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Pumau ki te Oranga

In conjunction with the International Seating Symposium - Vancouver (ISS)

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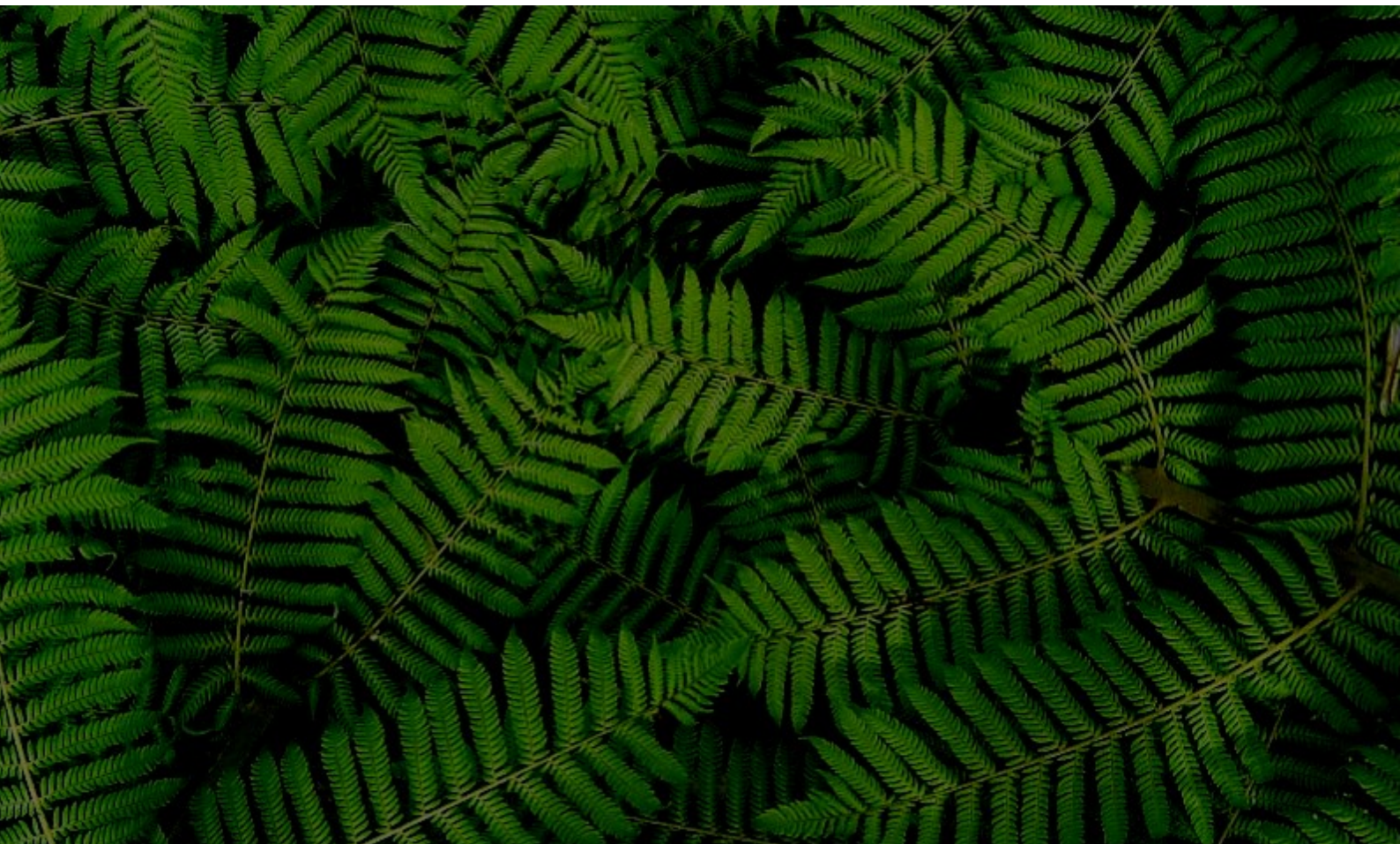

Kia ora – Welcome

Seating To Go is proud to be hosting the inaugural Oceania Seating Symposium in New Zealand, in conjunction with the International Seating Symposium - Vancouver (ISS). ISS is considered one of the premier meetings in the world, attracting dedicated clinicians, researchers, manufacturers, and others who work in the area of seating and positioning, and wheeled mobility.

