Slide 1.
Thank you to all those involved for providing me with this opportunity to give this presentation at this collaborative meeting. My presentation will describe how the Canadian Centre for Activity and Aging is able to translate evidence-based research into effective education and training programs that support community-based physical activity programs across Canada. I will also attempt to highlight the step-by-step process of program development, implementation, evaluation and implementation.

Slide 2.
The Centre’s vision is to be a leader in both research and the translation of research into effective exercise and education programs that target Canada’s older adult population. The Centre enjoys a unique relationship between the research and community outreach divisions allowing for dynamic communication between scientists and practitioners. Basic and applied research is translated into effective programs while feedback from these programs contributes to the Centre’s ongoing research agenda. This relationship is the key behind the Centre’s success over the past 15 years. The research division includes five in-house research scientists. These researchers lead a team of twenty graduate and undergraduate students. Twenty associate faculty include members from the departments of; Kinesiology, Physiology, Biochemistry, Epidemiology and Biostatistics, Physical Therapy, Communication Sciences and Disorders, Medical Biophysics and members from the Faculty of Medicine and Dentistry and the Lawson Health Research Institute, the research arm of London’s two leading hospitals. Three faculty members from other University institutions hold adjunct research positions with the Centre. The community-outreach division includes 40 education and project coordinators, instructors, and office support personnel. Most are employees of the University of Western Ontario, however, special project coordinators are hired separately under contact to the Centre.

Slide 3.
First, let us review why so many older adults neglect physical activity. In Canada an estimated 65-75% of older adults are considered inactive, defined as not engaging in sufficient levels of physical activity to maintain or promote health. There are many physiological and psychosocial determinants associated with poor physical activity participation by older adults. For many older adults exercise is a foreign concept that is not supported by general societal beliefs that one should take it easy and slow down in their retirement years. Both the general adult and older adult populations are unaware of the ability of exercise to restore and/or preserve function beyond its traditional promotion for disease prevention. Older adults who are interested in experiencing the benefits of regular exercise may quickly become disinterested if there are no convenient facilities to support senior exercise programs, nor are there their trained personnel ready to support a population living with multiple chronic diseases and disabilities. Overcoming such barriers requires appropriate education of both the older adults and those who serve them.

Slide 4.
Factors that enable successful physical activity adoption include selecting moderate intensity activities, at least to start, activities that are inexpensive yet functional (e.g. walking), select activities that are easily performed, conveniently located, and that support a social network. To
support long term adherence requires appropriate education of the participants and those who
instruct them. Educating both participants and instructors will help foster an exercise
environment that is both safe and effective.

**Slide 5.**
This diagram indicates why we need to take exercise promotion beyond traditional disease
prevention and understand why it has such important physiological benefits for older adults. In
general, by age 65 years an older adult will have lost 30-40% of his/her capacity to perform daily
functional abilities. Thus, it become increasingly more difficult for many older adults to continue
to do activities they may have once considered to be routine. By the time the older adult has
reached 80 years of age they may no longer have the aerobic capacity to perform simple
activities of daily living without become overly fatigued. Research has directly linked the
reduction in cardiorespiratory fitness (heart and lung function) as an independent factor causing
functional dependence in old age.

**Slide 6.**
As observed in this slide, Morey and colleagues (1998) provide us with a model which indicates
the components of fitness are directly associated with a loss in function.
Therefore, poor fitness may be considered an impairment, and a critical modifier on the path of
disability and eventual frailty. Cardiorespiratory fitness has been traditionally associated with
disease pathology but is now considered an important independent factor contributing to
functional limitations in older adults.

**Slide 7.**
The community outreach division uses its in-house exercise programs as examples of what may
be achieved in the community. The Centre’s collaborations with community groups have lead to
the creation of many satellite exercise programs in both urban and rural communities across the
province of Ontario. The Centre’s in-house exercise programs are referred to as “a living
laboratory” for over 400 older adult participants. Education and training programs for
practitioners working with older adults in the community, at home and in long term care centers
is also the responsibility of the community outreach division. These education and training
programs were all developed from evidence-based research conducted by the Centre. Various in-
house exercise programs are offered at the Centre. These exercise programs target both the robust
community-dwelling older adult and those living with disability and disease. The exercise
programs are overseen by the community exercise physiologist and managed by the in-house
program coordinator. Twenty-five instructors lead 16 various exercise programs, which run
hourly, five days a week. Instructors are primarily older adults, however, many undergraduate
students from Kinesiology and health sciences gain valuable experience from helping to lead
these programs. Having various exercise programs for older adults to choose from was a primary
factor in Centre being lower participant dropout rates over a three-year period. The results of this
longitudinal participant tracking analysis were published in 1998.

