

People with Disabilities Need Funding for Additional Equipment to Live at Home and Work in the Community

The Ontario Government Should Fund Therapeutic Support Services, Transfer Devices, Seat-elevate Devices and Standing Wheelchairs.

April 27, 2021

Executive Summary

Through the Ontario Ministry of Health's Assistive Devices Program (ADP), the Ontario Government provides funding for mobility devices, including power wheelchairs and positioning devices, for community-dwelling individuals. These devices are fundamentally important for Ontarians with spinal cord injuries and other disabilities who live at home across the province. They help people with disabilities live the life they choose despite overwhelming challenges. And, because they are at home and not in a hospital or long-term care home, they reduce the financial burden on our health care system.

People with disabilities, however, need other basic devices to perform mobility-related activities of daily living that the Ontario Government chooses not to fund. These include therapeutic support surfaces, which are designed to prevent or manage pressure wounds, as well as transfer devices (floor and ceiling lifts), which allow caregivers to transfer individuals without manual lifting. Both therapeutic support surfaces and floor and ceiling lifts are covered by the B.C., Alberta, and Quebec Governments but not in Ontario.

Moreover, mobility aids such as seat-elevate devices and standing wheelchairs can either facilitate safer and more independent transfers, or they can help users meet a variety of medical and functional needs. They should be covered, too.

If the Ontario Government helps ensure that people with disabilities have the right mobility device, the right support surface, the right transfer device, and the right bathroom equipment, it would not only go a long way to providing these Ontarians with the equipment they need to live the life they choose, but also decrease Long-term Care (LTC) home waitlists and reduce the number of Alternate Level of Care (ALC) patients who are unnecessarily occupying hospital beds today. In many cases, it would save costs that are currently incurred by the province's health care system needlessly.

This policy paper examines therapeutic support surfaces, transfer devices, seat-elevating devices and standing wheelchairs, including their rationale, the research associated with their use, and what other jurisdictions are doing. In each section, it provides specific recommendations as it relates to government funding.

1. Pressure-management Beds and Therapeutic Support Surfaces

Description

Pressure-management beds and therapeutic support surfaces are designed to reduce the incidence of pressure injuries. These special mattresses or pads redistribute pressure across the whole surface of an individual's skin, helping to heal or prevent a pressure injury.ⁱ Pressure injuries are injuries to the skin and underlying tissue resulting from prolonged pressure. They develop on skin that covers bony areas of the body, such as the heels, ankles, hips, and tailbone.ⁱⁱ Pressure injuries "occur as a result of intense and/or prolonged pressure and/or shear", presenting either as intact skin or as an open ulcer.ⁱⁱⁱ

Pricing for therapeutic support surfaces varies significantly based on models, degree of pressure relief, materials, etc., but generally ranges between \$1,000 and \$8,000 per unit.

Rationale

Health Quality Ontario recommends that: "People who have developed or are at risk of developing a pressure injury are provided with appropriate support surfaces based on their assessment."^{iv}

Wounds represent a significant burden for patients, their caregivers and families, clinicians, and the Ontario health system, but the human and financial costs of wounds are not fully appreciated. People with pressure injuries report low levels of health-related quality of life, high rates of depression, and high rates of pain and discomfort.

- Pressure injuries are more likely to occur in people who are older; reside in long-term or critical care settings; are acutely or seriously ill; have experienced trauma; or have a spinal cord injury, a fractured hip, a neurological condition, diabetes, impaired mobility, or nutritional deficiency.
- Most pressure injuries are treatable if they are detected early, but when they are left untreated, they are associated with adverse outcomes for the people who have them and high treatment costs for the health care system.
- In addition to imposing high costs on the province's health care system through nursing care and supplies to treat these wounds, pressure injuries also contribute to unnecessary hospitalizations and LTC admissions.

