

Adjusted analyses demonstrated that referral strategy was significantly related to CR referral and enrollment ($P < .001$). Combined automatic and liaison referral resulted in the greatest CR use followed by automatic referral only, and liaison only compared with usual care. Once the individual was referred, regardless of the referral strategy, CR participation rates were consistently above 80% of prescribed sessions. The authors

identify that implementation of the combined strategy could potentially increase CR use by 45% suggesting a major population health gain, but also identify that this increase would clearly effect CR program capacity which could lead to longer wait times. However, overall, the results of this study provide strong evidence that innovative referral strategies can positively influence access to CR.

Trillium Health Centre's Experience with Automatic Referrals

Michelle Johnson, R.Ph., B.Sc.Ph.M., Clinical Leader; Cardiac Wellness and Rehabilitation Centre; Trillium Health Centre - West Toronto

Trillium Health Centre (THC)'s Cardiac Wellness and Rehabilitation Centre (CWRC) implemented an automatic referral system in 2001 as cardiac rehabilitation (CR) services were greatly underutilized at the time and, in fact, still are. CWRC demonstrated a greater CR participation rate of 43% with an automatic referral process in place¹, than the literature (15-20%)², the province (22%), and the surrounding region (16%)³. Other benefits include faster enrollment as the CR referral is received in less than half the time of usual referral⁴, and reduced disparity in access.^{2,5}

At the time of this study, when a patient presented to THC with a cardiac event, a standard order for CR referral for all eligible cardiac patients based on clinical practice guidelines is entered by the unit clerk or nurse on the in-patient unit into the hospital's health information system, Meditech. The referral then printed in CWRC on a network printer and the administrative assistant screened for eligibility. All referred patients fell into one of two categories: in THC's catchment area or outside of THC's catchment area. Patients within THC's catchment area were mailed to their home address, a personalized letter including the name of the referring physician, a program brochure, a schedule of classes and a request that the patient call to book an appointment. Patients outside THC's catchment area were also mailed a similar package, and were provided with the contact information for the CR program closest to their home. The alternate CR program was also sent the patient's contact information.

What appears to be a seemingly simple process requires the input, collaboration and support of numerous staff within the organization.

CWRC worked with the unit clerks, nurses and information technology team to develop a CR order in Meditech. Buy-in from the cardiologists was important as an automatic referral to CR meant the patient would be undergoing a graded-exercise stress test prior to starting the program which is automatically ordered by the physician in CWRC. Similarly since CWRC has a physician who initiates and adjusts medications, it is important that the cardiologists are supportive as they are responsible for the patients long-term.

Challenges with implementing an automatic referral process included an increase in patient volumes and therefore a long wait list ensued. To address this issue, CWRC had to change from a 6-month twice weekly program, to a once weekly program and is now currently a 4-month once weekly program. During this delay as patients waited to join CWRC, it was identified by cardiologists at their follow-up appointment that these patients had a lot of questions. The primary coronary intervention teams also identified similar issues as patients' length of stay is short and information retention tends to be poor during a hospital admission for an acute crisis. CWRC therefore developed an early discharge class called the Cardiac Education and Recovery Appointment (CERA) in consultation with the in-patient areas. This class was intentionally called an appointment to increase the attendance rate and it addresses key safety issues reviewed upon discharge including when to use nitroglycerin spray, when to call 911, the importance of taking medications, especially clopidogrel for angioplasty patients, as well as establishing next steps such as joining a CR program. Patients are also provided

with tips about health behaviour changes they can start to make prior to joining a CR program, with the understanding they will obtain additional information and support in the CR program. CERA is offered biweekly and is facilitated by any one of our interprofessional staff, including kinesiologists, dietitian, pharmacist or nurse. CERA is booked directly on the in-patient unit prior to discharge so all patients can attend this group education appointment and have an opportunity to ask questions within 2 weeks of discharge from the hospital. The exception is aortocoronary bypass patients who are booked at 4 weeks post-discharge as it was felt patients needed longer recovery time before attending the 90 minute class. Currently, CERA ranges in size from 30 to 100 attendees.

Another challenge of the automatic referral system has been the repatriation of patients to the CR program closest to home. This requires additional administrative staff time and has been the expectation of regional programs without additional support. Currently, staff manually fax a letter to the CR program closest to the patients' home notifying them to contact the patient regarding CR as they recently had an event. CWRC no longer sends a letter to patients to this regard as it was labour-intensive. To help ensure patients enroll in a CR program, during the CERA talk, patients are informed that if they are not contacted by a CR program within 4 weeks of discharge from the hospital, to call us at CWRC to inquire. CWRC is currently investigating an electronic patient management system which will meet our clinical and administrative needs, including an efficient method to transfer referrals electronically.

