

Assistive Devices:

*Proactive Solutions
for Ontario's Seniors
and Persons with
Disabilities*

CADA
ACAF

Canadian Assistive Devices Association
Association Canadienne d'Appareils Fonctionnels



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CADA

Supporting Access to People with Disabilities

The Canadian Assistive Devices Association (CADA) represents this country's manufacturers, distributors and vendors of medical devices and supplies.

The scope of products includes mobility items like wheelchairs and walkers, incontinence products, hearing aids, masks, gloves, portable oxygen supply devices, patient transfer systems, and feeding tube devices. These products are used in homes, hospitals and long-term care facilities and promote independence for seniors as well as individuals with disabilities.



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Key Messages:

- 01 | Canada's aging population will bring shifts to and increased demands on healthcare needs. As a result, the Canadian federal and provincial governments will be faced with budgetary resource constraints.
- 02 | The reallocation of healthcare dollars into preventative healthcare measures such as Assistive Devices will improve quality of life for those in need, while providing governments considerable downstream savings.
- 03 | Assistive Devices will play an increasingly significant role in the healthcare continuum and therefore the Assistive Devices industry must be included in the healthcare policy decision making process.
- 04 | The adoption of new and innovative technologies is key to transforming Ontario's healthcare system and improving the health and wellness of Ontarians.



Context:

What are Assistive Technologies & Assistive Devices and who do they benefit:

As there are numerous definitions for assistive technologies and assistive devices, the Canadian Assistive Devices Association uses the following definitions set out by the World Health Organization:

Assistive technology, a subset of health technology, refers to assistive products and related systems and services developed for people to maintain or improve functioning and thereby promote well-being. It enables people with difficulties in functioning to live healthy, productive, independent and dignified lives, participating in education, the labour market and social life. It can reduce the need for formal health and support services, long-term care and the burden on carers. Without assistive technology, people with disabilities and older people and others in need are often excluded, isolated and locked into poverty, and the burden of morbidity and disability increases.ⁱ

Assistive [devices] include any external product whose primary purpose is to maintain or improve an individual's functioning and independence and thereby promote his or her well-being. They include wheelchairs, hearing aids, [walkers], [glasses], pill organizers, and [prosthetics and orthotics], as well as assistive information and communication technology such as memory aids, specialized computer hardware and software, augmentative and alternative communication, and customized telephones. Assistive products are essential tools: to compensate for an impairment/a loss of intrinsic capacity, to reduce the consequences of gradual functional decline, to reduce the need for carers, for primary and secondary prevention, and to help rationalize health and welfare costs.ⁱⁱ

Who benefits from Assistive Technology? ⁱⁱⁱ



Who needs assistive technology?

THE PEOPLE WHO MOST NEED ASSISTIVE TECHNOLOGY INCLUDE:



older people



people with disabilities



people with noncommunicable diseases



people with mental health conditions including dementia and autism



people with gradual functional decline

ASSISTIVE PRODUCTS ARE ESSENTIAL TOOLS TO:



compensate for an impairment/ a loss of intrinsic capacity



reduce the consequences of gradual functional decline



help minimize the need for caregivers



prevent primary and secondary health conditions



lower health and welfare costs

ASSISTIVE PRODUCTS ARE OFTEN THE FIRST STEP TOWARDS:



getting out of bed and out of one's house



accessing education, work and employment



escaping from poverty and hunger



greater mobility, freedom and independence



inclusion and participation



leading a dignified life

Facts:

01

Canada's aging population will bring shifts to and increased demands on healthcare needs. As a result, the Canadian federal and provincial governments will be faced with budgetary resource constraints.

a | Population Change:

Canada's population is changing. The 2017 Statistics Canada figures indicate that the Canadian population will be wading into uncharted territory in the next 20 years with the seniors' population expected to grow by 68 percent.^{iv} Furthermore, with the recent advancements in medicine as well as improved life conditions, Canadians are expected to live significantly longer and have lower mortality rates. According to an Organisation for Economic Co-operation and Development (OECD) study, life expectancy has increased on average by about one year every four years since the early 1990s.^v

For the first time, there are more persons aged 65 and over than persons aged 0-14 in Canada and the government needs to ensure that their needs are met. Currently, a whopping 81 percent of adults aged 65 and over report using some form of assistive technology or device.

