



Pessam Gardens

Memory Care Retirement Home & Smart Living Lab

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April 18, 2019

Alzheimer's and Dementia in Canada

- ▶ It is estimated that **747,000** Canadians currently living with Dementia and at least **47.5 Million** world wide
- ▶ In Canada **76,000** new cases of dementia diagnosed every year with the expectation to reach a total of **1 Million** Canadians by 2030 (66% increase)
- ▶ The current cost for Dementia is **\$10.4 Billion** per year and expect to reach **\$16.6 Billion** by 2030 (1% of GDP)
- ▶ Currently, there is NO effective treatment for Dementia or Alzheimer's. However, some European countries are attempting innovative practises, proven to be successful to slow down the disease.

hogeweyk

Holland's Dementia Village



3

World Class

Top
Memory
Care
Facility



A True Family Living Space

Magic Life Furniture

5



Custom
Memory
Care
Solutions

Ressam Gardens State of the Art Memory Care Facility

6



- ▶ **Innovative Building Concept**
- ▶ **Smart Living R&D Laboratory**
- ▶ **Modern Urban Design**
- ▶ **Advanced Healthcare Training & Practices**

Ressam Gardens: A Smart Living Laboratory

- ▶ A Living Lab is an environment that fosters technologic innovation for joint value co-creation among citizens, research organizations, companies, cities and regions
- ▶ Ressam Gardens Living Lab will benefit all sectors of our society including: Patients, Research Community, Industry, and Government
- ▶ The expected outcomes for Ressam Gardens are: provide economic opportunities, enhance research platform, new product(s) development, technology commercialization, and encourage industry partnerships

Ressam Gardens – Partnerships



Hamilton



Micro Grid Solutions





Lotfi Belkhir, Ph.D.

**Associate Professor & Chair of Eco-Entrepreneurship
W Booth School of Engineering Practice & Technology
McMaster University**

Ressam Gardens Collaboration with SEPT & MIRA

Work in Progress

- ▶ Breathing Patterns Remote Monitoring
- ▶ Fall Prevention and Detection

Future Projects

- ▶ Smart Living Space for Seniors
- ▶ Bio Monitoring Apparatus
- ▶ AI-enhanced projects
- ▶ Indoor and Outdoor Tracking Systems
- ▶ Data Aggregation & Cyber Security
- ▶ Electric Mobility (Wheelchair, Bike, Golf Cart)

Breathing Patterns Monitoring Using Infrared Imaging

Target Market:

- ▶ Smart Living Space for Seniors
- ▶ Chronic Obstructive Pulmonary Disease (USD \$40+ B in the North America)
- ▶ Sleep Apnea affects about 44 Million people in North America

Solution:

- ▶ Use of Infrared Imaging to deliver inconspicuous, safe and early assessment and diagnostics of breathing disorders

Benefits:

- ▶ Early and preventative treatment
- ▶ Improvement in quality of life and aging
- ▶ Reduction in cost of treatment

Fall Prevention & Detection Using Infrared Depth Cameras

Target Market:

- ▶ Falls are the second leading cause of accidental or unintentional injury deaths worldwide
- ▶ 37.3 million falls that are severe enough to require medical attention occur each year
- ▶ Adults older than 65 years of age suffer the greatest number of fatal falls

Solution:

- ▶ Use of Infrared depth camera to assess and analyze gait patterns and provide early warnings of potential falls as well as detection of those falls when/if they occur

Benefits:

- ▶ Leading indicator warning of potential falls and preventative measures to prevent them
- ▶ Immediate alert of the emergency and caregivers in case of falls
- ▶ A record and playback ability of the fall to enable optimal treatment



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About Claybar Construction

- ▶ Established in 1965
- ▶ Claybar's corporate carries top expertise in general contracting and petroleum construction sectors
- ▶ Today, Claybar is a multi-disciplinary firm offering a wide range of professional and various technical services to meet continually changing and demanding client requirements
- ▶ Moving forward, it is our plan to invest into the development of Retirement Homes, an industry estimated to reach a **One Trillion Dollars** by 2050

Ressam Gardens

The Future Of Memory Care Facility

Site Location and Building Design

- ▶ Proximity to newly developed town houses, city parks & shopping centres
- ▶ A unique building layout

Long Term Strategy

- ▶ Creating a harmonized urban community
- ▶ A modern concept of retirement home
- ▶ A model which can to be adopted throughout Canada and North America





