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## Ethnicity

# Ethnicity and Cardiac Rehabilitation Research and Care

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**G**rowing diversity in Canada as a result of immigration and the knowledge that risk factors for cardiovascular disease (CVD) vary dramatically by ethnic group<sup>1</sup> necessitates the need for ethnicity-based research in CVD care. Similar to the identified need for gender-based analyses of health issues,<sup>2</sup> CVD research must examine how CVD risk varies by ethnicity, and how ethnicity may affect access to and the effectiveness of currently structured healthcare systems and

programs, including cardiac rehabilitation (CR). To begin a dialogue about how to begin to assess and address ethnicity within both CR research and clinical practice, we developed four relevant questions and sought the opinions and experiences of leading researchers in the area of ethnicity and CVD/CR. The following is a summary of the responses we received from three of Canada's leading clinicians and researchers in ethnicity and cardiac care: Dr. Milan Gupta, Dr. Kathryn King-Shier, and Dr. Nadia Khan.

*"Growing diversity in Canada as a result of immigration and the knowledge that risk factors for cardiovascular disease (CVD) vary dramatically by ethnic group<sup>1</sup> necessitates the need for ethnicity-based research in CVD care."*

**Question 1. What is the typical ethnic demographic of the clientele compared to the health care providers at your CR site or within your cardiology practice?**

Dr. Milan Gupta: "Our CR population [in Toronto] is about 40% South Asian. The majority of the remaining population is white Caucasian. The vast majority of our CR staff members are white Caucasians, with few South Asian staff. The same applies to our clinical practice, although we have a substantial number of South Asian nurses working in the CCU, and on the cardiology ward."

Dr. Nadia Khan: "Patients in Vancouver are more likely to be Chinese or South Asian with ischemic heart disease, and the care providers are more likely to be white and English-speaking. While most South Asian patients are English-speaking, most Chinese patients are non-English-speaking."

**Question 2. How do you address barriers to care resulting from ethnic differences between clientele and**

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# From the Editor

Lea Carlyle, MA

Disproportionate rates of cardiovascular diseases (CVD), including coronary heart disease and stroke and their related risk factors are evident in certain ethnic groups. Epidemiologic studies show that South Asians have higher rates of diabetes and are at risk for major cardiovascular events at a younger age and have a greater mortality from CVD compared to white Europeans. Canada's Aboriginal population has a greater incidence of diabetes and obesity, with rates of diabetes about three times the national average. Black people in the United States and Canada have a higher prevalence of hypertension and rates of physical inactivity are found to be higher in South Asians and Chinese.

There are many facets to ethnicity that need to be considered when addressing CVD and its risk factors in different populations. These include the proper measurement of ethnicity, recognizing cultural differences in beliefs about health as well as providing culturally appropriate primary and secondary prevention programs.

This international issue of the CICRP will expand on these issues starting with our Feature articles from three different countries. Dr. Contractor and colleagues from the Asian Heart Institute in Mumbai, India review some of the risk factors that contribute to the increased risk of CVD in the South Asian population as well as their attitude and beliefs toward health and illness, stress and coronary heart disease, smoking, exercise, and diet. Our second Feature article has been compiled by Danielle Rolfe. This article summarizes the responses from Dr. Milan Gupta, Dr. Kathryn King-Shier, and Dr. Nadia Kahn that relate to barriers to care resulting from ethnic differences, collection of ethnicity data, conducting research on ethnicity in cardiac rehabilitation (CR) and improving access and quality of care for ethnic groups. Our final Feature article

comes from Alison Ketchell and colleagues from the UK who provide insight into the reasons behind poor uptake and attendance to CR in minority ethnic groups.

In the References and Reviews, Danielle Rolfe highlights the cardiovascular risk factors in ethnic populations as well as experiences and participation rates in CR in underserved populations. We have also included a brief overview of what type of information on ethnicity can be found on the Heart and Stroke Foundation of Canada and the British Heart Foundation websites.

For those of us who work in an urban CR setting, we don't often encounter patients who chop wood for their stove or hunt for their food. However, for Dr. Amy Hendricks, an internal medicine physician in Northern Canada, these are the things she takes into consideration when providing care to cardiac patients in the North. In our Case Study, Dr. Hendricks shares her experience of working with patients in Northern Canada by telling us the story of Archie, a traditional Aboriginal elder.

Much work has gone into the International Charter on Cardiovascular Prevention and Rehabilitation (formerly know as GAP-CR). Dr. Sherry Grace provides us with an update and a copy of the Charter is included for your review. You'll have an opportunity to share your thoughts on the Charter at the CACR Web education session in May.

Please do not hesitate to contact any member of the Editorial Board with suggestions for upcoming CICRP issues.

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**care providers at your site (e.g., are different cuisines incorporated into nutrition counseling sessions? Do you provide language translation services, and if so, how? Is there a need for, and/or how do you provide care for women unable to participate in co-ed classes as a result of cultural differences?)?**

Dr. Milan Gupta: “We are conducting a pilot research study funded by the Heart and Stroke Foundation of Ontario to determine if culturally-appropriate counseling, when provided to South Asian survivors of acute coronary syndrome, improves outcomes compared to standard care. In the intervention arm, South Asian patients and their spouses are grouped together in classes and taught in Punjabi, by South Asian pharmacists, cardiologists, dietitians, and nurses, regarding best practices to improve outcomes. We also have a South Asian Diabetes Education Clinic that provides specific nutrition and dietary advice by South Asian dietitians, and diabetes management advice by South Asian nurses. However, we lack the funding to provide such culturally-appropriate services to the general cardiovascular population outside the context of a research study.”

Dr. Nadia Khan: “[In Vancouver] there is language translation offered to patients, or more typically, translations are conducted through family members. Dietitians do have dietary discussions tailored to ethnic types of food (e.g., congee [a type of rice porridge popular in many Asian countries]). There is no specific intervention for women that I am aware of although this would be very valuable.”

**Question 3. When you conduct your research, is ethnicity data typically readily available to enable your intended data analyses?**

Dr. Milan Gupta: “Not usually.”

Dr. Nadia Khan: “Ethnicity data is not available in administrative data, so we have used surname analysis. We are collecting data directly from patients (by self-report) in our primary collection studies, which is the gold standard.”

Dr. Kathryn King-Shier: “There is rarely appropriate ethnicity-related data in databases. The main reason for this, I believe is that there is a lack of consistent definitions, which leads to extreme difficulty in getting valid data. For example ‘race’ and ‘ethnicity’ are not synonymous...yet, they are occasionally treated as such. One specific example would be the term ‘Black’ (often seen under ‘ethnicity’). Actually, ‘Black’ is more of a term regarding race than it is of ethnicity or ethnic origin.”

**Can you describe how this data is collected for either retrospective or prospective data analyses (i.e., what are the processes involved in collecting this data, ethical considerations, etc.)?**

Dr. Milan Gupta: “We usually have to manually

assign ethnicity based upon surname analysis, or use proprietary software to assign ethnicity retrospectively. Collecting ethnicity information prospectively is not a priority at our hospital, and there is sensitivity over the issue, along with limited staff to ask [about this information] and [to] document ethnicity.”

Dr. Kathryn King-Shier: “Lately, regardless of the primary study focus, I obtain ethnicity data. It is very important to begin to characterize study samples not only based on sex/gender, but also on race/ethnicity. My work is typically focused on Caucasian, South Asian, and Chinese patients. Thus, I ask patients about their origins or the origins of their ancestors.”

