

## Cardiovascular Disease and Cancer

### Cardiac Oncology: An Emerging Field of Clinical Care, Research, and Education



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#### Introduction

Advances in cancer treatment, including the introduction of targeted therapies, have dramatically improved patient outcomes over the last 20 years. However, cancer therapy-induced cardiac toxicity is increasingly being recognized as a significant cause of morbidity and mortality among cancer survivors. Although cardiac toxicities associated with conventional chemotherapy are well known, the short- and long-term effects of targeted agents on the heart are less well understood. For patients and their families, navigating the complexities of the cancer system can be overwhelming. This is compounded if cardiac complications from cancer treatment occur, justifying the need for a multidisciplinary approach across several medical specialties.

#### The Ottawa Cardiac Oncology Program (OCOP)

In order to address this unmet need, the Ottawa Cardiac Oncology Program (OCOP) was established at The Ottawa Hospital in 2008 by a multidisciplinary team consisting of a medical oncologist (Dr. Susan

in collaboration with



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Dent), three cardiologists (Dr. Michele Turek, Dr. Christopher Johnson, Dr. Angeline Law) and a pharmacist (Sean Hopkins). OCOP, the first program of its kind in Canada, provides patients with an integrated approach to cancer therapy, and promotes seamless communication between health-care providers. OCOP encompasses three mandates: clinical service, research, and education. Patients benefit from timely access to cardiac assessment and treatment, resulting in improved quality of care. The goal of the research component of the program is to develop a national cardiac oncology patient registry, in order to facilitate the development of evidence-based guidelines for diagnosis and treatment of cardiac toxicity. In collaboration with basic scientists, we are in the process of establishing a translational research program that will evaluate the role of 'novel' biomarkers and specialized cardiac imaging techniques in predicting early signs of cardiac toxicity. The goal of the educational component of the program is to educate patients, practitioners, and health care professionals at various stages of training. The educational needs of trainees are currently met through clinical rotations supplemented by self-directed learning activities, and future efforts will focus on producing electronic learning resources. We have established bimonthly multidisciplinary cardiac oncology rounds to foster education of our staff, residents and fellows. Future education activities will focus on web-based information about the interactions between cancer therapies and the heart.

OCOP has made great strides since its inception. While the initial focus of this clinic pertained to women with early stage breast cancer exposed to chemotherapy +/- trastuzumab, the widespread adoption of targeted therapies in oncology has subsequently led to the referral of a much broader patient population. The clinic takes place four half days per month, and over 550 patients have been evaluated to date. The clinic has gained recognition from several academic institutions across North America, and this has led to the development of a 1-day preceptorship in Ottawa for health care professionals to facilitate the establishment of a cardiac oncology clinic at their respective centres. In recognition of these efforts, the Ottawa Cardiac Oncology Program received the 2013 Innovation Award from the Cancer Quality Council of Ontario.

In July 2013, we established a cardiac oncology research fellowship at the University of Ottawa, the first of its kind in North America. This research fellowship is designed to provide trainees with the opportunity to increase their knowledge and expertise in the detection and treatment of cardiac complications

related to systemic therapy (including chemotherapy and targeted agents).

### **The Canadian Cardiac Oncology Network (CCON)**

Multidisciplinary collaboration is invaluable in the treatment and management of cancer patients. As the link between cancer therapy and cardiac toxicity has become more evident, there was a growing need to establish a national organization in order to focus clinical and research expertise in this novel area of patient care. In 2011, the Canadian Cardiac Oncology Network (CCON) was established to facilitate collaboration among health care professionals interested in the emerging field of cardiac oncology, working towards understanding how cancer therapies impact cardiac health. The Network's vision is to optimize cardiac care for cancer patients receiving potentially cardiotoxic therapy. The Network's missions are to: 1) gain a better understanding of cardiac complications related to oncology treatments, 2) develop early detection and intervention strategies to optimize cardiac health, and 3) optimize patient outcomes by collaborating with allied healthcare professionals. In order to accomplish these goals, several initiatives are currently underway. CCON is collaborating with national experts to formulate diagnostic, monitoring, and treatment guidelines for the management of patients with cancer therapy-related cardiac toxicity. Several research projects are being prepared for peer-reviewed publication, and a North American cardiac oncology fellowship program is in development. We are also forming partnerships with international cardiac toxicity organizations, such as the International Cardioncology Society (ICOS).

To date, CCON has hosted three national conferences in Ottawa, with a growing interest from a number of health care providers including: oncologists, cardiologists, nurses, pharmacists, radiologists and basic scientists. The 4th Annual Canadian Cardiac Oncology Network Conference was held on May 8-9, 2014 at The Ottawa Convention Centre.

