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The Centre of Excellence on Longevity would firstly like to acknowledge all those who support its undertakings and initiatives, and consequently the health, well-being and quality of life of our elders and their family caregivers.

The Louise & André B. Charron Family has pledged its support to the Centre of Excellence on Longevity through the sustainable financing of its Research-Action Department. Thanks to this momentous donation, the Centre of Excellence on Longevity innovative new research, such as the Arts & Longevity program, will be born, and concrete measures will be undertaken to benefit our elders.

- CIUSSS West-Central Montreal
- DeSerres Group
- Division of Geriatrics, Jewish General Hospital
- Donald Berman Maimonides and Jewish Eldercare Centre
- Emergency Department, Jewish General Hospital
- Foundation of the Jewish General Hospital
- Foundation of the Montreal Museum of Fine Arts
- Guarantee Company of North America
- Gustav Levinschi Foundation
- Henry & Berenice Kaufmann Foundation
- Humanization of Care Committee, Jewish General Hospital
- Joseph Kaufmann Chair in Geriatric Medicine, McGill University
- Lady Davis Institute for Medical Research, Jewish General Hospital
- Ministry of Health and Social Services (MSSS)
- Montreal Jewish General Hospital
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- Mrs. Mina Drimaropoulos
- Mrs. Denyse Valois
- Mrs. Suzanne Forest & Mr. Guy Fortin
- Mrs. Pierrette Jabbour & Dr. William Jabbour
- Mrs. & Mr. Jean Monty
- Mr. Gilles Senécal
- Oberfeld Family
- Pinsky Family
- Saint-Germain Family
- T.A. Saint-Germain Charitable Foundation
- University Advancement, Faculty of Medicine, McGill University

THANK YOU
AUGMENTED LONGEVITY

2018 has been a landmark year for the Centre of Excellence on Longevity. Positive results in our Research-Actions commitments have validated number of our existing projects, and allowed us to elaborate brand new programs. Innovative actions have also been undertaken in the fields of prevention, care continuum, caregiving and inclusive technologies; and these have already produced conclusive results, thereby highlighting their importance.

Every day of 2018, thanks to the help of our partners and the generous contribution of our donors, we endeavoured to push back the limits of human longevity. We have delved into uncharted reaches, and are clearing the path to the future, ours and that of our children, so that all elderly persons may enjoy health, well-being and high quality of life.

We are the trailblazers of prolonged health, and will open new avenues of “augmented longevity.” Our most powerful, efficient and intelligent ally in this undertaking is technology. Neural networks and artificial intelligence, self-evaluations, automated measurements, research modelling, accident prediction and prevention... Technology has put itself in our service, in all fields.

It moulds us, informs us, alerts us, guides our diagnostics and supports our decision-making, so as to make us quicker, more efficient and — let us hope — better. Where to? Beyond acceptable care, humanity or ethics? At the Centre of Excellence on Longevity, we do not believe so. Paradoxically, technology allows us to better focus on the patient, the caregiver, the elder. On you.

What is necessary is for technology to support the human relationship, to achieve true augmented longevity.

Together, we can augment human intelligence with the help of technological intelligence. For the well-being of all.

Dr Olivier BEAUCHET
Director of the RUIS McGill Centre of Excellence on Longevity
CENTRE D’EXCELLENCE SUR LA LONGÉVITÉ

CENTRE OF EXCELLENCE ON LONGEVITY
THE RUIS MCGILL CENTRE OF EXCELLENCE ON LONGEVITY

Missions
- To increase the quality of life, health and autonomy of elderly persons, by enabling them to take charge of their own health and influence their environment
- To promote a just and efficient healthcare system

DEPARTMENTS
- RESEARCH ACTION
- KNOWLEDGE TRANSFER
- EDUCATION
- INFORMATION

AREAS
- HEALTH PREVENTION
- CARE CONTINUUM
- CAREGIVING
- INCLUSIVE TECHNOLOGY

www.ceexlo.ca
2 – KEY DATES AND ...

- **2012**
  - December: Creation of the CEVIMAC and nomination of José Morais as Director
  - January: Opening of the Geriatric Inclusive Art Exhibition at the Jewish General Hospital
- **2013**
  - January: Analysis of Geriatrics and Aging Resources in the RUIS McGill catchment area
  - September: Establishment of communities of practice
  - December: Opening of the multi-site Mobility Clinic of the Geriatric Department of McGill University
- **2014**
  - December: Start of Alzheimer Work Committees with the Aboriginal Territories of the Far North
- **2015**
  - January: Appointment of Olivier Beauchet as Director
  - September: Campus Longevity Quebec creation
  - October: Launch of Geriatric Inclusive Art Workshops at the Jewish General Hospital
- **2016**
  - August: Launch of the ER2 study in partnership with the CHUM and the Jewish General Hospital
  - September: 1st pilot of Caregiver workshop
  - December: Start of A-Health study
- **2017**
  - May: Validation of the effects of music in reducing the risk of falls at St. Mary's Hospital
  - July: Demonstration of a cortical network to control gait related to cognitive conditions in elderly people
  - November: Opening of a self-administered healthcare questionnaire on the cloud platform
- **2018**
  - February: End of Phase 1 and start of Phase 2 of ER2, at the JGH Emergency Room
  - May: Partnership with Telehealth RUIS McGill
  - August: Second pilot of Dementia Education Workshops for Family Caregivers
  - September: Partnership with Nanyang Technological University and Lee Kong Chian School of Medicine, in Singapore
  - October: Final results of Geriatric Inclusive Art study at the JGH
- **2019**
  - December: Final results of A-Health study
... PARTNERS

CANADA - QUEBEC
- AGI Alzheimer Group
- Aide Abus Aînés Info-Line, Montreal
- Akinox Solutions INC.
- Alzheimer Society of Abitibi-Témiscamingue
- Alzheimer Society of Montreal
- Alzheimer Society of Outaouais
- APPUI Montreal
- APPUI National
- BPSD Outpatient Teams Community of Practice Montreal
- BPSD Outpatient Teams Coordination Committee Montreal
- BPSD Outpatient Teams Implementation Working Committee Montreal
- Canadian Consortium on Neurodegeneration in Aging (CCNA)
- Canadian Deprescribing Network
- Canadian Foundation for Healthcare Improvement
- Caregiver Crosswalk Inc.
- Caregivers Mobilization Committee of the CIUSSS West-Central Montreal
- Caregivers Support Committee of the CIUSSS West-Montreal
- Centre de recherche de l’Institut universitaire de gériatrie de Montréal (CRIUGM), University of Montreal
- Centre de recherche sur le vieillissement de Sherbrooke (CSSS-IUGS), Université de Sherbrooke
- Centre for Research and Expertise in Social Gerontology (CREGES), McGill University
- Centre Hospitalier de l’Université de Montréal (CHUM), University of Montreal
- Cree Board of Health and Social Services of James Bay, McGill University
- Crescendo Systems Corporation
- Code Lion
- Coordinating Table of Primary Health and Professional Services, CIUSSS West-Central Montreal
- Consultation Table for the Elders of Côte-des-Neiges, Montreal
- Consultation Table for the Elders of Peter McGill Ward, Montreal
- Continuing Professional Development, Faculty of Medicine, McGill University
- Cummings Centre, Montreal
- Department of Family Medicine, McGill University
- Department of Orthopedics, Jewish General Hospital
- Directorate, First Line Integrated Services, CIUSSS West-Central Montreal
- Directorate, Nursing, Jewish General Hospital
- Directorate, Mental Health and Addiction Program, CIUSSS West-Central Montreal
- Directorate, Rehabilitation, CIUSSS West-Central Montreal
- Directorate, Support for Elderly Autonomy Program, CIUSSS West-Central Montreal
- Distance Teaching and Learning Centre (DTLC) — Northern Health Program
- Division of Geriatric Medicine, Jewish General Hospital
- Division of Geriatric Medicine, McGill University
- Douglas Mental Health University Institute, McGill University
- Emergency Department, Centre Hospitalier de l’Université de Montréal (CHUM)
- Emergency Department, Jewish General Hospital
- Evasion Centre, Montreal
- Faculty of Medicine, McGill University
- Federation of Quebec Alzheimer Societies
- First Nations of Quebec and Labrador Health and Social Services Commission
- Foundation of the Jewish General Hospital
- Foundation of the Montreal Museum of Fine Arts
- Geriatric Assessment Unit, St. Mary’s Hospital Centre
- Geriatric Wards, Jewish General Hospital
- Health and Well-being of Elders Table, CIUSSS West-Central Montreal
- Hospital Elder Life Program (HELP), Jewish General Hospital
- Institut national d’excellence en santé et services sociaux (INESSS)
- Institut national de santé publique du Québec (INSPQ)
- Institut universitaire de gériatrie de Montréal (IUGM)
- Institut universitaire de gériatrie de Sherbrooke (IUGS)
- Integrated Health and Social Services Centre (CISSS) Abitibi-Témiscamingue
- Integrated Health and Social Services Centre (CISSS) Lanaudiere
- Integrated Health and Social Services Centre (CISSS) Laval
- Integrated Health and Social Services Centre (CISSS) Mauricie and the Centre of Quebec
- Integrated Health and Social Services Centre (CISSS) Laurentides
- Integrated University Health and Social Service Centre (CIUSSS) Estrie
- Integrated University Health and Social Service Centre (CIUSSS) Montreal: North, West-Central, South-Central, East and West
- International Laboratory for Brain, Music and Sound Research (BRAMS), University of Montreal
- Joseph Kaufmann Chair in Geriatric Medicine, McGill University
- Lady Davis Institute for Medical Research, Jewish General Hospital
- Local Coordinating Table of Pharmacists, CIUSSS West-Central Montreal
- McGill University Health Centre (CUSM-MUHC)
- McGill University Research Centre for Studies in Aging (MCSA)
- Memory Clinic, Jewish General Hospital
- Ministry of Health and Social Services (MSSS)
- Montreal Museum of Fine Arts (MMFA)
- Nunavik Regional Board of Health and Social Services
- Perform Centre and the Department of Psychology, Concordia University
- Quebec Centre of Excellence on Aging (CEVQ)
- Quebec Network for Research on Aging (RQRV)
- Quebec Senior’s Housing Group (QSHG)
- Regional Department of General Medicine, Montreal
- Regional Pharmaceutical Services Committee (CRSP) Montreal
- Research on Organization of Healthcare Services for Alzheimer (ROSA)
- Services d’accompagnement et de répit aux personnes âgées à domicile (SARPAD)
- Steinberg Centre for Simulation and Interactive Learning, McGill University
- Support Services Continuum for the Autonomy of Elder Patients — Virtual Community of Practice
- TeleHealth RUIS McGill
- University Integrated Health Networks (RUIS) for McGill University, Université de Sherbrooke, Université Laval and University of Montreal
- Users’ Committee, Jewish General Hospital

CANADA — OTHER PROVINCES
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- Andrew and Marjorie McCain Human Performance Laboratory, Richard J. Currie Centre, Faculty of Kinesiology, University of New Brunswick, Fredericton, NB
- Baycrest Health Sciences Centre, Toronto, ON
- Centre for Aging and Brain Health Innovation (CABHI), Toronto, ON
- Department of Medicine, Division of Neurology, University of Alberta, Edmonton, AB
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INTERNATIONAL

Australia
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- Laboratory of Human Motion Analysis, Liege University

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- Dynseo, Paris
- Gérontopôle des Pays de la Loire, Nantes
- Musée d’Art moderne et d’Art contemporain, Nice
- Ministère de la Culture, Paris
- Pôle Réhabilitation Autonomie Vieillissement, Centre Hospitalo-Universitaire, Nice

Israel
- Department of Internal Medicine, Hadassah University, Jerusalem
- Israel Museum, Jerusalem

Japan
- Arts Alive, Tokyo
- Department of Physical Therapy, School of Health Sciences, Narita International University of Health and Welfare, Kobe

Luxembourg
- Centre for Memory and Mobility (CeM2), Luxembourg City

Norway
- Clinic for Clinical Services, St. Olav University Hospital, Trondheim
Russia
- Department of Data Analysis and Artificial Intelligence, National Research University Higher School of Economics, Moscow

Singapore
- Lee Kong Chian School of Medicine of Singapore
- Nanyang Technological University
- National Museum, Singapore
- National Gallery, Singapore
- Tan Tock Seng Hospital, Geriatric Clinic, Singapore

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- Technology for Human Wellbeing Institute HumanTech, Fribourg

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United Kingdom
- Artocene, Oxford
- Cornelius Foundation For Arts, London
- Loughborough University, Loughborough

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- Cleveland Arts and Medicine Institute, Cleveland
- Department of Neurology, Division of Cognitive & Motor Aging, Albert Einstein College of Medicine, Yeshiva University, New York
- Department of Psychiatry and Rehabilitative Medicine, New-York University, New York
- Museum of Modern Art, New York
A MULTIDISCIPLINARY TEAM INVOLVING A FULL NETWORK OF EXPERTS

Director
Olivier Beauchet, MD, PhD,

Dr. Olivier Beauchet, who is Neurology, Internal Medicine and Geriatrics-certified, took over as director of the Centre of Excellence on Longevity in June of 2016. At 51, Dr. Beauchet is a Professor at McGill University, Geriatrician in the Division of Geriatrics of the Jewish General Hospital and Joseph Kaufmann Chair in Geriatric Medicine. He possesses a Master's Degree in Pharmacology, a Master's Degree in Neuropsychology and a Doctorate in Neurosciences. In his 27 years of clinical research and practice, Dr. Beauchet has brought into focus the motor and cognitive decline associated with aging, Vitamin D's effects upon neurological functions and the health pathways of elderly patients. He is now one of the world's leading experts on gait and balance disorders, and their relationship with cognitive decline. He has founded and leads two consortia rallying international research teams and clinicians specializing in human aging. In 2018, Dr. Beauchet was named Visiting Professor at Nanyang Technological University and at the Faculty of Medicine of Lee Kong Chian School in Singapore.