While THC's CR enrollment rate is well above the provincial and regional average at 43%, this still means over half of all eligible patients are

not attending CR. THC currently has Healthy Heart volunteers who assist on the cardiac inpatient units. CWRC hopes to work with this group to further increase our patient enrollment rate by implementing a patient liaison component which can result in CR enrollment rates up to 72%.⁶ Despite good evidence showing that CR programs result in substantial reductions in morbidity, mortality, and in the cost of care, and also increases the quality of life when compared with usual care⁷, it is still disconcerting how many patients do not access this valuable service. In our experience at CWRC, automatic referral has significantly improved participation rates and assists in ensuring patients receive the full continuum of care.

References

1. Grace SL, Evindar A, Kung T, et al. Increasing access to cardiac rehabilitation: Automatic referral to the program nearest home. *J Cardiopulm Rehabil* 2004;24:171-74.
2. Daly J, Sindone AP, Thompson DR, et al. Barriers to participation in and adherence to cardiac rehabilitation programs: A critical literature review. *Prog Cardiovasc Nurs*. 2002; 17: 8-17.
3. Cardiac Care Network. The Ontario cardiac rehabilitation pilot project: Report and recommendations 2002; Toronto, ON: Cardiac Care Network.
4. Grace SL, Scholey P, Suskin N, et al. A prospective comparison of cardiac rehabilitation enrollment following automatic vs usual referral. *J Rehabil Med* 2007;39: 239-45.
5. King KM, Teo KK. Cardiac rehabilitation referral and attendance: not one and the same. *Rehabil Nurs*. 1998;23:246-51.
6. Canadian Association of Cardiac Rehabilitation. Canadian guidelines of cardiac rehabilitation and cardiovascular disease prevention: Translating knowledge into action, 3rd ed. 2009.
7. Gravelly-Witte S, Leung YW, Nariani R, et al. Effects of cardiac rehabilitation referral strategies on referral and enrollment rates. *Nat Rev Cardiol*. 2010;7:87-96.

Program Profiles

Sudbury Regional Hospital Cardiac Rehabilitation Program

Kate Blanchette, RN, Clinical Manager, Sudbury Regional Hospital Cardiac Rehabilitation Program, Sudbury, ON

Anne Philips, RN, is the Regional Coordinator for the Sudbury Regional Hospital's cardiac rehabilitation (CR) program. In this role, she acts as a liaison between clients who have been

discharged from the program, and the program itself, to ensure that those clients who live outside the City of Sudbury have access to appropriate education and supervised exercise programs, closer to home, as part of their care regime.

The role of our Regional Coordinator evolved from the Ontario Cardiac Rehabilitation Pilot (OCRCP) Project of 2001. The OCRCP final report indicated that the North region has one of the highest cardiac discharge rates in the province,

as well as one of the poorest rates of access to CR services. In order to expand and meet the service gap, it was recognized as a need for smaller programs throughout the North East region. This is a long-term initiative requiring a dedicated regional coordinator who can act as a resource for these smaller communities.

Through various technological tools, such as the Hopital Regional Sudbury Regional Hospital (HRSRH) CR website and the Ontario Telemedicine Network, clients have access to essential medical and educational services without having to leave their communities. Anne works closely with the family doctors, nurse practitioners (NPs), cardiologists, cardiac surgeons, hospital administrators, Ministry of Health, Long Term Care representatives and the Cardiac Care Network staff to make sure clients have access to these vital services.

The CR program catchment area extends from Parry Sound to Hearst and Wawa, to Mattawa including Manitoulin Island. Any person who has been a cardiac patient in the HRSRH can access the services of CR. There are six satellite programs in the northeast region including New Liskeard, Sault St. Marie, Little Current, Sturgeon Falls, Espanola, and Kirkland Lake.

On-site education and supervised exercise are provided in each of these locations; however, the staff mix will vary between satellite locations and may consist of physicians, NPs, registered nurses, kinesiologists, physiotherapists, dietitians, respiratory therapists, psychologists, clinical exercise specialists, and traditional healers. Referrals are sent directly to the six satellite programs and letters are sent out to clients advising them of the opportunities in their area.

Referrals are sent to Anne via an automatic hospital referral system. She then forwards to the 6 satellite programs, and/or contacts clients who live in smaller rural communities outside of the established satellite locations.