Supporting Research

According to Health Quality Ontario: "The use of support surfaces, with regular repositioning, is an effective way to prevent and treat pressure injuries. Support surfaces reduce pressure, friction, and shear by protecting and supporting at-risk areas such as bony prominences, and by redistributing pressure more evenly across a larger surface area."^v

Writing in the *International Wound Journal*, several Ontario scientists estimated that the total average monthly cost was \$4,745 for each community-dwelling individual with spinal cord injury who had a pressure ulcer.^{vi}

According to the Government of Alberta: "Best practice supports the provision of pressure redistribution surfaces to improve skin breakdown outcomes."^{vii}

Other Jurisdictions

British Columbia

The B.C. Government currently provides funding for pressure relief mattresses under its Medical Equipment and Devices program. For a person to be eligible, the Ministry must be satisfied "...that the pressure relief mattress is medically essential to prevent skin breakdown and maintain skin integrity."^{viii}

Alberta

The Alberta Government covers homecare beds under the Alberta Aids to Daily Living (AADL) program. AADL homecare beds include a bedframe, bedrails and either a pressure reduction mattress or standard mattress. AADL provides funding for homecare beds and accessories for clients who meet the following criteria:

1. The client lives in a house, apartment, lodge, group home or assisted living facility (level 2), and
2. Client has a chronic, long term mobility related impairment resulting in the inability to transfer in and out of bed or to reposition in bed, and
3. Client is palliative, estimated six months to end of life, is on comfort measures and wishes to remain in their residence, or
4. Spends 80% or more of the day in bed.^{ix}

Quebec

Through the *Ministère de la Santé et des Services sociaux* (MSSS) or the *Régie de l'assurance maladie du Québec* (RAMQ), the Quebec Government provides, or covers expenses for, specialized mattresses (preventive or curative).^x

Available Ontario Government Funding

Funding for pressure-management beds and therapeutic support surfaces is generally very limited for community-dwelling individuals. Moreover, funding is typically reactive – once a wound has reached a significant stage.

In certain limited cases, for example, the Workplace Safety and Insurance Board's (WSIB)'s Independent Living Device Program may provide funding for pressure redistribution mattresses.^{xi}

Recommendation

Ontario's Ministry of Health should fund pressure-management beds or therapeutic support surfaces for community-dwelling individuals when it is deemed medically essential to prevent skin breakdown, maintain skin integrity, or manage pressure injuries when they occur.

2. Transfer Devices (Floor and Ceiling Lifts)

Description

Floor and ceiling lifts are two types of mechanical aids that allow caregivers to transfer individuals without manually lifting them.

When using a floor lift, a sling is first placed around the person and attached to the lift. The arm of the lift rises, either through an electric motor or mechanically through a pumping motion, and lifts the person. The lift can then be moved around to a chair or other surface and the person lowered down. The sling then needs to be removed. Space is also needed to store this device when it is not in use.

For a ceiling lift, a track is installed in the ceiling and a lift runs along the track. The track is installed into the structure of the room, so it will carry the required load. To use this lift, a sling is again placed around the person and then attached to the lift. An electric motor lifts the person, who can then be guided through the air to the next surface, lowered and the sling removed. Although there are not usually additional storage requirements for this lift, it is important that the track is conveniently located. It may be possible to have a track installed in a number of locations in the home, and use one lift that can be moved from track to track.

Although some lifts can be operated independently, depending on the individual's level of function, most lifts allow for caregivers to perform transfers of individuals in a safe and secure way.^{xii}

Floor lifts generally range from \$2,000 to \$5,000 per unit. An installed ceiling lift ranges from \$5,000 to \$20,000 based on the specific configuration and the length of travel.

Rationale

The purpose of these mechanical lifts is to reduce the risk of injury to both caregivers and the individuals in their care. Currently, caregivers – and especially Personal Support Workers (PSWs) – operating outside of hospitals and long-term care (LTC) homes are at risk of musculoskeletal injury due to manual lifting. Similarly, individuals requiring lifting are at risk of injury should their caregiver be unable to support their weight and they fall.

Hospitals and LTC homes are currently required to provide transfer devices for occupational health and safety reasons. For example, under the *Long-Term Care Homes Act, 2007*, "Every

licensee of a long-term care home shall ensure that staff use safe transferring and positioning devices or techniques when assisting residents.”

There is no similar device requirement for home care, and both caregivers and the people in their care are becoming injured. By definition, many individuals who require mobility devices will also require transfer devices. Candidly, many people – PSWs, parents, siblings – are unable to lift a disabled person safely. The effort required to move somebody, even across a modestly sized room, creates avoidable physical, psychological, and emotional risks for everyone involved.

As a result, at a time when there is a PSW shortage, PSWs (and loved ones, for that matter) are working in the community in conditions that hospitals or LTC homes would not accept.