Experts at the Centre of Excellence on Longevity

As the Centre for Excellence on Longevity attracts the collaboration of high calibre experts, complementary professional practices and various environments, it is capable of addressing the full spectrum of fields associated with human longevity. Therefore, the Centre of Excellence on Longevity can call upon the knowledge of an extensive community of provincial, national and international subject-matter experts, on a frequent or infrequent basis, and seek complementary opinions upon a variety of specialties relating to human longevity. These subject-matter experts — university researchers, teachers, entrepreneurs, sociologists, nurses, occupational therapists, designers, professional caregivers, communication and marketing specialists, territorial development specialists, geriatricians, gerontologists, doctors, home automation specialists, trainers, political representatives and advocates for the elderly, among others — have been enlisted from various associations, universities, communities, public services, economic sectors and government agencies.
... Experts at the Centre of Excellence on Longevity

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PROGRAMS AT THE CENTRE OF EXCELLENCE ON LONGEVITY

**Health Prevention**
1. Arts & Longevity
2. Mobility
3. Nutrition

**Care Continuum**
4. Acute and Chronic Care for the Elderly, ACCE
5. Cognition

**Caregiving**
6. Support care
7. Epidemiology

**Inclusive Technology**
8. Aging in Place
9. Quantified-Self
HEALTH PREVENTION.
ARTS & LONGEVITY PROGRAM
— Background

Human aging brings with it a number of pernicious effects: health and functional decline, social withdrawal, and a greater risk of worsening quality of life. The practice of art, and more specifically participatory art-based activity, can increase elder well-being and quality of life, which suggests a real impact on health.

With this backdrop, the Centre of Excellence on Longevity — with the help of the Foundation of the Jewish General Hospital, of McGill University’s Faculty of Medicine, and of the Montreal Museum of Fine Arts — has put in place an innovative new program marrying art and health: the Montreal Arts & Longevity Lab.

— Objectives

- To increase the well-being, quality of life, medical condition and social inclusion of the elderly, through art
- To create and conceive of new complementary and inclusive interventions involving participatory art-based activity
- To confirm, validate and apply the results of this study to everyday life
- To communicate this newly acquired expertise to art and healthcare professionals
- To promote the use of thusly created and validated interventions, for the benefit of elderly persons everywhere

Four activities, covering three distinct fields of application, will be disseminated.
— **Background**

Older adults are the fastest increasing group of patients admitted to hospitals. Compared to younger inpatients, they tend to suffer from multiple comorbidities and related disabilities, and therefore present a higher disease burden. As hospitals are largely configured for single acute disease care, rather than multiple comorbidities and related disabilities, the treatment of age-related multi-pathologies is one of the main challenges faced by them. Thus, accurately assessing and addressing the needs of the growing number of older inpatients is mandatory.

Inpatients with dementia are highly vulnerable. Compared to non-demented inpatients, they suffer a higher rate of adverse outcomes including mortality, delirium, and longer hospital stays. There are only limited pharmacological options for demented inpatients, and these may incur many adverse effects and the possibility of worsening their illness. Thus, non-pharmacological approaches must be considered in the treatment of these patients: these approaches should always be prioritized and only combined with medication if needed.

Art therapy has been used as a non-pharmacological approach for different types of patients. It showed that positive outcomes from the use of creative arts in therapy could have important value, relatively to patient health and well-being.

Conversely, few studies have been published on the effects of art therapy, specifically painting, on inpatients with cognitive decline.

— **Objectives**

- To determine whether GIA painting workshops could reduce 1) the daily number of therapeutic classes taken and 2) in-hospital mortality in inpatients with cognitive impairments

— **Methods**

The design was a prospective, non-randomized, controlled, open, intent-to-treat clinical trial with two parallel arms (Intervention and Control) to be compared (the Intervention received the intervention and the Control group received normal care).

The recruited elderly inpatients (i.e., ≥65) with cognitive impairment were separated in two groups: 1) the Intervention group took part in the GIA painting workshops; and 2) the Control group did not take part in the GIA painting workshops. Both were age and sex matched.

— **Results**

Painting workshops performed with elderly inpatients suffering from cognitive impairment decreased in-hospital mortality.

Painting workshops performed with elderly inpatients suffering from cognitive impairment decreased the amount of medication prescribed upon discharge from the hospital.
— **Background**

There is increasing evidence that music presents an easy to implement non-pharmacological intervention in geriatric inpatients. In patients with dementia, several studies have demonstrated that musical interventions can improve cognition, in particular spatial and temporal orientation, episodic memory and working memory. There is also evidence for the use of music in the treatment of Behavioural and Psychological Symptoms of Dementia (BPSD).

Despite existing evidence regarding the use of music in the geriatric population, few formal studies have been performed on the subject, fewer still in the hospital environment. There was therefore a need to further assess the effect of music on short-stay geriatric units. Since October 2014, live music performances have been a fixture of the geriatric ward at St. Mary’s hospital in Montreal. Volunteer musicians have performed an average of four one-hour music sessions every week. Most of these volunteer musicians are McGill University students playing the piano, guitar, saxophone or violin, or singing. On average, four to six patients have attended each performance, on a voluntary basis.

— **Objective**

- To determine whether patients attending live music workshops demonstrated an increase/improvement in their positive emotions, when compared to a Control group

— **Methods**

The design was a prospective, open, randomized controlled clinical trial with two parallel groups (Intervention versus Control). The recruited elderly inpatients (i.e., ≥65) with cognitive impairment were separated in two groups: 1) the Intervention group attended a live music performance, while 2) the Control group would watch television.

— **Results**

Patients who attended the musical performance displayed a greater increase in their levels of happiness.
Background

Aging is frequently associated with the deterioration of health condition, which in turn can increase the risks of leading a poor quality of life. Practice of art and participation in cultural programs, most specifically participatory art-based activity, has been reported to increase quality of life in all patients of all ages. However, no study has ever been conducted which concerned itself with the quality of life of community-dwelling patients living autonomously at home. As of October 2015, the Montreal Museum of Fine Arts (MMFA) has put in place a popular series of participatory art-based activity aimed at community-dwelling elders, the “Thursdays at the Museum.” This artistic creation program features a great variety of activities, such as participative cultural meditation. It thereby presents a unique chance to examine if and how the MMFA’s artistic activities program can impact the well-being, quality of life and health of community-dwelling elders.

Objectives

- To examine the various characteristics which define the well-being, health and quality of life of participating elders before and after their participation in the MMFA’s artistic activities program
- To examine the compliance to different workshops
- To examine the feasibility of self-evaluating health and quality of life with the help of a Web application, accessible through the Centre of Excellence on Longevity’s online platform

Methods

The design was a pre-post single arm, prospective and longitudinal design. The follow-up period was 3 months, that is to say the duration of one session of the MMFA’s participatory art-based activity program.

Results

Confirmation of positive effects of art on the well-being and quality of life of elders

The improvement of both these variables happened at varying rates during the three-month session:
- An increase in well-being was noted after each workshop, no matter the number of workshops attended
- A progressive increase in well-being took place throughout the three-month session
- Efficiency with regard to community-dwelling elders:
- For the first time, increase in health condition was recorded

The various participatory art-based activity workshops given by the Montreal Museum of Fine Arts demonstrated positive multidimensional effects on the health of community-dwelling elders. These results confirmed that museums could potentially become key partners in public health policy initiatives aiming to improve the health of the elderly.
Background
Findings from A-Health, a pre-post single arm pilot study led by the Centre of Excellence in 2018, indicated that curated, sustained and professionally-lead museum-participatory-art-based activity can competently improve well-being, quality of life, and health in older, community-dwelling elders.

The success of this pilot study has led to the empirical expansion of A-Health via a 36-month international Randomized Control Trial (RCT) for testing its effectiveness, relative to health enhancement among older adults of different societal and cultural groups.

This RCT will involve multiple centres (i.e. museums/galleries) in numerous countries. The Centre of Excellence on Longevity of McGill University, in partnership with universities and museums, will develop and implement the different national versions of the A-Health Study. The research data generated will be analyzed locally and merged with the international RCT data set for overall and comparative analysis.

Specifically in Montreal, and in order to better understand previous clinical results observed at a neurophysiological level, we intend to examine changes in functional connectivity in the default mode cerebral network which is associated with participatory art-based activity in community-dwelling elders.

Objectives
- To compare the changes in 1) well-being, 2) quality of life, and 3) health condition in community-dwelling elders participating in the MMFA’s participatory art-based activity
- To examine how the participatory art-based activity changes functional connectivity of the default mode cerebral network, and whether reported changes are related to enhanced mental and physical health in community-dwelling elders
ARTS & LONGEVITY PROGRAM

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**Methods**

The design is a unicentre (each centre is autonomous), clinical, randomized, controlled, single blinded (i.e.; investigators), superiority trial, with two parallel arms (Intervention and Control groups) to be compared (comparison of Intervention and Control groups) and analyzed with the intention-to-treat.

Members of the Intervention group will be participants in the MMFA participatory art-based activity. The Control group will be composed of community-dwelling elders who will not be participating in the MMFA participation-based artistic activity.

The follow-up period will be three months, which is the duration of a session of the MMFA participatory art-based activity. Assessment of well-being, quality of life and health condition will be performed at baseline, at the beginning of second and third months, and at the end of the third month. At the end of the study, data from each centre will be merged, and an international analysis will be performed.

**Prospects**

- To recreate a relationship between the elderly and their environment
- To increase well-being, health and quality of life
- To prove the hypothesis that there exists a simple and inexpensive solution which can be put in place to promote active aging and good health on a major scale: in primary and secondary prevention
- To offer new directions for the research and development of health promotion programs which prioritize non-pharmacological approaches
- To promote such a participatory art-based activity cultural program on an international scale
- To reduce the economic burden presented by the pernicious consequences of population aging
- To reduce the volume of medication taken and healthcare dependency

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1. Canada
   - Montreal: McGill University, Jewish General Hospital
   - Toronto: Baycrest University

2. USA
   - New York City: NYU
   - Cleveland: Arts & Medicine Institute

3. France
   - Paris: Ministry of Culture
   - Nice: Nice University

4. Switzerland
   - Basel: Basel University

5. United Kingdom
   - London: Cornelius Arts Foundation
   - Loughborough: Loughborough University
   - Oxford: Artocene

6. Israel
   - Jerusalem: Hadassah University

7. Singapore
   - Nanyang Technological University

8. Taiwan
   - Kaohsiung: Kaohsiung General Hospital

9. Japan
   - Tokyo: Arts Alive
— **Background**

Engaging in productive and enjoyable leisure activities is associated with many health benefits in seniors (e.g., enhanced well-being, improved physical health, decreased risk of dementia, and reduced use of healthcare resources). Despite the well-documented importance and benefits of leisure activities, there are several known barriers which can make participation difficult (i.e., mobility problems, travel distance, poor mood). Thus, mobile health (mhealth) technology represents a viable alternative to potentially mitigate these obstacles by bringing the activity to the user.

Recently, the Baycrest team created a novel mhealth solution, called ArtontheBrain; a web-based application (app) aimed at promoting cognitive health for older adults across the continuum of “normal” cognitive aging through early dementia. The rationale for creating ArtontheBrain is largely attributed to the positive health benefits reported through participatory arts-based interventions. In fact, studies show that when their mood is better, people tend to socialize more, get out of the house more, need to see the doctor less, and even pay better attention and solve problems more easily.

The ArtontheBrain app is modelled after face-to-face participatory interventions, incorporating three basic activities; learning (history of the art work), playing (telling stories, word games) and mingling (interacting with other users). The app can be played individually (with assistance from a partner, if needed), or in facilitator-led groups. Moreover, ArtontheBrain fosters intergenerational interaction as well as interaction with care partners and health professionals to concomitantly reduce stigma and promote socialization around a neutral topic which is unrelated to age or health status.

— **Objectives**

- To establish and validate the positive health impacts of ArtontheBrain
- To evaluate how well the app can support different user play styles
- To evaluate if it can affect positive health outcomes in the same way as face-to-face arts interventions do

— **Methods**

The experimental designs in this multi-centre clinical validation include: a) a simple pre-test post-test (Design 1); b) a randomized pre-test post-test pitting Intervention against active Control (Design 2); and c) a randomized pre-test post-test pitting Intervention against active Control against waitlist Control (Design 3).
Background

Dementia is a significant health issue because of its high prevalence and incidence, which is estimated to reach 20% in older population, but also because of its adverse consequences for both patients (e.g., disability, institutionalization) and the broader healthcare system (e.g., increased expenditures).

Predicting individuals at risk for dementia provides an opportunity to act on potent risk factors, with the aim of reducing its incidence rate.

Slow walking speed and subjective cognitive impairment (SCI), defined as perceived changes in cognition in the absence of objective impairment, are two clinical characteristics which have been independently associated with an increased risk of dementia.

MCR has all the characteristics required for a clinical screening risk assessment for dementia in primary care populations. However, five years after its initial definition, MCR's utility and its value in the prediction of dementia are still under question. For instance, a recent non-systematic review underscored the possibility of an MCR paradox, describing this syndrome as “a condition to treat or a mere matter for research purpose.” Data accumulated since initial definition appears to conflict with this assumption.

