

consumption of a balanced diet of healthy food choices based in Canada's Food Guide, and supplementation where indicated to meet individual nutrition needs. Special emphasis should be placed on foods high in fibre and of appropriate fat quantity and quality to achieve

targets for both diabetes and CVD. The CR setting is an ideal environment for the person with diabetes to take ownership of their diabetes management through a collaborative learning process with the CR team.

### References

1. Pastors JG, Wardshaw H, Daly A et al. The evidence for the effectiveness of medical nutrition therapy in diabetes management. *Diabetes Care* 2002;25:608-13.
2. Van Horn L, McCoin M, Kris-Etherton P et al. The evidence for dietary prevention and treatment of cardiovascular disease. *J Am Diet Assoc* 2008;108:287-331.
3. Willaing I, Ladelund S, Jorgenson T et al. Nutritional counselling in primary health care: A randomized comparison of an intervention by general practitioner or dietitian. *Eur J Cardiovasc Prev Rehabil* 2004;11:513-20.
4. Morrish N, Wang S, Stevens L et al. Mortality and causes of death in the WHO multinational study of vascular disease in diabetes. *Diabetologia* 2001;44 (Suppl 2):S14-S21.
5. Public Health Agency of Canada. National Diabetes Fact Sheet Canada 2007. Retrieved March 13, 2009, from <http://www.phac-aspc.gc.ca/ccdpc-cpcmc/diabetes-diabete/english/pubs/ndfs-fnrd07-eng.html>.
6. Canadian Diabetes Association Clinical Practice Guidelines Expert committee. Canadian Diabetes Association 2008 clinical practice guidelines for the prevention and management of diabetes in Canada. *Can J Diabetes* 2008;32(Suppl 1):S1-S201.
7. Health Canada. Eating Well with Canada's Food Guide. Retrieved March 13, 2009, from [http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html).
8. Dattilo A, Kris-Etherton P. Effects of weight reduction on blood lipids and lipoproteins: A meta-analysis. *Am J Clin Nutr* 1992;56:320-28.
9. Goldstein D. Beneficial health effects of modest weight loss. *Int J Obes Relat Metab Disord* 1992;16:397-415.
10. Elmer P, Grimm R Jr, Laing B, et al. Lifestyle intervention results of the Treatment of Mild Hypertension Study (TOMHS). *Prev Med* 1995;24:378-88.
11. Knowler W, Barrett-Connor E, Fowler S, et al. Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 2002;346:393-403.
12. National Institutes of Health. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults – the evidence report. *Obes Res* 1998;6(Suppl 2):51S-209S.
13. Stone, JA (Ed.) (2004). Canadian Association of Cardiac Rehabilitation Guidelines for Cardiac Rehabilitation and Cardiovascular Disease Prevention. CACR. Winnipeg.
14. Brand-Miller J, Hayne S, Petocz P, et al. Low glycemic index diets in the management of diabetes: A meta-analysis of randomized controlled trials. *Diabetes Care* 2003;26:2261-67.
15. Anderson J, Randles K, Kendall CW, et al. Carbohydrate and fiber recommendations for individuals with diabetes: a quantitative assessment and meta-analysis of the evidence. *JACN* 2004;23:5-17.
16. Jacobs D Jr, Meyer K, Kushi L, et al. Whole-grain intake may reduce the risk of ischemic heart disease death in post-menopausal women: the Iowa Women's Health Study. *Am J Clin Nutr* 1998;68:248-57.
17. Kris-Etherton P, Harris W, Appel L, et al. Fish consumption, fish oil, omega-3 fatty acids and cardiovascular disease. *Circulation* 2002;106:2747-57.
18. Appel L, Moore T, Obarzanek E, et al. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med* 1997;336:1117-24.
19. Sacks F, Svetkey L, Vollmer W, et al. Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. *N Engl J Med* 2001;344:3-10.
20. Colberg S. Avoiding possible interactions between exercise and diabetic medications. *ACSM's Certified News* 2007;17:8-10.

## Mutli-site Telemedicine Cardiac Rehabilitation Program for Residents of Northwestern Ontario

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### The Issue

In 2003, the Northwestern Ontario District Health Council identified inequities in the delivery of Cardiac Services in Northwestern Ontario (NWO) and made specific reference to the benefits of Cardiac Rehabilitation (CR) participation. These services were limited to patients living within the proximity of Thunder

Bay Regional Health Sciences Center (TBRHSC), leaving 50% of NWO with no access to care. Given the prevalence of cardiac disease in the North, it was imperative that a cost-effective means of ensuring access to this program be developed and evaluated.

### The Value

TBRHSC provides an evidence-based CR

program with reproducible patient outcomes based on the Cardiac Care Network (CCN) of Ontario model. The program includes group education, exercise classes, and individual counseling. Thunder Bay has the critical mass to support the interdisciplinary team required for a robust program; however, many NWO communities have no access to professionals such as dietitians or pharmacists. Likewise the patient volumes would be too small to maintain clinical competency at each site. Therefore, a traditional program could never be translated across the Northwest Local Health Integration Network (NW-LHIN).

At the same time, NWO hospitals widely adopted telemedicine technology. An initial trial of broadcasting group education sessions from Thunder Bay to communities via telemedicine was met with overwhelming enthusiasm. This component of the project received the 2005 Clinidata: Canadian Society of Telehealth Award.

Despite this success, access to the exercise component remained an issue. The innovation came by adapting the full CCN model to be delivered via telemedicine, facilitating equitable and effective care to the remote and sparsely populated NWO communities severely challenged by a lack of professional resources.

