The Challenge

The increasing incidence of chronic disease has emerged as one of the most important health issues in the 21st century. Cardiovascular disease (CVD) is a chronic disease that kills more Canadians than any other disease. According to the Heart & Stroke Foundation of Canada, 80.2% of all Canadians have one or more of the following preventable risk factors for CVD: smoking, physically inactive, overweight, high blood pressure, and diabetes; 10% have three or more. In British Columbia, CVD is not only a leading cause of death, it is also the most costly healthcare problem with an annual cost of at least $820.4 million in direct medical expenses alone. Even though deaths from CVD have significantly declined over the last few decades, the number of persons living with CVD as a chronic disease has increased. As the population continues to age and modifiable risk factors for CVD are not addressed, the incidence, as well as the economic and social burden of CVD, is expected to increase.

Vancouver Island’s population profile is a major concern for heart health. The residents of Vancouver Island are some of the oldest in British Columbia, with 38.1% of Qualicum Beach, 32.6% of Sidney, and 30.8% of Parksville’s population being over the age of 65, compared to the provincial average of 13.6%. Also, the central and northern parts of the island have a statistically higher percentage of smokers and people living in poverty than the provincial average; all of these conditions are associated with a higher incidence of CVD. Prior to the formation of the Vancouver Island Health Authority in 2002, persons living in the more rural parts of Vancouver Island north of Victoria were receiving little or no cardiac risk reduction education or support post-cardiac event. The challenge for the health authority was to create an evidence-based, cost-effective cardiac risk reduction service that all persons, including those who live in the rural and remote parts of the health authority, could have equal access to.

The Multi-Site Cardiac Risk Reduction/Rehabilitation Program: A Solution

Chronic disease management (CDM) is a systematic approach to improving healthcare for people living with chronic diseases. Cardiac rehabilitation (CR) is a systematic process of long-term chronic disease care. Cardiac Rehabilitation, as defined by the Canadian Association of Cardiac Rehabilitation (CACR), is “...the enhancement and maintenance of cardiovascular health through individualized programs designed to optimize physical, psychological, social, vocational, and emotional status. This process includes the facilitation and delivery of secondary prevention through risk factor identification and modification in an effort to prevent disease progression and recurrence of cardiac events.” Using this definition as a foundation and the Expanded Chronic Care Model as a framework for chronic disease management, the Vancouver Island Health Authority (VIHA) implemented a multi-site cardiac risk reduction/rehabilitation program with the goal of delivering a comprehensive, integrated, evidence-based, and coordinated chronic care program to reduce the economic and social burden of heart disease throughout the health authority. The purpose of the Multi-Site Cardiac Risk Reduction/Rehabilitation Program (MSCRP) is to support people with CVD and their families, and to facilitate cardiac risk factor reduction and rehabilitation. This is accomplished through the use of telephone-nurse case management to educate, counsel, link with community programs, and provide home-based cardiac rehab exercise guidance.

Using the Research

There is no doubt that multi-factorial risk reduction and cardiac rehab improve health outcomes for people living with CVD, and there is a significant amount of literature supporting a physician-directed/nurse case-management model of care for cardiac risk factor reduction. The MSCRP was developed upon two key cardiac risk factor reduction intervention studies, the Stanford Coronary Risk Intervention Project (SCRIP) and the Stanford Multi-Fit study. The SCRIP study was the first randomized trial that demonstrated the benefits of a multifactor risk reduction program, using both intensive lifestyle management plus lipid-lowering medications, on the progression and regression of coronary atherosclerosis and clinical cardiac
events in people with established heart disease. The MULTI-FIT study, another randomized trial, looked at the effects of education and counselling on smoking cessation, physical activity, and diet through a case-management model that primarily offered intervention via telephone and mail. The findings from MULTI-FIT demonstrated significant changes in functional capacity, smoking cessation, and LDL outcomes.

Though these studies were originally published in the 1990s, the interventions continued to be studied, and as Haskell reported in 2003, the use of nurse case management and telephone follow-up intervention continues to be an effective way of supporting people in coronary risk factors reduction, thereby reducing CVD morbidity and mortality. Further studies on telehealth have shown that frequent assessments, education, and counselling by telephone reduce the frequency of emergency room visits and decrease hospital readmissions post-event. In the United Kingdom, the Heart Manual, a widely used six-week home-based case-management/self-management cardiac rehabilitation program that is very similar to the Vancouver Island MSCRP, has been proven to be clinically effective in three randomized trials.

Finally, the research around chronic disease management and prevention also played a significant role as a source of evidence for the development of the MSCRP. There is a growing recognition that management of chronic diseases, such as heart disease, is more effective when self-management skill development is emphasized. The Expanded Chronic Care Model was developed as a framework in an effort to reduce the overall burden of chronic disease. It integrates population health promotion with the prevention and management of chronic disease by not only supporting people and communities to be healthy but also by reducing the impact and burden on those who already have the disease. The emphasis of the MSCRP is to support and empower people living with CVD to recognize risk factors and develop a self-management plan that includes personal skills to live well with chronic heart disease. The knowledge gleaned from the Expanded Chronic Care Model encourages health professionals to go beyond the clinical and curative services of a medical model of disease management to an expanded mandate that supports individuals in a more holistic realization and reduction of risks.

Conclusion

The MSCRP is a cardiac risk reduction and rehabilitation program that was thoughtfully developed by utilizing the research available from cardiac rehabilitation and chronic disease management. Not only does this program fill the gap in care/education between coming home from hospital after an acute cardiac event and commencing a formal cardiac rehabilitation exercise program, it also provides a service for those who live in the remote and rural areas of the island. By providing a telephone intervention service, the MSCRP provides access to supportive counselling and risk reduction education for all communities of Vancouver Island, while at the same time reducing the social and economic burdens of the disease.

References:
5. Canadian Association of Cardiac Rehabilitation (2004). Canadian Guidelines for Cardiac Rehabilitation and Cardiovascular Disease Prevention: Enhancing the Science, Refining the Art (2nd ed.).