The population is changing...

For the first time, there are more persons aged 65 years + in Canada than 0-14

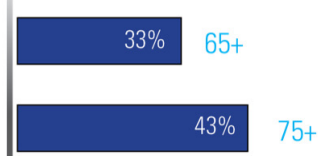


The number of Canadians aged 65+ is expected to double in the next two decades



...and in need of more assistive technology

Individuals reporting some form of disability...



81%

...of whom report using some form of assistive technology



Changing Population ^{vi}

b | Shifts in healthcare needs:

In Canada, healthcare services are primarily funded by provincial governments and represent the single largest item in the provincial budgets, ranging from 34.3 percent of total program spending in Quebec to 43.2 percent in Ontario in 2016.^{vi} The most recent reports by the Canadian Institute for Health Information estimate that in 2016, a total of \$228.1 billion was spent on healthcare in Canada, out of which 69.8 percent or \$159.1 billion was shouldered by the public sector. Further, provincial and territorial governments accounted for 93.2 percent or \$148.3 billion of the public spending on healthcare.^{viii}

Statistics from 2001 to 2016 show that all provinces experienced substantial growth in government healthcare spending; well above the increase in GDP.

Overall Growth Rates, Selected Indicators, 2001 – 2016^{ix}

	Health spending	Non-health program spending	Program spending	GDP
Canada	116.4%	94.6%	102.8%	77.4%
NL	109.7%	105.1%	106.8%	104.6%
PEI	114.0%	80.3%	92.0%	83.7%
NS	114.1%	99.4%	105.5%	54.4%
NB	94.2%	83.3%	87.2%	56.5%
QC	99.4%	92.8%	95.0%	63.8%
ON	114.4%	94.4%	102.6%	69.0%
MB	123.2%	160.3%	144.1%	87.8%
SK	137.3%	112.6%	121.2%	129.6%
AB	191.4%	139.5%	157.6%	101.8%
BC	90.0%	49.9%	64.5%	90.7%

Sources: CIHI, 2016; Canada, Department of Finance, 2016; Statistics Canada, 2016c; TD Economics, 2016; RBC Economics, 2016; Grantham, 2016; calculations by authors.

Taking the challenges of an aging population into consideration, the growth of total healthcare spend is unsustainable. While provincial governments have made great strides in slowing the healthcare spend to 2.6 percent per year in the last five years, as opposed to 6.7 percent growth in healthcare spend between 2001 and 2011, the spending trend is still upward.^x

Since the demographic shift cannot be changed and the increased demand on the healthcare system is inevitable, government policy needs to focus on improving health system efficiency, sustainability and value. One of the best ways to improve efficiencies is to become a more proactive healthcare system, not only in name but in practice.

The reallocation of healthcare dollars into preventative healthcare measures such as Assistive Devices will improve quality of life for those in need, while providing governments considerable downstream savings.

Part of the solution is reallocating where healthcare funds are spent – or allocative efficiency. Allocative efficiency refers to optimizing resource allocation to produce maximum outputs that fulfill societal demands.^{xi} Furthermore, as evidenced by a 2017 study published by the Common Wealth Fund^{xii}, a U.S. think tank, there is not automatically a direct correlation between dollars spent per person and the health system outcomes. In that study of 11 high-income countries, the U.S. ranked last out of health system outcomes while spending the most per capita. Canada also ranks low in the 9th spot.

The following case studies illustrate that spending money on preventative care measures keeps people independent and longer in their homes while providing governments downstream savings.

