30 mins - Instructional Course Session / Workshop

Virtual training: connecting peers to communities through wheelchair skill education.
Dr Krista Best, Dr. Céline Faure, Dr. Ed Giesbrecht

The Seat Cushion Micro Climate: Surface Temperature, Moisture and Humidity - Effects on Skin Integrity
Ms Amy Bjornson

Wheelchair and seating solutions for people with multiple sclerosis
Ms Rachel Brown

Strengthening the Growth of Sustainable Wheelchair Provision Communities of Practice: The Bigger Picture
Dr. Rosie Gowran

Changes with Age – Giving You the Justification for Custom Manual Wheelchairs for the Geriatric Client
Dr Christie Hamstra

Functional Movement Disorder – where do we fit in?
Rachel Maher

Segmental Assessment of Trunk Control (SATCo)
Mr Robert Norman, Ms Amy Bjornson

Making a Success of Custom Moulded Seating
Kate Pain

A standing Ovation for Communication – casestudy on benefits of standing for people with Dyskinetic CP
Mrs Alisha Parkin, Mr Mykal Mayne

Re-framing delivery of wheelchair and seating assessment services: Our journey into service review and development
Lisa Swann, Liz Turnbull

Setting the scene for success: person centered seating and wheelchair prescription
Mrs Jess Vallance, Ms Philippa Melrose

Slipping and sliding: exploring the link between horizontal shear forces and sliding frequency.
Bart Van Der Heyden

How Mental Health is Impacted by Mobility: A look into the evidence
Ms Rainy Wu

Virtual training: connecting peers to communities through wheelchair skill education.

Dr Krista Best[1,2], Dr. Céline Faure[2], Dr. Ed Giesbrecht[3], Dr. François Routhier[1,2], Dr. William Miller[4]
[1]Université Laval, Quebec City, Canada. [2]Cirris, Quebec City, Canada. [3]University of Manitoba, Winnipeg, Canada. [4]University of British Columbia, Vancouver, Canada
Dr Krista Best, Assistant Professor, Researcher
Dr. Céline Faure, Research Professional
Dr. Ed Giesbrecht, Assistant Professor
Dr. François Routhier, Professor, Researcher
Dr. William Miller, Professor

Learning objectives

At the end of the session, attendees will be able to:

1) Describe potential barriers and facilitators to peer-trainer readiness and intervention fidelity with virtual training.
2) Discuss anticipated trends of peer-led approaches to rehabilitation delivery.
3) Apply the content and structure of material presented to other peer-training interventions.

Abstract

Peer-led wheelchair skills training programs are feasible and promising for improving wheelchair skills, wheelchair use self-efficacy, and satisfaction with participation in meaningful activities.[1-3] Peers are individuals who share the life experience of using a wheelchair for mobility and have received specialized training to support wheelchair skills.[4]Integrating peers in the delivery of wheelchair skills training can enhance the continuum of healthcare delivery from rehabilitation to the community.[1,4]

TEAMWheels is a tablet-based eHealth program combining a wheelchair skills training app and three peer-led training teleconferences on Microsoft Teams.[5] Pre-COVID, peer-trainers received a two-day in-person preparation course. In light of pandemic-related public health recommendations, this course was reconfigured to be delivered virtually.

Our virtual train-the-trainer program is comprised of videos, videoconferencing, and evaluations of trainer readiness and intervention fidelity. Six asynchronous modules provide instruction about the Microsoft Teams and TEAMWheels applications; the goal setting, monitoring and action planning components of the intervention; and the 'trainer's hangout' built-in Microsoft Teams to keep peers connected throughout the study. A series of 1-hour interactive videoconferences with members of the research team provide review, discussion, and integration of module content. Each session allows the peer trainer to demonstrate their capacity to conduct items from the trainer readiness checklist. Fidelity of the virtual train-the-trainer program is documented during training and will be followed through TEAMWheels application activity.

Five peer-trainers have completed the training program to date. This instructional course will discuss the development of the modules and their current implementation. Considerations for trainer readiness and intervention fidelity will be discussed in reference to the TEAMWheels project, with discussion on how

modules may be applied in other areas of rehabilitation. Development of a virtual train-the-trainer wheelchair education program demonstrates **Whanaungatanga,** as it facilitates ***connecting people and communities***.

Content references:

1. Best KL, Miller WC, Huston G, Routhier F, Eng JJ. Pilot study of a peer-led wheelchair training program to improve self-efficacy using a manual wheelchair: A randomized controlled trial. Arch Phys Med Rehabil. 2016;97(1):37–44.

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Presenter biography

Dr. Krista Best is an Assistant Professor in the Faculty of Medicine at Université Laval and a Quebec Health Research Foundation Junior 1 Scholar at the Centre for interdisciplinary research in rehabilitation and social integration (Cirris) in Quebec, Canada. Dr. Best has expertise in developing and evaluating community-based wheelchair skills training programs for manual and power wheelchairs, including clinician-led, peer-led and mHealth approaches to training. While most of her research has focused on adults, she has recently begun to investigate best practices in children and youth. A member of the Wheelchair Skills Program editorial committee since 2001, Dr. Best continues to inform the evolution of the Wheelchair Skills Program. She is on the Board of Directors for the Canadian National Society of Prosthetics and Orthotics and Associate Editor for the Assistive Technology Journal.