Objectives

- To improve knowledge of MCR syndrome
- To confirm clinical utility of MCR syndrome

Methods

The design is a systematic review and meta-analysis of the scientific publications on MCR and data analysis of the Canadian Longitudinal Aging study and EPIDOS study.

Prospects

- To better understand the relationship between MCR and adverse health outcomes (i.e., dementia, cognitive impairment, abnormal brain structures, falls and mortality)
- To promote the taking in consideration of MCR syndrome in primary care
- To improve the screening of older individuals at risk of dementia in primary care setting
- To make a crucial breakthrough in terms of epidemiology of MCR syndrome in the Canadian population
- To create and further networking advances: proposals will establish a unique, innovative and common forum on relationship between gait and cognition interaction for researchers and clinicians between Canada, the US and Europe
MOTORIC COGNITIVE RISK SYNDROME, INCIDENT COGNITIVE IMPAIRMENT AND BRAIN STRUCTURE ABNORMALITIES: SYSTEMATIC REVIEW AND META-ANALYSIS

— Background
Motoric Cognitive Risk syndrome (MCR) is a pre-dementia phase, which compounds slow walking speed and Subjective Cognitive Impairment (SCI). MCR's clinical utility for the prediction of dementia and its physiopathology are still under question.

— Objective
- To examine the association of MCR and incident cognitive impairment, cognitive performance and brain structures

— Methods
The design is a systematic review, which was conducted using the Medical Subject Heading terms “Walking” and “Cognition disorders” combined with the terms “Subjective Cognitive Impairment,” “Subjective Cognitive Decline” and “Motoric Cognitive Risk.” A total of 12 studies were included in the systematic review and meta-analysis: 4 for dementia, 4 for incident cognitive impairment and its association with cognitive performance, and 4 for its association with brain structures.

— Results
MCR was found to be associated with incident cognitive impairment and dementia. MCR was also found to be associated with low grey matter volume involving the premotor and the prefrontal cortex, and lacunar lesions in the frontal lobe, however, no significant associations with white matter abnormality were found. MCR successfully predicts cognitive impairment including dementia, suggesting that it may be used as a screening tool for dementia in a primary care setting. Its significant association with both low brain grey matter volume and lacunar lesions make MCR's physiopathology unclear.
ASSOCIATING MOTORIC COGNITIVE RISK SYNDROME WITH CARDIOVASCULAR DISEASE AND ITS RISK FACTORS: RESULTS FROM AN ORIGINAL STUDY AND META-ANALYSIS

— Background

Motoric Cognitive Risk (MCR) syndrome — a recently described pre-dementia syndrome— has been associated with cardiovascular disease and its risk factors (CVDRF) in non-European populations. There is a lack of information in the European population and no structured critical evaluation has investigated this association.

— Objectives

- To determine whether MCR syndrome was associated with CVDRF in French community-dwelling elders
- To quantitatively synthesize, with a systematic review and meta-analysis, the relationship between MCR syndrome and CVDRF

— Methods

The design is a cross-sectional study.

238 community-dwelling elders without dementia (71.4±3.6 years; 37.4% female) were selected from the French “Gait and Alzheimer Interactions Tracking” (GAIT) study. In addition, a systematic Medline and Embase search (with no limits on the date of publication) was conducted in both English and French, in February 2017, using the terms “motoric cognitive risk syndrome” OR “motoric cognitive risk” OR “motoric risk.” The systematic review and meta-analysis included 8 studies. CVDRF was defined as cardiovascular diseases, hypertension, diabetes, stroke, obesity and abnormal waist-hip ratio (WHR).

— Results

MCR syndrome is significantly related to CVDRF. These findings suggest that a vascular mechanism may underlie the pathophysiology of MCR syndrome.
Background
Cognitive impairment, slow walking speed and Motoric Cognitive Risk syndrome (MCR) have separately been associated with an increased risk for mortality in the short term.

Objective
- To examine the relationship between MCR and its components (i.e., Subjective Cognitive Complaint—SCC—and slow walking speed) with short, medium and long terms mortality rates in community-dwelling elders.

Methods
The design is a prospective observational cohort study. 3,778 participants were selected from the EPIDémiologie de l'OStéoporose (EPIDOS) study. MCR was defined as the combination of slow walking speed and SCC in participants not suffering from major neurocognitive disorders. Deaths were prospectively recorded with the help of mail-in and phone surveys, and of the French national death registry at 5, 10, 15 and 19 (end of follow-up period) years.

Results
Slow walking speed and MCR were associated with an increased risk in mortality in the medium and long terms. No associations, however, were found with SCC.
MOTORIC COGNITIVE RISK SYNDROME: COULD IT BE DEFINED THROUGH INCREASED FIVE-TIMES-SIT-TO-STAND TEST TIME, RATHER THAN SLOW WALKING SPEED?

— Background

Slow walking speed, time to perform the Five-Times-Sit-to-Stand (FTSS) test and Motoric Cognitive Risk syndrome (MCR; defined as slow gait speed combined with subjective cognitive complaint) have been separately used to screen older individuals at risk of cognitive decline.

— Objectives

- To compare the characteristics of older individuals with MCR, as defined through slow walking speed and/or increased FTSS time
- To examine the relationship between MCR and its motor components and amnestic (a-MCI) and non-amnestic (na-MCI) Mild Cognitive Impairment

— Methods

The design is a cross-sectional study, which used the baseline assessment of the “Gait and Alzheimer Interactions Tracking” (GAIT) study. A total of 633 dementia-free individuals were selected from the cross-sectional GAIT study. Slow gait speed and increased FTSS time were used as criteria for the definition of MCR. Participants were separated into five groups, according to MCR status: MCR as defined by
1) slow gait speed exclusively (MCRs),
2) increased FTSS time exclusively (MCRf),
3) slow gait speed and increased FTSS time (MCRsaf),
4) MCR irrespective of the mobility test used (MCRsof) and
5) absence of MCR. Cognitive status (i.e., a-MCI, na-MCI, cognitively healthy) was also determined.

— Results

Individuals displaying MCRf are distinct from those displaying MCRs. MCRf status does not relate to MCI status in the same way that MCRs does. MCRs related negatively to a-MCI and positively to na-MCI. These results suggest that FTSS cannot be used to define MCR when the goal is to predict risk of cognitive decline, such as future dementia.
MOTORIC COGNITIVE RISK SYNDROME AND RISK OF FALLS, THEIR RECURRENTNESS AND POST-FALL FRACTURES: RESULTS FROM A PROSPECTIVE OBSERVATIONAL POPULATION-BASED COHORT STUDY

— Background
Motoric Cognitive Risk syndrome (MCR) is a predementia phase which is associated with increased risk of falls. There are conflicting results regarding its association with recurring falls and no information about its association with post-fall fractures.

— Objective
- To examine the association of MCR and its components (i.e., slow walking speed and subjective cognitive complaint [SCC]) with the occurrence of falls, their recurrence and post-fall fractures in community-dwelling elders

— Methods
The design is an observational prospective and longitudinal cohort study. Participant data (n=5,958) from the EPIDémiole de l’OSTéoporose (EPIDOS) study was used for the analysis. MCR was defined as both the presence of SCC and slow walking speed in women free of major neurocognitive disorders. Falls (≥1), recurrent falls (≥2) and post-fall fractures (any fractures and hip fractures) were prospectively recorded using mail and/or phone call questionnaires every 4 months over 4 years.

— Results
There is an increased risk of fall, recurrent fall and post-fall hip fractures associated with MCR but not with its individual components.
THE ASSOCIATION OF DEPRESSION WITH MOTORIC COGNITIVE RISK SYNDROME: RESULTS FROM THE CANADIAN LONGITUDINAL STUDY ON AGING

— Background
Motoric Cognitive Risk syndrome (MCR) as well as depression and depressive symptoms (i.e. anxiety, depressive symptomatology and/or clinical depression — ADSCD) are associated with cognitive complaint and slow gait speed. Overlap with other syndromes (such as depression and/or depressive symptoms) may influence the predictive value of MCR.

— Objectives
- To examine whether there was an association between ADSCD and MCR in the participants of the Canadian Longitudinal Study on Aging (CLSA)
- To determine whether the nature of depressive symptoms and age may influence this association

— Methods
The design is a cross-sectional study, which used the baseline assessment of CLSA. A total of 29,569 participants from the CLSA were included after excluding those 1) lacking walking speed data and/or 2) diagnosed with dementia or AD. Participants were categorized by age groups and MCR diagnosis. Intra-group comparisons were completed using the unpaired t-test or Chi square test. Multiple logistic regressions were also performed to examine the association between MCR and depressive symptomatology, while adjusting for multiple variables.

— Results
MCR may be a clinical manifestation of depression or depressive symptomatology in younger individuals, whereas it may be related to both depression and the predementia phase in older adults.
MOBILITY PROGRAM

BRAIN STRUCTURES AND GAIT CONTROL IN AGING

— Background
Gait speed is a simple and reliable clinical measure of performance, safety and gait control. It reflects the integrated performance of multiple peripheral organ systems (e.g.; perceptual system, peripheral nervous system, muscles, bone and/or joints) which are controlled by the central nervous system. Numerous brain regions are involved in gait control during self-paced walking to maintain a safe and optimal performance.

Slow gait speed is a marker of impaired locomotion which is associated with both normal and pathological aging. Gait speed is slower in patients with cognitive impairment as compared to cognitively healthy individuals (CHI), even in the early phases of cognitive impairment, such as mild cognitive impairment (MCI). This association of gait speed and cognitive impairment suggests that the pathological brain processes which cause MCI and lead to a loss of brain volume also affect the control of gait.

Lower brain grey matter (GM) volumes have also been independently associated to poor performance in cognition and locomotion. Loss of GM volumes can be found in both normal and pathological aging such as MCI. However, the pattern of MCI-related low brain GM volumes is different to that of normal aging. Recently, a systematic review examined MCI-related structural brain abnormalities: besides low hippocampal and entorhinal cortex volumes, which are most frequently reported, brain GM volume loss was also demonstrated in a distributed network (e.g.; temporal lobe, cingulate, insula; parietal, frontal and occipital lobes). A limited number of studies have examined the relationship between brain GM volumes and gait speed. These have demonstrated a positive association between hippocampal and frontal region volumes and gait speed. The brain volume loss associated with reduced gait speed in normal aging is also not yet fully established.

— Objective
- To better understand change in gait control which occurs through physiological and pathological (e.g., cognitive impairment) aging

— Methods
The design is a cross-sectional study, which uses the baseline assessment of the “Gait and Alzheimer Interactions Tracking” (GAIT) study.

Partners
Angers University Hospital, France
Department of Neurology, Geneva University Hospital, Switzerland
Institut universitaire de gériatrie de Montréal, University of Montreal

Prospects
- To better understand the topographical organization of gait control in aging while using anatomical structural covariance
- To provide a rationale for clinical intervention targeting the specific regions involved in gait control to improve gait in non-demented older adults
- To improve the screening of patients at risk of gait disorders and cognitive impairment
ASSOCIATING BRAIN STRUCTURE COVARIANCE AND GAIT CONTROL IN AGING

Background
Structural and functional brain imaging methods have identified age-related changes in the brain structures involved in gait control.

Objective
- To investigate grey matter networks associated with gait control in aging using structural covariance analysis

Methods
The design is a cross-sectional study.
Walking speed was measured in 326 non-demented community-dwelling elders (age 71.3±4.5; 41.7% female) under three different walking conditions: Normal walking, normal walking + two challenging tasks, one motor (i.e.; fast speed) and one attention-demanding (i.e.; backward counting) executed in a dual-task context.

Results
Three main individual grey matter regions were positively correlated with walking speed (i.e.; slower walking speed was associated with lower brain volumes): Right thalamus, right caudate nucleus and left middle frontal gyrus; for normal walking, rapid walking, and dual-task walking conditions, respectively. The structural covariance analysis revealed that prefrontal regions were part of the networks associated with all walking conditions; the right caudate was associated specifically with the hippocampus, amygdala and insula for the rapid walking condition and the left middle frontal gyrus with a network involving the cuneus for the dual-task condition.

These results suggest that brain networks associated with gait control vary according to walking speed and depend on different walking conditions. Gait control in aging involves a broad network of cerebral regions, including regions for emotional control, which are solicited in challenging walking conditions.
ASSOCIATING THE VOLUME OF GREY BRAIN MATTER WITH GAIT SPEED AND RELATED STRUCTURAL COVARIANCE NETWORKS IN COGNITIVELY HEALTHY INDIVIDUALS AND IN PATIENTS WITH MILD COGNITIVE IMPAIRMENT: A CROSS-SECTIONAL STUDY

--- Background

Gait speed is slower in older individuals with cognitive impairment, when compared to those with normal cognition, suggesting that the pathological brain processes which lead to loss of brain volumes and cause cognitive impairment also affect gait control.

--- Objective

- To examine the patterns of grey brain matter (GM) volume covariance associated with gait speed in cognitively healthy individuals (CHI) and in patients with mild cognitive impairment (MCI).

--- Methods

The design is a cross-sectional study. A subset of 96 CHI (mean age 69.9±3.7) and 99 patients with MCI (mean age 70.7±4.61) recruited in the “Gait and Alzheimer Interactions Tracking” study was selected. Brain GM volumes measured with voxel-based morphometry and self-paced gait speed served as outcomes.