Moreover, the lack of funding for transfer devices often means that someone who cannot be transferred at home is either added to the LTC admissions waiting list or occupying an acute care hospital bed as an Alternate Level of Care (ALC) patient. These individuals could be living at home if they had the right equipment.

Supporting Research

To date, the majority of the research is focussed on caregiver safety, as compared to the safety of the individual being transferred.

According to the Workers’ Compensation Board of British Columbia (“WorkSafeBC”):

The health care sector in British Columbia accounts for more worker injuries than any other sector, including forestry, construction, and transportation [our emphasis]. WorkSafeBC statistics show that, on average, 890 health care workers in B.C. miss work each day because of work-related injuries. In the five-year period from 2001 to 2005, the direct cost of those claims was \$285 million. When indirect costs are included (for example, replacing and retraining workers), the total cost of work-related injuries and diseases is much greater. In addition to the financial costs, there are substantial human costs.

Of particular concern is the manual handling of patients, which can result in musculoskeletal injuries (MSIs) such as back and shoulder strains.... Patient handling activities account for almost 50% of musculoskeletal injuries in acute care and long-term care settings.

WorkSafeBC specifies a number of factors related to the incidence of musculoskeletal injuries among workers, including the availability and use of appropriate patient handling equipment.

The agency's guide, furthermore, "promotes the implementation of a 'no-lift' policy (sometimes referred to as a minimal-lift or safer-lift policy) as a means of preventing MSI."^{xiii}

Other Jurisdictions

British Columbia

The B.C. Government currently provides funding to community-dwelling individuals for floor or ceiling lift devices under its Medical Equipment and Devices program. According to B.C.'s program: "a floor or ceiling lift device means a device that stands on the floor or is attached to the ceiling that uses a sling system to transfer a person." Under the program, the Ministry must be "... satisfied that the floor or ceiling lift device is medically essential to facilitate transfers of a person in a bedroom or a bathroom." In addition, "the cost of the floor or ceiling lift device does not exceed \$4,200, or if the cost of the floor or ceiling lift device does exceed \$4,200, the ministry is satisfied that the excess cost is a result of unusual installation expenses."^{xiv}

Alberta

The Alberta Government funds portable overhead lifters and floor lifters under the Alberta Aids to Daily Living (AADL) program. AADL provides funding for lifters for clients who meet all the following criteria:

1. Client has chronic, long term mobility related impairment resulting in the inability to safely transfer from one position to another; and
2. Client's weight falls within the weight limits of the device; and
3. The client lives in a house, apartment, lodge, group home or assisted living facility (level 2); and
4. Client has no other lifter in place.
5. The client must have funding in place for the ceiling track before becoming eligible for a portable overhead lifter.^{xv}

Quebec

Through the *Ministère de la Santé et des Services sociaux* (MSSS) or the *Régie de l'assurance maladie du Québec* (RAMQ), the Quebec Government provides, or covers expenses for, patient lifts.^{xvi}

Available Ontario Government Funding

Currently, funding is not widely available for transfer devices in the home, even though there may be eight to 10 caregivers (and/or a partner) going into the home each week.

In fact, the Ministry of Health's Assistive Devices Program (ADP) specifically states that it does not cover any lifting devices.^{xvii}

In certain limited circumstances, the Ontario Disability Support Program (ODSP) may provide funding for lifting devices.^{xviii}

Recommendation

Ontario's Ministry of Health should fund a floor or ceiling lift for community-dwelling individuals when it is medically necessary to facilitate the transfer of a person in a bedroom or bathroom.

3. Seat-elevating Devices

Description

A seat elevator raises and lowers users in their seated position through the use of an electromechanical lift system, without changing the seated person's angle or the seat's angle relative to the ground, in order to provide varying amounts of added vertical access. A seat elevator may elevate vertically from a standard seat height or may lower the user closer to the floor.^{xix}

In general, pricing per unit is \$3,000 to \$5,000 for seat-elevating devices.

Rationale

Seat-elevating devices address a variety of medical and functional needs, including the following:

- Seat-elevating devices can facilitate safer and more independent transfers by elevating or lowering the seated height of the wheelchair.
- Seat elevating devices provide psychological benefits, including the following:
 - Eye-to-eye conversations are more socially appropriate and improve a person's ability to participate in social activities and employment.