Dr. Ed Giesbrecht began working as an occupational therapist in 1994, developing a particular interest in assistive technology and wheeled mobility, serving as clinical specialist in an Assistive Technology clinic in Winnipeg, Canada. His research interest drew him to academia to pursue a master's and PhD degree. He is an Associate Professor in the department of Occupational Therapy at the University of Manitoba. His research focuses on strategies to address wheelchair mobility skills and training, improving entry-to-practice education, and winter mobility.

Managing Forces in Active Bodies. Dynamic Seating from Theory to Practice.

Ms Amy Bjornson, Mr Robert Norman
Sunrise Medical, Sydney, Australia
Ms Amy Bjornson, Clinical Director
Mr Robert Norman, Product Specialist Clinical Hub

Learning objectives

1. State 3 clinical assessment findings for when dynamic seating should/shouldn't be considered.
2. Demonstrate at least 3 important components that can be prescribed for dynamic seating.
3. List 2 research findings that support dynamic seating which can be used for justification.

Abstract

Often clinicians experience difficulty keeping clients stable and safe in their wheelchairs if they have higher tone, dystonic movement patterns or behavioural episodes.

With this in mind, dynamic seating was developed. This type of seating provides movement within individual components of a wheelchair in efforts of allowing the client to "move" and then return to a good sitting posture. Components can include leg rests, headrest components, back rest assemblies or complete seating systems.

When the client moves, the dynamic seating components move with the client, maintaining client alignment within the seating system. These dynamic components absorb and spread the force, assisting with posture protection and safety of the client as well as protecting the wheelchair from potential damage. Research on these components has found that clients can experience a reduction in muscle tone, decrease in agitation and enhanced comfort.

This workshop will investigate the research that has led to component development, the clinical assessment process required for dynamic seating and how to utilize the components currently to increase sitting tolerance, function and client well-being.

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1. Cimolin V, Piccinini L, Avellis M, Cazzaniga A, Turconi AC, Crivellini M, Galli M. 3D-Quantitative evaluation of a rigid seating system and dynamic seating system using 3D movement analysis in individuals with dystonic tetraparesis. Disabil Rehabil Assist Technol. 2009 Nov;4(6):422-8.

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Presenter biography

Robert is a seating and mobility product specialist in Australia and is currently working in the Sunrise Medical Clinical Hub. Robert has 17 years of experience in seating and mobility industry in the UK as well as Australia for the last 5 years. His past experience is as a Technical Trainer at JCM seating in the UK, Pediatric Product Specialist for Hewerdines in the UK, working with a children's charity. Robert has also worked for equipment suppliers in Australia with his prior role as a senior AT Consultant. Robert has presented Nationally in Australia on various seating and mobility topics.

Amy trained as a Physical Therapist in the United States, Amy has over 20 years' experience working with adult and pediatric neurologic populations, with specialties in the treatment of spinal cord injury, and provision of assistive technology for clients with physical challenges.

Based in Sydney, Amy currently develops and implements national and international training programs on using Assistive Technology to enhance inclusion, health and well-being in those with physical disabilities. She also serves a product improvement and development role for Sunrise Medical, Australia.

Amy is a dynamic speaker who has lectured extensively on seating and mobility. She has also traveled to several developing countries, learning and sharing information with their medical communities.

Amy received her ATP certification in 1995, SMS certification in 2015 and Australian Physiotherapy certification in 2018. She is an active member of Wheelchairs for Humanity, Health Volunteers Overseas and offers technology support to Hidden Treasures Home, Fuzhou China

The Seat Cushion Micro Climate: Surface Temperature, Moisture and Humidity - Effects on Skin Integrity

Ms Amy Bjornson
Sunrise Medical, Wetherill Park, Australia,
Clinical Director

Learning objectives

Upon completion of this course, the participant will:

- Identify the primary mechanisms by which heat, moisture and humidity can negatively affect the skin's health and integrity
- List 4 mechanisms of reducing the risk of tissue injury due to heat and moisture.
- Identify strategies to assess a cushion's ability to protect skin from damage due to moisture, heat or humidity

Abstract

Historically, the term Microclimate has been used in a weather or topographical context, but as of late it has made its way into the complex rehab industry to describe the mini-atmosphere of increased skin temperature and moisture at the seating interface. Because of their limited mobility and sensation, wheelchair users are at risk for tissue injuries. We've known for decades that pressure and shear are clear culprits in these injuries, but continued research is determining that higher skin surface temperature and moisture are also contributing factors and management of this climate is also critical in healthy skin promotion.

This session will investigate the existing research on the contribution of temperature and moisture in pressure injuries, the body's response to heat stress in common mobility disorders and the overall effect on skin integrity. We will also discuss the research currently underway at Southern Cross University in Queensland, Australia. This study is investigating clients using several common wheelchair cushions. Performance parameters being investigated include cushion surface temperature, cushion humidity and client body temperature.