The initial 1983 ISS meeting in Vancouver has grown to include participants from 27 countries with partner conferences around the world including the U.S.A., Ireland, Brazil, Asia, and now Oceania. The Oceania Seating Symposium will alternate between New Zealand and Australia every two years hosted respectively by Seating To Go and Swinburne University, Melbourne.

We hope you enjoy everything the symposium brings over the three days.

Ngā Mihi,

Debbie Wilson

NZ Chair OSS 2017

Mauriora: Empowerment, control, choice

Reflects our commitment to improving participation and well-being among people with disabilities by coming together to advance and share knowledge, practice and innovations. The Symposium will include plenary sessions, instructional courses, papers and posters, and an exhibition hall. There will be plenty of opportunities to network with international colleagues and friends.

OSS 2017 Committee

Debbie Wilson (New Zealand Chair)

BappScOT, NZROT, Managing Director & Clinical Specialist, Seating To Go, New Zealand

Bonita Sawatzky

PhD, Associate Professor, Orthopaedics, University of British Columbia, Vancouver, Canada

Rachael McDonald (Australian Chair)

PhD OT, Dept Chair, Dept of Health & Medical Sciences, Swinburne University, Melbourne, Australia.

Liz Turnbull

BOT, NZROT, Team Leader, Mobility Solutions, Auckland, New Zealand

Energy Events Centre, Rotorua
Home of the inaugural Oceania Seating Symposium 2017

Thank you

The OSS 2017 Committee would like acknowledge the following sponsors:

Permobil NZ, Allied Medical Limited, Invacare, C1 South, Medifab and the New Zealand Ministry of Health.

Without their support, the inaugural OSS would not have been possible.

The committee would also like to mention thanks to:

- Tourism New Zealand for a grant to assist with international marketing and promotion
- Lu Budden and Dean Bradley from Convention Management New Zealand

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Invited Speakers

Keynote:

Rachel Callander

Life, Love & Awesomeness - Rethinking the Language of Disability

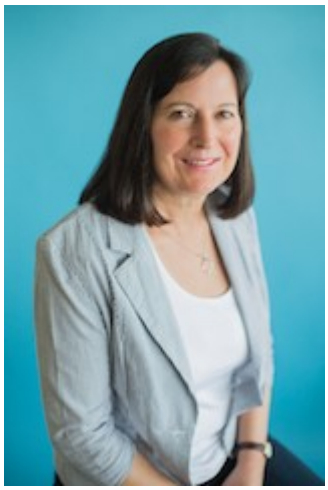
After loving and losing her daughter Evie who was born with a rare chromosomal condition, award winning NZ Wedding and Portrait photographer Rachel Callander turned her talent to capturing the beauty and abilities of other children with 'Super Powers'. Rachel has travelled the length and breadth of NZ meeting ordinary families being made extraordinary through the journeys their children are taking them on.

As a result of her travels, Rachel's insights and images offer a fresh understanding and language regarding disability. The stunning photographs of the children alongside the conversations with their parents are presented in the Super Power Baby Project, a photographic art book launched in 2014. The book is being used and celebrated in schools, neonatal units and by health professionals around New Zealand and the world, where it is making real changes in the way people think about and work with people with disabilities.

"The Super Power Baby Project is a life affirming work. It does not shy from the notion that genetic syndromes bring with them their share of challenge, grief and difficulty. The strong message is that there is much that lies beyond that. Rachel demonstrates that these children have much to teach us about themselves and ourselves, which is to be celebrated as truly exceptional." Stephen Robertson, Curekids Professor of Paediatric Genetics, University of Otago.

Plenary:

Maureen Story



Craniopagus Conjoined Twins: The Journey

Maureen Story is a Physical and Occupational Therapist who has worked in the field of Positioning and Mobility for over 30 years in both private practice and most notably at Sunny Hill Health Centre for Children in Vancouver, B.C. She was part of the team that developed and implemented the Positioning and Mobility Clinic at Sunny Hill Health Centre for Children and is a clinical instructor at the University of B.C. She has presented at numerous conferences both nationally and internationally, and has been involved in a number of research projects including development of the Seated Postural Control Measure.

She has been involved in international health projects in both India and China, and has most recently provided training and guidance to the staff at Guangzhou Children's Hospital to assist them in developing and opening the first pediatric seating clinic in mainland China. Maureen has been a member of the International Seating Symposium committee since its inception in 1983 and has been Co-Chair since 2000.