- Communication on level height may improve people’s self-confidence, thereby increasing their chance of success.
- Vertical mobility can raise society’s expectations of wheelchair users and provide them with a more equal chance for success.
- When talking at eye level with others, typical hyperlordotic cervical curvatures of the spine can be reduced. This relieves strain on the neck and may help enhance vision, thus helping to prevent secondary complications.
- Seat elevators may also help reduce upper extremity pain and help delay secondary complications to the shoulders.
- For individuals with limited reaching abilities, a seat-elevating device may be necessary for access to objects and surfaces within their home, work, school, and community, thus improving their independence and decreasing their dependence on others.
- An elevating seat may also allow a person in a wheelchair to hear and engage in conversations within a noisy environment, as well as to see and navigate more safely through a crowd of people.^{xx}

Supporting Research

According to the U.S. National Council on Disability, an independent federal agency charged with advising the President, Congress, and other federal agencies regarding policies, programs, practices, and procedures that affect people with disabilities:

“Power Wheelchair Seat Elevation Systems Provide a Medical Benefit and Assist in the Performance of or Participation in MRADLs in the home.

“A seat elevator raises or lowers the seat of the power wheelchair and is used to assist an individual when transferring from the wheelchair to another surface to perform MRADLs, such as a commode, bed, couch, chair, in order to perform or participate in MRADLs such as hygiene, grooming, dressing, and food preparation. The clinical literature indicates that seat elevation can reduce injuries due to falls during transfers and secondary injuries due to multiple transfers over the time of prolonged wheelchair use.”^{xxi}

Similarly, the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) declared:

“It is RESNA’s position that seat elevators are often medically necessary for wheelchair users by enabling them to reach, improving mobility-related activities of daily living tasks (MRADL) abilities, facilitating or enabling transfers, providing peer height at different ages, enhancing independence and productivity, and delaying or preventing pain and secondary complications of the upper extremities.”^{xxii}

Finally, the Independence Through Enhancement of Medicare and Medicaid (ITEM) Coalition convened a group of experts and stakeholders across the disability and rehabilitation continuum to develop a formal NCD request, which concluded last year:

“The medical benefits of power seat elevation and power standing systems in power wheelchairs are beyond dispute. Spending one’s life unable to stand or ambulate, restricted to a bed, chair, or wheelchair 24 hours a day, seven days a week, dramatically inhibits the ability to participate in and perform MRADLs and causes countless complications and secondary conditions that are almost entirely avoidable with access to power seat elevation and standing systems in Group 3 power wheelchairs. Seat elevation is critical to MRADL participation and performance, the standard for medical coverage of Medicare mobility equipment. Seat elevation improves transfers and reaching, reduces falls, and reduces or eliminates neck and spine injuries from power wheelchair use.”^{xxiii}

Other Jurisdictions

United States

In September 2020, the ITEM Coalition submitted a formal request for reconsideration of the Medicare National Coverage Determination (NCD) for Mobility Assistive Equipment (MAE) to ensure that beneficiaries with mobility impairments have access to seat elevation and standing systems in power wheelchairs.^{xxiv}

Available Ontario Government Funding

Provincial government funding is not available for seat-elevating devices.

Recommendation

Ontario’s Ministry of Health should fund seat-elevating devices for people using power wheelchairs who have the potential to use the device when transferring from the wheelchair to another surface to perform mobility-related activities of daily living, or who have the potential for paid or voluntary employment.

4. Standing Wheelchairs

Description

A standing feature integrated into a wheelchair base allows the user to obtain a standing position without the need to transfer from the wheelchair. A mechanical or electromechanical system manipulated via levers or the wheelchair's controls moves the seat surface from horizontal into a vertical or anteriorly sloping position while maintaining verticality of the leg rests and backrest, thus extending the hip and knee joints. A full vertical standing position can be achieved directly from sitting, or through gradual angle changes from a laying position, or a combination of these positions. Most wheelchair standers allow for full or partial extension of the hip and knee joints, and full upright or partially tilted positions. Wheelchair standers are available on manual or power wheelchair bases.^{xxv}

In general, standing wheelchairs range from \$25,000 to \$50,000 per unit.

Rationale

The Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) has declared:

"It is RESNA's position that wheelchair standing devices are medically beneficial for wheelchair users by: enabling them to reach; improving Activities of Daily Living (ADL) abilities; enhancing independence and productivity; maintaining vital organ capacity, bone mineral density, circulation and range of motion; reducing tone and spasticity, the occurrence of pressure sores and skeletal deformities; and enhancing psycho-social well-being."^{xxvi}

In addition, the ITEM Coalition has determined:

"The physiological benefits of standing are widely known and often promoted throughout society, and these benefits are not confined to ambulatory individuals. Standing systems improve joint mobility and muscle tone, increase strength and bone density, assist bladder and bowel management, enhance cardiovascular and respiratory functions, and reduce pressure injuries of the skin.

