

# The Tele-homecare Exercise Coaching Initiative (TECI)

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# Moderate degrees of physical activity and exercise improve the health and well-being of people at all ages (Haskell et al, 2007).

The benefits are evident in the management of cardiovascular health, diabetes, mental health, work related stress, osteoporosis, recovery following hospitalization and surgery, obesity, community acquired sepsis, cancer and living with HIV.

## Exercise benefits older adults

Physical activity and exercise have primary preventive benefits for older adults whose lives may be increasingly complicated by chronic disease, more sedentary life styles, cognitive decline, and falls.

Secondary prevention benefits are also evident frail older adults who are at risk of losing the capacity for independent living or suffering the effects of cognitive decline.

# **Frail seniors may loose fitness faster than others but continue to benefit from appropriate levels of exercise**

Following a systematic review Nash (2012) concludes that despite methodological difficulties including dose specificity, exercise format, outcome measures, the impact of moderating variables such as nutrition and self-efficacy, and the durability and transferability of benefits, exercise is safe and beneficial for the majority of frail older people.

## Chaired based exercise for frail seniors

Finally, evidence is emerging that exercise may benefit frail seniors who require intervention in the home (Yamauchi et al 2005) and for those whose functional abilities require chair based rather than more ambulatory exercise (Anthony et al 2013)

Because of these benefits geriatric day hospitals and community health centers serving frail seniors incorporate exercise and mobility enhancing interventions in their treatment programs and encourage the maintenance of home based exercises following program discharge and for home bound seniors.

**But older adults are not unlike younger people in that the maintenance of exercise programs is itself a challenge.**

## TECI explored two issues.

**Technically:** explore the feasibility of telehome exercise coaching for frail home bound seniors through real-time, point-to-point personal computer video conferencing (PCVC) provided by the Ontario Telemedicine Network (OTN) Home Video Visits Demonstration Project.

**Clinically:** examine the feasibility of TECI for maintaining or improving the mobility and sense of self-efficacy of frail home bound older adults and facilitate post-discharge transitions while sustaining the gains achieved from participation in clinic based exercise programs.

# Where we started

- Dr. Ryan's idea of home exercise as an assess and restore opportunity needed video functionality to support patients in their home
- OTN's Home Video Demonstration Project looking for new settings for video use
- A chance meeting at Baycrest's Aging Summit in February, 2014



## OTN Provided

- Patient equipment - Customized laptop computer with cellular connectivity
- High resolution external camera and speaker
- Dedicated, point-to-point videoconference
- Equipment installed and patient trained in their home by experienced technicians
- Training & Support services as required



# AJHS/Geriatric Day Hospital/RGP

- Patient selection and enrollment
- Development of a coach training video and evaluation framework
- Exercise coach for regularly scheduled video sessions with patients
- Provider hardware (computer, camera, speaker)
- Initial troubleshooting when patient experienced technical issues

# Equipment & Services Costs

Item	Approximate Cost
Hardware (laptop, camera, etc)	\$950
In home installation and training (per patient)	\$180
Equipment retrieval (if done by technician)	\$120
Cellular connectivity (per patient, per month)	\$ 60

## Learnings: OTN side

- Inconsistent connectivity traced to mobility software settings and loose USB fittings on internet sticks
  - resolved with cellular connectivity
- Patient confusion with computer start-up
  - resolved with auto-answer feature install
- The need for patient to be seated several feet from the computer complicated computer start-up
  - resolved with auto-answer feature
- Cost of home installation/retrieval and training
  - geriatric service rather than OTN responsibility

# Mrs P. 93 years old & living independently at home

Admitted to the Geriatric Day Hospital because of functional decline and deconditioning following a complicated hospital admission. Concerns regarding decreased mood and cognition.

## Medical Status

Pulmonary Fibrosis

Osteoporosis

Hypertension

Sleep disturbance

## Day Hospital Discharge

MOCA 27/30

GDS 3/15

Berg balance scale on Day hospital discharge 54/56

Timed up and go (TUG) on Discharge 9.37 secs

Play video here if it is available

# Coaching evaluation Mrs P

Timed up and go (TUG) on discharge from day hospital	9.37 secs
Modified TUG admission to telehome coaching	2.87 secs
Modified TUG following months of coaching	2.08 secs

Activity confidence on coaching admission 38/40

Activity confidence on coaching discharge 37/40 (I have cleaning lady now)

Perceived exertion on coaching admission 3.3

Perceived exertion on coaching discharge 1

Did exercise coaching help you maintain your independence 4/5

Will you be able to maintain exercises now program is over 3/5

Would you recommend the coaching service to your friends 5/5



# What we would do next

Telehome exercise coaching is feasible and valued by participating seniors

TCLHIN Community Health Centers and Geriatric Day Hospitals would like to do this

Better integrate the exercise coaching with other tele-home care activities

Better integrate CHC and SGS outreach services

Continue to build exercise progression

Find a way to remove set-up and recovery costs from OTN

Test the reliability and validity of tele-home TUG

Conduct a pilot of this idea whose feasibility we have demonstrated

# The Tele-home Exercise Coaching Initiative – Participants

Project Directors:

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Exercises developed by:

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**Old is the  
new black**