**Slide 8.**
The community outreach division is actively involved in establishing exercise programs and
educational opportunities throughout the city of London and in the surrounding rural areas. The
Centre’s Get Fit for Active Living program is delivery at multiple sites across London and the
surrounding areas. Volunteer instructors form the Victorian order of Nurses (VON) lead exercise
programs in many of the small rural communities surrounding London. The Centre also has an
active role in establishing exercise programs within the Cherryhill area of London, which has a large concentration of approximately 4,0000 older adults with a 1km sq. area. All are living in apartment buildings. These programs act as models for other communities across Canada. For example, the VON program model is presently being disseminated across Canada by the national VON office, in collaboration with the Canadian Centre for Activity and Aging.

Slide 9.

The development of leadership education and training programs is an essential part of the community-outreach division. It is through these education and training programs that the Centre is able to translate the latest research into effective exercise programming thorough the appropriate training of those who lead older adult exercise programs. For those leading exercise programs for the general older adult population, those still considered actively independent, the Centre developed the Seniors Fitness Instructor Course. This course trains both seniors a “peer” leaders and an advanced program is used to train experienced instructors and physical education students. The Centre has just completed an evaluation of its Get Fit for Active Living Program (GFAL), an eight week introduction and education experience for older adults interested in starting an exercise program. Later this year the Centre plans to pilot test a new personal trainer program that will train exercise leaders to provided individually tailored programs to older adults. The Centre also has developed behaviour modification (i.e. increase daily physical activity) and education program, named the First Step Program (FSP) for persons with type 2 diabetes. The Centre also realized the need to target those older adults who can not leave their home because of deteriorating health and frailty. The Home Support Exercise Program (HSEP) was developed to training home care employees on how to deliver an effective exercise program to their clients. Caregivers (those who are taking care of a sick loved-one) and volunteers also deliver this program of 10 simple exercises for mobility, balance and strength. A third area of interest to the Centre was to deliver education and training programs to the staff in long term care centres. This led to the development of the Functional Fitness for Older Adults (FFOA) and the Restorative Care Education and Training (RCET) program. The Functional Fitness program is a group-based program for higher function institutionalized older adults while the Restorative Care Education and Training program train staff members to provide rehabilitation, positioning, communication, feeding and exercise with the very frail, sick and/or demented. A train the trainer program has also been established to train experienced and certified educators to teach these programs across the country, thus increasing the Centre’s national network of trainers and exercise leaders.

Slide 10.

The Get Fit for Active Living is an education and exercise program for older adults. The program teaches older adults how to get started on a regular exercise program, and about the importance of living a healthy and active lifestyle so that they can maintain their functional independence. The program is run over an eight-week period and participants are introduced to exercise through a series of lectures and exercise classes. Class included two cardiorespiratory programs per week and on strength training program per week. The lectures cover the topics many topics including: the benefits of physical activity; exercise adherence; cardiorespiratory exercise; muscle strengthening; flexibility and balance; healthy eating; exercise at home and community options. Various exercise adherence and feedback tools are introduced such as exercise log books, pedometers and heart rate monitors. The goal of the program is to give the older the experience and self-confidence to exercise independently. Preliminary results based-on 215 one year follow-up evaluations on past GFAL participants suggests that up-to 80% continue to exercise regularly,
3-times per week. Of those who continued to exercise 63% were enrolled in structured exercise programs and 17% exercised at home.

**Slide 11.**

The Seniors Fitness Instructor Course (SFIC) was originally designed to train peer leaders (older adults), to become exercise leaders of community-based exercise program. This has been a very successful program for the Centre which requires the older adult have take the 36 hour course followed by 16 hours of practical experience (leading an exercise class), followed by a take-home examination and professional evaluation. After completing these requirements the Centre provides certification for the exercise leader. To meet a growing demand from younger, experienced and well-educated exercise leaders the Centre produced an advanced, 18 hour version of the original Seniors Fitness Instructor Course. Not all participants meet the certification requirements and only a third of all trainees have become certified, which speaks to the credibility of those who the Centre does certify.

**Slide 12.**

The First Step Program (FSP) is a pedometer-based physical activity, behaviour modification program for those living with Type-2 diabetes. The goal of the project is to determine if the program is effective at increasing physical activity of type-2 diabetics when delivered through 15 diabetes education centres across Canada. The program trains both diabetes educators and peer leaders to deliver the program. Preliminary results indicate that the program increases the patient’s daily physical activity and decreases body-mass index scores, waist girth values and blood pressure. Thus, allowing many patients to control their diabetes with little or no medication. Health Canada and the Canadian diabetes Association have provided much of the funding for this project. Both the initial pilot study and randomized control trial have been published in peer reviewed journals. The National implementation and dissemination project saw the FSP roll-out in 15 diabetes education centres across Canada with the program being delivered by either diabetes educators or peer leaders. A train the trainer model has also been implemented. Recently this project received an additional year of Health Canada funding to investigate strategies that support long-term physical activity adherence.