Access to Cardiac Rehabilitation Programming - Lethbridge, AB

Leila Lavorato, Team Lead, Building Healthy Lifestyles, Cardiac Rehabilitation Program, Lethbridge, AB

Like many other programs, Alberta Health Services South West Zone, the former Chinook Health Region, struggles to meet access benchmarks. We have integrated cardiac rehabilitation (CR) with our chronic disease management program,

Building Healthy Lifestyles (BHL). One referral and entry point for all chronic disease programs within BHL allows for appropriate and timely navigation to the area/service of priority. This has allowed us to be more creative with scheduling and service delivery with the goal of broadening and improving access to our services.

BHL CR specific referrals (520 received in 2010) have come from a number of sources: 1) automatic referrals linked with clinical pathways (70%) (STEMI pathway initiated in the emergency room at the time of transfer to Calgary Cardiology Services, ACS and Chest Pain Rule Out MI pathways typically initiated on day one in intensive care unit); 2) "Order Entry" referrals from inpatient units for non-pathway patients directly to our administrative offices (19%); 3) direct paper or faxed referrals sent in from healthcare providers, physician offices, primary care and community clinics (8%); and 4) self referrals (3%). Cardiac Wellness Institute in Calgary also redirects referrals appropriate to our program from patients who are transferred to Calgary for their interventional cardiology. We are confident that with these various points of entry, patients who are appropriate for programming are efficiently contacted and offered service.

Upon receipt of referral, electronic medical records are reviewed. NETCARE, a provincial health information system, improves the speed of information access, preventing delays in decision making. Patients are then navigated to appropriate services. Typically, our patients have their first intervention two to four weeks post event. Patients initially attend our Heart CHEC education series, a combination of classes and group visits. These classes are followed by a one on one assessment with a program nurse. Depending on their goals for risk factor control and lifestyle management, the program nurse may initiate consults with specialists and/or recommend additional classes and interventions. Therapeutic exercise tests, including a 6 minute walk test, is scheduled at the initial meeting for all patients entering an exercise program to ensure timely entry into exercise programming. Results assist in identifying the most appropriate exercise approach and progression within our BHL Therapeutic Exercise Program. We offer on site group exercise sessions or home based options. All exercise levels, either I, II (progressive), or III (interval training) include aerobic conditioning; muscle strength, endurance, and flexibility

components. Lifestyle Journals are used for reference and tracking progress. Three and 6 month follow up sessions are scheduled at program initiation. Currently, we are also able to accommodate requests for earlier individual assessments within one week.

Our family physicians and internists continue clinical management while their patients participate in our program. Communications are built into our process at each major transition point, with any change of treatment plans/goals and if/when issues or concerns arise. BHL clinicians share the same electronic record, ensuring easy, up to date information sharing among team members. Our approach attempts to be a dynamic process in the hopes of maximizing our limited resources to improve patient outcomes.

Primary Care Network Concept Meeting Local Cardiac Rehabilitation Programming Needs

Rebecca Dunne & Chris Mitchell; Wood Buffalo Primary Care Network, Fort McMurray, AB

The Wood Buffalo Primary Care Network (WBPCN), located in Fort McMurray, Alberta, provides comprehensive cardiac rehabilitation (CR) patient programming through the use of an extensive interdisciplinary team of experienced health care professionals. The Primary Care Network (PCN) concept is a made-in-Alberta model of primary care whereby local family physicians and other health care professionals work together as a team to provide a wide variety of comprehensive primary care programs and services to the community. The WBPCN, like all other PCNs in the province, is established within a framework set by Alberta Health and Wellness (AHW), Alberta Medical Association (AMA) and Alberta Health Services (AHS).

Cardiac navigation, delivered as part of the WBPCN heart health program, is initiated within the hospital setting, with all supporting follow-up care taking place within the centralized PCN clinic site. Prior to the establishment of the WBPCN, CR services were virtually non-existent within the region, unless patients chose to embark on the four hour drive to Edmonton, Alberta. The Canadian Association of Cardiac Rehabilitation describes how, according to research, formal CR programs improve upon patient quality of life through the implementation of real lifestyle

change.¹ The WBPCN initiates such change opportunities for its cardiac patients through its primary base of cardiac care, the cardiac navigators. The PCN cardiac navigators consist of registered nurses who embrace the importance of supporting and guiding lifestyle change by facilitating patient ownership of changes that need to take place within their own lives. All follow-up support is provided through the highly collaborative, on-site, interdisciplinary team.

WBPCN Cardiac Navigator Role

The cardiac navigators form a vital part of the WBPCN team. Primarily located within the Northern Lights Health Center (NLHC), the local hospital, the cardiac navigators work collaboratively with hospital nurses and physicians to provide an access point for patients to acquire the necessary post-emergent care, at the PCN site, necessary to realize long-term health improvement through lifestyle change. Channeled through the local family physicians, the patients are referred to the centralized clinic site to acquire the services of the interdisciplinary team comprised of registered nurses, a pharmacist, an exercise specialist, a mental health coordinator and registered dietitians.