**What recommendations would you make to others wishing to conduct research on ethnicity in cardiac care settings (e.g., processes to facilitate analyses, particular variables that should be collected, etc.)?**

Dr. Milan Gupta: “Ethnicity should be self-declared by the patient prospectively, along with country of birth and year of immigration to Canada if appropriate.”

Dr. Kathryn King-Shier: “Quan et al<sup>3</sup> did a small survey a few years ago and found that [most] people (>84%) really would not mind providing ethnicity data for their health records, if asked. I think this would be one mechanism of garnering such data. Another [way to gather data on ethnicity] would be to develop appropriate definitions (decide on country ancestral origin, for example) and use them consistently.”

**Question 4. What general suggestions might you have (with respect to research or clinical care) in order to improve access to and quality of cardiac care for ethnic groups?**

Dr. Milan Gupta: “We need to better understand the unique needs and perspectives of various ethnic groups when it comes to CR. Some groups have limited access to CR programs, or [face] transportation difficulties, language barriers, financial barriers and so on. [Some ethnic groups] do not appreciate the benefits of CR, whereas others are reluctant to wear informal exercise clothing in front of others or gather with people from other ethnic groups.”

Dr. Nadia Khan: “I think there needs to be a further barriers-analysis. These [ethnicity-specific] barriers include language, time and accessibility for cultural groups (i.e., a lack of transportation). One wonders about referral problems for ethnic groups, and whether there could be a women-only group, or CR for the family.”

Dr. Kathryn King-Shier: “One major issue in ethnicity-focused research is the need for valid translations of study materials. This has become a huge issue in my work. Simple backward/forward translation is absolutely insufficient. We published a manuscript<sup>5</sup> focusing on the work we did to establish

translational and cultural equivalence of study measures...it represents more than a year of work in preparing materials for ONE study! To improve access to care or quality of care in cardiac rehabilitation as it pertains to ethnic groups, the first step would be to get people from all ethnic groups to cardiac rehabilitation. Currently this is not what generally happens. In our experience, South Asian [clients] tend to be 'busy' managing family issues, whereas Chinese [clients] will make sure that the affected family member attends [CR] as a mechanism of seeking the 'best' care. These observations stem from some qualitative work we did some time ago.<sup>6</sup>

Thereafter, there are [three] major streams of work to be done. One stream would be to focus on ethnic differences in uptake, process, and outcomes of cardiac rehabilitation referral and attendance in terms of attendance/adherence. Another stream would be to assess the outcomes in a more physiological way (e.g., Is there ethnic variation in cholesterol or blood pressure response to exercise?). A final stream might be to determine the long-term benefit of [CR] attendance for particular ethnic groups, in terms of adherence to recommendations, morbidity and mortality.”

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*“To improve access to care or quality of care in cardiac rehabilitation as it pertains to ethnic groups, the first step would be to get people from all ethnic groups to cardiac rehabilitation.”*

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These clinicians and researchers have highlighted a number of issues to be considered when considering how best to meet the needs of an ethnically diverse clientele in a CR setting, and how research can be designed to identify the cardiac care needs of particular ethnic groups who may be currently underrepresented in the existing cardiac literature and/or inadequately served by currently structured CR programs. From a research perspective, there is a need to obtain accurate data about ethnicity (most easily obtained directly from patients), and to then conduct studies about what barriers particular ethnic groups may face in accessing CR care, and whether different groups have different CR outcomes both in the short and long-term. Providing culturally appropriate clinical care requires that the content, method and mode of CR care match the needs of ethnically diverse clientele (for example, providing culturally relevant dietary advice, counseling in languages other than English, and gender/ethnicity-specific CR classes). There is a need for greater funding to support the development of culturally and linguistically appropriate services. Further enhancing the ethnic diversity of CR clinicians may also help to bridge the gap that currently exists between clients and CR care providers.

Notes on Contributors:

**Milan Gupta, MD, FRCPC, FACC**

Associate Clinical Professor, Division of Cardiology, McMaster University; Assistant Professor of Medicine, University of Toronto; Affiliate Scientist, Li Ka Shing Knowledge Institute, St. Michael's Hospital Scientist, Division of CV Surgery, St. Michael's Hospital

Dr. Gupta is a co-founder and past-chair of the Greater Toronto Area Community Cardiovascular Specialists (GTACC), and past Board of Directors member of the Cardiac Care Network of Ontario. He is Treasurer and Executive member for the Canadian Cardiovascular Society, and has served as chair of the Local Arrangements Committee and member of the Scientific Program Committee for the Canadian Cardiovascular Congress. He is also the Medical Co-Director of the Canadian Cardiovascular Research Network. Dr. Gupta's research interests include South Asian heart disease, management strategies for acute coronary syndromes, and emerging risk factors in vascular disease.

**Kathryn King-Shier, RN, PhD**

Professor and Heritage Health Scholar; Faculty of Nursing and Department of Community Health Sciences; University of Calgary

Dr. Kathryn King-Shier is a cardiovascular nurse scientist with expertise conducting research in vulnerable populations. She has led several interdisciplinary research teams and has the experience and knowledge to guide the researchers and decision-makers in Phase 2, including those from AHW and the CDM programs. She has a multi-methods program of research, funded by CIHR and HSFC, which focuses on cardiac recovery and determinants of heart health decisions.

**Dr. Nadia Khan**

Associate Professor, Department of Medicine, Division of General Internal Medicine, University of British Columbia

Dr. Nadia Khan's research interests include social determinants of cardiovascular disease, and exploring gender and ethnic differences in patients with hypertension. Dr. Khan has received many prestigious supporting grants including CIHR operating grants and Michael Smith awards. She is currently supported by a Michael Smith Foundation for Health Research Career Scientist Award.

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## Cardiovascular Risk in the South Asian Population

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### Introduction

The South Asian region has undergone an epidemiological transition over the past decade, and in most South Asian countries, chronic non-communicable diseases (NCD) are the leading cause of death, as opposed to infectious diseases. The World Health Organization (WHO) published a new regional report in 2011 describing the current burden of NCD in the South-East Asia Region (SEAR), their underlying risk factors and socioeconomic determinants.<sup>1</sup>

The paper reported alarming statistics of 14.5 million total deaths in 2008 in the SEAR, of which 7.9 million (55%) were due to NCD. Cardiovascular diseases (CVDs) alone accounted for 25% of all deaths. Chronic respiratory diseases, cancers and diabetes accounted for 9.6%, 7.8% and 2.1% of all deaths, respectively. However, these numbers are still likely underestimates as they do not account for undiagnosed and asymptomatic CVDs. NCDs were common both in urban and rural areas. In urban areas of India, CVDs ranked first, claiming 33% of the top 10 causes of deaths.<sup>1</sup>

### Risk Factor Profile

A further disturbing fact is the early occurrence of CVD in the South Asian Region. The INTERHEART investigators, 2007, completed a detailed analysis focusing on the CVD risk profile among the 1732 cases and 2204 age-matched controls from the five South Asian countries and 10 728 cases and 12 431 controls from other countries. The results showed that compared with study participants from the other 47 countries in the world, South Asians had a lower mean age for first acute myocardial infarction (53 vs 58.8 yr of age).<sup>2</sup>