Content references:

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Relative Contributions of Interface Pressure, Shear Stress, and Temperature on Ischemia induced, Skin-reactive Hyperemia in Healthy Volunteers: A Repeated Measures Laboratory Study Ostomy Wound Manage. 2015;61(2):16–25 2 Lachenbruch, C BES, MS, PhD; Tzen, Y PhD; Brienza, D PhD; Karg, P MS; Lachenbruch, PPhD

Ostomy Wound Manage. 2005 Feb;51(2):70-9. Skin Cooling Surfaces: Estimating the Importance of Limiting Skin Temperature. Lachenbruch, PPhD

Microclimate: A critical review in the context of pressure ulcer prevention Jan Kottner, Joyce Black, Evan Call, Amit Gefen, Nick Santamaria; Clinical Biomechanics Volume 59, November 2018, 62-7

Presenter biography

Trained as a Physical Therapist in the United States, Amy has over 20 years' experience working with adult and pediatric neurologic populations, with specialties in the treatment of spinal cord injury, and provision of assistive technology for clients with physical challenges.

Based in Sydney, Amy currently develops and implements national and international training programs on using Assistive Technology to enhance inclusion, health and well-being in those with physical disabilities. She also serves a product improvement and development role for Sunrise Medical, Australia.

Amy is a dynamic speaker who has lectured extensively on seating and mobility. She has also traveled to several developing countries, learning and sharing information with their medical communities.

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Wheelchair and seating solutions for people with multiple sclerosis

Ms Rachel Brown
Enable New Zealand, Christchurch, New Zealand
EMS Advisor - Outreach Wheelchairs and Seating

Learning objectives

- Identify four key factors to consider when assessing someone with multiple sclerosis (MS) for a wheelchair.
- Describe the advantages of three power seating functions for people with MS.
- Name a cushion and back support that are clinically indicated and have functional benefits for someone who has MS.

Abstract

Multiple sclerosis (MS) is a chronic neurodegenerative disease of the central nervous system (1).

Within 10 to 15 years of the disease onset 50% of people with MS will have difficulties with mobility (2).

As the disease progresses people with MS transition from walking to using a manual wheelchair (MWC) and generally become power wheelchair (PWC) users; with their seating needs changing along the way. This session will explore the symptoms associated with MS and the wheelchair and seating solutions that maybe prescribed.

The International Classification of Function will be used to identify factors to consider when assessing someone with MS (3).

These include range of motion, spasticity (4, 5 & 6), fatigue (6 & 7), pain (8), cognitive function (9), transfers (10), mobility/walking (4, 11 & 12), falls (9, 13 & 14) , pressure, and sweating. Considerations around activities of daily living, participation, environmental and personal factors will be identified.

In New Zealand wheelchair and seating solutions can be funded by the Ministry of Health for people with MS. Statistics have been reviewed relating to the provision of this equipment to identity any prescriptive themes.

The literature around MWC use (2, 15 & 16), considerations when scripting MWCs and why PWCs are prescribed for people with MS will be identified (2 & 15).

The clinical indicators/functional benefits of drive wheel configuration (12), power posterior tilt (2, 12, 15, 17 & 18), anterior tilt (12), recline (12, 15, 17 & 18), elevating lower leg supports (12, 17 & 18), elevate (12 & 19), and power standing (20) will be discussed.

PWC programming (12 & 21), and some custom PWC modifications will be mentioned.

The clinical indicators/functional benefits of cushion and back supports will be examined and the importance of reviewing people with MS will be highlighted (22)

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(1). Nuray, A., Vedat, C., Aysel, M. & Abdullah, Y. (2019). Comparison of upper and lower extremity functions in primary and secondary progressive multiple sclerosis patients. *Medical Science*, 39(4), 389-394.

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(14). Sung, J. H., Trace, Y., Peterson, E. W., Sosnoff, J .J., & Rice, L. A. (2019). Falls among full-time wheelchair users with spinal cord injury and multiple sclerosis: A comparison of characteristics of fallers and circumstances of falls. *Disability and Rehabilitation*. 41(4), 389-395.

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(16). Verza, R., Battaglia, M. A., & Uccelli, M. M. (2010). Manual wheelchair propulsion pattern use by people with multiple sclerosis. *Disability and Rehabilitation: Assistive Technology*. 5(5), 314-317.

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Presenter biography

Rachel graduated as an occupational therapist in 1995. She has worked in a variety of adult and paediatric services within New Zealand and overseas. Most of her practice has been in community settings and included wheelchairs and seating interventions . Rachel has been in her current role with Enable New Zealand since 2010. She is passionate about wheelchairs and seating and has high number of people with MS on her case load. . Rachel has published two articles on lying supports, one on back supports and has presented at other symposiums on these topics.