The primary role of the cardiac navigators is to coordinate care for the cardiac patient, a process that begins while in the hospital setting and continues once the patient is discharged. Additionally, the cardiac navigators strive to connect with patients returning from other health care facilities located outside of Fort McMurray, a case that frequently arises as a result of the highly transient Fort McMurray population. The process begins daily as the cardiac navigators review patient lists on relevant floors for a range of cardiac diagnoses with the intent to make direct contact with patients. There is a reciprocal relationship between the cardiac navigators and nurses who work on the floors in the hospital. Frontline hospital nurses welcome the visit of PCN cardiac navigators on their respective hospital floors and directly identify patients with the potential and need to receive the necessary health care support to facilitate lifestyle changes aimed at cardiac health improvement.

References

1. Canadian Association of Cardiac Rehabilitation. (2009). Canadian Guidelines for Cardiac Rehabilitation and Cardiovascular Disease Prevention: Translating knowledge into action (3rd Ed.).

Developing a Hardy Heart: Program Accessibility without Direct Referral - Kitchener, ON

Cathy Schuknecht, BSc Kin, Program Director, Hardy Hearts

Hardy Hearts is a Level 3, community based, cardiac rehabilitation (CR) program operating at Grand River Hospital in Kitchener, Ontario. It is a non-profit organization which involves a collaboration between Dr. Michael Sharratt from the University of Waterloo Kinesiology Department, a Kitchener based Cardiologist, Dr. Ron Fowles, and Grand River Hospital. The program has been in operation for 35 years. There are currently 4 exercise classes a week with each class consisting of a comprehensive exercise program; including a group warm-up, resistance training, cardiovascular exercises, and a group cool-down. The classes are supervised by the Program Director and a Registered Nurse. Assistance is provided by several volunteer Exercise Leaders studying in the Faculty of Applied Health Sciences. The client population includes individuals with cardiovascular disease or with significant risk profiles for heart disease of any age, from the Kitchener Waterloo Community.

At this time, Hardy Hearts does not have an automatic referral system and, therefore, relies on several alternate ways to receive potential referrals. Referrals are received directly from Cardiologists as well as other time-limited CR programs in the region. Hardy Hearts has a market for individuals who benefit from ongoing

motivation and supervision to continue their exercise routine. Promotion of this program occurs at many levels. Brochures are mailed directly to Physicians in the region, and are placed at various resource centers. To generate interest and promote the program in the community, Hardy Hearts runs an annual health walk. This is advertised in the local paper and on local television, and through the fundraising committee, who are active at community events such as hockey games, St Jacob's farmer's market and local retail locations, selling raffle tickets. The program relies heavily on word of mouth from our current members. They are able to encourage family members and friends who meet the criteria to participate to become involved in the program.

Upon referral to Hardy Hearts, the participant must first go through an interview process with the Program Director. The results of their stress test and interview information is used to determine eligibility to participate in the program and to identify appropriate training intensities. Once this is completed, an individually prescribed exercise program is developed and the client is then encouraged to come and participate in a minimum of two classes per week. At this time, there are no discharge procedures in place and clients are encouraged to come for as long as they would like to participate. Medical updates and stress test results are routinely performed. This program has a long history of success in the Region and we look forward to continuing to serve our Community in the future.

National Office News

Marilyn Thomas, BA, Executive Director

Congratulations and thank you to the 302 members who have renewed at this point and welcome to the 23 new members who have made a significant decision toward their professional development. You will have noticed that our Membership Sub-Committee and Lori Brulé-Tole, Membership Services Coordinator, have been more proactive in ensuring our members receive the maximum benefits purchased by your membership. To do this: renew as early in the year as possible. Our membership year is from January 1 to December 31. Your member benefits start on the date that you renew (or join) and extend only to December 31 of the current year so there is no longer any great benefit to

waiting until conference registration time to join or renew.

New! Online access to current and archived issues of JCRP! Simply login to your personal record via the CACR Membership Centre and click through on the JCRP link to be automatically logged in on the JCRP web site with access to full issues.

All things CCRR...

The Canadian Cardiac Rehab Registry (CCRR) is an online database used to track patient collected in Cardiac Rehabilitation (CR) programs across Canada. The goals of the CCRR are three-fold: to enable the ability to benchmark performance

across Canadian CR centres, to provide clinical research to support leading health outcomes and ultimately, influence health policy.