South Asians have a 40-50% greater mortality from CVD compared to the indigenous white European population.<sup>3</sup> There are several hypotheses that have been drawn to explain premature CVD mortality in South Asians. These include a higher prevalence of the metabolic syndrome and diabetes mellitus, a

pro-atherogenic diet, a lack of physical activity, and high levels of homocysteine and Lp(a). South Asians, especially women, are more likely to present with 'atypical' symptoms and more likely to be diagnosed as 'non-cardiac'.<sup>4</sup>

The INTERHEART study also reported that the prevalence of risk factors (blood apolipoproteins (ratio of apoB to ApoA<sup>1</sup>), smoking, hypertension, diabetes mellitus, abdominal obesity (assessed by waist-to-hip ratio), and psychosocial stressors was higher in South Asians when compared to other ethnicities. In addition, South Asians had lower rates of protective factors (physical activity, daily intake of fruits and vegetables, and regular but moderated alcohol consumption). Moreover these risk factor levels were present at a younger age explaining the prevalence of CVD earlier in South Asians as compared to the rest of the world.<sup>2</sup>

The WHO SEAR Report accounted an unhealthy diet, physical inactivity, tobacco use, and harmful use of alcohol as the top four reasons responsible for the metabolic risk factors namely overweight/obesity, raised blood pressure, raised blood glucose, and raised blood cholesterol. High triglycerides and low HDL are the most common dyslipidemias seen in this population. South Asian women are much more likely to have low levels of protective HDL cholesterol when compared to the European counterparts. The WHO Expert Consultation concluded that the proportion of Asians with a high risk of type 2 diabetes and CVD is substantial at BMIs lower than the existing WHO cut-off point for overweight (> 25 kg/m<sup>2</sup>). In an effort to highlight the problem of obesity in India, the Health Ministry of India revised the cut-off for overweight to >23 kg/m<sup>2</sup> in 2008.<sup>5</sup>

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*"South Asians have a 40-50% greater mortality from CVD compared to the indigenous white European population."<sup>3</sup>*

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### Attitudes and Beliefs

Social, cultural, economic and environmental

conditions have an enormous impact on population health.<sup>1</sup> In addition, the belief about the cause or the factors that individuals typically attribute to the development of their illness has an impact not only on the disease mortality and morbidity itself but also whether the individual will adopt the appropriate preventive measures to avoid or halt the progression of the disease.<sup>6</sup>

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*“Social, cultural, economic and environmental conditions have an enormous impact on population health.”*

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### **1. Fatalistic approach to health and illness**

Darr et al, did a qualitative study to understand the health beliefs of South Asians in the UK. For many participants there was a strong belief that they had been fated to have coronary heart disease (CHD), irrespective of ethnicity. These participants thought that there was nothing that they could have done to prevent their CHD from happening and found it difficult to identify any cause. South Asians strongly believed that it was God, and not the individual who was responsible for the condition.<sup>6</sup> Stone et al 2005, also had similar conclusions drawn in her study wherein South Asians with diabetes in the U.K. accepted their diagnosis with resignation and expressed the view that the condition had been “sent by God”. Most people have family members and friends with the disease, and accept it as inevitable, and are therefore less motivated to attempt to control it.<sup>7</sup>

### **2. Stress and heart disease**

Stress is perceived as one of the significant contributors to the development of their CVD.<sup>6</sup> Some participants report that they have been living under stressful circumstances for a prolonged period and that as a result stress had accumulated over time. Individuals who had been caring for family members with ill health for a prolonged period, those experiencing work-related problems, and those dealing with stressful family situations thought that this had had a negative impact on their health. Other patients thought that their CHD had developed as a result of the stress they experienced because of a particular life incident, for example, the sudden death of a family member.

### **3. Tobacco and smoking**

Tobacco chewing and cigarette smoking behaviour varies in this population. In general, it was common for participants to continue smoking despite being aware of the detrimental effect to their health. Most of these individuals considerably reduced the number of cigarettes they smoked but found complete cessation difficult.<sup>6</sup>

### **4. Beliefs about exercise and physical activity**

Fischbacher, Hunt and Alexzander, 2004 did a literature review to study the physical activity behavior in South Asians. They concluded that Indian, Pakistani and Bangladeshi men were 14, 30, and 45% less likely than the general population to meet current guidelines for physical activity. Levels of physical activity were lower in all South Asian groups than the general population. The Health Survey for England reported that only 1% of Bangladeshi women, and 2% of Indian women above 55 years, reported a high level of physical activity and were very unlikely to take part in any type of sporting activity.<sup>8</sup> Darr et al reported that lack of time and the presence of other co-morbidities prevented some individuals from participating in what they considered an appropriate amount of physical exercise. Others perceived that vigorous exercise was unnecessary in the context of their advancing age and that keeping mobile and active was preferable. The majority of participants, irrespective of ethnicity, reported walking as their preferred form of physical exercise, but few were successful in walking regularly. Participants identified a number of barriers to walking outdoors. The greatest problem was the variability in weather conditions, which made it difficult to plan walks as part of one’s daily routine. Some individuals also had physical symptoms that discouraged them from walking, such as breathlessness, swollen feet, dizziness, and excessive tiredness. Moreover, cold weather precipitated symptoms in those with angina, making them reluctant to take walks during the winter months. A number of participants raised concerns about the distance they had been recommended to cover while walking. This was more of an obstacle for South Asian participants who were less likely to walk as an outdoor pursuit and subsequently found it more difficult to think of places where they could exercise.<sup>6</sup>

Another study by Sriskantharajah and Kai in 2006 studied the attitude of South Asian women with CVD and diabetes towards physical activity. The results showed that women did not acknowledge the importance of physical activity in limiting the progression of the disease. They were unaware of the specific guidelines of a structured exercise programme and believed in being active in their daily chores rather than engaging in a structured exercise programme.<sup>9</sup> Other barriers to exercise include lack of awareness and uncertainty, low priority, over protective attitude of family, worry about activity being harmful and mixed sex exercise facilities.

### **5. Dietary Considerations**

South Asian meals use a variety of fats, including “ghee,” a clarified butter that is traditionally used in South Asian cooking. Some participants report that since being diagnosed with CVD they were eating dishes that were cooked in less fat, but not everyone was willing to compromise the taste of their meals to improve their health. A number of participants

had reduced their intake of fried foods. Grilling foods rather than frying them was seen as one approach to reducing dietary fat intake. Some South Asian individuals reported that it was not always possible to modify their fat intake, especially on social occasions or when visiting others. Few South Asian patients mentioned the substitution of some of their dietary components with lower fat alternatives. Furthermore, although a few patients mentioned that they had switched to using semi-skimmed milk, others admitted that they still preferred to drink full-fat milk. South Asians were less likely than their European counterparts to cut down on their intake of sweet foods.<sup>6</sup> In the U.K., one in three Asian Indian diabetics have been reported as consuming sweets, high in sugar content, at least once a week. Approximately 80% consumed tea with high sugar content, and 75% ate snacks cooked in fats/oils daily.<sup>10</sup> Related to the dietary practices are fasts and feasts. Muslim patients who observe Ramadan face additional challenges to maintain a steady blood glucose level during this month. In Hindus, there are several periods of fasting throughout the year from one to nine days. These fasts are usually preceded and followed by feasts, and present a challenge for self-care in the South Asian diabetic.<sup>11</sup>

Thus cultural issues, dietary practices, low levels of physical activity, irrational beliefs, lower stress thresholds are all challenges faced in the cardiac rehabilitation setting while catering to the needs of the South Asian population.

