30 mins - Instructional Session

D2: Slipping and sliding: exploring the link between horizontal shear forces and sliding frequency.
Bart Van Der Heyden

D3: Segmental Assessment of Trunk Control (SATCo)
Mr Robert Norman, Ms Amy Bjornson

A4: Functional Movement Disorder – where do we fit in?
Rachel Maher

D5: Ready to Roll: wheelchair skill development for therapists
Mrs Meg Whitelaw, Mrs Michelle Smith

A7: Invacare Gold Sponsor's session:
The Ripple Effect – Evaluation of Foam Configuration in Temperature and Moisture Control
Anna Sokol (Canada)

B7: Wheelchair and seating solutions for people with multiple sclerosis
Ms Rachel Brown

C7: Allied Medical Platinum Sponsor's session:
Supportive Seating: Matching prescription to provision, for all children.
Laura Finney, James Gilmour

D8: How Mental Health is Impacted by Mobility: A look into the evidence
Ms Rainy Wu

B8: Strengthening the Growth of Sustainable Wheelchair Provision Communities of Practice: The Bigger Picture
Dr. Rosie Gowran

E8: Virtual training: connecting peers to communities through wheelchair skill education.
Dr Krista Best, Dr. Céline Faure, Dr. Ed Giesbrecht

A15: Sunrise Medical Gold Sponsor's session:
Quickie Q500 M Mini - Come learn about the ultra-compact power wheelchair that's packed with BIG performance.
Amy Bjornson

A17: Allied Medical Platinum Sponsor's session:
Think Lego, a constructive approach for paediatric mobility
Eric Van Olst

B16: The Seat Cushion Micro Climate: Surface Temperature, Moisture and Humidity - Effects on Skin Integrity
Ms Amy Bjornson

C18: Allied Medical Platinum Sponsor's session
Vibration's Effect on a Manual Wheelchair User
Curt Prewitt

D21: Invacare Gold Sponsor's session:
Amplify the push – Using manual wheelchairs without strain and pain.
Michael Urso

A19: Allied Medical Platinum Sponsor's session:
A New Frontier: Introducing the Quantum 4Front 2.
Jay Doherty (USA)

B18: Can the prescription of a mobility device facilitate increased connection to one's community?
Tracee-Lee Maginnity

C20: Making a Success of Custom Moulded Seating
Kate Pain

D23: Managing Forces in Active Bodies. Dynamic seating from theory to practice.
Amy Bjornson, Robert Norman

D2: 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

1. Describe the impact of different wheelchair adjustments on sliding, seating tolerance, head position and upper extremity function
2. Describe the impact of different pelvis support systems on sliding frequency
3. Discuss at least 3 postural interventions for dealing with sliding challenges
4. 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.

Content references:

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2) 2.Giesbrecht EM, Martenson, WB, Miller W. Prevalence and facility level correlates of need for wheelchair seating assessment among long term care residents. Gerontology. 2012; 58(40:378-384)
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Presenter biography

Bart Van Der Heyden 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

D3: 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.

Content references:

1) Butler PB, Saavedra S, Sofranac M, Jarvis SE, Woollacott MH. Refinement, Reliability, and Validity of the Segmental Assessment of Trunk Control. Pediatric Physical Therapy. 2010; 22(3):246-257. Winner of the Toby Long Award for the best manuscript published in Paediatric Physical Therapy, 2010.
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reliability and construct validity of the Posture and Postural Ability Scale in adults with cerebral palsy in supine, prone, sitting and standing positions. Clin Rehabil 2014; 28: 82–90. (Note: This paper gives the PPAS in full.)

Presenter biography

Robert Norman 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 Bjornson 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

A4: 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.