Strengthening the Growth of Sustainable Wheelchair Provision Communities of Practice: The Bigger Picture

Dr. Rosie Gowran[1,2,3], Dr. Nathan Bray[4], Dr Paula Rushton[5], Dr Mary Goldberg[6], Dr Marie Barhouche Abou Saab[7,3]
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Dr Paula Rushton, Associate Professor Occupational Therapy
Dr Mary Goldberg, Associate Professor
Dr Marie Barhouche Abou Saab, Physiotherapist, Head of Technical Aids Unit at SESOBEL

Learning objectives

Upon completion of the session, participants will be able to:

1. Describe the five key positions to address the challenges when accessing appropriate wheelchairs.
2. Reflect on wheelchair provision within their own context, considering challenges and solutions for sustainable development.
3. Identify and prioritize ways to take positive action to strengthen the growth of sustainable wheelchair provision communities of practice

Abstract

Introduction: The World Health Organization's primary role is to direct and lead global health responses with international partners within the United Nations' system. On 28th May 2018 the World Health Assembly passed a resolution to improve access to assistive technology for all, in line with the CRPD, Sustainable Development Goals, and the call for action by the WHO Global Co-operation on Assistive Technology (GATE). The provision of wheelchair and seating assistive technology are among the key priority assistive products and WHO have committed to developing global standards for wheelchair provision to meet this primary personal mobility need as a basic human right. However, providing appropriate wheelchairs is complex to meet individual requirements to enhance fundamental freedoms and equal opportunity. Many governments have not committed to national wheelchair provision policy globally. To create a sustainable and seamless wheelchair service delivery system which is woven into the fabric of each community requires careful consideration and planning.

Approach: Lead international contributors to discussions, research and actions towards sustainable wheelchair provision development collaborated to explore the global challenges to accessing appropriate wheelchairs from a sustainable human security perspective, supported with scientific and grey literature from 2008 to 2021, and in-country case study examples.

Findings: Five key positions emerged, *I: Consideration of key perspectives of wheelchair provision across the life course is essential***,** II: *Comprehensive wheelchair service delivery processes and a competent*

workforce are essential, III: Evaluations on wheelchair product quality development, performance and procurement standards are key, *IV: Understanding the economic landscape when providing wheelchairs is critical.* V*: Establishing wheelchair provision policy* is a key priority globally.

Conclusion: This paper will present each position, its purpose and discuss ways, how together; we as can take positive action to strengthen the growth of sustainable wheelchair provision communities of practice globally.

Content references:

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Presenter biography

Rosie Gowran**,** Course Director of MSc Occupational Therapy (Professional Qualification) and Post-Graduate Certificate in Posture Seating and Wheelchair Mobility Across the Life Course, University of Limerick. Occupational Therapist and human rights activist, Rosie's PhD focused on Sustainable Wheelchair Provision. Rosie adopts a human security approach to support people with disabilities, particularly people who use wheelchairs, to address service system challenges and erosion of personhood. Building sustainable communities of practice in health and social care is the overarching

theme that drives Rosie's research and education philosophy to advocate for appropriate person-centered service provision as a responsibility of the whole community. She uses participatory, stakeholder-centered inclusive mixed methodologies, towards collective development of sustainable policy, implementation and provision of appropriate wheelchair services to meet peoples' needs across the life course. A member of International Society of Wheelchair Professionals (ISWP), Rosie is a nominated member of the Wheelchair Educator Package (WEP) development team (2020-2022)

Changes with Age – Giving You the Justification for Custom Manual Wheelchairs for the Geriatric Client

Dr Christie Hamstra
Motion Composites, St. Roch de l'Achigan, Canada
Clinical Education Specialist

Learning objectives

1. Discuss two musculoskeletal changes associated with the normal aging process.
2. Describe two distinct adjustments to a manual wheelchair to counteract changes seen in a geriatric client.
3. Explain two justification rationales where the geriatric client would benefit from an ultralightweight wheelchair

Abstract

The elderly client can be easily overlooked as one who could benefit from a custom fitting or adjustable manual wheelchair. They are too often provided the "basic" wheelchair without much thought on the part of the clinician because it requires little to no work to justify. The normal aging process causes losses in strength and muscle mass, decreased ROM, and postural changes. These normal aging decreases can be intensified by disease processes that require wheelchair dependence. Having a manual wheelchair that can be custom fit in all aspects including seating will give the user optimum positioning for function.

Decreased overall strength, especially in upper extremities, including loss of muscle mass is well documented as an age-related change. Increases in kyphosis, and other postural changes, combined with decreased strength along with disease processes can make self-propelling a manual wheelchair difficult for an elderly client, if not placed in optimum position. The geriatric population is often overlooked as a group requiring custom fitting or modifications, and they end up with poorly fitting, poorly performing equipment, which as a result can lead to decreased mobility, increased morbidity and even mortality.

This session with look at normal physiological changes that come with aging, and how proper wheelchair seating, base selection, fitting, and set up, can and should be justified for the geriatric client. One size fits all should not be used for a geriatric client who will utilize the wheelchair for an extended period of time (most likely longer than 6 months). A custom manual wheelchair, fit to client specifics can provide optimum outcomes and hopefully better quantity and quality of life for the geriatric client.