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## Culturally Competent Cardiac Rehabilitation

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We know that people in some black and minority ethnic (BME) groups have a higher prevalence of cardiovascular disease (CVD) than others. Whilst coronary risk factors can be divided into biological, psychosocial and behavioural factors understanding the individual contribution of each factor to overall coronary risk is complex. The interaction between biological, psychosocial and behavioural factors is potentially powerful and whilst several studies have large sample sizes, reliable data on health behaviours, family history or socio-economic status is not always available making it difficult to interpret ethnicity as an independent coronary risk factor. Moreover many studies exploring ethnic differences use heterogeneous ethnic classifications. This adds an additional layer of complexity to the picture. What is clear is that there do appear to be some ethnic differences in cardiovascular risk among different racial / ethnic groups.

Biological factors such as insulin resistance and diabetes have been suggested as important coronary

risk factors that might explain variation across ethnic groups; variations in insulin sensitivity linked to higher rates of Type 2 diabetes are evident in South Asians, Hispanics and African American people compared to White counterparts<sup>1-3</sup>. Variability in adiposity across ethnic groups may also explain differences in CVD risk<sup>4</sup>. Some of these differences can be attributed to socio-economic factors<sup>5</sup> and others to cultural differences in health behaviours<sup>5,6</sup>. More research is needed to clarify the interplay between biological and genetic differences and more socio-cultural differences, as it is likely that all are involved to some extent.

There is no cure for atherosclerosis and CVD represents a significant global health burden. For people with established disease secondary prevention is the treatment option that slows disease progression. Cardiac rehabilitation (CR) is an important part of secondary prevention. Despite the evident mortality and morbidity benefit of CR post myocardial

infarction (MI), percutaneous coronary intervention or coronary artery bypass graft, referral, attendance and adherence in the UK remains consistently below the National Service Framework coronary heart disease (CHD) target of 85%<sup>7</sup> at 42% of eligible groups<sup>8</sup>.

A disparity in uptake across different groups particularly among older adults<sup>9</sup>, women<sup>10</sup>, BME<sup>10</sup> and socially deprived groups<sup>11</sup> has previously been reported. However, the latest National Audit of Cardiac Rehabilitation (NACR) tentatively suggests that uptake and outcomes are similar for BME groups, while acknowledging that small group numbers and bias towards reporting by centres keen to ensure an equitable service may have skewed their data<sup>8</sup>. Once referred, approximately 25% fail to attend CR programmes to completion usually withdrawing before phase 3, most commonly citing lack of interest and patient refusal, ongoing investigation, locality and physical incapacity<sup>8</sup>. The data does not specify 'drop out' rates across particular groups and therefore specific inferences about BME attendance in the UK cannot be made. A Canadian multi centre cross sectional study compared attendance at CR among patients of European (71%), South Asian (14%) and Chinese (15%) origin. Attendance rates were lower in the South Asian and Chinese patients compared with the Europeans and increasing age and being female across all groups was associated with lower attendance<sup>12</sup>.

Minimal evidence exists regarding the explicit needs of BME groups. Current research related to CR and black (Afro-Caribbean) and minority ethnic groups tends to focus upon those of South Asian origin (Indian, Pakistani, Bangladeshi and Sri Lankan). The proportion of Eastern European's, also known to be at high risk from CHD, residing in the UK has increased in recent years, yet little is known of their experience or preferences for CR. A literature review in 2005 concerned with improving uptake and adherence to CR identified only one North American and one UK study which included ethnic minorities<sup>13</sup> with subsequent studies largely drawing upon qualitative methodology.

A qualitative study of people of Muslim faith, and Pakistani, Indian or Bangladeshi background revealed several reasons for non attendance at CR<sup>14</sup>. As with other groups, social support and healthcare professionals positively influenced access while barriers included poor health, lack of time and transport. Specific negative experiences such as communication problems, language barriers and misinterpretation were associated with non attendance as were gender, religious views, cultural norms and family pressure. Mixed gender groups were cited as particularly problematic by women partially related to dress code and the propriety of exercising in front of men. A poor appreciation of the role of the nurse

and CR, compounded by language difficulties were also associated with non attendance. Additional issues cited as problematic by Asian women were the timing of classes, particularly if they coincided with religious events such as Ramadan<sup>15</sup> and language barriers specific to women of Indian and Pakistani descent<sup>16</sup>. Family support was identified as an important incentive to attend<sup>16</sup>.

In an effort to address poor uptake and attendance, the BRUM trial sought to compare the effectiveness and cost efficiency of a traditional hospital versus home based model of CR among a multi ethnic population<sup>17</sup>. The study provided follow-up by a rehabilitation nurse who spoke Punjabi and an audiotape of an abridged version of the Heart Manual in Punjabi accompanied the manual for patients with a limited command of English. A small sub group of participants including<sup>15</sup> from ethnic minority groups described reasons for non adherence with home and centre based CR<sup>18</sup>. Co morbidity and continuing cardiac problems preventing exercise, or a lack of motivation to exercise alone in the home based group was reported particularly among women. They also cited domestic duties, while ethnic minority women were more likely to cite ill health as reason for non adherence. The majority reported some positive outcomes from CR with respect to lifestyle changes<sup>18</sup>.

Subsequent meta-analyses and systematic reviews have concluded that home and centre-based CR appeared to be equally effective and cost efficient in improving both clinical and health-related quality of life outcomes among low risk adults post MI or who had undergone revascularisation<sup>17-20</sup>. Their findings support the view that home-based CR programmes such as the Heart Manual not only increase patient's choices in line with their preferences but may also improve uptake of CR in all groups. Certainly consideration of cultural and language differences when promoting exercise, dietary advice and educational materials within home based models has the potential to improve uptake and adherence in BME groups and as such requires further refinement, implementation and evaluation<sup>21</sup>. More importantly, it is evident that several ethnic and cultural differences exist between South Asian and White European patients among similarities irrespective of ethnicity such as health status<sup>16</sup>. It is therefore imperative that CR services avoid generalisations about the impact of ethnicity, but rather 'develop a cultural repertoire to engage with diversity and difference' in order to recognise when culturally mediated differences do and do not impact upon an individuals' likelihood to access and adhere to CR<sup>16</sup>.

Further research is needed to better understand when ethnicity impacts upon coronary risk and engagement with primary and secondary prevention strategies and when it does not<sup>22</sup>. In particular we need to consider factors that impact on the uptake

and engagement with CR in BME groups. A better understanding of such factors will enable us to develop culturally competent approaches to the care of people diagnosed with CVD.

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## BACPR Response to RAMIT Study

[http://www.bacpr.com/pages/news\\_box.asp?NewsID=19495621](http://www.bacpr.com/pages/news_box.asp?NewsID=19495621)

A study has been published at HeartOnline which has caused a great deal of concern among members. The study by West et al. is of a randomised controlled trial of cardiac rehabilitation (CR) that recruited patients from 14 hospitals from 1997 – 2000. Centres were identified via a survey and had to be willing to randomise patients to receive (or not) a CR programme. Consequently in this study of 1813 patients, half were randomised to CR, and half were randomised to usual care without CR. The patients were followed up for up to 9 years. The study found no difference on the vast majority of measures including deaths from any cause, quality of life or psychological

well-being. The abstract to the study concludes: “The value of cardiac rehabilitation as practised in the UK is open to question.”

Members have already received comments about this study from cardiologist colleagues and managers, and in these times of members receiving threats of cuts to services, this paper has the potential to be damaging. So what arguments can you give as a response if queried about this study?