Content references:

1) Barbey, A. & Aybek, S. (2017). Functional Movement Disorders. Curr Opin Neurol, 30:427-434. DOI:10.1097/WCO.0000000000000464
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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

D5: Ready to Roll: wheelchair skill development for therapists

Mrs Meg Whitelaw[1], Ms Ulrike Luebcke[2], Ms Amy Hughes[2], Mrs Michelle Smith[2], Miss Jazz Fox[2]
[1]Mobility Solutions, Auckland, New Zealand. [2]ADHB, Auckland, New Zealand
Mrs Meg Whitelaw, Occupational Therapist
Ms Ulrike Luebcke, Kaiwhakaora Ngangahau
Ms Amy Hughes, Kaiwhakaora Ngangahau
Mrs Michelle Smith, PT
Miss Jazz Fox, Kaiwhakaora Ngangahau

Learning objectives

1. Have been introduced to the resources, tools and techniques used to facilitate wheelchair skill development amongst therapists.
2. Learn about applying wheelchair skills assessment and training with their clients.
3. Take home practical tips and resources that will facilitate provision of wheelchair skills assessment and training.

Abstract

From identifying learning needs to skill competency, the journey of service improvement can take time. In this session we will be offering participants the opportunity to learn about our Ready to Roll wheelchair skill development for therapists within the Mobility Solutions service.

As clinicians working with complex clients, we recognised the need to up skill our team to achieve more effective wheelchair training outcomes. Our goal was to ensure that there is consistency in our practice through having standardised processes and skill level within our team.

Utilising the initial training and experience from Debbie Wilson and the Seating to Go service and drawing on the Wheelchair Skills Programme (Kirby et el.2018) we have embarked on a service improvement journey. We completed a pre wheelchair skills training confidence survey across the team which identified the need for skill development, standard practice procedures and equipment to facilitate safe and effective training. Understanding our client population and improving on client outcomes has guided us in this project.

We have completed a post wheelchair skills training confidence survey across the team with excellent results and helpful feedback for the continuation of the project. Through measuring baseline confidence and setting specific goals we have been able to increase the awareness, skill and confidence level of the therapy team. These outcomes are expected to support clients to become more effective wheelchair users.

In this session we will cover the essential components of wheelchair skills assessment and training for therapists and how we have applied this within our service. We will share the resources developed throughout this mahi which could be of benefit to other service providers thereby weaving people together, whiria te tangata.

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1) Best, K.l., Routhier, F., & Miller, W.C. (2014). A description of manual wheelchair skills training: current practices in Canadian rehabilitation centres. Retrieved from https://doi.org/10.3109/17483107.2014.907367
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Presenter biography

TBA

A7: Invacare Gold Sponsor's session:
The Ripple Effect – Evaluation of Foam Configuration in Temperature and Moisture Control

Anna Sokol
Invacare® Matrx® Clinical Education Specialist for Canada

Abstract

The clinicians usually strive to choose back support products that maximize postural support and stability. Recently, however, we hear more and more questions related to temperature and humidity. Prescribers are looking for ways to address the build-up of heat and moisture between the seating product and the skin. Several clinical conditions involving impaired innervation of sweat glands impact sweating function and contribute to increased core temperatures and sensitivity to heat. To prevent heat strokes, some wheelchair users avoid exposures to warm weather and prefer to stay inside.

For many people with thermoregulation issues, lowering the interface temperatures may create the possibility of enjoying the outdoors during summer months without the added weight of ice packs. The new E2 Back with ripple foam was developed with the goal of addressing microclimate without deviating from the Matrx® no-maintenance product philosophy. In this session, we will compare thermo-performance of slab foam versus ripple foam and will describe our findings from four different scenarios the participants were subjected to. We will share the results of the clinical study that demonstrated reductions of both skin temperatures and sweating with the ripple foam.

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Speaker Biography

Anna Sokol is the Invacare® Matrx® Clinical Education Specialist for Canada. Anna is a Registered Nurse with Emergency, SCI Rehabilitation, and Community care experiences. Anna has joined Motion Concepts in 2019 and has been an active contributor to the wheelchair seating product development. Anna is a member of ISO/TC 173/SC1/WG11 Wheelchair Seating Workgroup offering nursing expertise and feedback on the wheelchair manufacturing standards. In 2021, she got CNA-certified in wound care specialty. She provides wheelchair seating education to nurses, physiotherapists, occupational therapists, and providers of assistive technology. She is consulted when teams strive to find the best mobility seating approach or deal with conflicting therapeutic goals. Anna is passionate about creating bridges between the disciplines and specialties and explains how attention to seating may offer the missing piece of the puzzle in client safety. The list of audiences Anna presented to includes CAOT (Canadian Association of Occupational Therapists), National Registry of Rehabilitation Technology Suppliers (NRRTS), TVS UK (Tissue Viability Society), and ISS (International Seating Symposium).