"[Standing] systems will provide medical and functional benefits while reducing costs to the Medicare program by decreasing falls, skin breakdowns, muscle contractures, and numerous other avoidable medical complications of long term or permanent wheelchair use. They will also allow beneficiaries with mobility impairments to be more functional and less reliant on

other caregivers, whether these caregivers are family members or paid homecare providers or personal assistants.”^{xxvii}

Finally, the U.S. National Council on Disability concluded:

“Wheelchair Standing Systems Provide a Medical Benefit and Assist in the Performance of or Participation in MRADLs in the Home

“NCD asserts that the power standing system is not only primarily medical in nature but assists an individual with MRADLs in the home. The power standing system assists those with limited reaching abilities to access objects within their home to assist in hygiene, dressing, grooming and meal preparation, all of which CMS considers MRADLs. For those beneficiaries who require a power standing system in their power CRT wheelchair to perform MRADLs, the absence of this system as a Medicare-covered benefit limits their independence and ability to be self-sufficient in their own home and often requires additional personal assistance services through home health agencies or other programs which can add unnecessary costs.”^{xxviii}

Supporting Research

According to five scientists writing in *Physiotherapy Canada*, a peer-reviewed journal:

“Many studies have shown that standing has measurable effects on different body functions and structures, including bone mineral density, cardiopulmonary function, range of motion, and hypertonicity. For people >18 years old with spinal-cord injuries, the use of standing devices can reduce pressure ulcers, decrease spasticity, facilitate emptying of the bladder, and improve quality of life (QOL). In addition, standing and other low-intensity activities that interrupt prolonged sedentary time may have beneficial effects on the cardiovascular system, as excessive sitting is considered harmful in this area.”^{xxix}

And RESNA’s review of the research found:

“Clinical experience suggests that wheelchair users often experience painful, problematic and costly secondary complications due to long term sitting. Standing is an effective way to counterbalance many of the negative effects of constant sitting. Stenders integrated into wheelchair bases enhance the beneficial effects of standing since they allow for more frequent, random and independent performance of standing than in persons who use standing devices outside of a wheelchair base. Integration of this feature into the wheelchair base also enables standing to enhance functional activities.

“It is RESNA’s position that wheelchair standing devices are often medically necessary, as they enable certain individuals to:

- Improve functional reach to enable participation in ADLs (Activities of Daily Living (i.e. grooming, cooking, reaching medication))
- Enhance independence and productivity
- Maintain vital organ capacity
- Reduce the occurrence of Urinary Tract Infections
- Maintain bone mineral density
- Improve circulation
- Improve passive range of motion
- Reduce abnormal muscle tone and spasticity
- Reduce the occurrence of pressure sores
- Reduce the occurrence of skeletal deformities, and
- Enhance psychological well being.”^{xxx}

Other Jurisdictions

United States

In September 2020, the Independence Through Enhancement of Medicare and Medicaid (ITEM) Coalition submitted a formal request for reconsideration of the Medicare National Coverage Determination (NCD) for Mobility Assistive Equipment (MAE) to ensure that beneficiaries with mobility impairments have access to seat elevation and standing systems in power wheelchairs.^{xxxi}

Available Ontario Government Funding

Although the Ministry of Health’s Assistive Device Program (ADP) lists in its *Mobility Devices Product Manual* a “LEVO compact-easy LCEV with battery powered stand-up feature” as one of the devices it covers, ADP covers only the power base for this device, which represents a fraction of the cost of the overall device.^{xxxii}

Recommendation

Ontario's Ministry of Health should fund standing wheelchairs for people who have the potential for paid or voluntary employment.

i Health Quality Ontario. "Pressure Injuries: Care for Patients in All Settings." Quality Standards. <https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-pressure-injuries-clinical-guide-en.pdf>.

ii Health Quality Ontario. "Pressure Injuries: Care for Patients in All Settings." Quality Standards. <https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-pressure-injuries-clinical-guide-en.pdf>.