--- Results

Brain GM volumes of right middle frontal and precentral gyri were positively associated with gait speed in CHI (i.e. slow gait speed was associated with low GM volumes). Striatum (i.e. left putamen and bilateral caudate nuclei) volumes were positively associated with gait speed in patients with MCI. The right middle frontal gyrus volume covaried with cortical frontal region volume in CHI, whereas the left putamen volume covaried with the left putamen and the right caudate nucleus volumes in patients with MCI. Additionally, in patients with MCI the right caudate nucleus was associated with the different volumes of the right caudate nucleus, right frontal regions and the left superior medial frontal gyrus.

Slow gait speed was associated with low brain volumes, and solicited a network of GM regions in the frontal cortex in CHI and the striatum in MCI.
ASSOCIATING OF HIPPOCAMPAL VOLUME WITH GAIT VARIABILITY IN PRE-DEMENTIA AND DEMENTIA PHASES OF ALZHEIMER’S DISEASE: RESULTS OF A CROSS-SECTIONAL STUDY

— Background
Decreased hippocampal volume is a biomarker of Alzheimer’s disease (AD). The association of hippocampal volume with gait variability across the spectrum of AD, especially in early phases, has been little studied.

— Objective
- To examine the association of hippocampal volume with the Coefficient of Variation (CoV) of stride time in individuals with mild and moderate to severe subjective cognitive impairment (SCI), non-amnestic mild cognitive impairment (na-MCI), amnestic mild cognitive impairment (a-MCI), and mild to moderate AD dementia

— Methods
The design is a cross-sectional study, featuring 271 individuals (79 mild SCI, 68 moderate to severe SCI, 47 na-MCI, 42 a-MCI and 35 mild to moderate AD dementia). Hippocampal volume was quantified from a three-dimensional T1-weighted MRI. CoV of stride time was recorded at self-selected pace on an electronic walkway. Age, sex, body mass index, number of drugs daily taken, history of falls, walking speed, type of MRI scanner, total intracranial volume and white matter volume abnormality were used as covariates.

— Results
Participants with moderate to severe SCI had a higher CoV of stride time when compared to those with mild SCI and na-MCI (P<0.010), and a higher hippocampal volume when compared to other groups (P≤0.001). Participants with moderate to severe SCI had increased hippocampal volume associated with increased CoV of stride time (Coefficient of regression β= 0.750 with P=0.041), while the other groups did not show any significant association.

A positive association between greater hippocampal volume (i.e., better brain morphological structure) and an increased stride time variability (i.e., worse gait performance) in individuals with moderate to severe SCI is reported. This association confirms the key role of the hippocampus in gait control and suggests an inefficient compensatory mechanism in early phases of pathological aging, such as AD.
NUTRITION PROGRAM
— **Background**
Gait and posture disorders are very frequently found in subjects aged 65 and more, at prevalence between 25 and 30%. These are frequently caused by neuromuscular and cognitive disorders.

Number of studies have shown that 1) Vitamin D deficiency is frequent in subjects aged over 65, and can even reach 80% in the women of that group; 2) subjects suffering from Vitamin D deficiency present lower muscular, gait and execution performances, and become less able more rapidly than non-Vitamin D-deficient subjects; and 3) taking Vitamin D, combined with Calcium or not, may increase muscular force and cognitive performances.

These “non-skeletal” effects of vitamin-calcic supplements are partially dependent on the initial levels of Vitamin D deficiency. The greater the deficiency, the more notable the supplements' effects.

— **Objective**
- To study the relationship between serum concentration of 25-hydroxyvitamin D (25OHD) and variations in gait, posture and executive function performance, before and after oral vitamin-calcic supplementation.

— **Methods**
The design is a monocentre, randomized, controlled, single-blinded, superiority trial with intention-to-treat, comparing 2 groups: the first group (Intervention) would consume two cups of yogurt supplemented with Vitamin D₃ and Calcium every day (resulting in a daily intake of 400 UI of Vitamin D₃ and 800 mg of Calcium); and the second group (Control) would consume two equivalent, but non-Vitamin D₃ and Calcium-supplemented cups of yogurt, for 12 weeks.

— **Results**
This clinical trial has partially confirmed the initial hypothesis, as it has shown that the daily 400 UI dose of Vitamin D₃ delivered by the two daily cups of yogurt, while not increasing them upright, as was first theorized, 1) stabilized 25OHD serum levels; and that 2) this aforementioned serum level stabilization is the reason for greater gait performance (more specifically for a lower variability in basic gait), and overall cognitive performance. The Control group, on the other hand, saw a reduction in 25OHD serum levels over the same period and a subsequent degradation of motor and cognitive performances.
CARE CONTINUUM.
ACUTE AND CHRONIC CARE FOR THE ELDERLY, ACCE PROGRAM
ELDERLY EMERGENCY ROOM USERS AND AGE-RELATED ADVERSE OUTCOMES: ISSUES, CHALLENGES AND PERSPECTIVES WITH THE “EMERGENCY ROOM EVALUATION AND RECOMMENDATIONS” (ER²) TOOL

— Background

Emergency Rooms (ERs) across North America are under duress because of overcrowding, delays and diversions, whose increases can be exponential. The aging of Canada’s population amplifies the magnitude of this issue, as older ER users are the fastest increasing group of ER users and they possess complex and specific needs. Regardless the reason for an ER visit, multi-morbidities and disabilities tend to define older ER users. These two characteristics go a great way in explaining the pernicious age-related events which may arise during an ER visit, such as greater ER and hospital lengths of stays, and a higher hospital admission and in-hospital mortality rates, when compared to younger ER users. Because ERs are configured on a disease-oriented and episodic model, rather than chronic multi-morbidities and disabilities, the short-term adverse outcomes are one of the main challenges that they struggle with. Assessing the specific needs of the growing number of older ER users is a priority, if we wish to reduce the occurrence of the short-term age-related adverse ER outcomes.

The short-term adverse outcomes are relevant to rapid screening. Screening individuals presenting a high risk for short-term age-related adverse ER outcomes is, therefore, the first step to developing an effective ER care plan. However, the existing ER screening tools, such as the Identification of Seniors At Risk (ISAR) tool or the Triage Risk Screening Tool (TRST) used in Canadian ERs, or the “Programme de Recherche sur l’Intégration des Services pour le Maintien de l’Autonomie” (PRISMA-7), which is used in Quebec ERs, do not predict the short-term age-related adverse ER outcomes. We have developed a tool, known as “Emergency Room Evaluation and Recommendations” (ER²), which was specially designed to predict short-term age-related adverse ER outcomes. Its intended purpose is to improve screening of older ER users at risk of short-term age-related adverse ER outcomes, when compared to ISAR, TRST and PRISMA-7, with the aim to prevent the occurrence of these incomes, through delivering the right intervention, to the right patient, at the right time.

Evidence based medicine has shown that simple and early interventions throughout the care pathway may prevent delirium and motor deconditioning in older patients, and medication reconciliation is an efficient intervention to prevent adverse drug reactions. Furthermore, early assessment of home support is a crucial step to adapt home services to an early discharge to home.
Based on these evidences, we have improved ER\textsuperscript{2} by adding an interventional facet to the assessment component. Intervventional suggestions depend on the results of the assessment component, and feature recommended interventions aiming to prevent confusion, motor deconditioning, adverse drug reactions and inappropriate home support. These recommendations are formulated with the help of the answers to ER\textsuperscript{2} questions. The effects of the ER\textsuperscript{2} recommendations on age-related adverse ER outcomes have not yet been examined and, thus, need to be defined through a Randomized Controlled Trial (RCT).

— **Objectives**
- To examine the usability of ER\textsuperscript{2} in ER
- To examine the relationship between ER\textsuperscript{2} risk stratification levels and incident short-term age-related adverse ER outcomes
- To compare the predictive value of ER\textsuperscript{2} with existing ER screening tools
- To study the effects of ER\textsuperscript{2} interventions on short-term age-related adverse ER outcomes

**Prospect**
A crucial breakthrough in terms of screening and care of older ER users.
“EMERGENCY ROOM EVALUATION AND RECOMMENDATIONS” (ER²): A PRE-POST INTERVENTIONAL STUDY

— Background

The Emergency Department of the Jewish General Hospital is one of the busiest ERs in North America where older ER users are highly prevalent and represent close to 50% of visitors. Successful delivery of high-quality care at the JGH ED depends upon the cooperation and coordination of a multidisciplinary team of individuals, and support from administration, medical and nursing leadership, as well as from medical and technical departments. Staff works side-by-side as a specialized team to provide efficient, high-quality patient care while remaining at the forefront of academic Emergency Medicine. Thus, this ER was the right place to implement and examine the usability and effects of ER².

— Objectives

- To examine the prevalence PRISMA-7 scores and the prevalence of checked PRISMA-7 items, in the case of partial completion, in older ER users at the JGH
- To examine the prevalence of ER² scores and the prevalence of checked ER² items, in the case of partial completion, in older ER users at the JGH
- To examine the relationship between an abnormal (i.e.; ≥3/7) PRISMA-7 scores and length of stay in older ER users admitted to the medical or surgery wards at the JGH
- To examine the relationship between ER² risk levels (i.e.; low, moderate and high) and length of stay in older ER users admitted to the medical or surgery wards at the JGH
- To examine the relationship between an abnormal (i.e.; ≥3/7) PRISMA-7 score and acute medical events in older ER users admitted to the medical or surgery wards at the JGH
- To examine the relationship between ER² risk levels (i.e.; low, moderate and high) and acute medical events in older ER users admitted to the medical or surgery wards at the JGH
- To examine the effects of PRISMA-7 on the length of stay in older ER users admitted to the medical or surgery wards at the JGH
- To examine the effects of PRISMA-7 on the occurrence of acute medical events (i.e.; new organ failure and fall) in older ER users admitted to the medical or surgery wards at the JGH
- To examine the effects of ER² recommendations on length of stay in older ER users admitted to the medical or surgery wards at the JGH
- To examine the effects of ER² recommendations on the occurrence of acute medical events (i.e.; new organ failure and fall) in older ER users admitted to the medical or surgery wards at the JGH
Methods

The design was a prospective observational cohort design which was separated in two phases (in terms of recruitment of participants):

Phase 1: PRISMA-7 and ER², where only the assessment component was performed over a period of 3 months.

Phase 2: PRISMA-7 and ER², where both components (i.e., assessment and recommendations) were performed over a period of 3 months.

Participants were patients aged 65 years and over, whose visit to the JGH ED was unplanned. For both tools (ER¹ and PRISMA-7) assessed patient results were compared to a reference group of elderly patients admitted to the ER, for whom neither assessment was completed. The analysis of their medical chart, following discharge, allowed researchers to closely follow the various steps of their stay at the JGH. The medical charts were also taken into account to ensure the respect of the study’s inclusion criteria.
**ER² RISK STRATIFICATION FOR SHORT-TERM AGE-RELATED ADVERSE EMERGENCY ROOM EVENTS**

--- **Background**

Since 2012, we have been perfecting and validating a simple clinical tool, known as the “6-item brief geriatric assessment” (BGA), which is used to screen older ER users at risk of short and medium terms age-related adverse ER outcomes. The 6-item BGA provides risk stratification in three levels (i.e., low, moderate and high), to help predict short-term age-related adverse ER outcomes (i.e., long ER and hospital stays, hospital mortality). The main difference with other ER screening tools is that we introduced weighting for two items, exploring cognition and mobility, now scored for 5 points instead of 1, because as we have demonstrated that these items are key risk factors for short-term age-related adverse ER outcomes. Recently, we have improved the 6-item BGA by adding an interventional facet to the assessment component. Interventional suggestions depend on the results of the assessment component, and feature recommended interventions aiming to prevent confusion, motor deconditioning, adverse drug reactions and inappropriate home support. These recommendations are formulated with the help of the answers to the 6-item BGA. Because of this change, the 6-item BGA is now known as the “Emergency Room Evaluation and Recommendations,” or ER². ER² risk stratification has never been associated with any incident age-related short-term adverse ER events in Quebec.

--- **Objective**

- To examine how the three levels of ER² stratification related with incident age-related short-term adverse ER events in older users

--- **Results**

ER² risk levels have correlated with LOS in ER and in hospital, as well as with hospital admission rates. The ER² tool is predictive.
UPDATING THE BRIEF GERIATRIC ASSESSMENT SCREENING TOOL TO 6 ITEMS FOR OLDER INPATIENTS AT RISK FOR LONG LENGTH OF HOSPITAL STAY: RESULTS OF PROSPECTIVE AND OBSERVATIONAL COHORT STUDY

— Background
Assessing the specific needs of the growing number of older ER users is a priority, if we wish to reduce the occurrence of the short-term age-related adverse ER outcomes. Screening individuals with a high risk for adverse outcomes is the first step of an effective care plan. ER² is a standardized and validated tool which screens inpatients at risk for age-related adverse events which may arise during their hospitalization. The item answers of ER² depend on objective information, except for factors which relate to any history of falls. Obtaining valid information for this item may be difficult due to the high prevalence of cognitive impairment in older inpatients. History of falls was chosen because it is a good marker of mobility impairment and dependence. The use of a walking aid is a similar marker, which is more objective and easier to collect. Thus, we theorized that the use of a walking aid instead of history of falls would not change the predictive value of the 6-item BGA for long length of hospital stay.