B7: 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

1. Identify four key factors to consider when assessing someone with multiple sclerosis (MS) for a wheelchair.
2. Describe the advantages of three power seating functions for people with MS.
3. 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 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), pressure, sweating, transfers (10), mobility/walking (4, 11 & 12), and falls (9, 13 & 14). 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 & 16).

The clinical indicators/functional benefits of drive wheel configuration (12), power posterior tilt (2, 12, 16, 17 & 18), anterior tilt (12), recline (12, 17 & 18), elevating lower leg supports (12, 17 & 18), elevate (12 & 19), and power standing (20 & 21) will be discussed.

PWC electronics (12 & 22) and control methods will be mentioned.

The clinical indicators/functional benefits of cushion and back supports will be examined and the importance of reassessing people with MS will be highlighted (23)

Content References:

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Presenter biography

Rachel Brown 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.

C7: Allied Medical Platinum Sponsor's session:

Supportive Seating: Matching prescription to provision, for all children.

Laura Finney

James Gilmour

D8: 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.

E7: Sunrise Medical Sponsor's session:
Converting Energy into Motion – Quickie Nitrum

Amy Bjornson
Clinical Director – Asia Pacific
Sunrise Medical, Sydney, Australia

Abstract

Wheelchairs have rapidly evolved in recent years. It's now possible to find wheelchairs offering a super light-weight frame with adjustability and unparalleled energy efficiencies. These new ultralightweight wheelchairs are possible due to advances in materials, technology and designs. New ideas in shapes, structures and engineering are producing better, lighter and efficient manual wheelchairs. Come join us to learn about the Quickie Nitrum series

Presenter biography

Amy Bjornson 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

B8: 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]
[1]University of Limerick, Limerick, Ireland. [2]Assisting Living and Learning (ALL) institute Maynooth University, Kildare, Ireland. [3]International Society of Wheelchair Professionals, Pittsburgh, USA. [4]Bangor University, Bangor, United Kingdom. [5]Université de Montréal, Montréal, Canada. [6]University of Pittsburgh, Pittsburgh, USA. [7]SESOBEL, Lebanon, Lebanon
Dr. Rosie Gowran, Course Director, Lecturer MSc Occupational Therapy (Professional Qualification)
Dr. Nathan Bray, Lecturer Healthcare Improvement
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
David Constantine, United Kingdom, Motivation International
Ritu Ghosh, India, Mobility India
Jon Pearlman, United States, University of Pittsburgh

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.

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7) I was unable to add these authors, please add thank you:
8) David Constantine, Constantine@motivation.org.uk, United Kingdom, Motivation International
9) Ritu Ghosh ritugm@mobility-india.org , India, Mobility India
10) Jon Pearlman, jpearlman@pitt.edu, United States, University of Pittsburgh

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)

E8: 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*.

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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.

Céline Faure, PhD, OT, is a research professional at the Centre for Interdisciplinary Research in Rehabilitation and Social Integration in Quebec, Canada. She has a high interest in the development of new technologies to improve rehabilitation and the community reintegration of persons with functional motor limitations. She has expertise in virtual reality and is involved in several research projects to develop training such as eHealth peer-led wheelchair skills training program and exoskeleton gait training combined with functional electrical stimulation.

A15: Sunrise Medical Gold Sponsor's session:

Quickie Q500 M Mini - Come learn about the ultra-compact power wheelchair that's packed with BIG performance.

Amy Bjornson
Clinical Director
Sunrise Medical, Sydney, Australia

We expect a lot out of our power wheelchairs: driving performance, diverse terrain navigation and comfortable ride - all while being manoeuvrable and easy to drive. The Quickie Q500 M Mini does all this and more. Join us to hear about all its features and clinical applications.