Please refer to the link above to review responses from the BACPR.

## References and Reviews

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### Cardiovascular Risk Factors in Ethnic Populations within Canada; Results from National Cross-Sectional Surveys

*Liu R et al. Open Medicine 2010;4(3):E143-E153*

This Canadian study is among the first to examine the prevalence of cardiovascular (CV) risk factors among various ethnic groups. The authors' examination of CV risk factors among ethnic groups in Canada is important for planning appropriate public health prevention strategies and healthcare services, such as cardiac rehabilitation (CR). Using data from the 2000, 2003, and 2005 versions of the Canadian Community Health Survey (CCHS), which is a national survey of Canadians aged 12 years and older, the authors compared CV risk factors between white respondents and visible minorities (defined as all ethnic groups other than white and Aboriginal).

The authors reported a number of differences in CV risk factors between visible minorities and white respondents, but also described differences between different visible minority groups. Compared to white respondents, members of visible minority groups (considered collectively) had a lower prevalence of diabetes, hypertension, smoking, obesity (BMI  $\geq$  30), but were more likely to be physically inactive. After adjusting for differences in sociodemographic characteristics and chronic health conditions, diabetes and hypertension were found to be more prevalent among South Asian, Filipino, South East Asian and black respondents compared to white respondents. Chinese, Japanese, Korean, South Asian, Filipino, and South East Asian respondents were less likely to be obese than white respondents. Additional analyses showed that some of these risk factors differed within each ethnic group based on age and gender. For example, people with Chinese and South Asian ethnicity were the least active ethnic groups, however, older Chinese respondents (aged 65+ years) were more active than their middle-age counterparts, and older South Asian respondents were less active than their middle-age counterparts. Rates of smoking were higher among white females compared to females from visible minorities.

An important point of discussion that is included in this study relates to the fact that Canadian data on ethnicity has limitations. For example, the category of 'black,' as an ethnicity, fails to differentiate between African-American, Caribbean, or African heritage, which represent very diverse and distinct cultural groups with very different social histories. Thus, there is a need for greater critical analysis of current

classifications within population-based surveys, despite early best efforts by some researchers to collect such data in order to facilitate analyses based on ethnicity. Another limitation of using population-based surveys to assess differences in populations based on ethnicity, is that the tools used (such as the CCHS) may have inherent limitations that result in study findings that attribute differences to ethnicity, rather than to limitations of the measurement tool. For example, the CCHS (like many population-based surveys) primarily collects physical activity information related to leisure-time participation, and the activities are typically reflective of traditional Western sports and physical activities. In this study, visible minorities were reported to have a lower prevalence of all CVD risk factors, with the exception of physical inactivity. It is unknown, however, whether these individuals engaged in greater occupation and transportation-related activities compared to white respondents, despite a lower level of leisure-time sport and exercise participation. Despite these CCHS-related limitations, this study offers findings that are key to the initiation of the process of developing culturally diverse and appropriate health promotion programs. That is, by understanding CVD risk factors among visible minority groups, CR professionals may be better informed to develop outreach initiatives to particular ethnic groups that may lead to improved CR participation and a reduction in CVD risk.

### A Narrative Review of South Asian Patients' Experiences of Cardiac Rehabilitation

*Galdas PM et al. J Clin Nurs 2011;21:149-159*

This recently published review explores the available English-language empirical evidence of South Asian patients' experiences with cardiac rehabilitation (CR), published since 1999. The authors posit that individuals of South Asian origin have a higher risk of premature death from coronary heart disease (likely due to abdominal obesity and insulin resistance) compared with other ethnic groups, and this increased risk is compounded by their demonstrated low levels of CR participation in the US, Canada, the UK and Australia. Key themes identified from their review of the literature on South Asians' CR experiences included issues related to exercise, culture and religion, program access and structure, and communication and language.

Related to exercise as a component of CR, issues that negatively affected the participation of South Asian patients included a lack of social support for

exercise, with females reporting less social support from their family members compared to males. Co-educational environments typical of CR programs (involving males exercising alongside females), being unaccustomed to Western modes of exercise (involving exercise equipment in a gym environment) and exercise attire that is incompatible with traditional South Asian dress may deter some women of South Asian origin from attending CR. By developing and offering culturally competent CR programs for South Asian clients, however, it is reported that participants can derive greater physical benefits and are more likely to continue to exercise upon discharge when compared with traditional CR programs.

Cultural- and ethnic-specific CR programs also have the potential to improve patient adherence. Such programs can address the cultural and religious disparities that may exist for South Asian clients attending traditional programs in terms of the meanings and understandings that they hold about CVD. For example, Western models of CR may not reflect many South Asian's beliefs about CVD etiology (e.g., that CVD is caused by lifestyle behaviours versus a belief that a cardiac event is a sign from God) and the level of control that one has in terms of CVD and its sequelae (e.g., that exercise and diet can improve outcomes versus a fatalistic notion about CVD).

Similar to other underrepresented groups in CR, a lack of physician referral, time and transportation to attend CR posed barriers to South Asian clients' enrollment and attendance at CR. These barriers, however, are complicated by different issues than what is reported in the literature on access for other groups, such as women or individuals of low socioeconomic status. For example, some South Asian women reported that they would need their husband's agreement to attend CR, and for some younger CR attendees, transportation was a reported barrier because it is considered culturally inappropriate for them to be in the presence of young male taxi drivers. The timing of CR classes can conflict with the call to prayer for Muslim women. An inability to speak English, and a lack of interpreter services are deterrents from CR attendance for many South Asian clients. Having family members translate for clients may lead to additional issues, as patient confidentiality is breached, and family members may feel uncomfortable conveying negative aspects and the seriousness of the cardiac condition. Not surprisingly, this language barrier also affects access to relevant health information.

This paper is the first to review the empirical literature on South Asian patients' experiences of CR. In particular, their description of the needs of South Asian women and the barriers that they face in accessing and participating in CR highlights how gender and ethnicity can intersect to create unique barriers not faced by men of the same ethnicity, or

women of a different ethnicity. Additionally, the authors' discussion of the diversity that exists within the South Asian population highlights the need to conduct research to better understand and develop culturally relevant CR programs. Its broad overview of the issues and specific examples that highlight the unique context and needs of South Asian CR clients makes this paper essential reading for CR professionals who work with an ethnically diverse client population that may include South Asian clients.

## Cardiac Rehabilitation Participation in Underserved Populations: Minorities, Low Socioeconomic, and Rural Residents

*Valencia HE et al. J Cardiopulm Rehabil Prev 2011;31:203-210*

This US-based review paper has begun to address the dearth of literature on the cardiac rehabilitation (CR) participation of underserved populations, including minorities, low socioeconomic and rural residents. Given the focus of ethnic minority populations for this issue of CICRP, however, the following review will summarize Valencia et al.'s observations and suggestions pertaining to the participation of racial and ethnic minority groups in CR. As an initial point of clarification that the authors briefly review, it is imperative that reference to 'race' and 'ethnicity' not be confounded. The authors aptly describe race as a social construct, and its identification is a subjective and limited process (e.g., defining someone as 'Black' or 'White,' while failing to acknowledge multiracial identities) with measurable consequences and effects (i.e., discrimination based on sociopolitical inequities). In contrast, ethnicity is typically self-identified and represents not only a unique geographical location, but also a shared heritage, language, and culture. This review, however, grouped racial and ethnic minorities together as an underserved group in CR.