iii Health Quality Ontario. "Pressure Injuries: Care for Patients in All Settings." Quality Standards. <https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-pressure-injuries-clinical-guide-en.pdf>.

iv Health Quality Ontario. "Pressure Injuries: Care for Patients in All Settings." Quality Standards. <https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-pressure-injuries-clinical-guide-en.pdf>.

v Health Quality Ontario. "Pressure Injuries: Care for Patients in All Settings." Quality Standards. <https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-pressure-injuries-clinical-guide-en.pdf>.

vi Chan BC, Nanwa N, Mittmann N, Bryant D, Coyte PC, Houghton PE. "The average cost of pressure ulcer management in a community dwelling spinal cord injury population"; International Wound Journal; 2013.

vii Alberta Health. "Alberta Aids to Daily Living Lifters, Homecare Beds and Accessories: Policy & Procedures Manual". April 1, 2019. <https://open.alberta.ca/dataset/8b0a5505-243c-409c-8159-13d1a368b90a/resource/728a0d59-8ddd-4d47-8b90-29d6d97b2ad8/download/aadl-manual-lift-transfer.pdf>.

viii B.C. Government. "Medical Equipment & Devices." <https://www2.gov.bc.ca/gov/content/governments/policies-for-government/bcea-policy-and-procedure-manual/health-supplements-and-programs/medical-equipment-and-devices>.

ix Alberta Health. "Alberta Aids to Daily Living Lifters, Homecare Beds and Accessories: Policy & Procedures Manual". April 1, 2019. <https://open.alberta.ca/dataset/8b0a5505-243c-409c-8159-13d1a368b90a/resource/728a0d59-8ddd-4d47-8b90-29d6d97b2ad8/download/aadl-manual-l-lift-transfer.pdf>.

x Quebec Government. "Assistive Devices Programs for Persons with a Physical or Intellectual Disability or an Autism Spectrum Disorder (ASD)". <https://www.quebec.ca/en/health/health-system-and-services/assistive-devices-disabilities-and-handicaps/assistive-devices-programs-for-persons-with-a-physical-or-intellectual-disability-or-an-autism-spectrum-disorder-asd>.

xi WSIB. "Independent Living Devices." <https://www.wsib.ca/en/operational-policy-manual/independent-living-devices>. And University of Toronto, McMaster Health Forum and March of Dimes Canada. "AGE-WELL NCE: Access to Assistive Technology in Canada: A Jurisdictional Scan of Programs". June 2017. https://agewell-nce.ca/wp-content/uploads/2019/01/age-well_jurisdictional-scan_2017_June-30_FINAL.pdf.

xii Linda Norton. "Lifts and transfers: Thoughts for caregivers" Caregiving Matters. October 5, 2012. <https://caregivingmatters.ca/lifts-and-transfers-thoughts-for-caregivers/>

xiii WorkSafeBC. "Handle With Care: Patient Handling and the Application of Ergonomics (MSI) Requirements". <https://www.worksafebc.com/en/resources/health-safety/books-guides/handle-with-care-patient-handling-application-ergonomics-musculoskeletal-msi-requirements?lang=en>.

xiv B.C. Government. "Medical Equipment & Devices." <https://www2.gov.bc.ca/gov/content/governments/policies-for-government/bcea-policy-and-procedure-manual/health-supplements-and-programs/medical-equipment-and-devices>.

xv Alberta Health. "Alberta Aids to Daily Living Lifters, Homecare Beds and Accessories: Policy & Procedures Manual". April 1, 2019. <https://open.alberta.ca/dataset/8b0a5505-243c-409c-8159-13d1a368b90a/resource/728a0d59-8ddd-4d47-8b90-29d6d97b2ad8/download/aadl-manual-l-lift-transfer.pdf>.

xvi Quebec Government. "Assistive Devices Programs for Persons with a Physical or Intellectual Disability or an Autism Spectrum Disorder (ASD)". <https://www.quebec.ca/en/health/health-system-and-services/assistive-devices-disabilities-and-handicaps/assistive-devices-programs-for-persons-with-a-physical-or-intellectual-disability-or-an-autism-spectrum-disorder-asd>.

xvii Assistive Devices Program. "Types of equipment and supplies not covered". <https://www.ontario.ca/page/assistive-devices-program#section-5>.