Presenter biography

Amy Bjornson 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

A17: Think Lego, a constructive approach for paediatric mobility

Allied Medical Sponsor session

Eric Van Olst
Karma Medical
Chief Innovation Officer

Presenter biography

With over 30 years of experience in the wheelchair market, Eric brings with him a wealth of knowledge and experience. Since joining the Karma company, Eric has already been involved in the design of many topline power wheelchairs, which benefit not just the users but also the therapists, family members and service engineers, including EVO Altus Power Standing Wheelchair 2018 Red Dot award, EVO Lectus Prescription Power Wheelchair 2015 iF Design award

B16: 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:

1. Identify the primary mechanisms by which heat, moisture and humidity can negatively affect the skin's health and integrity
2. List 4 mechanisms of reducing the risk of tissue injury due to heat and moisture.
3. 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.

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Presenter biography

Trained as a Physical Therapist in the United States, Amy Bjornson 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

C18: Vibration's Effect on a Manual Wheelchair User

Allied Medical sponsor session

Curt Prewitt
Director of Education
Ki Mobility. USA

Presenter biography

Curt Prewitt is Director of Education for Ki Mobility. He has a BS in Exercise Physiology and an MS in Physical Therapy from the University of Colorado.

He practiced as a physical therapist in a number of settings for a few years, most prominently in long term care, where he gained experience with seating and wheeled mobility. He transitioned from a practicing therapist to a manufacturer's representative, eventually moving into sales management and focusing on complex rehab technology. Throughout his tenure on the manufacturer's side in the complex rehab arena, he has dealt largely with pediatric positioning and mobility products. He has previously also served as a product trainer/product specialist, teaching product features and clinical application, as well as coordinating continuing education presentations, both credited and non-credited. He has presented continuing professional education courses across the US and internationally.

D21: Amplify the push – Using manual wheelchairs without strain and pain

Invacare sponsor session

Michael Urso
Senior Product Manager
Alber, Germany

Abstract

Permanent and frequent use of a manual wheelchair may often lead to problems regarding the musculoskeletal system resulting in pain and chronic pathologies. From a biological perspective the human upper body, especially shoulder and arms seem to not be designed to replace the legs in long term. However, the use of manual wheelchairs respectively the manual propulsion of such seems to also have a positive benefit for the wheelchair occupant compared to the use of pure electric wheelchairs that are controlled via joystick. In this context the use of a Pushrim-Activated Power Assisted Wheelchairs (PAPAW) that amplify the force of the occupant's push seems to be an interesting alternative.

During this presentation the concept of PAPAW will be introduced as well as several independent studies that have been carried out to examine the benefit of PAPAWs in comparison to the use of pure manual wheelchairs and electric joystick-controlled wheelchairs. In addition, some information will be given on how to find and setup the appropriate solution according to pathology and need of the wheelchair occupant.

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6) Arch Phys Med Rehabil. 2001 May;82(5):702-8., May 2001
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Presenter biography

Michael Urso is senior product manager at Alber in Germany that is part of the Invacare Group. Alber is leading specialist for portable add-on drives for manual wheelchairs. Michael has been working for Alber for 15 years and is responsible for marketing and development of Aber's Pushrim-Activated Power Assisted Wheelchair (PAPAW) range such as the e-motion M25 and the twion T24. Michael has been active as speaker on several international conferences.

A19: A New Frontier: Introducing the Quantum 4Front2

Allied Medical sponsor session

Jay Doherty

B18: Can the prescription of a mobility device facilitate increased connection to one's community?

Ms Tracee-lee Maginnity
Permobil, Sydney, Australia
Clinical Education Specialist

Learning objectives

- By end of this session attendees will be able to identify at least 3 barriers to community access for wheelchair users
- Identify at least one feature of a mobility base that will enhance community access
- Compare at least two mobility base options in relation to community access

Abstract

Can the prescription of a mobility device facilitate increased connection to ones community? Access to the Urupa (burial ground) for a Kaumatua (Maori elder) enables participation in the conclusion of a tangi (funeral) and ongoing connection to tupuna (ancestors). In many areas the location of this sacred ground will involve traversing terrain beyond the capacity of a standard mobility base. There is an abundance of evidence in the literature that supports the importance of appropriate wheelchair configuration of the wheelchair to an individual's needs for increased functional and participation outcomes. Experience and critical analysis of the capacity of a wheeled mobility device also reveals the external environmental barriers that exist for wheelchair users. Whilst funding criteria is specific to a country or region, most models are based around ensuring access to essential mobility needs, a basic human right. Unfortunately, this sometimes means that a users primary mobility device will not enable them to access environments that may hold significant cultural or personal value.