### **For more information:**

- The Ottawa Cardiac Oncology Program (OCOP)  
– Dr. Susan Dent, [sdent@Ottawahospital.on.ca](mailto:sdent@Ottawahospital.on.ca)
- The Canadian Cardiac Oncology Network (CCON) – [info@cardiaconcology.ca](mailto:info@cardiaconcology.ca)

# References and Reviews

Reviewed by Kelly Angevaare, R.Kin., MSc, ACSM-RCEP UHN Cardiovascular Prevention and Rehabilitation Program, Toronto, ON

Yu Chen Yue, medical student, University of Sherbrooke

## The Mechanisms Responsible for Exercise Intolerance in Early-Stage Breast Cancer: What Role Does Chemotherapy Play?

Bonsignore, A., & Warburton, D. *HKPJ* 2013; 31: 2-11

With improved survivor rates among women aggressively treated for breast cancer, the prevalence of chemotherapy-induced cardiotoxicity has increased. Consequently, breast cancer survivors often exhibit reduced left ventricular ejection fraction (LVEF) and impaired exercise tolerance. The poor relationship between resting LVEF and exercise intolerance prompts Bonsignore and Warburton to conduct this review paper in search of central, peripheral, and molecular explanations for the reduced peak oxygen uptake observed in women with breast cancer.

Important highlights of this review include the non-selective nature of treatment agents used that also affect myocardial and endothelial tissue, thus contributing to systolic and diastolic dysfunction, heart failure, hypertension, and cardiovascular disease. During exercise, diastolic dysfunction limits the cardiac output response (consider Frank-Starling mechanism) despite increases in end-diastolic volume, while endothelial dysfunction increases afterload on the heart. Muscle atrophy during and after chemotherapy can lead to weakness, fatigue, and reduced physical activity participation. Finally, anemia often presents with chemotherapy, but its impact on exercise tolerance requires further investigation.

Chronic disease prevention and rehabilitation programs play an important part in improving functional capacity and quality of life among women with breast cancer. This review paper provides physiological evidence for the potential benefits of endurance and strength training during and following treatment.

## Modelling the Impact of Compliance with Dietary Recommendations on Cancer and Cardiovascular Disease Mortality in Canada

Bélanger, M., et al. *Public Health* 2014; doi: 10.1016/j.puhe.2013.11.003. [Epub ahead of print]

Canadian dietary recommendations are linked to a reduced risk of cancer (e.g., stomach and colorectal), cardiovascular disease, diabetes mellitus, and obesity. Of course to be effective, one must successfully commit to following these guidelines of increased consumption of fruits, vegetables, and fibre, and reduced consumption of salt and saturated fat. Bélanger et al.'s paper estimates the impact of changing eating habits to meet Canadian dietary recommendations on mortality rates related to cardiovascular disease and cancer.

A comparative risk assessment model originating from the UK, called PRIME, was used. The 2004 Canadian Community Health Survey provided average dietary intake data, which was compared with Canadian dietary recommendations extracted primarily from Health Canada. On average



Dr Warner Mampuya, MD PhD FRCPC

## From the Editor

Cardiovascular disease and cancer are the two leading causes of death. Together, they make up to 50% of the mortality. Recent advances in cancer treatment improved the survival rate tremendously. There has been an increased recognition of cardiovascular adverse effects of many cancer therapies. These adverse effects include hypertension, left ventricular dysfunction (heart failure), arrhythmia and vasculopathy.

As a result, an increasing number of cancer patients and survivors have cardiovascular disease. In the long-term, these side effects can undermine the success achieved by cancer treatment. Prevention is therefore important in keeping today's cancer survivors from becoming tomorrow's cardiac patients.

Cardio-oncology programs ensure the prevention of cardiovascular complications caused by chemo- or radiation-therapy and the specialized cardiac evaluation, treatment and follow-up of cardiovascular morbidities.

As professionals of cardiac rehabilitation and prevention, we have to improve our knowledge of this reality and work to find strategies to help these patients.

This issue is dedicated to cardio-oncology, which is a fast growing field that tries to bridge the gap of collaboration between oncologists and cardiologists and improve the care of cancer patients with potential cardiac problems. Our Featured article is written by Dr Jeffrey Sulpher from the division of medical oncology at the Ottawa

Canadians were found to be consuming only 40-50% of the recommended was also low, while average salt and fat intake exceeded recommendations. Overall, changing average dietary habits to meet Canadian guidelines produced an annual estimate of 30%, 540 potentially averted or delayed deaths. Adequate fruit and vegetable consumption had the greatest impact on modifying risk for cardiovascular disease and cancer.