**Slide 13.**

Exercise programming is important for frail older adults who are at risk of premature institutionalisation. The Home Support Exercise Program (HSEP) consists of 10 simple, progressive exercises designed to maintain or improve functional mobility and quality of life. The program is delivered through the home support network and also through a volunteer visitor network. The training workshop is four hours in length and covers basics on physical activity and aging, teaching of the exercises, motivation techniques and evaluation skills. A recent collaboration in Hong Kong has led to the development of a Chinese version of the HSEP, which includes a DVD video. An American version of the program will begin later this year in collaboration with Perdue University’s Exercise and Aging Centre. Over 800 home care employees, volunteers and caregivers have received training. The video and pictures of the exercises are available for the public to purchase.

**Slide 14.**

The 16-hour Functional Fitness for Older Adults course is designed for staff working in long-term care centres who are interested in implementing safe, effective and challenging group-based
exercise programs for the frail elderly. This workshop is based-on the Centre’s own evidence-based research. The FFOA is very popular and is presently offered through several community collages across Canada.

Slide 15.
The Restorative Care Education and Training Program (RCET) resulted from a research trial designed to promote physical mobility, feeding and communication skills of long-term care residents. The results of the study indicated improvements following education and training in functional independence, mobility and staffs knowledge of communication disorders due to stroke and dementia. The week-long workshop also includes new education modules on stroke rehabilitation and exercise programming with Alzheimer’s Disease patients. This is the Centre’s most popular education and training program as there is a great demand for training of staff to work cost-effectively with this very frail population.

In 1995, the Training for the Trainer course was introduced to make the CCAA’s leadership training courses available to communities across the country. Participants must have a university degree in a health related-field or equivalent college diploma with experience and desire to facilitate the growth and development of the CCAA’s leadership training programs. Prerequisites also include CCAA certification and experience with the program the plan to train facilitators for. The training is 40 hours long. Trainers must facilitate the delivery of one course within a year of the training for the trainer. This is either co-facilitated or observed by a certified CCAA Trainer. To maintain certification trainers must provide a minimum of at least two courses each year and submit appropriate training records to the CCAA along with a biannual review of their teaching skills. Through our Training for the Training program, facilitators are prepared to deliver CCAA leadership-training programs in communities across the country. The Centre currently has trainers in the provinces of Ontario, British Columbia, Alberta, Manitoba, New Brunswick and Nova Scotia.

Slide 17.
The Canadian Centre for Activity and Aging has certified over 4000 health professionals and peer leaders over the past 10 years. These numbers have recently escalated with the addition of our Home Support Exercise Program and First Step Programs.

Slide 18.
This map highlights the location of the CCAA trained trainers across Canada. These trainers have or will soon have the capacity to deliver all of the Centre’s education and training programs.

Slide 19.
Later this year the Centre will have a designated, interactive website for its trainers, course facilitators and certified exercise leaders. The website will host special areas for each of the Centre’s courses with secure access for certified members only. Course calendars, certification requirements and monthly newsletters will be posted on the site. Users will be able to view education manuals and other resources (e.g. videos, exercise photographs, career page etc.)

Slide 20.
With support from Health Canada the CCAA develop national leadership guidelines for those leaders working in community-based programs, and for those working in long-term care and home care. A series of stakeholder forums were held to establish a template for these guidelines. These forums included government officials, provincial health and fitness representatives, directors of long-term care centres and members form provincial home care associations. These guidelines have recently been translated into French and will be available for dissemination across Canada later this year. International guidelines are presently being developed and will be
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tabled during the 6th World Congress on Aging and Physical Activity and will be endorsed by
the World Health Organization.

Slide 21.
The CCAA is proud to host the 6th World Congress on Aging and Physical Activity in August of
2004. This event is held every four years under the direction of the International Society for
Aging (ISAPA). The Congress attracts both researchers and practitioners from around the world
to exchange the latest research findings and clinical developments in the area of aging and
physical activity. In addition to original research reports and scholarly symposia, the Congress
also provides an opportunity for presentations pertaining to developing, implementing, and
evaluating physical activity programs for older adults. The Congress has previously been held in
Congress produced the Heidelberg Guidelines for developing strategies and policies to increase
physical activity levels in all older adults. Holding this prestigious event in London will give the
CCAA international exposure in aging physical activity research. If you are interested in aging
and physical activity research and/or programming I suggest you try to attend this meeting.