Why participate in the CCRR? Canadian CR programs are facing ever-increasing pressure from funders to demonstrate the effectiveness of their programming and therefore solidify future funding. The CCRR allows CR Programs to:

- Objectively evaluate patient progress thereby validating Program efficacy.
- Benchmark Program performance against similar CR programs participating in the CCRR.
- Compare patient status to treatment targets outlined by the Canadian Guidelines for Cardiac Rehabilitation and Cardiovascular Disease Prevention.
- Conduct research using CCRR data.

There is tremendous interest in CCRR participation among Canadian CR programs. Is your program seeking more information? A CCRR Webinar may be for you! CCRR Webinars are hosted by CCRR experts and designed to allow Canadian CR Programs to see the CCRR in action, understand the benefits to participation and answer questions specific to your Program's participation.

Is your Program ready for CCRR participation? Getting started is easy! The first step is to decide how you will share your Program's data. Do you use an electronic data capture system such as a Microsoft Excel spreadsheet, a Microsoft Access database, hospital or commercial electronic database system? You can upload that data directly from your electronic data-capture system to the CCRR. Do you collect data on paper? Why not consider directly entering your data into the CCRR instead? Once you decide how you are going to participate, CACR will support you in establishing the specifics of your participation, including navigating the details of information-technology and applicable privacy regulations.

If you or your Program staff are interested in learning more about CCRR participation, wish to take part in a CCRR Webinar or you have questions about CCRR participation, please contact Kristal at kkiland@cacr.ca.

Our First Position Statement

In keeping with our leadership role in the establishment of guidelines and evidence-based practice for cardiac rehabilitation (CR) and prevention, CACR is taking another big step

forward in our evolution with the release of our first position statement "Systematizing Inpatient Referral to Cardiac Rehabilitation: A joint policy position of the Canadian Association of Cardiac Rehabilitation and Canadian Cardiovascular Society". We are very pleased that this important area has been recognized by the Canadian Cardiovascular Society (CCS) and as referenced in the article, is just one part of an overall focus on entrenching cardiac rehabilitation as a standard of care.

This Position Statement addresses the underutilization of CR and the goal to optimize the referral of inpatients to cardiac rehabilitation. As all of us know, we must take immediate action to address the low rate of CR utilization in Canada, using referral strategies which have been demonstrated effective in increasing patient enrollment. Several tools are available to support change in CR referral practice and to promote patient enrollment and these are highlighted in the statement.

The Position Statement will appear online in the Canadian Journal of Cardiology (CJC) and Journal of Cardiopulmonary Rehabilitation and Prevention (JCRP) on April 1 and in the printed CJC, Vol 28, No. 2 March-April 2011. Both CCS and CACR have plans to add the full statement to their websites for the reference and use of members.

We wish to recognize the outstanding work of CACR member, Sherry Grace (York University), in leading the many key volunteers on the primary and secondary writing panels and review committee in the production of this position statement. We also extend our thanks to Louise Marcus and the CCS for their guidance, assistance, reviews and financial support.

Now what? The plan for CACR is to continue to pursue the issue of automatic referral and to address its most likely result – increased wait times. Sherry Grace is doing a follow-up research project "Promoting Systematic Inpatient Cardiac Rehabilitation Referral" funded by CIHR. CACR will host a conference session on current methods of handling wait lists and is pursuing funding for clinical tools for physicians and CR/chronic disease programs to assist the referral process and for patient support during this stressful time. There will be opportunity for members to become involved in these activities as they develop. Expressions of interest can be directed to mthomas@cacr.ca.



BACPR Annual Conference

Thursday 6th & Friday 7th October, 2011
Brighton, Thistle Hotel

Partnership working to improve care

in association with BACPR-EPG, BANCC,
BDA Heart UK, BHF, BSH, PCCS, EACPR and CACR

**Join us at BACPR 2011 in Brighton; the meeting place
for all health professionals involved in cardiovascular
disease prevention and rehabilitation.**

Keynote lectures from international experts

- Dr Stephan Gielen (Germany) on
Highlights from EuroPrevent Geneva 2011
- Dr Bob Reid (Canada) on Team Behaviour Change
- Dr Barry Franklin (USA) on
Lifestyle Modification Counselling

Breakout sessions

- Highlights from PCCS 2011
- Physical Activity Consensus Statement
- Appetite, Glycaemic Index and Obesity
- Smoking Cessation
- Triggers for Cardiac Events
- Congenital Heart Disease

Plus

- BHF and BACPR Celebrating Cardiac
Rehabilitation Award
- Oral and Poster Presentations
- Gala dinner with comedian
John Ryan