This paper emphasizes the value of continued collaborative efforts between registered dietitians, primary care professionals, and public health experts to assist Canadians in adopting dietary recommendations known to improve health. Promoting regular screening of dietary habits in primary care, and access to registered dietitians, particularly among Canadians identified as high risk for cardiovascular disease or cancer, is important from both a prevention and rehabilitation perspective.

### **CRIB—the use of Cardiac Rehabilitation Services to Aid the Recovery of Patients with Bowel Cancer: a Pilot Randomised Controlled Trial (RCT) with Embedded Feasibility Study.**

*Munro J, Adams R, Campbell A, et al. BMJ Open 2014;4:e004684. doi:10.1136/bmjopen 2013- 004684*

Globally more than 1 million people get colorectal cancer every year. It is the second most common cause of cancer in women and the third most common in men. It is also the fourth most common cause of cancer death after lung, stomach, and liver cancer. It is more common in developed countries. Colorectal cancer patients as well as patients with other types of cancer will experience physical and psychological problems during and after their cancer treatment. Furthermore, survivors of colorectal cancer seem to demonstrate lower physical activity participation rate. Often, these problems are not easy to deal with.

This study explores in a randomized controlled manner the feasibility and accessibility of supervised exercise sessions run by a cardiac physiotherapist to colorectal cancer patients. Although this study does not test the effectiveness of cardiac rehabilitation for patients with colorectal cancer, past studies suggest that increased physical activity is associated with improved mortality related to colorectal cancer and quality of life. This is a two-phased pilot study, which will enroll a total of 78 patients: 12 patients in one site for phase 1 and 66 patients in 3 sites for phase 2. Phase 1 consists of intervention testing and feasibility study and phase 2 includes the pilot randomized and controlled trial with a process evaluation.

The primary outcome is accelerometer measured physical activity. Secondary outcomes include self-report physical activity, quality of life, anxiety, depression and fatigue. Factors affecting adherence and outcomes will also be evaluated.

This is the first study of its kind in colorectal cancer patients. It will be interesting to follow the results because if conducted successfully, they will provide valuable insight into the growing field of cardio-oncology and help improve patient care.

Hospital Cancer Centre. He introduces to us the Ottawa Cardiac Oncology Program and the Canadian cardiac oncology network. This highlights the importance of this field and the network that works to bring together oncologists and cardiologists.

We also reviewed 3 articles that demonstrate how wide and varied the field of cardio-oncology is. The first article reviews the physiological basis of the benefits of potential exercise training for cancer patients. The second article is an example of the interdisciplinary collaboration that should characterize the work of cardio-oncology teams. In this case dietitians' work is singled out. The third article introduces the first randomised controlled trial to test the feasibility and acceptability of cardiac rehabilitation for patients with colorectal cancer. The results of this trial will be important to follow as it might provide evidence for cardiac rehabilitation services for cancer patients.

We have a very informative case study on anthracyclin-induced cardiomyopathy by Dr Christopher Johnson, cardiologist from the University of Ottawa. Another beautiful case study written by Sonya Meigh, illustrates how cardiac rehabilitation resources can be used to help in pre-operative training of lung cancer patients with very encouraging results.

Cardio-oncology programs are emerging all over the world, and we profile an innovative rehabilitation program from England that offers physical activity programs to cancer and cardiac patients.

We hope that addressing the need of this emerging field in this bulletin can open opportunities for clinical and research activities, collaboration and exchange of ideas and initiatives to better serve our cancer patients.

Lastly, CACPR President Simon Bacon and Executive Director Stacey Grocholski will bring us some updates on CACPR's activities.

Please don't miss our next edition, which will deal with quality indicators in cardiac rehabilitation and prevention. Please do not hesitate to contact any member of the Editorial Board with any suggestions for upcoming issues.

# Case Study

## Anthracycline Induced Cardiomyopathy: Favourable Response to Medical Therapy In Spite of Remote Anthracycline Exposure.

Christopher Johnson MD<sup>1</sup>, Susan Dent MD<sup>2</sup>, Jeffrey Sulpherb, Sean Hopkins<sup>3</sup>, Nadine Grahamb, Angeline Law MD<sup>1</sup>, Ellamae Stadnik MD<sup>1</sup>, and Michele Turek MD<sup>1</sup>; <sup>1</sup>Division of Cardiology, Department of Medicine, University of Ottawa, Ottawa, Ontario, Canada, <sup>2</sup>Division of Medical Oncology, Department of Medicine, University of Ottawa, Ottawa, Ontario, Canada. <sup>3</sup>Department of Pharmacy, The Ottawa Hospital Cancer Center, Ottawa, Ontario, Canada



A 63 year old woman presents with symptoms and signs of heart failure. She received anthracycline chemotherapy for early stage breast cancer 18 years prior to presentation. Her echocardiogram reveals an ejection fraction (EF) of 25%. Cardiac CT confirms normal coronaries, and reveals a bony metastasis due to recurrent breast cancer.