Valencia et al. highlight both the ethical need to ensure that ethnic minority groups have equal access to CR services, but also the consideration that cardiovascular disease (CVD) may be more prevalent among particular ethnic groups, and thus underscores the need for CR to be accessible and relevant to these populations. In reviewing the extant literature on CR referral by minority status (in the US), a number of studies demonstrated that minority status predicts lower referral rates to CR, and lower CR participation. One study reviewed demonstrated the need to consider how particular identities (e.g., race, ethnicity, gender, socioeconomic status, age, etc.), and the intersections therein, may create even more significant barriers to CR than ethnicity alone. For example, one study found that 'black' women were nearly 60% less likely to be referred to enroll in

outpatient CR compared to 'white' women.

In exploring the barriers to CR participation in ethnic and racial minorities, studies highlighted how communication poses a significant barrier to CR when CR staff members are only able to communicate in English with non-English speaking patients. While communication barriers can be rectified with interpreter services, a greater challenge exists when CR programs as they are currently structured (i.e., with a focus on individual risk factor modification such as exercise) are at odds with the ways in which patients from other cultures conceptualize CVD etiology (e.g., the belief among some South Asian patients that CVD is caused primarily by worry and stress). The review also points to a need for greater diversity among CR and other healthcare professionals, as one study reviewed reported that among 960 CR professionals surveyed, 96% identified themselves as 'white.' In addition, the authors argue for the need to more accurately identify individuals' ethnicity, and suggest that self-reporting and direct interviews are more likely to lead to accurate classifications compared to the current practice of healthcare professionals'

observation, or more commonly avoidance of the issue altogether.

The authors highlight the important need for initiatives (mandated at an institutional level or higher) to provide the necessary infrastructure to provide culturally and linguistically appropriate services to patients (e.g., language interpretation services at no cost to patients). The authors encourage more research to be conducted to identify underserved populations (such as ethnic minority groups) and explore the barriers that they face with respect to CR referral and participation. Having identified the needs of particular ethnic groups, appropriate interventions can then be structured and evaluated with the broad goal of developing culturally sensitive, patient-centered care. Despite the limitation of grouping racial and ethnic minorities together when considering underserved populations in CR, this paper and in particular, the authors' review of the literature and suggestions for improving the quality of care in CR, is useful for researchers and clinicians involved in CR.

## Website Review

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The Heart and Stroke Foundation of Canada and the British Heart Foundation (BHF) provide excellent multicultural resources on their website for both health care professionals and the public. Below is a description of some of the information that is available for different ethnic groups.

### Heart and Stroke Foundation of Canada

[www.heartandstroke.ca](http://www.heartandstroke.ca)

Printed material and videos on lowering the risk of heart disease and stroke, cholesterol, and blood pressure are available to individuals of African, South Asian, Chinese, Persian, First Nations, Inuit, and Métis descent. Television and radio Public Service Announcements (PSAs) cover topics such as nutrition, high blood pressure, ethnicity factors, and physical activity. The PSAs are available in Cantonese, Mandarin, Hindi, Punjab, Tamil, and Urdu. There are videos that offer suggestions for First Nations communities about what they can do to live a healthier lifestyle, how changes in First Nations' traditional lifestyle have impacted their health, and using medical and Aboriginal traditions to help lower blood pressure. Heart Healthy African, Caribbean, and South Asian recipes are also available.

### British Heart Foundation

[www.bhf.org.uk](http://www.bhf.org.uk)

Information on ethnicity can be found under the Heart Health tab and then by clicking on the Prevention link on the BHF website. Resources on healthy eating, keeping active, healthy tips, and heart risks are available for each ethnic group which includes African Caribbean, Bangladeshi, Pakistani, and Indian. The healthy eating section offers recipe suggestions for the different populations as well as an app that can be downloaded for healthy recipes (African Caribbean). Booklets and DVDs on taking medicines for your heart, angina, heart failure, and affairs of the heart are available in six different languages: Hindi, Urdu, Gujarati, Punjabi, and Bengali.

## My Patient, My Professor – Lessons from the North

Dr. Amy Hendricks, MDCM, FRCPC Internal Medicine; Stanton Hospital, Yellowknife, Northwest Territories, Canada

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The request on the discharge summary from Edmonton was simple, “Please have patient seen by cardiology/internal medicine in six weeks for referral to cardiac rehabilitation.” I smiled as I read it, considering carefully the patient whom I was being asked to refer.

Archie hadn’t crossed my path during his recent admission; I was away, or not on call, or maybe he went right from our emergency room to the cath lab. His day had begun as usual – hauling wood into his home in the bush to keep the woodstove going. But this time, the 80+-year-old fell, fracturing his hip. I’m not sure how long he waited for help. He would have been taken first to the local health centre, then medevaced to Yellowknife where he was also diagnosed with an acute coronary syndrome. By the time all was said and done, he had a couple of new stents and a pin in his hip. After a brief rehab stint in Yellowknife, he was discharged home – with the GP noting in his discharge summary that Archie had learned how to use a commode so he could safely relieve himself without going outdoors for the purpose.

Although I hadn’t seen him this admission, I know Archie well; he has a pacemaker that I have been following for the last ten years during my travel clinics to Fort Simpson (a three-hour drive from the health centre nearest to him). He comes with an escort who speaks marginally more English than he does, and quietly submits to my brief examination and pacemaker interrogation. This involves reluctantly peeling off a few layers of well-worn clothing – the ubiquitous long underwear being worn well into spring. The stickers on my ECG leads don’t stay put for long on his skin, untouched for months by any type of detergent. He brings with him the land of the north, its many contours traced onto his weathered brow, and the magnificent scent of wood smoke and hometanned moosehide. As he leaves his appointment, I often reflect on the immense privilege of practicing in the Northwest Territories, among the last generations of traditional elders.

Archie’s heart is not his only issue; he also has prostate cancer, vertebral compression fractures, and has struggled at times with the temptations of the city. The January 1st birthdate listed on

his card (very common among elders) makes me suspicious that not only the birthday, but also the year was the best guess of a village priest or government official. Is he really 83, or closer to 90? None of us really knows, and it doesn’t matter much in Archie’s day-to-day life.

I have not yet decided whether to refer Archie for cardiac rehabilitation (CR). I had previously referred him for a pacemaker generator change, so perhaps he would benefit from some further teaching and evaluation while he’s in the big city. Or maybe it’s not the best way to provide his care; even in a tiny health centre, he is obviously uncomfortable in encounters with health care professionals. He will return to the bush, he will chop and carry wood for his stove, and hopefully he will take at least a month of clopidogrel. Social role changes, urban stressors, and fresh produce are essentially unknown to him; and the concept of a treadmill would likely seem ridiculous. Nevertheless he has embarked on a medical journey for which he deserves all the support we can offer him. What might that support look like? As I do my best to follow cardiac patients scattered over the Arctic and sub-arctic, I spend a lot of time pondering where and how care can best be delivered.

First: our resources. There are no designated nursing resources, CR programs, or northern-specific cardiac teaching tools available in the Northwest Territories. However, we boast a network of highly skilled and committed community nurses. If someone needs a stress test or echo, I book and perform it, with Edmonton offering angiography and other advanced cardiology services. Through travel to the various communities, I have become acutely aware of the strengths and limitations of individual health centres. And if I ask the nurses in a community to provide specific support to a patient – no matter how time-intensive it may be to fill out the congestive heart failure flow sheet and fax it down to me every week – it is done without question or complaint. Telehealth gives me another tool to quickly connect with patients and nurses, avoiding the exorbitant cost of medical travel to my clinic.