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Presenter biography

Christie is a Clinical Education Specialist with Motion Composites and has experience as both a Physical Therapist in seating clinic and ATP as a supplier in the area of seating and mobility and wheelchair prescriptions. Christie received her Masters of Science in Physical Therapy from Andrews University, and a transitional Doctorate of Physical Therapy from Oakland University, and yearly teaches complex rehab technology to current students. As Christie has worked in many settings, she enjoys sharing her expertise and passion with fellow clinicians. Christie has provided education in multiple areas of the United States and Canada, and has presented at The European Seating Symposium, The Canadian Seating and Mobility Conference, and The International Seating Symposium.

Functional Movement Disorder – where do we fit in?

Rachel Maher
Permobil New Zealand, Auckland, New Zealand
Clinical Education Specialist

Learning objectives

Participants will

1. Be able to identify underlying mechanisms and aetiological factors associated with FMD
2. Identify three different presentations of FMD
3. Understand the basic treatment strategies behind FMD, including the role of the MDT

Abstract

This session will present an overview of Functional Movement Disorder, reviewing underlying mechanisms and aetiology, how it is diagnosed and potential treatment strategies, including the role of therapy.

Functional Movement Disorder (FMD) is a complex disorder with a wide range of signs of symptoms affecting a diverse range of individuals. Historically FMD was referred to as 'conversion' disorder, a diagnosis given when diagnostic tests failed to identify an organic cause for a person's symptoms, and with psychiatric / psychological intervention being the standard treatment. This approach has not always resulted in good outcomes, with a level of disability often persisting over time.

A person diagnosed with FMD can present with a significant level of disability, with resulting activity limitations and participation restrictions, hence will often be referred to therapy services for assistance and treatment. Establishing the optimal intervention for this person can be challenging, with the need to balance the potential for recovery in the long term with the need to maintain quality of life and participation in life activities in the short term.

Recent research has highlighted the role of a multi-disciplinary team approach to treatment of FMD, including both physiotherapy and psychological/psychiatric care. Treatment begins with how the diagnosis is communicated to the person, with a person's understanding and acceptance of the diagnosis impacting on their engagement with physiotherapy to help re-learn movement patterns and psychologist / psychiatrist input to address any underlying anxiety, depression or limiting behaviours where appropriate.

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Presenter biography

Rachel Maher graduated from the University of Otago in 2003 with a Batchelor of Physiotherapy, and later gained her Post Graduate Diploma in Physiotherapy (Neurorehabilitation) in 2010.

After graduating, Rachel gained experience in inpatient rehabilitation and community Physiotherapy, before moving into a Child Development Service, working with children aged 0 to 16 years.

Rachel developed a passion for seating and mobility while working children, recognising the value of a team approach to wheelchair and seating provision to achieve the best outcomes for end users.

Rachel later moved into a Wheelchair and Seating Outreach Advisor role at Enable New Zealand in 2014, complementing her clinical knowledge with experience in New Zealand Ministry of Health funding processes.

Rachel joined Permobil in June 2020, and is passionate about education and working collaboratively to achieve the best result for our end users

Segmental Assessment of Trunk Control (SATCo)

Mr Robert Norman, Ms Amy Bjornson
Sunrise Medical, Sydney, Australia
Mr Robert Norman, Product Specialist Clinical Hub
Ms Amy Bjornson**,** Clinical Director – Asia Pacific

Learning objectives

1. The participant will be able to describe how the SATCo can be used as an outcome tool for postural Control
2. The participant will be able to state at least one adjustment that facilitates segmental targeted training in the person's trunk posture.
3. The participant will be able name 2 approaches in integrating positioning equipment functionally into daily routines

Abstract

This seminar is focused on the application of a treatment approach called "Segmental Assessment of Trunk Control", (SATCo) in the Pediatric Population. Many of our treatment paradigms in therapy and the application of Assistive Technology are based on facilitating proximal stability for distal function. SATCo is an alternative treatment approach that is based on targeted training to gain control of trunk posture. Therapist's hands or therapy supports are placed on the child's trunk directly beneath the segment where control is found to be difficult in the child. This support is gradually lowered as control is gained. During the seminar, attendees will learn about SATCo and the underlying research that was led to its development, this will be discussed specific to the selection and set-up in standing frames and a therapy bench. Additionally the SATCo can also be used as an outcome tool for justifying the clinical effectiveness in sitting and standing therapy. Case examples will be used to demonstrate this approach.

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Presenter biography

Robert is a seating and mobility product specialist in Australia and is currently working in the Sunrise Medical Clinical Hub. Robert has 17 years of experience in seating and mobility industry in the UK as well as Australia for the last 5 years. His past experience is as a Technical Trainer at JCM seating in the UK, Paediatric Product Specialist for Hewerdines in the UK, working with a children's charity. Robert has also worked for equipment suppliers in Australia as a senior AT Consultant. Robert has presented nationally in Australia on various seating and mobility topics.

Amy trained as a Physical Therapist in the United States, Amy has over 20 years' experience working with adult and pediatric neurologic populations, with specialties in the treatment of spinal cord injury, and provision of assistive technology for clients with physical challenges.