Case Studies:



I | Preventing Falls and Hip Fractures:

Falls are the leading cause of injury-related hospitalizations among seniors. According to the Ontario Ministry of Health and Long Term Care, falls are responsible for 85 percent of seniors' injury-related hospitalizations.

According to a study conducted by the Public Health Agency of Canada, the average acute length of stay for a fall-related injury was 70 percent longer (15.1 days) for Canada as a whole compared to the average length of stay for all other causes of hospitalization excluding falls (8.9 days) in 2008/2009.^{xiii} This could translate into requiring an equivalent of thirteen additional 200-bed hospitals by 2036, where all the beds would be filled with seniors with fall-related injuries every day of the year.^{xiv}

The average acute length of stay for a fall-related injury was



longer for Canada as a whole compared to the average length of stay for all other causes of hospitalization excluding falls.

The average cost of treating a hip fracture in Ontario is between \$12,505 and \$15,684. In Canada, the direct health cost of hip fracture care is estimated to be \$650 million, growing to \$2.4 billion by 2040. The average cost of a walker to prevent these falls is approximately \$400. This does not factor in the benefits of keeping seniors in their homes and in surroundings with which they are familiar.

Bottom line: An early assessment by a health practitioner and a small spend on an Assistive Device such as a walker can help prevent falls and save thousands of dollars spent on hospitalizations.

II | Providing Independence and Preventing Feelings of Isolation:

There are countless, well-documented case studies that illustrate health and wellness benefits provided by Assistive Devices. Among others, Assistive Devices play a pivotal role in providing independence, which in turn helps decrease the risk of social isolation.

While loneliness and isolation may appear to be fuzzy terms that have not been traditionally regarded as health-related issues, in the last two decades there has been an increased focus on how these states relate to a person's wellbeing. Simply put, the new school of thought believes that social relationships influence the health outcomes of adults.^{xv} As a case in point the United Kingdom (U.K.) has become one of the leaders in focusing on mental health and tackling issues related to social isolation by appointing a Minister of Loneliness in early 2018.

While there is a wide array of peer-reviewed articles on the definitions and the causes for isolation, we would like to focus on one of these causes and the cost of these issues on the healthcare system.

Data from a 2010 U.K. study found that “across 308,849 individuals, followed for an average of 7.5 years”, people with adequate social relationships have a 50% greater likelihood of survival compared to those with poor or insufficient social relationships.”^{xvi}