She is treated with an ACE inhibitor and a beta blocker with prompt clinical improvement. Over several years, her EF improves into the low-normal range. She has no heart failure symptoms and has not been hospitalized.

Anthracyclines irreversibly injure myocytes, resulting in a dose-dependent risk of cardiotoxicity<sup>1</sup>. Heart failure can occur early, but even remote exposure

confers a lifelong risk of heart failure. Left ventricular EF is measured before and after anthracycline chemotherapy. Definitions of cardiotoxicity following anthracycline exposure include: a drop of 10 EF units to an EF < 50 or 55, a drop of 20 EF units but the EF remains > 50 or 55, and any drop in EF into the abnormal range (< 50 or < 55).

Early treatment of anthracycline induced cardiotoxicity with angiotensin converting enzyme inhibitors and beta blockers has been associated with good clinical and EF outcomes<sup>2</sup>. Our patient had a long interval between anthracycline exposure and initiation of heart failure medical therapy, yet still had a favourable clinical and EF response.

Due to their efficacy, anthracyclines continue to be used in breast and many other cancers, with important implications for cardiovascular risk and the global burden of heart failure. There are currently no firm guidelines for long term EF surveillance following anthracycline exposure. Patients and their health care providers should be aware of the potential for late onset of anthracycline induced cardiomyopathy.

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## Exercise Training for Pre-operative Lung Resection Patients – A Case Study

Sonya Meigh, Paul Stern and James Rushton, University Hospital of North Staffordshire (UHNS) Cardiac Rehabilitation, Stoke-on-Trent, UK

### Combining Cardiac and Cancer Rehabilitation

The cardiac rehabilitation service at the University Hospital of North Staffordshire (Stoke-on-Trent) has a long history going back to the mid 1970s. This programme performed the first UK-based RCT for cardiac rehabilitation (1). Recently it has successfully incorporated the pre-operative management of lung cancer patients awaiting surgical resection, into the existing cardiac rehabilitation programme. The inclusion of more complex cardiovascular conditions, with changes in clinical guidelines, has resulted in the up-skilling of current staff to manage a wide range of complex medical conditions. Many cardiac patients accessing the service, now present with multiple morbidities, that are often more debilitating than their cardiac condition. Therefore treatment approaches have become far more tailored to individual needs. Lung cancer patients present with similar additional cardiovascular and pulmonary co-morbidities. These patients can now benefit from access to a wide range of cardiac professionals, whose skills are transferable across specialities, including nurses, exercise physiologists, nutrition specialists and physiotherapists. The necessity to combine these services became apparent from a recognition that lung cancer patients, undergoing invasive procedures, now included a sicker and elderly population. This population is at significant risk of developing complications with costly and prolonged hospital stays. Previous management has focussed on responsive post-operative physiotherapy, including breathing exercises and early ambulation. It is now believed that pre-operative intervention to reduce de-conditioning, stabilise co-morbidities and influence modifiable risk factors, may effectively reduce the incidence of such complications. Given the cost implications of developing a new model, the expansion of the existing cardiac rehabilitation service, was considered an appropriate alternative. Referral into the programme is at the surgeons' discretion, but typically reflects those individuals at greater surgical risk.

### Case presentation

Mrs W, a 63 year old female was diagnosed with lung cancer T2 N0 M0 in the left upper lobe and was due to have a lung resection via a thoracotomy incision. She had been referred for pre-operative rehabilitation due to her advanced age, smoking history and significant co-morbidities; COPD, hypertension, diabetes and anxiety. Her lung function tests identified an FEV1 that was 55% of predicted. On assessment she was a current smoker of 20 – 30 per day (40 pack years), her blood pressure was 155/90 on ace inhibitor medication, and she had recently been prescribed lorazepam due to the additional stress and anxiety associated with her diagnosis and pending operation.