Based in Sydney, Amy currently develops and implements national and international training programs on using Assistive Technology to enhance inclusion, health and well-being in those with physical disabilities. She also serves a product improvement and development role for Sunrise Medical, Australia.

Amy is a dynamic speaker who has lectured extensively on seating and mobility. She has also traveled to several developing countries, learning and sharing information with their medical communities.

Amy received her ATP certification in 1995, SMS certification in 2015 and Australian Physiotherapy certification in 2018. She is an active member of Wheelchairs for Humanity, Health Volunteers Overseas and offers technology support to Hidden Treasures Home, Fuzhou China

Making a Success of Custom Moulded Seating

Kate Pain
GTK, Sydney, Australia
Assistive Technology Consultant

Learning objectives

On completion of this workshop, participants will be able to:

1) Describe key factors in selecting custom moulded seating as the most suitable postural support option.

2) Demonstrate awareness of potential barriers to success with custom moulded seating.

3) List strategies to ensure optimal outcomes for postural support, function and pressure care.

Abstract

Custom moulded seating can be perceived as expensive, involving a complex production process, with little opportunity to modify the system to adapt to changes in the user's needs [1]. The risks associated with inappropriate moulded seating are significant and can lead to poor outcomes for the wheelchair user and their support network.

In this presentation, we will explore the decision-making process around choosing custom moulded seating, including best practice seating assessment [2,3]. We will discuss challenges that can arise during the casting, manufacturing and fitting process [1,4]. Strategies to ensure successful application of custom moulded seating will be explored, using case studies to illustrate these strategies, particularly in relation to achieving participation and functional goals.

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Presenter biography

Kate Pain is an Occupational Therapist, specialising in wheelchair seating and positioning, in her role as Assistive Technology Consultant with GTK (Sydney, Australia). Kate completed her Bachelor of Applied Science (Occupational Therapy) at the University of Sydney in 1999 and has gained experience in both Australia and the United Kingdom in a variety of settings including hospitals, rehabilitation units, community and private practice. Kate has focused on wheelchair seating and positioning for children and adults with complex postural support and pressure care requirements over the past decade.

A standing Ovation for Communication – casestudy on benefits of standing for people with Dyskinetic CP

Mrs Alisha Parkin[1], Mr Mykal Mayne[2]
[1]Seating To Go, Tauranga, New Zealand. [2]., Tauranga, New Zealand
Mrs Alisha Parkin, Wheelchair and seating therapist

Learning objectives

- Understand how changes in body position can impact communication
- Understand how effective communication can improve independence
- Understand the relationship between verbal communication and technology

Abstract

Current evidence tells us that the benefits of standing for wheelchair users includes; Improved range of motion and reduced the risk of contractures, Promotion of vital organ capacity including pulmonary, bowel and bladder. It can promote bone health, improve circulation, reduce muscle tone and spasticity. Additionally, it can reduce the occurrence of pressure ulcers and the occurrence of skeletal deformities.

But in practical application sometimes the results can surprise us. Mykal is a young man with GMFC level 5 Dyskinetic Cerebral Palsy (CP), but this has never stopped him from striving forward at his education, social life and future goals. This session will explore the current evidence and then describe some unexpected outcomes in relation to communication.

The motor limitations associated with CP pose many challenges during development, including the production of clear and intelligible speech. Effective communication is an integral part of Whanaungatanga – the concept of connection. Throughout his life Mykal has experienced a lack of whanaungatanga - disconnection, due to communication barriers, exclusion based on perceived disability, and physical barriers.

A case study; jointly presented by therapist and client.

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Pennington, L. (2008) Cerebral palsy and communication, Paediatrics and Child Health, Volume 18, Issue 9, Pages 405-409, ISSN 1751-7222

Presenter biography

Alisha completed her bachelor's degree at Auckland University of Technology in Health Science – Occupational Therapy in 2008. After practicing as an OT in rehabilitation and orthopedics, Alisha was looking for more, she was seeking a career that required problem solving and working alongside people with complex disabilities. In 2012 she specialized in Wheelchair and Seating and has worked at Seating to Go the past 9 years. Alisha facilitates training for the level 1 wheelchair and seating accreditation in New Zealand. Alisha has a special interest in pediatric powered mobility and custom seating, which contributed to the investigation into the benefits of standing and communication.

Mykal is an 18 year old with a big personality and even bigger support and communication needs, yet there's nothing that is going to hold him back from achieving his dreams of a good life. Like other teenagers, he likes playing video games, Dungeons and Dragons and watching YouTube and Star Wars. He enjoys Calculus, Physics and Digital Technology and has recently experienced good academic success despite predictions from the educators he's encountered over the years. Post school, Mykal wants to create computer games that have no intrinsic barriers for people who experience disability. An ordinary life is what Mykal and his whanau are looking for and his equipment and technology play an enabling role in this outcome.