— Objective
- To examine whether the modified ER² tool (i.e.; substituting the history of falls item for the use of walking aid item) successfully predicted the long length of hospital stay in geriatric patients admitted to the geriatric assessment unit

— Results
The modified 6-item BGA risk stratification predicted length of hospital stay at a better rate, when compared to a priori risk stratification using history of falls as an item. Recall bias relative to the history of falls may be considered a limitation when using the a priori BGA. Falls are usually underreported because of the cognitive decline of fallers, who forget to report them. This bias may underestimate their predictive value for length of hospital stay. The use of a walking aid, which has similar value in terms of gait and/or balance impairment marking, is more objective when compared to history of falls and, thus, may more efficiently detect the highest-risk inpatients, as suggested by our results.
— **Background**

Rapidly screening and estimating the risk of long LOS in the Emergency Room, as well as in hospital after admission from the ER, in older inpatients is relevant as it can help prioritize simple protective interventions. Screening of older patients presenting a high risk of long LOS upon arrival to the ER is, therefore, the first step of an effective hospital care plan. Several clinical tools have been proposed to this end, but most of them screen for frailty or chance of frailty-related adverse events after ER discharge. In Quebec, the “Programme de Recherche sur l’Intégration des Services pour le Maintien de l’Autonomie” (PRISMA-7) is the reference tool which is promoted by the Ministry of Health and Social Services for use in ERs and acute care wards. This tool, which separates older patients in two risk levels (i.e., low versus high), has never been validated for its predictive value relatively to the risk of long LOS. Thus, examining the association of PRISMA-7 risk levels with long LOS in ER could be helpful with regard to the choice of prognostic tools.

— **Objective**

- To examine the relationship between the risk stratification level of PRISMA-7 and LOS in ER, in older adults visiting the ED of the Jewish General hospital.

— **Results**

A score of PRISMA-7 ≥ 7 is associated with increased LOS in ER and in hospital after admission through ER.

**Prospect**

- To compare the predictive value of PRISMA-7 with ER² for LOS prediction, by analyzing the database of the ER² pre-post interventional study.
COMPARING PRISMA-7 AND ER² IN THE PREDICTION OF SHORT-TERM AGE-RELATED ADVERSE OUTCOMES IN OLDER ADULTS, AFTER AN ER VISIT

— Background
Several clinical tools have been proposed to screen older patients who are at risk of adverse outcomes after an Emergency Room (ER) visit. Most of these, however, screen for frailty or chance of frailty-related adverse events after ER discharge. No existing prognostic tools for adverse health events, outside of ER², currently predict short-term adverse events, such as long LOS, regardless the place of assessment (i.e., ER or upon admission to acute care ward). ER² has been validated in France and provides a three-level risk stratification (i.e., low, moderate and high), which predicts short-term hospital adverse outcomes (i.e., long ER and hospital stays, hospital mortality). In Quebec, the “Programme de Recherche sur l’Intégration des Services pour le Maintien de l’Autonomie” (PRISMA-7) is the reference tool which is promoted by the Ministry of Health and Social Services for use in ERs and acute care wards. Comparing the relationship between PRISMA-7 risk levels and ER2 risk levels for long LOS in ER could be helpful with regard to the choice of prognostic tools.

— Objective
- To examine the relationship between the risk stratification levels of PRISMA-7 and ER² for LOS and hospital admissions after an ER visit in older patients

— Results
ER² has a superior LOS and hospital admission LOS predictive value when compared to PRISMA-7.
USABILITY OF ER² BY EMERGENCY ROOM NURSES

— **Background**
A good predictive tool for age-related short-term adverse ER events should be based on reliable (i.e., objective, standardized, and communicable) and valid clinical information, which can easily be acquired in a busy ER setting and usable by all nurses. Such a tool can serve as a common mode of communication between professionals in order to provide timely and helpful information, allowing for an efficient continuum of care in the ER and timely appropriate discharges. ER² usability by ER nurses has never been examined in Quebec.

— **Objective**
- To examine the usability of ER² by ER nurses when screening older ER users who are at risk of age-related short-term adverse ER events

— **Results**
ER² is usable by ER nurses.

ER²-RELATED INTERVENTION AND EFFECTS ON AGE-RELATED SHORT-TERM ADVERSE EMERGENCY ROOM EVENTS

— **Background**
Regardless the reason of the ER visit, multi-morbidities and disabilities are common in older patients. These two characteristics largely explain the age-related adverse ER outcomes, which are longer ER lengths of stay, higher hospital admission rates and longer hospital stays, when compared to younger people who seek medical attention in ERs. As hospitals are largely configured for single acute disease care, rather than multiple comorbidities and related disabilities, the treatment of age-related adverse ER outcomes is one of the main challenges faced by them. Screening individuals who possess the highest risk for age-related adverse ER outcomes and introducing simple, appropriate geriatric interventions to them as soon as possible, are the two consecutive and complementary steps of an effective (i.e., ability to define the right objective) and efficient (i.e., ability to achieve thusly defined objective) ER care plan for older ER users.

— **Objective**
- To examine whether the “Emergency Room Evaluation and Recommendations” (ER²) tool, which is composed of both assessment and intervention components, may diminish age-related adverse ER outcomes in older users

— **Results**
The ER² intervention decreases LOS by 2 days after an admission to the hospital through the ED.
ELDERLY ER PATIENTS AND FRAILTY: FEASIBILITY OF “ED-SCREENER”

— **Background**

The use of emergency departments by the elderly is in continuous increase, largely due to the aging population. However, emergency departments are not suited to effectively deal with the complex needs of the frail elderly. The use of standardized risk assessment tools and discharge planning based on the identification of this risk could have major consequences for not only patient-centred outcomes, such as length of stay or autonomy, but on ER outcomes (reduced return visits and decreased waiting times).

— **Objectives**

This study is expected to advance knowledge and clinical practice relative to the assessment and identification of patients who present a high risk for negative outcomes in the acute care hospital system. More specifically, objectives are:

- To determine median administration times for all of the instruments; to determine whether some instruments were incomplete due to time constraints or patient fatigue
- To determine the percentage adherence to instrument administration (expected versus actual instrument completion)
- To determine the proportion of patients aged 75 and over with ED screener scores of 5 or 6
- To determine the proportion of patients with ED screener scores which require comprehensive geriatric evaluation (AC); this measure will allow us to determine the “false-positive” rate of the ED screener. We will also be testing the false negative rate (or confirming the threshold for more detailed evaluations) by completing ED-CA assessments on patients with ED screener scores of 4–6
- To determine the association between ED screener scores (or AUA scores) of 5 and 6, and clinical outcomes such as: Hospital length of stay, ICU admission, mortality, disposition at discharge, cognitive impairment, delirium, loss of autonomy in iADL and ADL (grouped and individual items), falls, prior hospital visits, and undernutrition. Examining these associations will enable us to determine which domains would most benefit from targeted interventions to improve patient-centred outcomes

— **Methods**

The design is a prospective observational study which evaluates the use of the interRAI Emergency Department Screener, the interRAI Emergency Department Contact Assessment (ED-CA) and the interRAI AcuteCare (AC) Assessment as a standardized systems approach to identify and address the needs of frail elderly patients in the acute care hospital setting. This is accomplished through implementation of these instruments in up to 15 hospitals across Canada. Patients 75 and older who were admitted to an emergency department will be included. Depending on the length of stay, certain portions of the interRAI Acute Care could be completed up to a maximum of four times (premorbid, admission, review and discharge). Evaluations will only be done while the patient is in hospital. The estimated total number of completed ED screeners is 5,000.

This study only involves the completion of questionnaires, with the ED screener to be completed for all patients and more detailed assessments to take place for patients scoring 5 or more on the ED screener.
PREDICTION OF UNPLANNED HOSPITAL ADMISSIONS IN COMMUNITY-DWELLING ELDERS, USING THE 6-ITEM BRIEF GERIATRIC ASSESSMENT: RESULTS FROM REPERAGE, AN OBSERVATIONAL PROSPECTIVE POPULATION-BASED COHORT STUDY

— Background
We previously developed and validated a simple clinical tool, known as ER²: for use upon arrival at the hospital during an Emergency Department (ED) visit to screen older ED users at risk of adverse events. ER² provides risk stratification on three levels (i.e., low, moderate and high), which predicts prolonged hospital stays, readmissions after ED visits, and in-hospital and long-term mortality. ER² has many criteria (i.e., easy to use, objective, standardized and based on collection of clinical information) required for an efficient and effective risk stratification of unplanned hospital admissions. Therefore, its use in primary care could be helpful for the care continuum. ER² has not yet been used in primary care to identify community-dwelling elders who are at risk for unplanned hospital admission. We hypothesized that ER² and its a priori risk stratification could be associated with incident unplanned, primary care hospital admissions in community-dwelling elders who consult with their general practitioner (GP).

— Objectives
- To examine the association between the a priori risk stratification levels of ER² as performed by a GP during a primary care consultation and incident unplanned hospital admissions in community-dwelling elders

— Methods
The design is an observational prospective population-based cohort study. 668 participants (mean age 84.7±3.9 years; 64.7% female) were recruited by their GPs during an index primary care visit. The 6-item BGA was performed at baseline assessment to provide an a priori risk stratification on three levels (low, moderate, high).

— Results
Incident unplanned hospital admissions were recorded during a 6-month follow-up period. The incidence of unplanned hospital admissions increased with the risk level defined by the 6-item BGA, with the highest prevalence (35.3%) being reported at the high-risk level (P=0.001). The risk for unplanned hospital admissions in the high-risk level was significant (crude Odds Ratio (OR)=5.48, P=0.001 and fully adjusted OR=3.71, P=0.032, crude Hazard ratio (HR)=4.20; P=0.002 and fully adjusted HR=2.81; P=0.035). The Kaplan-Meier distribution of incident unplanned hospital admissions differed significantly between the three risk levels (P-value=0.002). Participants at the high-risk level were more frequently admitted to hospital than those at the low risk level (P=0.001).

Partners
Gérontopôle des Pays de la Loire, France
Laboratoires MSD France

Prospect
Further research is needed to confirm this first result, to allow for recommending this clinical tool as early as possible for preventative or curative action on unplanned hospital admission risk factors.
2. ACUTE AND CHRONIC CARE FOR THE ELDERLY, ACCE PROGRAM

APPROPRIATE USE OF ANTIPSYCHOTIC DRUGS IN LONG-TERM CARE CENTRES, OPUS-AP PROGRAM: MEASURING THE EFFECTS OF PHASE 1

— Background

Antipsychotics (AP) are frequently used in Quebec long-term care centres (LCT), especially in older residents with major neurocognitive disorders (MNCD), and behavioural and psychological symptoms of dementia (BPSD), with prevalence up to 50%. There are issues related to the prescription of APs: They are associated with adverse health events, high costs and poor quality of life; their appropriateness is often questioned because due to poor efficacy and safety concerns. Their high prevalence is an indicator of suboptimal care. In 2017, the Quebec Health and Social Services Ministry in partnership with the Canadian Foundation for Healthcare Improvement launched the pilot phase of OPUS-AP in 24 LTC with the overall objective to 1) Improve the appropriateness of AP use in older residents with MNCD and BPSD and 2) Prioritize the use of non-pharmacological interventions. OPUS-AP is a conference and webinar-based training (integrated knowledge) program designed to mentor healthcare personnel (i.e., physicians, pharmacologists, nurses, physiotherapists, orderlies) which has been designed to: 1) Improve knowledge on the optimal use of AP, 2) Provide guidelines on AP deprescribing, and use of patient-centred care and non-pharmacological interventions to treat BPSD. OPUS-AP is a solution designed to develop standardized and objective best practices using a structured online assessment with recurring assessments of health condition and AP prescription in LTC residents, as well as of the occurrence of adverse health events including falls, admission in acute care and death. OPUS-AP is an epidemiologic method of monitoring of the evolution of AP prescription and health condition in older residents living in LTC, and changes in professional practices.

— Objectives

- To examine the effects of OPUS-AP on changes in AP prescription, health condition and use of non-pharmacological interventions in older LTC residents with MNCD and BPSD
- To perform a qualitative analysis of the implementation of OPUS-AP in LTC staff daily practice

— Methods

The design is a longitudinal, prospective, multicentre cohort study designed with repetitive measures. Quantitative and qualitative variables are recorded. OPUS-AP is composed of two consecutive phases: A pilot phase in 24 LTC facilities, followed by an extension phase to 136 LTC centres which will include around 3,000 residents in total.
MEASURING THE EFFECTS OF THE HOSPITAL ELDER LIFE PROGRAM (HELP) AT THE JEWISH GENERAL HOSPITAL: A PRE-POST INTERVENTION STUDY

— Background
The Hospital Elder Life Program (HELP) is a comprehensive inpatient-care program which ensures optimal care for older adults in the hospital. The primary goals of the HELP program are: Maintaining cognitive and physical function in high risk older adults throughout hospitalization, maximizing independence at discharge, assisting with the transition from hospital to home, and preventing unplanned hospital readmissions. These goals have been accomplished using a multicomponent intervention strategy. In addition to targeted interdisciplinary geriatric assessment, the program uses an innovative volunteer model to provide personal, supportive attention to vulnerable older inpatients. Thus, the HELP program is complementary to the AAPA program. Both HELP and AAPA program have been used in care practice at the JGH since 2016. The effects of these program on preventing adverse health events in geriatric inpatients hospitalized at JGH must now be evaluated.

— Objectives
To examine whether the HELP program:
- reduces the incidence of delirium
- reduces the incidence of falls
- reduces the incidence of prolonged length of stay in older (i.e.; ≥ 65 years) inpatients admitted to the orthopaedic ward for hip surgery after a fracture

— Methods
The study is a pre-post intervention, sequential, single arm, open-label, uncontrolled and prospective study.
Two consecutive periods were defined: An observational phase (i.e., pre-intervention), used as reference (i.e., control) period for the interventional phase, followed by an interventional phase which was separated in two sub-phases: Implementation (i.e., start-up) phase and full phase.
51 subjects were included, 28 in the observational phase and 23 in the interventional phase.