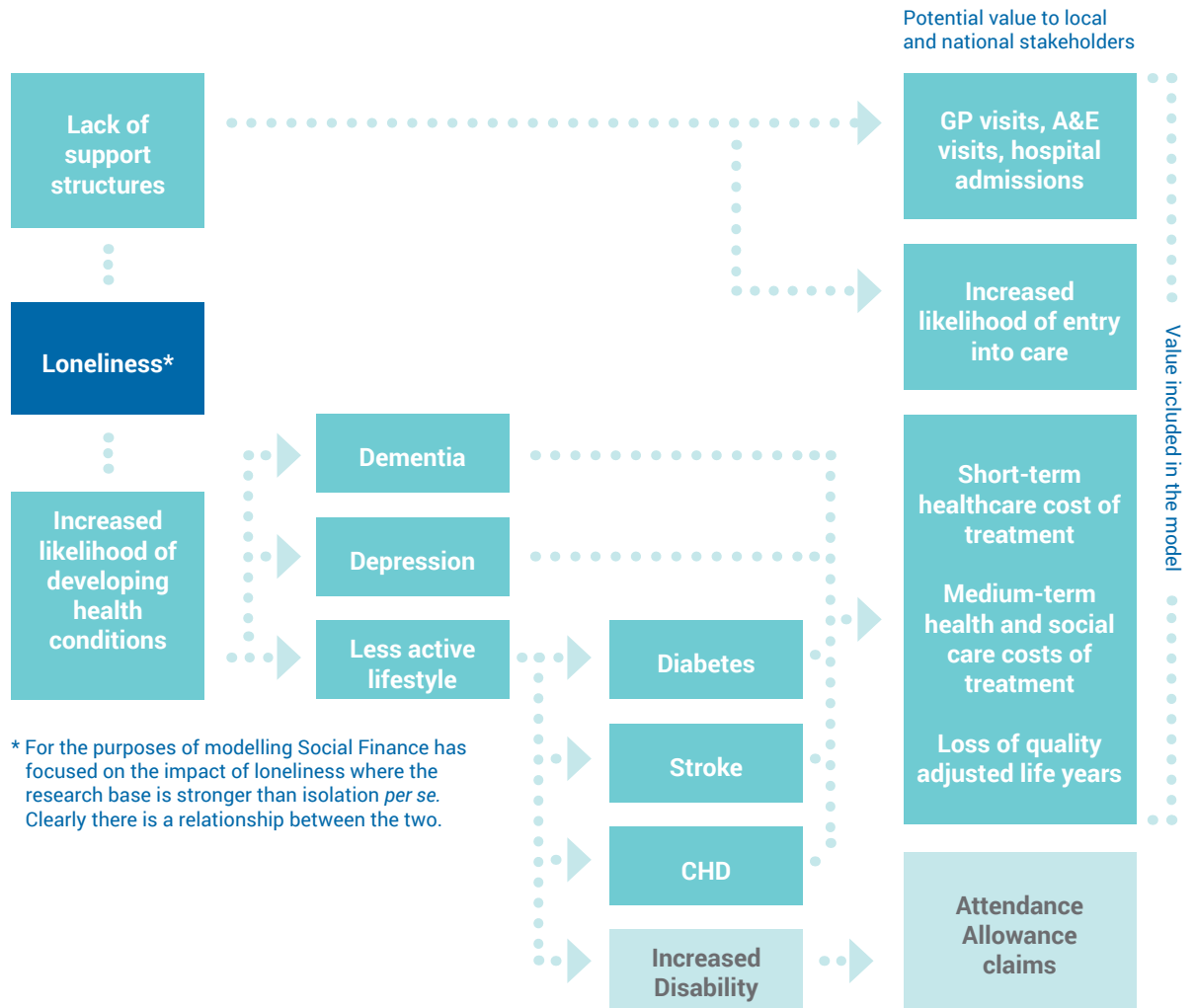
The diagram below illustrates the impact of loneliness on public sector resources, indicating linkages between loneliness and developing a negative health outcome and putting stresses on public sector resources.

People with adequate social relationships have a



greater likelihood of survival compared to those with poor or insufficient social relationships

The Impact of Loneliness on Public Sector Resources^{xvii}



Although it is difficult to pinpoint the causes for feelings of isolation and loneliness, not being able to participate in everyday activities is certainly part of it. What is certain is that once one is afflicted by one issue, it can spiral into many more health issues. For instance, according to a study conducted in the U.K., being inactive could lead to a 7 percent increase in the likelihood of diabetes, an 8 percent increase in the likelihood of stroke and a 14 percent increase in the likelihood of coronary heart disease.^{xviii}

Bottom line: Assistive Devices can keep people independent and involved in their communities for longer, thereby ensuring better health outcomes and less stress on public sector resources.

III | Adapting Homes for Seniors and Providing Assistive Devices Makes Financial Sense.

Studies show that a systematic approach of providing Assistive Devices and Environmental Interventions (EIs) can slow down the rate of decline in seniors, and reduce institutional and in-home costs.^{xix}

EIs include such measures as the addition of ramps and hand railings, kitchen modifications and the removal of throw rugs. To study the impact that EIs and Assistive Devices could have on maintaining independence and reducing homecare costs, researchers conducted an 18-month randomized control trial of 104 home-based frail senior persons living in Western New York with 52 people in the treatment group (with prescribed Assistive Devices and EIs) and with 52 in a control group that did not receive any extra interventions.