### Exercise Training for Lung Cancer

Mrs W was given a threshold inspiratory muscle trainer to use three times a day for 15 minutes which was set at 70% of maximal inspiratory pressure. Preliminary research suggests that pre-operative inspiratory muscle training may help preserve lung function post-operatively (2,3). Additionally, she attended cardiac rehabilitation sessions in the 3 weeks prior to her operation. Exercise classes were twice a week and were based on high intensity interval training, using treadmill walking (3.5kph, 4.6 METs), step ups (18/min, 4.8 METs) and hand held weights (6 kg). Interval training has been shown to produce comparable physiological effects to moderate intensity exercise in several chronic conditions (4,5). Studies suggest high intensity interval training can effectively increase exercise tolerance and mitochondrial capacity with minimal cardiac strain (4,5). During these classes, Mrs W achieved a work rate of 80% of her maximal heart rate, due to shortness of breath, but suffered no other adverse events. Repeated measurements following 3 weeks of exercise and inspiratory muscle training revealed a significant improvement in predicted FEV1, 6 minute walking distance, Medical Research Council Breathlessness Scale and HAD scores.

### Education for Lung Cancer

The existing cardiac rehabilitation programme adopts strategies to address modifiable cardiovascular risk factors, such as smoking, nutrition and stress management, which are equally relevant in cancer care. Mrs W, like many lung cancer patients has an extensive smoking history, which in many cases, is the aetiology of their disease process. They frequently experience poor eating habits and weight loss, whilst the diagnosis of cancer can be especially traumatic for the individual and their family. Mrs W, felt that she benefited greatly from the education

Outcome	Pre-rehabilitation	Post-rehabilitation
Predicted FEV1	55%	67%
6 minute walk distance (10m)	423m (averaging 3 METs)	490m (averaging 3.4 METs)
MRC index	4	3
HAD score	A (15) D (8)	A (8) D (6)

**Table 1 outcome measures before and after 3 weeks of rehabilitation**

and support on offer and the access to a wide range of health professionals within the cardiac rehabilitation team. She managed to successfully stop smoking 16 days before her operation, adopted a well-balanced diet and found the stress management techniques useful to help manage her anxiety (alongside medication), giving her a greater sense of control prior to her operation.

### Post-surgery

Following her operation Mrs W made an excellent recovery and was discharged after 4 days. She suffered no observable post-operative cardiovascular or pulmonary complications. She was independently mobile on the ward the following day of her operation, chest drains were removed after 2 days and minimal supplemental oxygen was needed. Whilst her glucose levels required medical regulation in the initial post-operative phase, her hospital length of stay was comparable to younger patients with no significant co-morbidities. On follow up 3 months after her operation, Mrs W is undergoing post-operative chemotherapy and continues to do well. She considers herself an ex-smoker, is no longer requiring lorazepam to manage anxiety, and continues to attend weekly gym sessions. Mrs W found the exercise particularly beneficial to manage the pain and fatigue associated with chemotherapy

### Conclusion

The successful risk factor modification and excellent patient outcomes, apparent in this case, indicates that the existing cardiac rehabilitation model may be perfectly positioned to assist in the preparation of high-risk surgical candidates to improve post-operative outcomes, without the need to develop new and costly surgical schemes. It is also apparent that further research is needed to fully inform clinicians about the true impact of this emerging intervention.

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# Building your Professional Profile

## Cancer Patients in a Cardiac Rehabilitation Setting

*Russell Tipson at Action heart Dudley; The Action Heart and Action Health Rehabilitation Teams, Dudley Group NHS Foundation Trust, West Midlands, England*



### Introduction

The Action Heart programme, based at Russells Hall Hospital in Dudley, West Midlands has been established for some while, its early beginnings being traced back to the mid 1970s. Since its inception, the programme has steadily developed from an exercise programme for post myocardial infarction patients into what would be described today as a truly inclusive and comprehensive programme: offering exercise prescription lifestyle analysis and counselling for all patients, whatever their cardiac diagnosis.

In recent years, the Action Heart programme has also collaborated with Dudley's Public Health Department to provide a borough wide Exercise Referral Programme for any individuals deemed to be at risk of developing cardiovascular disease (CVD) and for whom lack of physical activity has been established as one of their risk factors. The Exercise Referral Scheme also involves the Council's three leisure centres, whose staff are trained to accept low and moderate risk individuals.

The Action Heart programme has also been approached to take on other CVD patient groups and has been involved with specific projects, including patients with transient ischaemic attack (TIA), stroke, rheumatoid arthritis and peripheral arterial disease. These developments were recognised in the CVD Outcomes Strategy document, published by the Department of Health in 2013, encouraging services to consider working in a more generic manner in contrast to working in 'silo' fashion<sup>1</sup>.

### Physical Activity and Cancer

There is robust and mounting evidence which suggests that regular physical activity after the diagnosis and treatment of most cancers, in particular breast and colorectal cancers, can improve quality of life, decrease the utilisation of health services and promote early return to work. It is also accepted that common impairment suffered by cancer survivors may be prevented or favourably affected by physical activity.