Re-framing delivery of wheelchair and seating assessment services: Our journey into service review and development

Lisa Swann, Liz Turnbull
Mobility Solutions, ADHB, Auckland, New Zealand
Lisa Swann, Occupational Therapist
Liz Turnbull, Occupational Therapist

Learning objectives

Following this session, participants will:

1. Have been introduced to the tools and techniques used to facilitate service improvement
2. Learn about applied Improvement Fundamental concepts and processes
3. Take home practical tips that will allow them to review their own service with an improvement focus

Abstract

From problem statement to final outcome, the journey of service improvement can be a challenging road. In this session we will be offering participants the opportunity to learn about improvement principles and our lived experience of applying these.

As clinicians in a field with increasing demand and funding complexities, we recognised the need to work differently to achieve better and more timely outcomes for our clients.

Using Lean and Six Sigma principles including the DMAIC Process (define, measure, analyse, improve, control) we have embarked on a service improvement journey. Our learning within this end to end approach may be widely applicable to other service providers.

Being focused on eliminating waste including wasted time, resources, energy, and duplication;

reducing the impact of essential administrative activities; understanding our client population; valuing our team; and focusing on client outcomes have guided us in this piece of work.

We will cover the essential component of effective engagement including how a ground up approach can be a powerful catalyst for change. With teams on the ground often knowing the best solutions, success comes from listening and capturing their ideas in a structured framework.

By measuring baseline performance and determining metrics to support on-going evaluation we are able to measure our success, challenges and achievements.

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Presenter biography

Lisa has worked as an Occupational Therapist for 20 years with the over half of her career specialising in wheelchairs seating. Lisa has always had a passion for quality and service improvement. In 2015 Lisa achieved Green Belt Certification, via Auckland District Heath Board. This has equipped her with a specific skills and knowledge in applying lean six sigma tools and techniques. Since 2015 Lisa has been engaged in multiple quality projects, large and small for ADHB, in particular Mobility Solutions, ADHBs wheelchair and seating service.

Liz has over 20 years experience as an Occupational Therapist. Since 2005 Liz has worked for Auckland District Health Board in clinical and leadership roles with Mobility Solutions, Auckland's regional all age wheelchair and seating assessment service under the Ministry of Health. Liz has been involved extensively in service development, working groups and professional forums with ADHB, the Ministry of Health and Accessable. Liz has now managed the team and service for over 12 years. She has a special interest in professional development, evidence informed best practice, education and coaching for her team and fantastic outcomes for wheelchair users.

Setting the scene for success: person centered seating and wheelchair prescription

Mrs Jess Vallance[1], Ms Philippa Melrose[2]
[1]Laura Ferguson Brain Injury Trust, Christchurch, New Zealand. [2]Melrose Wheelchairs, Christchurch, New Zealand
Mrs Jess Vallance , OT
Ms Philippa Melrose, Sales Manager

Learning objectives

On completion of the session participants will:

- Be able to identify how to establish an effective person-centered, culturally sensitive and collaborative approach to seating services.
- Will understand current social constructs and institutional systems impacting on equity of service provision in NZ.
- Will identify three steps to promoting health literacy.

Abstract

In NZ the provision of wheelchair and seating solutions tends to be weighted towards the interests of the funders and providers. While funding criteria aims to provide an equitable guidance there remain significant differences between the MOH and ACC funders. This can be further complicated by the skill levels and interpretation of criteria by individual assessors and the quality of their report writing skills. And, while some of this weighting is balanced out by professional advisory roles, ultimately the quality of service provision is driven by the assessor.

As service providers seating and wheelchair assessors have a responsibility to maintain knowledge and develop specialised assessment skills which are evidence based, technical and specific. Assessors experience time and productivity pressures further impacting the assessment process. Add to this the reporting requirements and application processes which all take time and there is a recipe to lose sight of the key person in the process – the end user.

In this presentation we hope to establish Kaupapa; an outline of the values and principles upon which we can build and sustain our foundations for providing seating and wheelchair services.

This presentation will explore the value of a person-centered, culturally sensitive and collaborative approach to seating and wheelchair solutions offering potential to reduce time pressure and bringing the end user back into the focus of our practice.

We will address the following questions:

- Where in this process does the user fit?
- How well do we provide person centered, culturally sensitive collaborative care?

- What perceptions of our services do the end-users have? And how will this influence their future choices.
- How well do we really collaborate with service users and suppliers? How we can redress the power balance between user, assessor and supplier for successful outcome?

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Health Quality and Safety Commission NZ. Partners in care: Three steps to better health literacy – a guide for health care professionals. Last updated 05/04/2021. https://www.hqsc.govt.nz/our-programmes/partners-in-care/publications-and-resources/publication/2046/

Presenter biography

Jess Vallance - Graduating in 1988 in Glasgow, Scotland, Jess has worked in acute care, rehabilitation, and community-based services in Scotland, America and New Zealand. Jess has a strong, values-based approach to service provision. Currently Jess contracts to Laura Ferguson Brain Injury Trust with a focus on providing community-based, holistic, person-centered assessment and rehabilitation services to people who have sustained life altering injuries.

Philippa's father was paralysed when she was just 3 years old. Her passion for designing and supplying custom wheelchairs stemmed from her years of watching her dad in his garage as he manufactured wheelchairs to get the best quality wheelchair for the user. Over the years Philippa has worked from the ground up and honed her skills as the family business has grown to become one of the premier suppliers in NZ.