From a health benefit perspective, even though both the treatment and control groups declined in functional status over time, the decline was greater for the control group participants. When comparing healthcare costs, the treatment group expended more than the control group for Assistive Devices and EIs: mean and median for the treatment versus control group, \$2,620 and \$2,233 versus \$443 and \$0^{xix}. Meanwhile, the control group had significantly more expenditures for institutional care: mean and median for the treatment versus the control group, \$5,630 and \$0 versus \$21,846 and \$3,511. Further, there was a substantial difference in hospital stay days, which for the control group was a mean of 23.7 days versus a mean of 5.9 days for the treatment group. The information discussed here is presented in further detail below.

Comparison of Treatment and Control Groups on Factors Related To Cost^{xxi}

Cost Factor	Treatment Group (n = 52)				Control Group (n = 49)				Test of Significance, U*	Effect Size (d-index)
	Mean (SD)	Median	Range	Mean (SD) Cost, \$	Mean (SD)	Median	Range	Mean (SD) Cost, \$		
In-home personnel										
Nurse visits	4.4 (7.3)	1	0 - 37	426 (717)	8.6 (14.8)	6	0 - 89	842 (1451)	869†	0.36
Case manager visits	1.2 (1.8)	0	0 - 10	110 (164)	2.2 (1.6)	3	0 - 6	193 (138)	812†	0.55
Occupational therapist visits	6.9 (23.9)	0	0 - 144	620 (2147)	10.2 (30.4)	0	0 - 163	918 (2734)	1274	0.12
Physical therapist visits	13.1 (29.3)	0	0 - 144	1182 (2636)	18.4 (43.7)	0	0 - 216	1622 (3894)	1205	0.15
Speech-language pathologist visits	0 (0)	0	0 - 0	0 (0)	0.4 (2.3)	0	0 - 16	31 (206)	1222	0.21
Aide hours	439.4 (700.2)	137	0 - 2828	3585 (5714)	700.3 (937.4)	108	0 - 3528	5714 (7650)	1136	0.32
Subtotal				5923 (7133)				9320 (10861)	1091	0.40
Institutional care										
Nursing home stays, d	7.4 (35.6)	0	0 - 209	633 (3063)	11.9 (59.2)	0	0 - 394	1020 (5094)	1245	0.09
Hospitalizations, d	5.9 (13.2)	0	0 - 62	4997 (11599)	23.7 (46.5)	0	0 - 223	20826 (40801)	911†	0.53
Subtotal				5630 (1207)				21846 (41197)	901†	0.53
Assistive technology and environmental interventions				2620				443	183‡	1.69
Total: All Costs				14172 (13761)				31610 (42239)	1085	0.56

* Percentage error rate = 12.0% †P<.01. ‡P<.001.

Other factors to consider are in-home cost and nurse visits. There wasn't a significant difference in total in-home personnel costs, but there was a significant difference in expenditures on nurse visits for the control group: mean and median for the treatment versus control group, \$426 and \$98 versus \$842 and \$588.^{xxii}

Taking all of these various elements into consideration, it is clear that the control group had a much higher overall mean healthcare spend than the treatment group. ***The mean overall healthcare spend for the control group was \$31,610 versus the treatment group's overall costs of \$14,172.***

Bottom line: Proactive investment in Assistive Devices and other preventative measures not only improves the quality of life for seniors; it provides dramatic downstream savings to governments.



Assistive Devices will play an increasingly significant role in the healthcare continuum and therefore the Assistive Devices industry needs to be included in the healthcare policy decision making process

The Canadian Assistive Devices Association and its member companies enable provincial governments to save millions in healthcare costs by providing citizens with easier access to Assistive Devices, which keep them safe in their homes and in their communities. In line with Ontario's Patient First Act, we support a patient-focused, results-driven and sustainable health system. Proactive patient-centric care is an evidence-based solution to dealing with the aging demographic and the increased pressure on healthcare expenditures.