This session will look at how we can identify and assess different mobility base options and configurations to enable users to access and connect with their community. We will highlight some of the mobility barriers identified by users in several studies found in the literature and explore ways we can addresses increased participation in meaningful activities and tasks with the support of appropriately matched mobility solutions.

Real life case studies where the users' mobility goals include remote and rural access to home and community will demonstrate some situations where an additional purpose specific feature add on or device has enabled meaningful participation.

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Presenter biography

Tracee-lee Maginnity joined Permobil Australia in July 2019, as a clinical education specialist. Originally from New Zealand, she graduated Auckland University of Technology with a BHSc (Occupational Therapy) in 2003 and has since worked in various roles related to seating and mobility including assessing, prescribing and educating. After gaining experience as an assessor and prescriber at Seating To Go / Wheelchair Solutions in prescribing for both disability and injury, she moved to Australia in 2011 to take on the Senior Occupational Therapist role in a custom moulded seating service. She then worked in clinical consulting and education roles until joining Permobil. Tracee-lee is passionate about maximising functional outcomes with end users and the importance of education within the industry. She has mentored many therapists interested in AT. Her experience includes working with complex postures to achieve custom outcomes.

A19: Allied Medical Platinum Sponsor's session:

A New Frontier: Introducing the Quantum 4Front 2.

Jay Doherty (USA)

Presenter biography

Jay Doherty has 26 years of experience working in the assistive technology field with a concentration in complex rehab technology. As the director of clinical education at Quantum Rehab, Jay presents nationally and internationally on seating and wheeled mobility, focusing on evaluation and application of available technologies.

Before joining Quantum, Jay worked in both rehabilitation and assistive technology settings. His expertise ranges from pediatrics to adults. His presentations reflect a strong emphasis on different technology interventions. Jay currently sits on the Mobility Management Editorial Board and holds his ATP and SMS certifications from RESNA.

B18: Can the prescription of a mobility device facilitate increased connection to one's community?

Tracee-Lee Maginnity

Presenter biography

Tracee-lee Maginnity joined Permobil Australia in July 2019, as a clinical education specialist. Originally from New Zealand, she graduated Auckland University of Technology with a BHSc (Occupational Therapy) in 2003 and has since worked in various roles related to seating and mobility including assessing, prescribing and educating. After gaining experience as an assessor and prescriber at Seating To Go / Wheelchair Solutions in prescribing for both disability and injury, she moved to Australia in 2011 to take on the Senior Occupational Therapist role in a custom moulded seating service. She then worked in clinical consulting and education roles until joining Permobil. Tracee-lee is passionate about maximising functional outcomes with end users and the importance of education within the industry. She has mentored many therapists interested in AT. Her experience includes working with complex postures to achieve custom outcomes.

C20: 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.

Content references:

1) Dimiao, J.A. (2020). A Review of Factors, Seating Design, and Shape Capture Methods For Reducing Pressure Injury Risk (Unpublished doctoral dissertation). Virginia Commonwealth University, Richmond, Virginia.
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3) Minkel, J. (2018). Seating and Mobility Evaluations for Persons With Long-Term Disabilities: Focusing on the Client Assessment. In M. Lange & J. Minkel (Eds.), Seating and Wheeled Mobility: A Clinical Resource Guide (pp. 3–7). Slack.
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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.

D23: 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.
2) Angsupaisal M, Maathuis C G B, Hassers-Algra M, Adaptive seating systems in children with severe cerebral palsy across International Classification of Functioning, Disability and Health for Children and Youth version domains: a systematic review, Dev Med Child Neurol 2015, 57:919-931
3) Crane, B. A., Holm, M. B., Hobson, D., Cooper, R. A., & Reed, M. P. (2007). A dynamic seating intervention for wheelchair seating discomfort. American Journal of Physical Medicine & Rehabilitation, 86(12), 988-993.

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