In contrast to this evidence, efforts to encourage physical activity are not a routine element of cancer treatment and rehabilitation pathways. Furthermore, the Macmillan cancer organisation also reports that physical activity in cancer survivors declines with up to a 30% loss in physical activity reported.

Accordingly, there is a wide gap between evidence and practice, a lack of structured rehabilitation services with a resulting failure to convert evidence into practice, thereby disadvantaging the survival potential of cancer patients.

### Cardiac/Cancer Rehabilitation 'Overlap'

In practice, the number of patients living with cancer is increasing dramatically. The current figure of two million people in the United Kingdom is predicted to rise by more than 3% each year<sup>3</sup>. In Action Heart's case, a scan of our database revealed that approximately 5% of the programme's cardiac referrals also had a past or current



cancer diagnosis on entry to the programme. Furthermore, as Action Heart routinely provides twelve months of surveillance, it is not uncommon for patients to be diagnosed with cancer during their time on the programme. The Action Heart experience suggests that most cardiac rehabilitation programmes will also have experience of working with patients with cancer.

### **Physical Activity Targets**

In cancer patients, the physical activity targets will vary according to their position in the treatment pathway. There is evidence that becoming, or remaining, active pre, during and post surgery/chemotherapy/radiotherapy can be beneficial. In general, any increase in activity is a worthwhile step, although specific targets for different cancers are yet to be established. In the absence of such targets it seems sensible to adopt the Physical Activity Guidelines recommended by the Department of Health<sup>3</sup>. Specifically, the guidelines recommend that adults (19-64 years) and older adults (greater than 65 years) achieve a weekly physical activity dose adding up to at least 150 minutes of moderate intensity activity, in bouts of 10 minutes or more; one way to approach this is to undertake 30 minutes of activity on at least 5 days per week. Alternatively, the guidelines state that comparable benefits can be achieved by 75 minutes of vigorous intensity, or via appropriate combination of moderate and vigorous physical intensity. Physical activity in patients treated with cancer often declines below these recommended levels.

The link between Breast Cancer and CVD mortality also suggests this Department of Health target to be appropriate for cancer patients. The evidence that links CVD risk and Breast Cancer is already robust<sup>4</sup> with an element of the increased risk being due to chemotoxicity<sup>5</sup>. Accordingly, there is a real need to address the risk of CVD in breast cancer survivors and a strong case for linking cardiac and cancer services where appropriate. In summary, there is a good deal of synergy between the physical activity targets for cancer and cardiac patients.

### **‘Action Health’ - The Vision**

The Action Heart Centre at Russells Hall Hospital hosts an excellent exercise rehabilitation facility and it was probably a natural progression for the cancer teams to look towards Action Heart to develop a physical activity service for their cancer patients. This collaboration led to a successful grant application to the Macmillan organisation and ‘Action Health’ was born (the change of name was to assure patients they were not being referred to the wrong department!).

The overall aim of the ‘Action Health’ project was to establish an effective, efficient and sustainable physical activity service for Dudley patients being treated with, for example, breast, colorectal, urological, skin, gynaecological and haematological cancer. The service was designed to speed up the integration of physical activity as part of cancer treatment and to maximise the numbers of cancer survivors achieving the minimum level of physical activity recommended by the Department of Health.

The Action Heart Centre at Russells Hall Hospital remains the hub for the Action Health Team and is utilised to promote physical activity in the early stages of cancer rehabilitation. Existing links with physical activity stations in the community (due to Dudley’s Exercise Referral Scheme) are utilised to provide patients with a menu of options, in an attempt to optimise compliance to the desired dose of physical activity.

### **Action Health – The Service**

#### **Consultation and Self Determination**

Once a referral has been received the patient is contacted by a member of the Action Health Team and invited for a one to one consultation. During this consultation the patient is encouraged to take control of their situation and to help decide the most appropriate physical activity station for their circumstances. The Action Health staff also help to triage patients to the most suitable physical activity station, taking into account their preferences and the amount of support/surveillance they may require.

#### Physical Activity Stations

- Action Heart Centre
- Dudley Leisure Centres (x3)
- Outdoor Gyms (x8)
- Walking Groups
- Independent Exercise

#### **Exercise Intervention**

All ‘Action Health’ patients are offered a twelve week physical activity intervention at their agreed physical activity

station and are routinely supported by the Action Health staff. There is an interim consultation after 6 weeks, to assess progress and to formulate an activity plan to adopt once they complete the programme after 12 weeks.