### The Evidence

In December 2005, TBRHSC and 4 partner sites (Atikokan, Nipigon, Marathon and Manitouwadge) received a Change Foundation Grant to educate select professional staff from partner sites to support patients in their home communities. The education program included didactic and practical sessions on CR and telemedicine. These staff then returned home to extend their knowledge to their colleagues. Finally, all sites participated in a steering committee which met via telemedicine to guide the project and share experiences.

The staff education program was evaluated. Partner site staff indicated support for the approach and, in particular, the ongoing relationships and connectivity. This program has added a new dimension to professional roles in the region and serves as both a recruitment and retention tool. Four additional sites have since joined the project: Kenora, Dryden, Sioux Lookout and Terrace Bay. Fort Frances has also requested to join this initiative with two sites participating. Interest has been expressed by the

last remaining sites of Geraldton and Red Lake.

An application to FedNor and the Ontario Telemedicine Network was successful in funding Tandberg Interns, portable Telemedicine units, for each site. Through the Tandberg Interns, the sites are able to connect in real-time videoconferencing sessions permitting access to all program elements including the interactive exercise classes.

### The Technology

At the infancy of this project, we believed that telemedicine connectivity would be a “nice” addition to the program; however, it has become very evident that the Tandberg Interns are an integral component of the delivery model. Telemedicine allows for real-time staff interaction and provides isolated patients with a virtual real-time support group. This use of technology has been the key element in attaining interactive access to this program for residents and professional staff of NWO, enabling the delivery of a fiscally responsible program. The development of a shared website has created a common access point for all sites involved in the project. TBRHSC created and continues to update a source of tools including publications, policies, forms, etc.

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“Telemedicine allows for real-time staff interaction and provides isolated patients with a virtual real-time support group.”

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### The Outcomes

In October of 2006 we had our first “graduates” of the regional programs. The evaluation of client and care provider feedback was overwhelmingly positive. At the Innovations in Health Care Expo 2007 this project received the Minister’s Innovation Award in the category of Meeting Community Needs Through Integrated Care.

It was imperative to also review clinical outcomes. Through a partnership with Lakehead University an analysis of individual client data on intake and exit was conducted. Regional clients were compared with two groups in Thunder Bay (one with and one without Telemedicine). It was concluded that regional client outcomes matched those of the traditional program.

At the November 2008 Ontario Health Association (OHA) Health Achieve conference in Toronto this program was honoured with the Ted Freedman Award for Innovation in

Education. The success of this initiative is due both to the innovative use of technology and the commitment of care providers across the LHIN to gain the necessary education and skills to support these patients remotely. Our goals

are to extend to the remaining sites in NWO, to review the transferability of the approach to other Chronic Disease Management strategies and to share our knowledge to others.

## The Canadian Diabetes Association 2008 Clinical Practice Guidelines – Key Messages for Cardiac Rehabilitation Practitioners

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The 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada were released last October. In addition to updating chapters from the previous 2003 guidelines, a number of new sections were added, widening the scope to address issues in cardiovascular disease and introducing areas such as self-management. Cardiac rehabilitation (CR) represents an important model and locus of care for many persons living with diabetes. Key recommendations from a number of chapters (reviewed in an Executive Summary authored by Dr. Ian Blumer) and commentary about relevance to CR are presented below.

### SCREENING FOR TYPE 2 DIABETES MELLITUS

- “Screening for type 2 diabetes using a fasting plasma glucose (FPG) should be performed every 3 years in individuals  $\geq 40$  years of age.”
- *Comment: Many clients presenting to CR programs may be newly diagnosed with diabetes. This is an opportune time to help them adjust to and learn about their condition. If not already done, FPG should be checked in all clients upon entry to CR.*

### PREVENTION OF DIABETES

- “Intensive and structured lifestyle modification that results in loss of approximately 5% of initial body weight can reduce the risk of progression from impaired glucose tolerance (IGT) to type 2 diabetes by almost 60%.”
- *Comment: CR embodies an effective model that can reduce the incidence of diabetes for many persons at high risk.*

### ORGANIZATION OF DIABETES CARE

- “Diabetes care depends upon the daily commitment of the person with diabetes to self-management practices with the support of an integrated diabetes healthcare team.”

- “The team should be multi- and interdisciplinary, and should establish and sustain a communication network among the health and community systems needed in the long-term care of the person with diabetes.”
- “Diabetes care should be systematic and, when possible, should incorporate organizational interventions such as electronic databases, automatic reminders for the patient and diabetes health care team, and adaptations for distance.”
- *Comment: The parallels with the CR model are striking. There should be close alignment with CR and diabetes care since so many clients in CR are living with diabetes, and the interventions and philosophies of management are shared.*

### SELF-MANAGEMENT EDUCATION

- “Self-management education (SME) that incorporates knowledge and skills development, as well as cognitive behavioural interventions, should be implemented for all individuals with diabetes.”
- “The content of SME programs must be individualized according to the individual’s type of diabetes, current state of metabolic stability, treatment recommendations, readiness for change, learning style, ability, resources and motivation.”
- “SME is a fundamental component of diabetes care and is most effective when ongoing diabetes education and comprehensive healthcare occur together. All providers should implement interventions in a collaborative manner that increases the adult patient’s participation in healthcare decision-making.”
- *Comment: Self management is fundamental to CR practice. This chapter is a new addition for 2008 recognizing the movement towards the principles of chronic disease management as a model for care*