Next: our limitations. It takes time to build trust with an elder who has lived his life on the

land, and Archie may not connect to services available in Edmonton. The people he does connect with – family, local nurses, perhaps a translator or neighbour – may not have the best tools to accompany Archie through his cardiac health challenges. We need to find a middle ground – a way to provide him with knowledgeable but culturally appropriate support, ideally as close to home as possible

On behalf of my patients, I have a wish list. At the top is a nurse practitioner with cardiology training – someone who knows the north well and can follow patients without necessarily seeing them in person, blending cultural understanding with medical knowledge and helping patients to navigate their path towards improved cardiac health. Next on the list

is truly accessible CR, through which the patient's community nurse becomes a real-time collaborator with the experts in Edmonton. (I believe this is possible through telehealth, if all parties are able to engage in the process.) And third – I would like to know more about the lifestyles of my patients, and how they correlate with medical measurements. What is the MET equivalent of pulling a snowmobile out of a ditch? Or using a chain saw, compared with splitting wood? What if it's minus 40°C with a 50-km/hour wind? How does dried whitefish taste if you prepare it with less salt? Maybe for my next medical training mission, you'll find me in a shack learning from Archie. I'll bet he would have a lot to teach me.

## South Asian Cardiovascular Risk Assessment Clinic

Dr. Subodh Verma<sup>1</sup>, MD, PhD, FRCSC; Dr. Milan Gupta<sup>2</sup>, MD, FRCPC, FACC

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South Asians are the fastest-growing visible minority population in Canada. According to Census Canada (2006), individuals from India, Sri Lanka, Pakistan, Nepal and Bangladesh represent approximately 4% of the Canadian population and constitute the largest visible minority in Canada. It is estimated that this population will reach an estimated 1.7 million by 2017.

Numerous studies suggest that South Asians are at higher risk of developing cardiovascular disease (CVD) than other ethnic groups, and have a worse prognosis once CVD is established. South Asians in Canada have a unique risk factor profile, and are at greater risk of cardiovascular events than white Caucasians. There is evidence suggesting that South Asians are at higher risk of developing coronary disease and diabetes at a younger age, partly through the development of classic and novel risk factors earlier in life.

The Canadian Cardiovascular Research Network (CCRN) in Brampton, Ontario opened a specialized South Asian Cardiovascular Risk Assessment clinic in 2010. The purpose of this clinic is to provide ethnic-specific cardiovascular screening to individuals of South Asian descent in an effort to promote earlier risk factor modification, lifestyle interventions, and pharmacotherapy if appropriate. Furthermore, this clinic provides ethnically tailored dietary and lifestyle counseling, and offers communication in various South Asian languages including Hindi, Gujarati, Punjabi and Urdu.

In order to provide this valuable service to those who would most benefit from risk assessment,

patients are seen by physician referral only, and must meet the following criteria:

Men > 30 and women > 40 years of age, with at least one of the following:

- High blood pressure
- Elevated cholesterol
- Diabetes
- Current smoker
- Abdominal obesity or metabolic syndrome
- Family history of premature vascular disease

Patients receive an ethnic-specific cardiovascular risk assessment including blood work for traditional and novel risk markers, and also undergo stress testing. Patients then meet with a cardiovascular specialist to review their risk and receive culturally sensitive lifestyle counseling and pharmacotherapy if appropriate to reduce the risk of developing CVD. Patients are seen in follow-up until risk factors have come under control, and are then reviewed annually thereafter. The CCRN South Asian Risk Assessment Clinic has now evaluated approximately 500 patients.

# The International Charter on Cardiovascular Prevention and Rehabilitation (ICCPR; the group formerly known as GAP-CR)

Sherry L. Grace, PhD; York University & University Health Network

On behalf of Dr. Darren Warburton of the Canadian Association of Cardiac Rehabilitation (CACR) Board, as well as Dr. John Buckley (Past-President, British Association for Cardiovascular Prevention and Rehabilitation [BACPR]), I provide this update to the CACR membership with regard to the ICCPR collaboration.

We have been able to initiate this collaboration through funding from our national granting agency, the Canadian Institutes of Health Research. Dr. Warburton and I each secured funding for knowledge translation activities. Our proposals both outlined a meeting in conjunction with CACR's annual meeting (Vancouver, October 2011). The President of CACR, Dr. Bob Reid, suggested that we join forces so that we would have greater resources for a meeting that was international in scale. We agreed to a collaborative effort, but also deemed it best to ensure we sought input from other jurisdictions in our planning. We were delighted that Dr. Buckley accepted our invitation. Dr. Buckley's previous leadership in publishing the joint CICRP issue with the BACPR has been a great example of what we could achieve with greater international partnerships.

Indeed, our southern colleagues at the American Association of Cardiovascular Prevention and Rehabilitation (AACPR) hold a meeting at their annual conference to bring together international attendees and have some dialogue regarding cardiac rehabilitation (CR) on a global scale (which I hear from Drs. Jim Stone and Reed Humphrey is an extension of the now defunct World Council on Cardiac Rehabilitation, which held its last congress in 2005 in Dublin). I was in attendance at one such meeting chaired by Dr. Larry Hamm, where the current President of the European Association for Cardiovascular Prevention and Rehabilitation, Dr. Giannuzzi, raised the excellent idea of a 1-page international charter on CR. Dr. Warburton pointed out the success of the recent Toronto Charter on Physical Activity, which was also a global initiative where they engaged many organizations in their work through an endorsement process (see: <http://www.globalpa.org.uk/charter/>). On this basis, we set out to identify key leaders in the area of CR guidelines and referral to help us formulate a Charter and agenda for our meeting in Vancouver.

We held an initial teleconference in August 2011, which was attended by 19 experts internationally, including representation from the United Kingdom, India, Brazil, Mexico, United States and Australia.

We successfully developed an outline for the Charter, which our CACR Guidelines Editor, Dr. Jim Stone, was kind enough to draft.

Dr. Stone's first draft of the Charter was very well-received. We have been soliciting and welcoming input throughout this process (with special recognition of Dr. Neil Oldridge), and continuing to refine the Charter. Indeed we are now on our 10th iteration! We developed a website for the Charter at [www.globalcardiacrehab.com](http://www.globalcardiacrehab.com), where you can view and endorse the Charter as an individual CR professional. Also, you may recall that the Charter was brought to the CACR Annual General Meeting for a vote by the membership. We were delighted that the Charter was fully endorsed by our association. Many members took the opportunity to sign the Charter in the showcase area of the meeting.

During our ICCPR meeting which took place just when the CACR meeting ended, we again had representation on the web from many countries including Germany, Iran and New Zealand. We agreed that the purpose of the Charter was to increase awareness about CR, to increase utilization, and to promote the common message of prevention. There was much discussion regarding formal engagement of CR associations internationally, the United Nations Summit on non-communicable diseases, and the continuum of prevention.

With support of our President and Board, we have solicited endorsement of the Charter from other national CR associations. Overall, we have now received formal endorsement from the following organizations: the AACPR, Australian Cardiovascular Health and Rehabilitation Association, BACPR, the Canadian Cardiovascular Society, the Cardiac Rehabilitation Association of New Zealand, the Centre for East-meets-West in Rehabilitation Sciences- Department of Rehabilitation Sciences- the Hong Kong Polytechnic University, and the Irish Association of Cardiac Rehabilitation.