### **Action Health Research**

Physical activity and its role in the prevention and treatment of cancer is a very ripe area for current and future research.

The 'Action Health' project will also be making a contribution to the evidence base in the use of physical activity with cancer patients. A sub group of patients is undertaking a number of physiological, psychological and quality of life assessments to help establish the effectiveness of the intervention.

### **Experience to Date**

The 'Action Health' project has been developing extremely well and will likely have received its one hundredth referral by the time this article is published. It is worth noting that the great majority of patients to date have chosen the supervised route, opting to exercise in the Action Heart Centre for their 12 weeks of physical activity. They have appreciated the support offered by the 'Action Health' team and have welcomed the opportunity to discuss their general situation with a health professional.

An important component of the project's success has been the collaboration between the cancer and cardiac rehabilitation teams. This collaboration has involved an exchange of information and training amongst the doctors, nurses, physiotherapists and exercise instructors. In principle, staff with experience of working with cardiac patients (associated psychological, lifestyle, fatigue and mobility issues) appear well placed to care for cancer patients with appropriate support from the cancer teams. In Action Heart's experience, this interdepartmental support has been far more beneficial than any 'stand alone' courses.

The 'Action Health' project appears well set to become an important addition to Dudley's portfolio of physical activity services.

### **Conclusion**

One of the consequences of our aging population is that many people will live with more than one long term medical condition. Although research does not generally reflect this fact, often screening out co-morbidities as a confounding factor in single condition trials, services will soon have to accommodate such patients as a matter of course. This should help to develop more generic services, where deemed appropriate for the patients' needs and may provide exciting opportunities for existing services to collaborate or expand.

As funding for new developments in the NHS is scarce at present, it may be beneficial for potential new initiatives to explore collaborative opportunities within existing physical activity services. The 'Action Health' service is a partnership between the Action Heart cardiac rehabilitation team and Dudley's cancer teams. Cardiac rehabilitation programmes are widely available within the UK and typically include exercise expertise within the multi-disciplinary team. Accordingly, other areas in the UK may be able to form similar partnerships, consolidate the use and sustainability of facilities/personnel and demonstrate to commissioners that their funding has been optimised.

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Please contact [actionhealth@actionheart.com](mailto:actionhealth@actionheart.com) for enquiries and to receive an electronic poster describing the cancer service in more detail.



# OCTOBER 25 & 26

## VANCOUVER, BC

### CACPR ANNUAL CONFERENCE & SYMPOSIUM

In conjunction with Canadian Cardiovascular Congress (CCC), the CACPR annual conference provides an opportunity to network with other cardiac rehab professionals, learn critical information that will enhance program performance and delivery and meet leading experts sharing the latest research and best practices. Be sure to register under CACPR – June 2<sup>nd</sup> registration opens.

## Exhibitors

The CACPR Showcase is divided into 4 categories of exhibitors: Cardiac Rehab Programs, Conference Sponsors, For-Profit Organization/Business and Non-profit organizations. A chance to showcase your program or perhaps a project you are working on. Don't delay, apply today as spaces are limited - visit: [http://cacr.ca/professional\\_development/Symposium.cfm](http://cacr.ca/professional_development/Symposium.cfm)

## Leadership Awards

Recognize a fellow member for a leadership award in the area of Clinical Practice, Research, Education/Knowledge Transfer and Advocacy. Nominate someone today:

<http://cacr.ca/awards/LeadershipAwardApplication.cfm>



**John Stanton**

### Plenary Speaker

Cardiovascular Prevention...  
Together we can do it!

Canada is treated with innovative success in Cardiovascular care manifested in diagnosis, treatment and recovery and now it's time for a collective and pro-active approach to prevention. We know the problems and many of the solutions. John Stanton has influenced 100's of thousands of North Americans to overcome the fear of embarrassment and lace up to a more athletic and healthy lifestyle. He will motivate you to take charge with some innovative ideas on improving your personal, professional and community approach to health care. Don't miss this session *Sunday, October 26 at 3PM.*



### Social Evening

**Saturday, October 25**

*Steamworks Brew Pub - 375 Water St.  
Limited seats available*

# From the President

*Simon Bacon, CACPR President*

It has now been nearly 6 months since I officially took over the reins at the Association and what a 6 months it has been. As an organisation we have made the bold step to rebrand ourselves. The expansion of our name to include cardiovascular, rather than cardiac, and prevention is really in recognition of the broad amount of great work that you, our members, do on a day-to-day basis. However, with this rebranding comes the responsibility to deliver an organisation which meets the needs of a much wider group of stakeholders. To address this, the executive and board have been busy looking at potential new services and products that we can create and deliver that will enhance the work and research of our current, and potentially new, members. Over the coming year we will be asking feedback on some potential new products and I encourage all of you to actively participate in this as you have a great opportunity to sculpt and enhance the things that your Association offers.