— Results
Populations in the observational and the interventional phases are quite identical, except that higher risk subjects were selected during the interventional phase.
No conclusive effects on length of stay were shown for the intervention. With regard to the small number of subjects included, and the impossibility to conclude on the effects of the HELP intervention, a new study can be designed. It can be a retrospective protocol concerned with all patients, demented or not, receiving surgery for all types of fractures in the Department of Orthopaedics at the Jewish General Hospital.
Background
In 2001, Canada was the first country in the world to allow the use of medical cannabis (i.e., a broad term which encompasses the use of cannabis for therapeutic purposes) also known as medicinal marijuana. More recently, new Canadian legalization was enacted which governs the use of cannabis for recreational purpose, leading Canada to become the second country to legalize marijuana after Uruguay. This recent foray into legalization led cannabis back to the medical prescription pad for physicians. There is increasing scientific data suggesting that cannabis could be beneficial for a large range of medical conditions. Physicians must be well aware of related medical knowledge (i.e., indications, dose and safety properties) before prescribing cannabis to older patients who are a priori more prone to adverse cannabis effects, when compared to younger patients. A mini-review was conducted to examine evidence relative to medical cannabis use in older patients.

Methods
The design is a systematic English and French search of Medline (Pubmed), for articles published between January 1, 2001, and October 15, 2018, with the help of the following MeSH terms: “Cannabis” OR “Marijuana Abuse” OR “Medical Marijuana” OR “Marijuana Smoking,” combined with “Aged” OR “Aged, 80 and over.” A total of 451 abstracts were identified and full relevant articles were retrieved and analyzed.

Results
Even with a growing amount of data highlighting the positive effects of medical cannabis use, the reported results are mixed. Additionally, the sample size of participants is often small and there are few randomized control trials. This lack of evidence on the positive effects of medical cannabis use is especially important in older patients who are little examined. There is too little, not to mention frequently contradictory, data on medical cannabis use in older patients to guide cannabis prescription in this group of patients.

Prospect
- To develop innovative interventions based on the use of medical cannabis to treat elders’ comorbidities
COGNITION PROGRAM
BENCHMARKING AND VALIDATING OF COMPUTERIZED
OLFACTORY TEST FOR SUBJECTS AT THE LIGHT
DEMENTIA PHASE OF ALZHEIMER’S DISEASE

— **Background**

Population aging is associated with an increase in the number of sufferers of Alzheimer’s disease (AD), which in turn leads to a corresponding growth in the costs of caring for these persons. We do not currently possess sufficient knowledge concerning the biological sign markers which would allow us to better prevent and delay the effects of AD.

Scientific researchers are unanimous, and have validated that olfactory identification is a reliable biomarker in the illnesses’ preclinical phase, or light dementia phase. Olfactory disorder has been accepted as a forerunning sign of the evolution of light cognitive decline into AD, as precisely as any other biological marker.

However, the studies highlighting this association have also made evident that there exist no benchmark or absolute reference in olfactory study, specifically for the detection of Alzheimer’s disease, and that memory clinics only rarely make use of these in their clinical practice. The benchmarking and validation of a test conceived following the recommendations of memory clinic professionals are necessary.

— **Objectives**

- To benchmark a computerized olfactory test following the recommendations of professionals employed by the French Memory Centres
- To validate this test by comparing the results obtained by reference subjects and subjects suffering from Alzheimer’s disease
- To identify the most effective fragrances used in the olfactory test
- To verify whether or not cultural variance exists by comparing the results collected for Quebec by the JGH to those collected by the Centre Mémoire Ressource et Recherche in Nice, France
- To verify whether or not there exists a correlation between results to the olfactory test and results obtained from the general cognitive evaluation tests (MMSE)
- To verify whether or not there exists a correlation between results to the olfactory test and state of frailty, as determined by the results presented by the CESAM health self-evaluation

— **Methods**

This controlled monocentre trial (Jewish General Hospital; Montreal, Quebec, Canada) includes two subject groups: A Control group and a group of light dementia-phase Alzheimer’s disease sufferers.

Each olfactory test (Bellecôte and Odor range) takes place once and lasts 15 minutes, on average.

Patients recruited to the Control group are aged 60 and over, without signs of mixed or vascular dementia or isolated cognitive disorders, and cannot present any unstable psychiatric or physical characteristics which are acute or serious enough to prevent them from participating in the study. They also cannot suffer from uncorrected visual or auditory disability or anosmia (complete olfactory loss).

Patients recruited to the Intervention group are limited by the same restrictions, and must also have been diagnosed with light dementia-phase Alzheimer’s disease.
ALZHEIMER PLAN, PHASE 1 AND PHASE 2

— Background

Following the May 2009 publication of the “Relever le défi de la maladie d’Alzheimer et des maladies apparentées, une vision centrée sur la personne, l’humanisme et l’excellence” (Tackling the Challenges Presented by Alzheimer’s and Other Related Diseases; a Focus on People, Humanism and Excellence) report by Dr. Howard Bergman, presented at the request of the Government of Quebec, the Ministry of Health and Social Services oversaw the two-year launch of a first phase of 19 local projects aiming to give better access to health and social services to patients suffering from Alzheimer’s disease and other major neurocognitive disorders. These projects were spread over the province of Quebec and financed between April 2013 and March 2016. The McGill RUIS, as well as the three other RUIS networks of Quebec, were called upon in this context. A provincial review, which took place in the autumn of 2015, highlighted the success of this initiative. It was hereby determined that these projects would serve as a model for the rest of Quebec. The ministerial initiative regarding Alzheimer’s disease and other significant neurocognitive disorders became a province-wide project in April of 2016, and entered into its “Phase 2.” The implementation guidelines for Phase 2, taking place between 2016 and 2019, were published with the aim to deploy the measures undertaken during Phase 1 on a grand scale, notably within all the Family Physician Networks of Quebec. On the territory served by the McGill RUIS, the Ministry of Health and Social Services has specifically requested that the Centre of Excellence on Longevity supervise Phase 2.

— Objectives

> Generically

To support the adoption of the Ministry’s initiative on Alzheimer’s disease and other major neurocognitive disorders by GMFs, Support for Elderly Autonomy Program services and other professionals in the health and social sectors who work with the elders on the territory of the McGill RUIS

> Specifically

- 1) To oversee and support the provincial and regional implementation of Phase 2
- 2) To advise and support CIUSSS West-Central Montreal
- 3) To facilitate knowledge transfer and support the cultural adaptation of tools offered by the MSSS for Northern Quebec territories
- 4) To put in place innovative measures to facilitate patient care and caregiver support, most notably by promoting the appropriate coordination between the 5 CIUSSSs on the Island of Montreal
2.A COGNITION PROGRAM

MONITORING AND SUPPORTING PHASE 2 ON THE MCGILL RUIS TERRITORY

— Background

The Centre of Excellence on Longevity is involved in the Phase 2 implementation advisory committee for the Ministry’s initiative on Alzheimer’s disease and other major neurocognitive disorders, whose objective is to drive this initiative at the provincial level. It has been called upon to participate in collective undertakings relating to knowledge transfer and clinical tool production, throughout regular meetings with the Ministry of Health and Social Services and the other centres of expertise, and to serve as interface between the Ministry and the stakeholders of the McGill RUIS territory.

— Objectives

- To promote the appropriation of better validated clinical and organizational practices at the provincial level
- To better support administrators and clinicians by taking part in the preparation, update and deployment of CISSS and CIUSSS plans of action

— Results

Verification of the interdisciplinary first line of care clinical processes
Creation of training focusing on clinical mentoring for nurses who care for persons suffering from cognitive disorders: 20 trainees
Organization of 4 online training sessions for GMF-practising nurses and social workers: 58 trainees
Organization of 3 regional exchange days for GMFs: 235 participants
Translation of Ministry-published Alzheimer’s care protocol into English

Partners

Canadian Deprescribing Network
Canadian Foundation for Healthcare Improvement (CFHI)
CISSS Abitibi-Temiscamingue and Outaouais
CIUSSS West-Central and West Montreal
Department of Family Medicine, McGill University
Douglas Mental Health University Institute, McGill University
Institut national d’excellence en santé et services sociaux (INESSS)
Institut national de santé publique du Québec (INSPQ)
Institut universitaire de gériatrie de Montréal (IUGM)
Institut universitaire de gériatrie de Sherbrooke (IUGS)
Ministry of Health and Social Services
Quebec Centre of Excellence on Aging (CEVQ), QC
Université Laval, Université de Sherbrooke and University of Montreal RUISs

— Prospects

- To help draft the review of Phase 2
- To propose organizations and priorities for the implementation of Phase 3
CREATION OF BPSD OUTPATIENT TEAMS

— **Background**

In the context of the Ministry’s initiative on Alzheimer’s disease and other major neurocognitive disorders, all CISSs and CIUSSs must put in place an effective outpatient team for the care of behavioural and psychological symptoms of dementia (BPSD).

In an effort to assist those regions which do not yet have such a team, the Centre of Excellence on Longevity has taken it upon itself to occupy a central role by rallying the necessary experts, tools, experiences and best practices for the creation and administration of these teams. In this general framework for intervention, as defined by the organizational parameters published in 2014 by the MSSS, the Centre proposes to analyze existing needs and available resources, and orients the organization toward the developmental axes which would most greatly benefit the involved population. These important preparation and co-building tasks will allow the constitution of multidisciplinary BPSD outpatient teams which will be perfectly adapted to each territory.

— **Objectives**

- To participate in the development and improvement of local expertise
- To support the stabilization and optimization of team constitution
- To propose tailor-made solutions, adapted to outlying patient needs

— **Results**

Creation of a training program for the clinical mentoring of BPSD outpatient teams: 22 trainees
Implementation of the Montreal community of practice for BPSD outpatient teams: 40 participants
Drafting of intervention algorithm for BPSD outpatient teams

**Partners**

- BPSD Outpatient Teams Implementation Working Committee Montreal
- CISSs Abitibi-Temiscamingue and Outaouais
- CIUSSs West-Central Montreal, Estrie and West Montreal
- Institut universitaire de gériatrie de Montréal (IUGM)
- Université Laval, Université de Sherbrooke and University of Montreal RUISs
COGNITION COMMUNITY OF PRACTICE

— **Background**

Created in 2014, the community of practice of McGill cognition nurses quickly emerged as the inter-regional and inter-RUIS community to service the territories of the McGill and University of Montreal RUISs. The success achieved by Phase 1 kept true during Phase 2, and this community grew from 50 to over 200 members. At the beginning of 2018, it was decided that this experience-sharing activity would be spread to regional and inter-regional communities.

— **Objectives**

- To organize regional meetings between clinicians servicing cognitively disabled patients
- To propose a new way of organizing, aiming to facilitate experience-sharing between regions

— **Results**

Creation of an inter-regional community of practice on ineptitude: 53 participants

Implementation of the CIUSSS West-Central Montreal interdisciplinary cognition community of practice: 21 participants

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**Prospect**

- Creation of a territorial Alzheimer’s resources community of practice for the McGill RUIS
COGNITION PROGRAM

INTER-RUIS COORDINATION FOR MONTREAL AND ADJACENT REGIONS

— Background
The Centre of Excellence on Longevity and the Institut universitaire de gériatrie de Montréal (IUGM) have joined their expertise to coordinate triennial action plans for the 5 CIUSSSs which make up the territory of Montreal and the 4 CISSSs which make up the adjacent regions. The proximity of these territories and healthcare-related popular behaviours highlight a real need to standardize and coordinate the activities of these CISSSs and CIUSSSs. This step is complementary to the specific measures undertaken by each territory and required to allow a better continuum of patient care.

— Objectives
- To ensure the synergy, transferability and accessibility of patient care in each CIUSSS
- To develop inter-CIUSSS collaboration, so as to better harmonize patient care and care continuum all over the city of Montreal and in its adjacent regions

— Results
Implementation of a Montreal and adjacent regions community of practice for territorial Alzheimer’s resources: 18 participants
Publication of a quarterly newsletter
Creation of coaching and evaluation tools for Phase 1 clinical interventions
Standardization of training content for nurses across territories

Partners
CISSSs in the Lanaudiere, Laurentides, Laval and Mauricie-Centre du Quebec regions
The 5 Montreal CIUSSSs: North, West-Central, South-Central, East and West
Institut universitaire de gériatrie de Montréal (IUGM)
Regional Pharmaceutical Services Committee, Montreal
Regional Department of General Medicine
IMPROVEMENT OF CARE PATHWAYS FOR ELDERLY PATIENTS AND FAMILY CAREGIVERS IN MONTREAL

— Background
The improvement of care pathways for elderly patients and their family caregivers is a major issue for the healthcare system, and also one of the two primary axes of the Ministry’s initiative on Alzheimer’s disease and other major neurocognitive disorders. The experience acquired throughout this initiative has allowed the Centre of Excellence on Longevity to become a heavily solicited player and the cornerstone of many cross-institution projects across Montreal.

By participating in these activities with network clinicians, through regular community-level meetings, the Centre of Excellence on Longevity of the McGill RUIS allows various players to better understand the medical and social needs presented by the members of this population, and therefore to better care for them. Some tools still remain to be put in place to offer a common language between partners, allowing them to coordinate these functional care pathways and pertinently attend to elderly patients and their caregivers.