Assistive technology enables people to live healthier, more productive, independent and dignified lives. It allows people to participate in everyday civic life, thereby keeping them from being and/or feeling isolated.

In 2015, as part of the Government of Ontario's move to eliminate the deficit, the Assistive Devices Program was cut by \$20 million.^{xxiii} We have seen this cut take effect with a considerable decrease in the number of approved devices in 2016-2017 and a markedly bigger decrease in expenditures than the government-mandated \$20 million. As illustrated by our case studies, we believe that this move will result in a substantial increase in healthcare costs and a negative impact on the most vulnerable Ontarians.

Year over Year Comparison of Ontario's Assistive Devices Program

Approved Devices and Expenditures

Date Range	# of Approved Devices	Delta Devices	Expenditures
April 1, 2016 - March 31, 2017	211,704	-16,669	\$140,579,952.26
April 1, 2015 - March 31, 2016	228,373	4,309	\$173,820,088.77
April 1, 2014 - March 31, 2015	224,064	108	\$176,696,340.59
April 1, 2013 - March 31, 2014	223,956		\$174,338,230.63

It is a fact that 32,000 seniors are currently waiting for long-term care services in Ontario.^{xxiv} Further, Ontario is currently experiencing a shortage of hospital beds and could be faced with a “capacity crisis” during each and every flu season. According to the Ministry of Health and Long Term Care, there are about 3,000 hospital beds that are occupied by patients who require an “alternative level of care,” meaning they no longer require acute care but still need a level of help that is beyond what can be provided to them at home.^{xxv}

We recognize that the Government of Ontario is working to find solutions to these issues. Providing Ontarians with a stronger array of proactive healthcare solutions will reduce pressure on hospitals and long-term care facilities.



The adoption of new and innovative technologies is key to transforming Ontario's healthcare system and improving health and wellness of Ontarians.

Ontarians benefit from the newest technologies provided by the healthcare sector. These new technologies provide patients with more efficient and effective means to regain health and/or maintain their existing health. Currently, there are major delays in the new product approval process at the provincial level that prevent new products being approved in a timely and efficient manner. As indicated in the Ontario Chamber of Commerce's 2018 Ontario Economic Report, "[although] Canada is a well-spring of scientific discoveries and technological advancements, we struggle to integrate these innovations into our public services: Canada is ranked 55 out of 140 when it comes to government procurement of advanced technology. Compared to other developed nations, access to the Canadian market generally takes more than two years longer for innovative firms and processes are particularly difficult to navigate for SMEs." ^{xxvi}

Product approval delays prevent patients in Ontario from accessing Assistive Devices which could significantly improve their quality of life.

Imagine how a robotic arm attached to a power wheelchair can help a person with very limited mobility accomplish tasks for which they usually rely on others. This robotic arm could help them accomplish different daily tasks independently such as drinking, eating and manipulating objects. This arm not only enriches their wellbeing and self-respect, it also decreases their reliance on caretakers.



Another example is a standing wheelchair. Think of a paraplegic person, being able to use a standing wheelchair to enable them to stand up to reach something from a top shelf in their kitchen or to speak to someone at eye-level. The action of standing up is something that most of us take for granted but it can mean the world to someone confined to a wheelchair. In addition, the medical benefits from a standing wheelchair have been widely researched and well-documented and include but are not limited to: better breathing, enhanced blood circulation, improved bladder function, improved bowel function and reduced pressure on the skin, which in turn helps prevent sores. Simply put, enabling someone to stand can reduce the risk of costly and painful physical complications.

The robotic arm and the stand-up wheelchair are just two of the many examples of Assistive Devices that can provide significant health benefits. However, in order to start the conversation about how Ontario and other provinces can help fund these life-improving technologies, there needs to be a paradigm shift about how healthcare spending is regarded. Currently, healthcare tends to be regarded as a cost driver. It is time to consider the mutual benefits of these technologies and the downstream savings.