This continual effort to provide more and better benefits to you our members is occurring with a backdrop of reduced support from our sponsors. As with every similar organisation CACPR has seen a steady decline in sponsorship income over the last 3 years. This has had a notable impact on our budget, where we have run a deficit for the last couple of years. Though the Association is still in good financial health it is clear that no organisation can survive when it loses money every year. One of the key themes that has been present in the board discussions over the last 6-18 months has been about diversifying our income stream and becoming less dependent on the annual meeting to generate monies. We have also taken a hard look at our expenditure and have refined the organisation to be as streamlined as possible. As we move forward there may be some hard decisions that may need to be made to secure the organisations short-term stability and put in place measures which will allow us to grow and prosper in the medium to long term.

One key aspect of navigating these exciting, but challenging, times is to ensure that the Association actively keeps you, our members, informed and engaged in the process. To this end I would like to highlight the up and coming elections (for which there are more details within this issue). The vibrancy of the Association is due to the dedicated participation of the membership in the running of the Association. I encourage each of you to take an active role in the voting process - collectively we are stronger together. As ever, we have the capacity to make this great organisation greater.

# From the Office

*Stacey Grocholski, CACPR Executive Director*

As Simon noted above, the organization has been going through a rebranding process and you may have noticed a few subtle and dramatic changes since January. Most notably, is the change from CICRP to CV Edge. Not only has the name changed, but the design and layout has also styled an updated

# What's New at CACPR

**Canadian Cardiac Rehab. Registry (CCRR) Data Dictionary 2.0** - The CCRR Research sub-committee is tasked with reviewing and updating the registry data elements dictionary every 2 years. This first time around, given much input has been received from participating programs, a task force was struck to undertake this task and make recommendations for the CCRR research sub-committee, program liaison sub-committee and larger CCRR committee. The task force is comprised of members of the CCRR research and program liaison sub-committees as well as a member of the Canadian Cardiovascular Society (CCS) data dictionary initiative, with methodological expertise.

Throughout the month of May, we invite CACPR members to provide input on the CCRR Data Dictionary 2.0. Comments can be made on the blog, which will be monitored by the chair of the task force, Dr. Todd Duhamel. All comments will be brought to the task force for consideration and action in June. To access the Data Dictionary 2.0 and the blog, login to our website at [www.cacr.ca](http://www.cacr.ca).

**Cardiac Rehab. Quality Indicators (CR QI's)** - June edition of CV Edge will be dedicated to the implementation of the CR QI's from a national and international perspective. Watch for it in your inbox coming soon!

## **E-Vote – easier way to select your new board members!**

New for this year, is the ability to vote for board nominees electronically! In the past, we have mailed ballots and accepted your votes via mail. The electronic process will help save some trees, postage, time and will be more efficient. With one click, each member will have access to one (1) anonymous vote and is strictly confidential. Of course, if you prefer to send it via mail or fax, we will accept these as well. After May 21st, you will be able to vote online OR print the Voting Package from our website. The deadline to vote is June 30th. Good luck to all the candidates!

corporate look and feel. I hope you like the new look! The new name was a collective effort of the membership and over fifty-five percent voted for CV Edge. I believe the new name opens the Association up for greater opportunities and the ability to market ourselves as the leading experts in the cardiovascular prevention and rehabilitation arena. I hope you enjoyed reading the publication and I welcome your feedback as always.

In conjunction to the rebrand process, key activities and priorities have been established. We look towards reshaping existing products and services and identifying new means of creating value to our members. Congruent to this, preliminary work and research has already started and two new task forces are currently being set up. The purpose of these task forces (although very different in nature) is to take a step back, review current practices, focus on research, provide recommendations to the Business Model Task Force and bring this information forward to the members for their constructive feedback and consultation. It's an exciting time and I invite you to consider joining one of these committees – more information can be found on our website homepage at [cacr.ca](http://cacr.ca). At any time, I welcome any questions or comments about the process or to learn more about how you can help out. Lastly, thank-you to all our dedicated volunteer committees who work tirelessly to give back to the CR field and make it that much stronger!

### **Publication Editor and Associate Editors**

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Kelly Angevaare, Associate Editor  
John Buckley, Associate Editor  
Andrew Jeklin, Associate Editor  
Holly Wykes, Associate Editor  
Stacey Grocholski, CACPR Executive Director  
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