— Objectives
- To improve communication, and care and service access mechanisms for elderly patients, through more efficient collaboration between the various stakeholders involved in their care
- To propose better observation, prevention, screening and support tools for elderly patients and their family caregivers

— Results
Creation of the caregivers support Committee of the CIUSSS West Montreal
Deployment of a caregiver support program for family caregivers of Alzheimer’s patients (ACCEPT) to the entirety of the Island of Montreal
COORDINATING A TRIENNIAL PLAN OF ACTION FOR THE WEST-CENTRAL MONTREAL CIUSSS

— Background
The Centre of Excellence on Longevity lends its support to the West-Central Montreal CIUSSS for the implementation of Phase 2 of the Ministerial initiative for Alzheimer’s disease and other major neurocognitive disorders. Beyond its advisory role, the Centre initiates and supports the deployment of innovative new measures. By putting the elderly patient front and centre in the care scheme, the Centre of Excellence on Longevity’s proposed strategy allows for the proper adaptation of care models for chronic diseases to the realities of elderly patients with cognitive disorders and their caregivers, and hereby to allow them access to a more complete approach, tailor-made for each elderly patient and coordinated between the stakeholders of every level which are involved in his or her care pathway.

— Objectives
- To guide and support CIUSSS administrators during the initial steps of the Alzheimer’s initiative, as well as to coordination between various clinical entities
- To guide primary care clinicians in giving the right tools, training and support to the different stakeholders who will be involved with the care of elderly patients and their caregivers

— Results
Drafting of the report on the state of affairs relative to the implementation of Phase 2 at the West-Central Montreal CIUSSS
Creation of interdisciplinary, GMF-approved training content
Supplying training and support to the new Alzheimer’s territorial resource
Implementation of a follow-up strategy for activity markers as they may appear in electronic healthcare records within GMFs
Implementation of an integration pilot project by one of the GMF pharmacists involved in the interdisciplinary clinical process

Partners
Coordinating Table of Primary Health and Professional Services
Directorate of the CIUSSS
Directorate of Rehabilitation
Directorate of Nursing
Directorate of Mental Health and Addiction Program
Directorate of First Line Integrated Services
Directorate of Support for Elderly Autonomy Program
Local Coordinating Table of Pharmacists
COGNITION PROGRAM

CREATION OF PILOT PROJECTS AND KNOWLEDGE TRANSFER IN THE FAR NORTH QUEBEC

— **Background**

The improvement of living conditions in the aboriginal communities of Northern Quebec has helped greatly increase longevity and caused the apparition of new, related morbidities, such as Alzheimer’s disease and other major neurocognitive disorders. Due to a significant lack of tools and resources, the Ministry of Health and Social Services has requested of the West-Central Montreal CIUSSS and of the Centre of Excellence on Longevity that they pool their resources to develop knowledge transfer and cultural adaptation strategies for their Alzheimer’s tools, for use on the territory.

— **Objectives**

- To guarantee, with the help of the West-Central Montreal CIUSSS, that the knowledge acquired through these provincial undertakings and regional experiences is shared with aboriginal territories of Northern Quebec.
- To adapt existing tools to the needs and cultural realities of aboriginal communities.

— **Results**

Creation of culturally adapted and community-validated training on cognitive disorders.

Implementation of caregiver support groups led by members of relevant communities.

Integration of the Chisasibi Hospital to the OPUS-AP approach.

Securing financing through APPUI.

Improvement of clinical skills for the members of the Chisasibi pilot group, with the help of the Douglas Mental Health University Institute.

Creation of relationships and aboriginal work groups on the Quebec and Canadian-level.

**Partners**

APPUI National Canadian Consortium on Neurodegeneration in Aging (CCNA) Aboriginal populations

CIUSSS West-Central Montreal

Cree Board of Health and Social Services of James Bay, McGill University

Distance teaching and Learning Centre (DTLC), Northern Health Program

Douglas Mental Health University Institute, McGill University

First Nations of Quebec and Labrador Health and Social Services Commission

McGill TeleHealth

Nunavik Regional Board of Health and Social Services.

**Prospect**

- Validation of a cognitive evaluation tool adapted for use with the aboriginal communities of Canada.
CAREGIVING.
SUPPORT CARE PROGRAM
SUPPORT CARE PROGRAM

SIMULATION WORKSHOPS FOR FAMILY CAREGIVERS OF ALZHEIMER’S DISEASE SUFFERERS

— Background
Population aging can entail the transfer of care from the hospital into patient homes. Home care can be an option for patients after hospital stay or as a way to avoid admission altogether. This choice is based upon the desire to remain safely autonomous in a familiar setting for as long as possible, even through illness.

Home care, often given by health professionals such as nurses, and occupational and physical therapists, can also be undertaken by family or professional caregivers, who will accompany patients in their day to day activities and help them groom and feed themselves, clean their home and prepare meals.

With a view to adequately prepare clinicians and family caregivers in their respective home care roles, the Centre of Excellence on Longevity and the Steinberg Centre for Simulation and Interactive Learning at McGill University; with the help of Claire Webster, certified counsellor in Alzheimer’s care and founder of Caregiver Crosswalk Inc.; and Olivia Monton, medical student at McGill University; have conceived of a pilot project overseeing the training and support of family caregivers for sufferers of Alzheimer’s and other neurodegenerative diseases.

— Objectives
- To support family caregivers through training and empowerment
- To promote awareness of caregivers with regard to their own health
- To direct them to the necessary support and resources

— Methods
The pilot project (2017/2018) includes the creation of a half-day workshop to answer any questions caregivers may have about the disease. This workshop includes a theoretical portion, teaching caregivers how to care for a person suffering from dementia and for themselves, as caregivers. It also includes a simulation portion, taking place in an apartment setting and teaching them how to make sure the person they are helping is safe at home.

— Results
Through training and empowerment, this workshop can support family caregivers and orient them toward the resources which will help them feel supported throughout their task. This pilot workshop was renewed for 2018 and recognized as a great success by participants.

Partners
Faculty of Medicine, McGill University
Joseph Kaufmann Chair in Geriatric Medicine, McGill University
Caregiver Crosswalk Inc.
Olivia Monton, Student Representative, McGill University
Steinberg Centre for Simulation and Interactive Learning, McGill University

Prospects
The workshop will be frequently given over 2019, and other workshops will be created as a way to broach different themes, such as risky behaviours, home-safeguarding and disease-related legal considerations.
2. SUPPORT CARE PROGRAM

SUPPORTING FAMILY CAREGIVERS OF ALZHEIMER’S DISEASE SUFFERERS, ACCEPT: A COMMUNITY SUPPORT PROGRAM

— Background
Alzheimer’s disease (AD) will affect its sufferers as well as their caregiving spouses. Caring for a sufferer of AD is both stressful and highly demanding, and will impact the health of caregivers, especially when they are also elderly and when considering the cumulative effects of chronic, age-related illnesses and psychological decline. Moreover, elderly caregivers have the tendency to focus their attention on their Alzheimer’s suffering spouse and, consequently, to lose sight of their own health. All of this contributes to a vicious cycle which will eventually lead to a mediocre standard of living and increased frailty for the dyad (the caregiver-sufferer couple). Therefore, any intervention which is focused on the conservation or improvement of health and functional status for caregiving spouses of Alzheimer’s sufferers must be a priority, so as to maintain the autonomy and living standard of the dyad for as long as possible.

It has been reported that elderly persons are perfectly capable of evaluating their own health status through a self-administered program, and that they are also capable of accessing the digital version of this questionnaire on the Web, which opens up new prospects in relation to caregiver support and improvement of caregiver health.

— Objectives
- To promote the use of CESAM, a self-administered quality of life and health questionnaire for family caregivers, with caregivers of Alzheimer’s sufferers
- To enable them to evaluate their own health status
- To learn what primary frailty points to pay particularly close attention to
- To allow caregivers to benefit from care advice and recommendations, with the help of community partners

— Results
Various pilot projects were put in place with the Cummings and Evasion Centres
The caregiver support procedure for using CESAM and during the care and recommendation sessions was adjusted
The ACCEPT project was opened to caregivers, with the help of SARPAD and of the 5 counsellors of the Alzheimer Society of the Island of Montreal
A follow-up study relating to the use of CESAM was put in place within the Alzheimer Society of the Island of Montreal
EPIDEMIOLOGY PROGRAM
1. EPIDEMIOLOGY PROGRAM

FAMILY CAREGIVERS IN QUEBEC: IDENTIFICATION AND NEEDS

— Background
According to the «General Social Survey on Care Given and Received» conducted by the Institut Statistique du Québec, some 1,675,000 Quebecers aged 15 and over were family caregivers in 2012. This data must be updated. Who are the family caregivers in Quebec today? How many are there? Do they recognize themselves as such? Are they long-term caregivers of chronically ill loved ones or short-term caregivers? Are they caregivers of elderly people, children, relatives with disabilities, loved ones with neurodegenerative disorders or mental illness?

— Objectives
- Identify and characterize caregivers to develop a provincial mapping
- Measure the health status and quality of life of caregivers to raise their awareness of their own condition and identify areas of personal vulnerability to be observed

— Methods
Since 2016, the Centre of Excellence on Longevity has created and operates an Internet platform for health professionals to improve the care pathway for seniors and family caregivers. This platform, called CESAM, will be accessible to the general public throughout Quebec in the spring of 2019. The family caregiver must be identified, accompanied and followed up. To do this, he must himself consider that he needs help and get involved in his own health. In this perspective, the Centre of Excellence on Longevity will make CESAM available free of charge to family caregivers of all ages, who will thus have access to simple and scientifically validated tools and questionnaires to assess their own quality of life and state of health. CESAM will make it possible to identify family caregivers, establish their socio-demographic profile, assess their needs and give the keys to better support them and help them to help.

— Prospects
- Assess the well-being, quality of life and health status of caregivers in order to improve their health and possibly increase their longevity for the benefit of all,
- Organize an epidemiological watch to be able to predict the pathological aging of Quebecers,
- Anticipate the needs of family caregivers throughout the province and match them with the necessary resources.
INCLUSIVE TECHNOLOGY.
AGING IN PLACE PROGRAM
**Background**
From the age of 75 on, over 70% of elderly persons will present a disability which will limit the accomplishment of daily activities. Even with these disabilities, elderly persons wish to remain at home for as long as possible and this objective of aging at home is one of the provincial and federal governments’ greatest priorities. In this context, it is critical to conceive of innovative solutions which will empower elderly persons to age in the place of their choosing. To this end, in a human and financial resource-scarcity context, technology is an essential supporting facet of the public healthcare system and of all its ecosystems.

**Objectives**
- To identify what may facilitate and hinder functional autonomy
- To identify what technologies already exist and how to develop/adapt/integrate them in a way to reduce or eliminate hindrances to functional autonomy
- To identify the expectations of all stakeholders, relative to how technology may optimize functional autonomy
- To verify the acceptability of technology with all involved stakeholders

**Methods**
This pilot, design research-action pilot study will be mixed (qualitative and quantitative). Focused discussion groups will take place, involving Foundation administrators and Care home stakeholders. Individual interviews to take place with 65 elderly persons and their relatives. Existing technologies to be deployed at these elderly residents’ homes. Preliminary effectiveness measurements, taken before, during and after the installation of said technologies, will focus upon improvement of autonomy, use and satisfaction with these technological means. The cost of these systems will also be evaluated, as well as their retail potential.
— **Background**

Maintaining the ability to prepare meals independently while suffering from Alzheimer’s disease (AD) is of paramount importance to both sufferers and their caregivers. Beyond it being necessary to feed oneself, meal preparation supports self-esteem and maintenance of social roles. However, numerous difficulties relating to task completion and inherent safety concerns, such as burns and fire hazards, make this a high-risk activity for individuals with cognitive deficits.

The CRIUGM research team has recently developed a culinary assistant called COOK. This project, which received funding through the CIHR/NSERC program (2013–2017), consisted in the development of a first version of COOK and in its implementation for three individuals with severe traumatic brain injuries. Since the project's implementation, these three persons started cooking again, and are currently preparing their own meals several times a week. New features should thus be developed in the COOK assistant to optimize it for this clientele.

— **Objectives**

- Identification of the main difficulties encountered during meal preparation as well as the type of verbal assistance required to facilitate greater independence and safety when cooking a hot meal using a stove and within the home
- Usability testing of an existing cooking assistant, named COOK, in a laboratory context with participants suffering from either MCI or AD, families and clinicians
- Technological development for improving and enlarging COOK’s prompting repertoire

— **Methods**

The design is a participatory research with 3 assessment sessions.

The first assessment session includes a presentation of the project and neuropsychological testing. The second and third assessment sessions are conducted at the person’s home and consist in the administration of the performance-based assessment twice.

Participants diagnosed with amnestic MCI due to AD — high likelihood and participants with AD are recruited in the early phases of the disease, i.e. phases 2-4 according to the FAST scale.

**Prospects**

- Identification of specific patterns of errors and difficulties for sufferers of MCI and AD when executing activities related to meal preparation will help develop a better understanding of the impact of such diseases on everyday living
- Guide the development of interventions, including technological solutions
- Advancing research in the area of context aware prompting based on finely detailed analysis of the behaviours of real participants
QUANTIFIED-SELF PROGRAM
QUANTIFIED-SELF PROGRAM

WEB-PLATFORM OF THE RUIS MCGILL CENTRE OF EXCELLENCE ON LONGEVITY

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**Background**

The current rate of population aging means that the early identification of illnesses and their potential consequences has become a significant public health issue. This early detection allows for adapted preventive and/or curative interventions and therefore the limiting of adverse outcomes on the health and quality of living of elderly patients suffering from these illnesses.