Recommendation: CADA recommends:

1. that the Government implement responsible product approval timelines that take into account prior testing.
2. establishing a multi-disciplinary Assistive Devices Program Equipment Sub-Committee to oversee the process.
3. funding for innovation and technology that will improve the lives of Ontario's seniors and persons with disabilities.

As the national association of Canadian Assistive Devices manufacturers and service providers, our mission is to enhance independence through the provision of Assistive Devices to Canadians with disabilities. Access to high quality healthcare technology is critical to improving the independence of Canadians.

As evidenced by the case studies provided here, increasing access to Assistive Devices will pay large dividends in terms of a better quality of life for Canadians and accruing savings in the healthcare system.

Call to Action:

- The Assistive Devices industry must be included in the healthcare policy decision making process.
- Funding for and the number of approved Assistive Devices needs to be reinstated to the 2016 levels.
- The Government must update the product approval process and invest in innovation and technology for Assistive Devices. This will provide downstream savings and improved health and well-being for Ontarians. More detail on p17.



ENDNOTES:

- ⁱ World Health Organization: http://www.who.int/phi/implementation/assistive_technology/Improving_access_to_assistive_technology.pdf?ua=1 (Last accessed November 25, 2017)
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- ^{viii} Ibid, p3
- ^{ix} Ibid, p10
- ^x Ibid, p4
- ^{xi} Improving Efficiency in the Canadian Health Care System, Canadian Medical Association, 2015 <http://policybase.cma.ca/dbtw-wpd/Polycypdf/PD15-11.pdf> (Last accessed September 08, 2017)
- ^{xii} Australia, Canada, France, Germany, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States. Source: <http://www.commonwealthfund.org/interactives/2017/july/mirror-mirror/> (last accessed on July 18, 2018)
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- ^{xv} Holt-Lunstad, J., Smith, T., & Layton, J. B., "Social Relationships and Mortality Risk: A Meta-analytic Review" PLoS Med 2010 Jul; 7(7) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2910600/> (Last accessed on Nov 27, 2017)
- ^{xvi} Ibid
- ^{xvii} Fulton, L., & Jupp, B., Investing to Tackle Loneliness, Social Finance, Social Impact Bonds, June 2015, p8 www.socialfinance.org.uk/sites/default/files/publications/investing_to_tackle_loneliness.pdf (Last accessed on November 30, 2017)
- ^{xviii} Ibid
- ^{xix} Mann, W. C., et al, Effectiveness of Assistive Technology and Environmental Interventions in Maintaining Independence and Reducing Home Care Costs for the Frail Elderly, Arch Fam Med/Vol 8, May/June 1999 p210 <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.468.475&rep=rep1&type=pdf> (Last accessed December 12, 2017)
- ^{xx} Ibid, p216 – All figures in US Dollars
- ^{xxi} Ibid, p217
- ^{xxii} Ibid, p216
- ^{xxiii} Ontario Ministry of Finance: <https://www.fin.gov.on.ca/en/budget/ontariobudgets/2015/ch2b.html> (Last accessed December 9, 2017)
- ^{xxiv} Ontario Long Term Care Association: <https://www.olta.com/OLTCA/>
- ^{xxv} "Ontario reopens 2 shuttered Toronto hospital sites to cope with overcrowding crisis," CBC News: <http://www.cbc.ca/news/canada/toronto/hospital-beds-crisis-flu-season-1.4367079> (Last accessed December 9, 2017)
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Association Canadienne d'Appareils Fonctionnels

OUR MISSION

INFORM.
INVOLVE.
INSPIRE

Special thanks to:

Invacare Canada LP,
Kinova Robotics,
Motion Specialties,
Permobil Canada, Pride
Mobility Products and
Sunrise Medical for
sharing images with us.