Philippa and Jess are passionate about understanding seating and wheelchairs. They are close collaborators during the scripting process and strive to provide the end user with the best quality wheelchair for their everyday life.

Slipping and sliding: exploring the link between horizontal shear forces and sliding frequency.

Bart Van Der Heyden
Private Practise 'de kine', gent, Belgium

Learning objectives

- Describe the impact of different wheelchair adjustments on sliding, seating tolerance, head position and upper extremity function
- Describe the impact of different pelvis support systems on sliding frequency
- Discuss at least 3 postural interventions for dealing with sliding challenges
- Be able to advise and implement a postural intervention plan for users with common seating challenges for maintaining posture and long-term functional ability.

Abstract

Inappropriate wheelchair seating is common. Among long-term care residents, the prevalence rate of inappropriate seating was 58,6%, the implications of which are discomfort, poor positioning and mobility and skin integrity issues (1 and 2). Individually prescribed wheelchairs are recommended to ensure proper fit and enhance function (3,4).

But what is the effect of common seating interventions and wheelchair adjustments on sliding frequency and is there a link between the sliding tendency of wheelchair users and the total horizontal shear force?

Several wheelchair users with sliding tendencies will be examined and discussed. The initial sliding frequency and repositioning frequency will be recorded, and the total horizontal shear force will be measured using the Ishear measuring tool. Then a seating assessment will be preformed. Based on the wheelchair user's needs and the findings of the seating assessment, common seating interventions will be implemented:

- Back support adjustments (tilt and recline)
- Introduction of a 2 and 4 point pelvic positioning system
- Different mounting angles of 2 point positioning systems: 45 degree vs. 70 degree angle

These adjustments have an influence on the sliding frequency and total horizontal shear force. The findings of the cases will be analyzed and the impact of different postural control techniques will be discussed.

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4. Bourbonniere MC, Fawcett LM, Miller WC, Garden J, Mortenson WB. Prevalence and predictors of need for seating intervention and mobility for persons in long-term care. Can J Aging. 2007;26:195–204

Presenter biography

Bart has specialized in the field of seating, wound care and mobility for over 25 years. After studying physical therapy in Gent, Belgium, he gained experience in Germany providing seating and therapy for children with Cerebral Palsy. After working in a rehab setting in the USA he offered clinical consultations to wheelchair users, clinicians and manufacturers worldwide. He has also started a physical therapy practice with his wife in Belgium.

Bart has developed multiple training courses and workshops on skin management, seating assessment, seating techniques & interventions for different user populations. He has presented for seating specialists all over the world and he developed a seating approach for clinical problem solving and maximizing outcomes.

Bart is known as a skilled and experienced clinician and presenter with a global, hands-on and multi-disciplinary view on clinical practice and seating.

More info: www.super-seating.com

How Mental Health is Impacted by Mobility: A look into the evidence

Ms Rainy Wu
Permobil, Shanghai, China
Clinical Education Specialist

Learning objectives

1. Discuss two ways that activities and participation are impacted for an individual after a spinal cord injury.
2. Provide 2 points on the economic and financial impact on participation from both an individual and government funding level.
3. Discuss 3 ways that participation can be negatively impacted by the environment and personal factors.

Abstract

How is participation impacted by a lack of mobility? This presentation will investigate the research behind mental health and its impacts on participation for individuals with a spinal cord injury.

Depression has been investigated as major psychological problem after SCI (Cardozo 2007). One year post injury, 11.5% of individuals with an SCI were reported to have probable major depression which was greatly associated with individuals' health, satisfaction with life and daily role functioning (Bombardier et al. 2004).

This presentation will consider the relationship between the loss of mobility and mental health. We will begin by looking at the ICF framework and discussing each interaction between mental health and the health condition, body function and structures, activities, participation, the environment and personal factors. Participation and community reintegration is not based on the health condition alone, but other factors such as environmental barriers, financial issues, and government policies should be considered when creating a plan for the individual's community reintegration.

Both across and within countries we see variations in factors associated with community reintegration. This presentation will end with a look into the current situation in China, focusing on the challenges for community reintegration faced by an individual following an SCI.

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Presenter biography

Rainy Wu joined Permobil China in March 2020, as a clinical education specialist. Originally from Taiwan, she graduated in Physical Therapy and Assistive Technology with a bachelor's degree from National Yang Ming University in 2012. Rainy went into New Taipei City Assistive Technology Centre as a physiotherapist, performing the assessment of assistive devices for government reimbursement. Also, she executed the assessment of barrier-free home environment and provided recommendations of homecare assistive technology for the ageing individuals and individuals with disabilities. At the same duration, she worked for several special education schools, offering physical therapy consultation and applying assistive devices for students who need assistance in schools from The Ministry of Education. Rainy moved to Shanghai in 2018 and worked in a private clinic. As the rehabilitation industry is increasingly thriving within China, her experience and passion in the field of assistive technology led to her career with Permobil.