All individuals, young or old, can access these digital tools and use them to evaluate the state of their health. They come in need of advice and information, relative to the state of their health, so that they become truly involved, concerned and active. As developed by the Centre of Excellence on Longevity, the CESAM self-evaluation (Centre of Excellence on Longevity Self-AdMinistered questionnaire) is the first scientifically validated general and functional health self-evaluation tool made with elderly patients in mind.

The CESAM includes a general and functional health self-evaluation component and an intervention component, based upon the recommendations put forward after the automatic analysis of the answers to the different questions. It was conceived of to predict adverse health events and detect which elderly patients are most at risk of interrupting their care pathway, so that preventive interventions may be put in place.

Since its 2016 creation, the interest of the population at large and of the Centre of Excellence on Longevity’s partners with regard to the CESAM has grown consistently. As a way to offer free, universal access to the CESAM, it has been determined that a new version of the cloud-based platform would be developed, and optimized on the graphic and technical level.

This new version has allowed the public at large to gain access to the platform, with or without an existing account, through search engines, while allowing a greater flexibility in use for healthcare professionals.

On top of this technological redesign, the platform now includes new questionnaires promoting greater empowerment and more efficient methods for elderly persons to both take charge of their own health and to support the diagnostics made by healthcare professionals. These new questionnaires are concerned with well-being, quality of life, fall risk, mood and state of mind.

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**Objective**

- To propose a free and high-performing health-related service to all involved audiences (elderly persons, caregivers, clinicians, healthcare and other professionals)
IMPLEMENTATION OF CESAM©® IN TAN TOCK SENG HOSPITAL GERIATRIC CLINIC, SINGAPORE

— **Background**

The Centre of Excellence on Longevity Self-Administered questionnaire (CESAM) is a digital tool aimed for older adults to self-assess their functional and cognitive health status themselves and become involved players in their own healthcare, with high levels of involvement and activity.

Developed by the Centre of Excellence on Longevity, the CESAM is the first scientifically validated self-assessment tool used to evaluate the state of general and functional health in elderly people. It provides recommendations to follow based on the provided information. It was developed to predict adverse health events and to provide early warning for individuals who are at risk of suffering significant disturbance to their overall health so that preventative measures can be put in place.

— **Objectives**

- To examine the feasibility, usability and participant compliance regarding the questionnaire in older patients visiting the outpatient geriatric care centre of TTSH Singapore
- To compare the CESAM score with the other validated tools used in the assessment of frailty in day-to-day practice at TTSH
- To examine the accuracy and complementarity of the CESAM recommendations when compared to physician recommendations
- To evaluate if the transfer of CESAM to clinical practice would be useful for Singapore
- To examine the predictive value of CESAM for the occurrence of adverse health outcomes with and without using recommendations of CESAM in addition to normal care

— **Methods**

The design is a cross-sectional study.

The recruitment of as many patients as possible, according to the following selection criteria; Inclusion criteria: Participants are patients aged of 65 years and over, visiting the geriatric outpatient clinic of TTSH for the first time.

**Prospects**

- Development of multilingual versions through a translation of CESAM into Mandarin Chinese
- Analysis of cultural impact
- Development and implementation of specifically designed modules, questionnaires and recommendations
COLLABORATIONS
COLLABORATIONS

THE CANADA GAIT CONSORTIUM,
A UNIQUELY CANADIAN TASK FORCE

— Background
Created by Dr. Olivier Beauchet in September 2015, the Canada Gait Consortium (CGC) is a nationwide research consortium which brings together nine teams of researchers from the fields of aging and human movement, thereby creating Canada’s largest network of gait and balance-related medical condition subject matter experts.

Director of the CGC
Dr. Olivier Beauchet, Director of the Centre of Excellence on Longevity, McGill University, Montreal, QC

Les membres du CGC
Dr. Teresa Liu-Ambrose, PhD, Aging, Mobility and Cognitive Neuroscience Laboratory, University of British Columbia, Vancouver, BC
Dr. Richard Camicioli, MD, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, AB
Dr. John Barden, Associate Professor, Faculty of Kinesiology and Health Studies, Neuromechanical Research Centre, University of Regina, SK
Dr. Tony Szturn, PhD, Department of Physical Therapy, College of Rehabilitation Sciences, University of Manitoba, Winnipeg, MB
Dr. Victoria Chester, PhD, Co-Director of McCain Human Performance Laboratory, Faculty of Kinesiology University of New Brunswick, Fredericton, NB
Dr. Guillaume Leonard, PhD, Centre de Recherche sur le Vieillissement de Sherbrooke (CDRV-IUGS), Université de Sherbrooke, Sherbrooke, QC
Dr. Sébastien Grenier, PhD, Institut universitaire de géériatrie de Montréal, University of Montreal, Montreal, QC
Dr. Louis Bherer, PhD, University of Montreal, Montreal, QC

— Objectives
The Canada Gait Consortium:
- develops joint research program into gait-related conditions and age-related balance conditions;
- provides researchers with the ability to share and connect their databases, so as to expand the range of their work and improve the relevance of their results;
- initiates innovative research activities based on mathematical modelling of clinical research;
- generates and/or joins international research initiatives in the field of mobility in elderly persons.
COLLABORATIONS

QUEBEC LONGEVITY CAMPUS

— Background

Faced with rapid technological change, and rapidly evolving behaviour in patients in relation to their health, the Centre of Excellence on Longevity has brought together Quebec’s centres of excellence and research in the field of aging to a single campus. This coordination of the operational activities of managers and clinicians in the healthcare network rounds out the activities of the Quebec Network for Research on Aging (RQRV). Indeed, the Quebec Longevity Campus aims to anticipate innovation, support ongoing research projects and enable the birth of new, joint research projects. Regular meetings will make it possible to share information with an approach that favours collaborative working and knowledge brokering in Quebec.

— Objectives

- To bring together the leadership teams of each research centre and centre of excellence in Quebec, as well as the RQRV to facilitate relationship building among each organization
- To act as a discussion forum for experts in longevity, decision makers, and stakeholders in healthcare policy, social services, and citizens, to share and convey knowledge derived from discussion forums.
- To support the RQRV in promoting research on aging in Quebec, Canada and internationally

Partners

Centre de recherche de l’Institut universitaire de gériatrie de Montréal (CRIUGM)
Centre de recherche sur le vieillissement de Sherbrooke (CSSS-IUGS), Université de Sherbrooke
McGill University Research Centre on Aging, QC
Quebec Centre of Excellence on Aging (CEVQ), QC
Quebec Network for Research on Aging (RQRV)

2018 Accomplishments

The Centre of Excellence on Longevity for the McGill RUIS has initiated and put in place a partnership with the Centre for Aging + Brain Health Innovation (CABHI) of Toronto. This unique and synergetic partnership, the only one of its kind in Quebec, has assembled provincial university research centres on aging to finance elder care innovations for Quebec. This exceptional Quebec Research-Clinician Partnership Program (QRCP2) has as its mission to support new and exciting initiatives on the themes of aging at home, family caregiving, mental health, care continuum, and the needs of aboriginal and rural populations. In the context of the QRCP2, the CABHI has helped finance projects concerning the transformation of research into products, services and new practices responding to the needs and challenges we all face with the increase of longevity in Quebec. At the end of this call for tenders, two projects were chosen for financing by the CABHI. They will soon be announced.
Art workshops have ‘huge’ effect on seniors’ health

Participants in three-month hospital study went from mildly frail to vigorous

MICHELLE LALONDE

Research has already shown that participating in art workshops can improve seniors’ moods and sense of well-being, but a new study out of Montreal suggests surprisingly positive effect on the physical health of seniors.

Launched last December, the study measured the effect on 150 people aged 65 to 94 who participated in weekly painting and drawing workshops at the Montreal Museum of Fine Arts over a three-month period.

The participants were relatively healthy seniors, living in their own homes and not suffering from serious cognitive impairment or physical illness, although due to their age they were dealing with varying degrees of frailty.

At the beginning of the study, the participants were rated according to their degree of frailty: severely frail, moderately frail, mildly frail, and vigorous. About half of the participants were in the “mildly frail” category. After three months of participating in weekly art workshops, 27 per cent of those in the “mildly frail” category had moved to the “vigorously healthy” category.

“This is an extraordinary result,” said Dr. Olivier Beauchet, professor of geriatrics at McGill University and director of the RUSS Centre of Excellence on Longevity, which is collaborating with the museum and the Jewish General Hospital on this research program.

He said researchers were not surprised when results showed that participants’ self-rated sense of well-being improved during and after each workshop and that their self-assessed quality of life improved cumulatively over the three-month period. These effects had been demonstrated in the past, through studies on art therapy on people suffering from various illnesses. But the scope of improvement in physical health on a relatively healthy elderly cohort was unexpected even by researchers in the field.

“The size of the effect was huge,” Beauchet said.

Participants rated their frailty using a set of 20 yes-or-no questions, such as whether they had gained or lost weight, whether they were taking more medications, ability to dress and bathe alone, and mood. The methods used for self-assessment have been scientifically verified and are reliable and doctor’s assessments, be said.

While 49 per cent of the participants rated their health as “vigorously” at the beginning of the research, 76 per cent had attained that status by the end.

He said the concrete effect of that improvement could mean seniors become more mobile and interactive in their lives, more willing to participate in family, which in turn preserves good health.

“This study confirms that the effect of participating in public art workshops are multi-dimensional, that museums can be important actors in illness prevention, particularly in an aging population,” he said.

Along with the study results, the Centre of Excellence on Longevity released a video Tuesday featuring former Montreal mayor Denis Coderre, now an ambassador to the Jewish General Hospital Foundation, interviewing Beauchet.

The museum has been running a very popular program of free artistic workshops for seniors called Thursdays at the Museum for the past three years. So far, more than 14,000 people have participated in this program, which includes art and musical workshops, yoga and guided tours of the collections.

Last month, the MMFA announced an innovative program that will allow physicians who are members of Medicine Finsophotes du Canada to prescribe museum visits to some of their patients. The museum will offer free admission to those with prescriptions.

The Museum of Fine Art is collaborating with a number of different research institutions in a bid to measure scientifically the effect of art on frail elderly. Research projects include a study of the effect of visits and workshops at the MMFA, people with cognitive disorders, on young people with psychiatric problems, on patients with cardiac arrhythmia, on those with Alzheimer’s, on the autism spectrum, and on breast cancer patients and survivors.

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CIUSSS INFOS - SEPTEMBER 2018

Let’s celebrate the successes of the Centre for Excellence in Longevity

Although not part of the SAPA team, the CIUSSS can also rely on the McGill RUES Centre for Excellence in Longevity to develop its knowledge of the health, longevity and quality of life of seniors. This Centre is located at the Jewish General Hospital.

Inclusive art for our seniors

Since 2016, the Centre has been offering workshops in Geriatric Inclusive Art in the Division of Geriatric Medicine at the Jewish General Hospital and with seniors in the Montreal community. This art form improves the emotional state of older participants, develops and increases awareness of their abilities and builds new relationships with health professionals and their families, while improving their well-being.

Supported by the Users’ Committee, these workshops are coordinated and facilitated by Samantha Remondière, gerontologist and art therapist. Nearly 1,000 patients hospitalized in geriatrics at the hospital have been able to benefit from this activity since the implementation of these workshops.

Research on Inclusive Geriatric Art has shown a three-day reduction in hospitalization and a 20% reduction in death rates among patients who participated in these workshops, compared to those who did not participate. A new clinical study is currently underway at the JGH to validate and refine these results.

Improving the care of seniors in emergency departments

In partnership with the Jewish General Hospital Emergency Department, the Centre initiated a research project on the use of a tool to improve the care of seniors waiting the emergency room.

The Emergency Room Evaluation & Recommendations (ER2) makes it possible to quickly detect seniors at risk of long hospital stays and to trigger actions that reduce the length of their stay. Some 12,000 patients were included in this study, more than 4,000 were evaluated, of which 2,000 benefited from the recommendations.

The screening conducted by ER2 and the implementation of adapted recommendations by emergency staff identified seniors who stay in hospital for a long time and reduced their hospitalization from two to four days compared to those who did not benefit from this assessment. ER2 also identifies seniors who will return home quickly.

* To learn more about Emergency Room Evaluation & Recommendations: click here.
* To learn more about the McGill RUES Centre of Excellence for Longevity: click here.
Art workshops help seniors improve their health, Montreal study finds

MONTREAL — For some seniors, visiting the museum instead of the doctor’s office could improve their health and quality of life, according to a study released Tuesday.

Research conducted at Montreal’s Museum of Fine Arts by McGill University geriatric medicine experts found that participating in a group activity such as painting or drawing is beneficial on many levels.

The clinical study of 150 people aged 65 to 94 looked at people taking part in the museum’s weekly art workshops, over a 10-month period.

People considered to be in “fragile” health showed a clear improvement after three months.

More than half of the subjects classified as “fragile” at the start of the study were rated “vigorous” at the end.

Participants reported a steady improvement in their quality of life over the duration of the study. Some benefits were found to be temporary while others were lasting and cumulative from one workshop to the next.

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People considered to be in “fragile” health showed a clear improvement after three months.

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The researchers said the results exceeded their expectations.

Olivier Beauchet, professor of geriatrics at McGill University, said the results show the potential of art therapy to prevent health problems. Although it is too early to say with certainty, he noted a tendency for visits to the doctor and hospitalizations to decrease among the participants in the study.

The next step is an expanded study with a control group and participants in 10 other countries.

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