We hope to engage the World Health Organization and World Heart Federation in our work, so that we may achieve some greater longevity of our international collaborative efforts. Our Charter has been accepted for presentation at the World Congress of Cardiology in Dubai (April 2012). We are hosting a meeting in conjunction with the World Congress where we have invited endorsing CR associations, as well as representatives from the big "W"s. This might be an opportunity to discuss the potential of further CICRP partnerships with other organizations!



# International Charter on Cardiovascular Prevention and Rehabilitation: A CALL FOR ACTION

PROPOSED VERSION 10

## RATIONALE

Cardiovascular disease remains the leading killer of adult women and men globally. However, as substantial gains in reducing acute cardiovascular mortality have been realized the prevalence of persons living with cardiovascular disease has increased significantly. Without systematic access to formal and informal programs of chronic cardiovascular disease prevention such as cardiac rehabilitation, these individuals will suffer multiple recurrent acute care events and/or unnecessarily premature death.

## AIMS AND FOCUS

The two aims of this Charter are:

- i. to bring together national associations from around the world, to harmonize efforts in promoting cardiovascular prevention and rehabilitation; and
- ii. to document, for the first time, consensus among national associations globally, regarding the internationally-common core elements and benefits of cardiovascular disease prevention and rehabilitation.

The focus of this Charter is on secondary prevention, which has well-established models supported by a robust evidence base. This Charter is visualised to fit within a continuum of care from primary prevention in public health initiatives, through to secondary prevention.



## DEFINITION

The World Health Organization (1993) has defined cardiac rehabilitation as:

“The sum of activities required to influence favourably the underlying cause of the disease, as well as to provide the best possible physical, mental and social conditions, so that the patients may, by their own efforts, preserve or resume when lost as normal a place as possible in the community.”

This process includes the facilitation and delivery of prevention strategies.

## BENEFITS

Cardiovascular prevention and rehabilitation programs are shown to significantly reduce mortality and repeat hospitalizations (Clark et al., 2010; Davies et al., 2010; Heran et al., 2011). These benefits are demonstrated in patients with acute coronary syndromes, stable chronic angina, stable chronic heart failure, and post-percutaneous coronary intervention, coronary artery bypass surgery, cardiac valve surgery, cardiac transplantation and cardiac resynchronization therapy. There is a growing evidence base on the same benefits of cardiovascular prevention and rehabilitation principles being applied to individuals at high risk, yet not diagnosed with cardiovascular disease (Wood et al., 2008).

In addition to these improved clinical outcomes, cardiovascular prevention and rehabilitation is also highly cost effective (Brown et al., 2003; Papadakis et al., 2005). Furthermore, comprehensive programs of cardiovascular prevention and rehabilitation reach across the continuum of patient care between acute disease and chronic disease care, thus easing the transition of patients from life-threatening illness to lifelong productivity and well-being.

## ACCESS

The only proven chronic disease care process that significantly and substantially reduces the mortality and the morbidity (physical and psychological) associated with this disease is cardiovascular prevention and rehabilitation. Despite the proven clinical and economic benefits of cardiovascular prevention and rehabilitation, it remains a chronically-underutilized resource (Candido et al., 2011; Suaya et al., 2007).

The strong evidence base for cardiovascular prevention and rehabilitation is such that any person diagnosed with cardiovascular disease should be offered a comprehensive program, which is respected in equal importance to the medical or surgical interventions they receive following such a diagnosis. For these reasons, proven mechanisms to facilitate universal access for indicated and eligible patients across sexes, age, ethnocultural and socioeconomic diversity should be instituted, such as systematic referral strategies (Grace et al., 2011). Referral to cardiovascular prevention and rehabilitation as a performance measure provides a major step to help facilitate accountability for implementing this quality indicator within processes of care (Thomas et al., 2010).

## STRUCTURE

Cardiovascular prevention and rehabilitation programs facilitate chronic cardiovascular disease care by specifically targeting patients' cardio-metabolic health and psychosocial well-being. The core components of contemporary cardiovascular prevention and rehabilitation programs are therefore intended to mitigate the atherosclerotic disease processes that drive cardiovascular disease progression and the related effects this has on psychosocial health. These components include individualized programs of cardio-protective pharmacological therapies in conjunction with health behaviour and education interventions of physical activity and exercise, nutrition, weight management, psychological health, and smoking cessation that are sensitive to and reflective of the socio-economic and cultural mosaic in which they are offered (Stone et al., 2009; BACR, 2007; Balady et al., 2007). Secondary prevention, including blood pressure and cholesterol management and the prescription of cardio-protective medication also forms an integral part of effective cardiovascular prevention and rehabilitation. Likewise, defining the core competencies of professionals providing these core components help align health care providers, educators, students, and administrators with defined expectations for knowledge and skills in providing cardiac rehabilitation/secondary prevention services (Hamm et al., 2010).

Cardiovascular prevention and rehabilitation programs may be offered and are equally effective in institution-based, community-based and home-based settings (Clark et al., 2010; Taylor et al., 2010; Dalal et al., 2010, Wood et al., 2008; Jolly et al., 2006). The Secondary Prevention of coronary heart disease for All in Need (SPAN) framework forwards a flexible model that can be adapted to diverse settings while ensuring a minimum care standard (Redfern et al., 2011). These parameters, if appropriate, can be applied to primary prevention.

## ACTIONS

Both government and private organizations responsible for the provision of patient care services can no longer deny patients with cardiovascular disease access to cardiovascular prevention and rehabilitation.

We call to action cardiovascular prevention and rehabilitation organizations and established associations around the world to partner and collaborate with those responsible for administering patient care:

1. To establish cardiovascular prevention and rehabilitation as an obligatory, not optional service
2. To support both low-to-middle and high-income countries to establish and augment, respectively, programs of cardiovascular prevention and rehabilitation (adapted to local needs and conditions) to ensure broader access to these proven services

We aim to maintain and grow this consortium through partnership with international organizations, to consider and communicate on-going consensus on evidence-based standards for cardiovascular prevention and rehabilitation.



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- ♥ Dr. Barry Franklin, (Michigan) on *Marathon Running and Cardiovascular Health: The Risk-Protection Paradox*
- ♥ *Measuring Performance and Improving Quality in Cardiac Rehab*; Sherry Grace (Toronto) on *Cardiac Rehabilitation Quality Indicator Project* and Paul Oh (Toronto) on *CACR CR Registry – Observations and Opportunities*.
- ♥ *The Brain-Heart Connection*; Dr. John Ratey (Harvard) on *Exercise and Brain Health* – moderated by Simon Bacon (CACR)

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- ♥ Exercise Recommendations to Optimize Outcomes after Stroke
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## Canadian Cardiovascular Quality Indicators

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Work is currently underway on the Cardiac Rehabilitation/Secondary Prevention Quality Indicators Chapter as part of the Canadian Cardiovascular Quality Indicators project led by the

Canadian Cardiovascular Society. Information on this project can be found at the following link:  
[http://ddqi.ccs.ca/index.php?option=com\\_content&view=article&id=60&Itemid=74](http://ddqi.ccs.ca/index.php?option=com_content&view=article&id=60&Itemid=74)

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Canadian Association of Cardiac Rehabilitation  
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India National Society for Prevention of Heart Disease & Rehabilitation



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