xviii University of Toronto, McMaster Health Forum and March of Dimes Canada. "AGE-WELL NCE: Access to Assistive Technology in Canada: A Jurisdictional Scan of Programs". June 2017. https://agewell-nce.ca/wp-content/uploads/2019/01/age-well_jurisdictional-scan_2017_June-30_FINAL.pdf.

xix Julianna Arva, Mark R Schmeler, Michelle L Lange, Daniel D Lipka, Lauren E Rosen. "RESNA position on the application of seat-elevating devices for wheelchair users." Assist Technol. 2009 Summer. <https://pubmed.ncbi.nlm.nih.gov/19715251/>

xx Julianna Arva, Mark R Schmeler, Michelle L Lange, Daniel D Lipka, Lauren E Rosen. "RESNA position on the application of seat-elevating devices for wheelchair users." Assist Technol. 2009 Summer. <https://pubmed.ncbi.nlm.nih.gov/19715251/>

xxi National Council on Disability. "NCD letter to CMS regarding standing and seat elevation systems". August 31, 2020. <https://ncd.gov/publications/2020/ncd-letter-cms-regarding-standing-and-seat-elevation-systems>.

xxii Julianna Arva, Mark R Schmeler, Michelle L Lange, Daniel D Lipka, Lauren E Rosen. "RESNA position on the application of seat-elevating devices for wheelchair users." Assist Technol. 2009 Summer. <https://pubmed.ncbi.nlm.nih.gov/19715251/>

xxiii Independence Through Enhancement of Medicare and Medicaid (ITEM) Coalition. Letter to the Centers for Medicare and Medicaid Services. September 15, 2020. <https://itemcoalition.files.wordpress.com/2020/09/letter-to-cms-re.-request-for-reconsideration-of-ncd-for-mae.pdf>.

xxiv Independence Through Enhancement of Medicare and Medicaid (ITEM) Coalition. Letter to the Centers for Medicare and Medicaid Services. September 15, 2020. <https://itemcoalition.files.wordpress.com/2020/09/letter-to-cms-re.-request-for-reconsideration-of-ncd-for-mae.pdf>.

xxv Rehabilitation Engineering & Assistive Technology Society of North America. "RESNA Position on the Application of Wheelchair Standing Devices". March 2007. https://www.rstce.pitt.edu/RSTCE_Resources/RSTCE_Res_Doc/Resna_position_on_wheelchair_standers.pdf

xxvi Rehabilitation Engineering & Assistive Technology Society of North America. "RESNA Position on the Application of Wheelchair Standing Devices". March 2007. https://www.rstce.pitt.edu/RSTCE_Resources/RSTCE_Res_Doc/Resna_position_on_wheelchair_standers.pdf

xxvii Independence Through Enhancement of Medicare and Medicaid (ITEM) Coalition. Letter to the Centers for Medicare and Medicaid Services. September 15, 2020.

<https://itemcoalition.files.wordpress.com/2020/09/letter-to-cms-re.-request-for-reconsideration-of-ncd-for-mae.pdf>.

xxviii National Council on Disability. "NCD letter to CMS regarding standing and seat elevation systems". August 31, 2020. <https://ncd.gov/publications/2020/ncd-letter-cms-regarding-standing-and-seat-elevation-systems>.

xxix Birgitta Nordström, Annika Näslund, Margareta Eriksson, Lars Nyberg and Lilly Ekenberg. "The Impact of Supported Standing on Well-Being and Quality of Life". Physiotherapy Canada. 2013 Fall. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817885/>

xxx Rehabilitation Engineering & Assistive Technology Society of North America. "RESNA Position on the Application of Wheelchair Standing Devices". March 2007. [https://www.rstce.pitt.edu/RSTCE Resources/RSTCE Res Doc/Resna position on wheelchair standers.pdf](https://www.rstce.pitt.edu/RSTCE%20Resources/RSTCE%20Res%20Doc/Resna%20position%20on%20wheelchair%20standers.pdf).

xxxi Independence Through Enhancement of Medicare and Medicaid (ITEM) Coalition. Letter to the Centers for Medicare and Medicaid Services. September 15, 2020. <https://itemcoalition.files.wordpress.com/2020/09/letter-to-cms-re.-request-for-reconsideration-of-ncd-for-mae.pdf>.

xxxii Assistive Devices Program. "Mobility Devices Product Manual." November 2, 2020. https://www.health.gov.on.ca/en/pro/programs/adp/information_technology/docs/mobility_devices_manual.pdf