Dr. Maryam Rostami, MD, CCFP

Family Doctor, Long Term Care Director

Associate Faculty, Department of Family Medicine, McMaster University

Ontario's Dementia Strategy

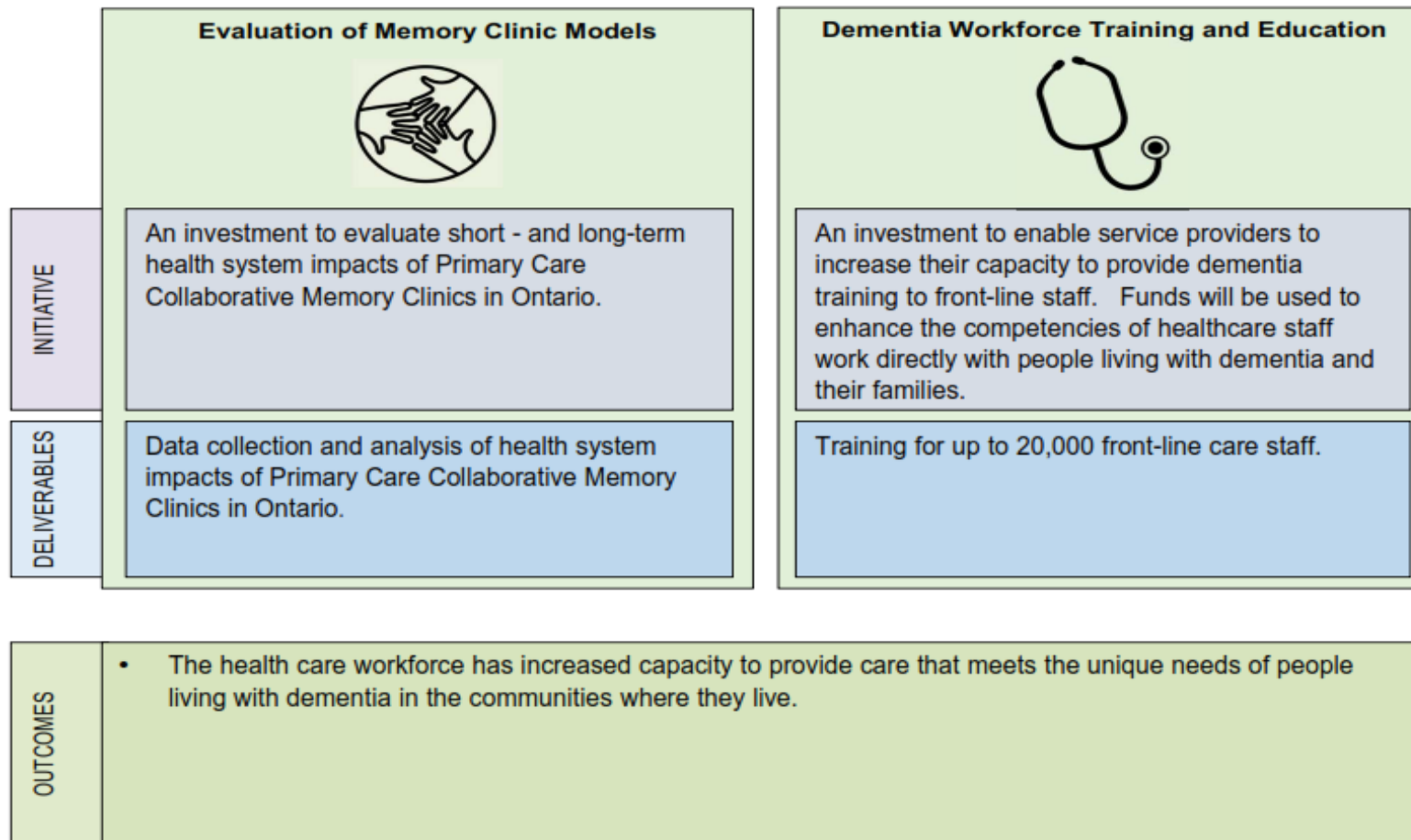


DEMENTIA STRATEGY KEY INVESTMENTS

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
	Community Dementia Programs	Caregiver Respite	Care Partner Education and Training	Dementia Workforce Training and Education	Behavioural Supports at Home and in Community	Behavioural Supports in Long-Term Care Homes	Evaluation of Memory Clinic Models	Patient Navigation	Continued investments in physician education in geriatric care	Dementia Campaign
INITIATIVE	Expand province-wide access to dementia specific programs.	Enhance flexible respite services for care partners of people with dementia.	Enhance education and training available to care partners.	More dementia-specific training hours and supports for front-line and primary care practitioners.	Expand Behavioural Supports Ontario program in home and community.	Expand Behavioural Supports Ontario program in long-term care (LTC) homes.	Build on innovative models to increase access to specialised care.	Expand access to integrated and coordinated dementia care in the community.	Explore geriatric medicine and geriatric psychiatry training needs in partnership with the medical schools.	Expand dementia awareness campaigns.
OUTCOME	More dementia day, evening, and overnight programs, including transportation to and from programs for patients and care partners.	Improved access to respite supports, including in-home and overnight, to reduce care partner burnout.	In-person and online educational resources for care partners so people have the right skills to provide care for loved ones.	Giving front-line health care providers more tools and supports to better manage dementia.	Enhancing supports in home and community to help care partners manage complex behavioural health needs.	Expand Behavioural Supports across all LTC homes.	Explore expansion of innovative models to improve patient diagnosis and appropriate management.	Additional care coordination support for newly-diagnosed people and their care partners.	Enhanced capacity for specialists to support the entire health workforce to respond to the needs of our aging population.	Targeted campaigns to key populations to educate the public and reduce stigma around dementia.

\$101 million over 3 years for Ontario's new Dementia Strategy

Ontario's Dementia Workforce



Advanced Healthcare Training Ressam Gardens Training Centre

19

- ▶ Ressam Gardens will house a medical clinic as well as a treatment centre on the main floor
- ▶ This space will be dedicated to McMaster University for research and training purposes
- ▶ The training program will include grad students, PDF, researchers, medical students, residents, nurse practitioners and physician assistants

Advanced Healthcare Practices

Repetitive Transcranial Magnetic Stimulation (rTMS)

- ▶ rTMS is a Promising Dementia Treatment Technique
- ▶ Recent studies showed that rTMS can help Dementia patients to slow the progression of the disease
- ▶ rTMS can also be used as an innovative tool to evaluate the effectiveness of new medications for Alzheimer's treatment
- ▶ rTMS offers patients, doctors, and family members a hope for a cure, and proven to slowing down the progression of the disease

* *It takes a village to care for an elder* *

Thank You