Plenary:

Ben Lucas

The Improvement of Quality of Life through Opportunity

In 1989, Ben Lucas was involved in a motorcycle vs. van accident which resulted in a burst fracture at L3. Following his injury he spent six months working hard on his rehab and consequently has the ability to walk short distances – something he is grateful for. Ben became a world ranked athlete, representing New Zealand in wheelchair racing at both Commonwealth and Paralympic Games, winning bronze in Canada in 1994.

His passion for seating arose when working for Allied Medical in sales for 10 years, setting up both manual and power wheelchairs, and paediatric rehab equipment. He was also CEO of the New Zealand Spinal Trust for over four years. His own personal experience, coupled with his impressive work resume made him the ideal candidate for his current role of Voice of the Consumer with Accident Compensation Corporation, New Zealand. Ben is happily married to his wife Tracie with whom he shares two kids.

Plenary:

Jean Minkel

What Matters Most - Hosting a Difficult Conversation

PT, ATP

Ms. Minkel is a physical therapist and master clinician well recognized for her work in Assistive Technology. She is currently the Senior Vice President for Care Coordination and Rehab Services for Independence Care System, a nonprofit long term care program in New York City. Jean is also an independent consultant who provides educational and consulting service to all members of the A.T. team – consumers, therapists, suppliers, manufacturers and payers.

Prior to entering the private section, Jean was the director of the Seating and Mobility Program at the Center for Rehabilitation Technology at Helen Hayes Hospital in West Haverstaw, NY. She produced the videotape series, Spending or Investing – Funding Assistive Technology. She is co-author of the Wheelchair Selection Guide: How to use the ANSI – RESNA Standards; the Manual Mobility Training Guide and the Power Mobility Training Guide.

The A.T. community has recognized Jean for her contributions by awarding her the RESNA Fellow Award in 1995 and the Sam McFarland Mentor Award in 2012.

Plenary:

Bonnie Sawatzky

New Wheelchair Technology - Evaluating its Effectiveness

Researcher and medical educator, Bonita (Bonnie) Sawatzky is passionate about all things wheeled and making research practical. An Associate Professor in Orthopaedics at the University of British Columbia and a Principal Investigator at ICORD (International Collaboration on Repair Discoveries), she focuses on the measurable physiological and biomechanical effects of wheelchair propulsion and explores new innovations which may help to decrease pain, fatigue and long-term overuse injuries in adults and children. She also helps to bring together therapists, engineers, students and physicians from around the world to present ideas, innovations and research to improve mobility at the Vancouver International Seating Symposium.

Plenary:

Catherine Ellens

New Wheelchair Technology - Evaluating its Effectiveness

Catherine Ellens is an occupational therapist who has worked at Sunny Hill Health Centre for Children on the Positioning and Mobility Team since 1997 and has been the team leader since 2014. Catherine graduated from the University of British Columbia with her B.Sc in OT in 1997 and is currently Clinical Faculty at the University. She has presented at the ISS in Canada and the US. Catherine has coordinated and taught many student placements and clinics and has won awards as a result of her work. Catherine has been a member of the ISS Vancouver committee since 2008.

Plenary:

Mal Turnbull

Skin and Shoulder Care - Lived, Observed and Applied Principles

In January 1980, at age 19, Mal Turnbull was a passenger in a motor vehicle accident which resulted in a complete spinal cord injury at T5 level. The experience of the acute post injury care, the subsequent rehab period and exposure to the real-life impact of pressure injury left a deep and abiding impact which resulted in some habits that are still a part of his daily routine.

Since 1992 Mal has been involved in the Assistive Technology industry with a focus on equipment supply that deals with prevention of pressure injury and shoulder preservation. Having access to a worldwide network of therapists, clinicians, researchers, manufacturers and end-users, Mal has an exceptional understanding of evidence based best practice. Coupled with 36 years of lived experience of managing pressure injury risk and shoulder injury prevention, Mal has an all rounded approach to maintaining an active lifestyle.

Closing Keynote:

Lloyd Walker

There's More to Good AT Outcomes Than Froth and Bubble

Dr Lloyd Walker, BE(Hons), MTheolSt (Bioethics), PhD(Bioeng), CPEng, GAICD, FIEAust, Rehabilitation Engineer.

Lloyd is a professional rehabilitation engineer who has been working in Assistive Technology (AT) for over 25 years. As a user of AT, he has always had an interest in improvements in technology and its application to enhanced participation. He has been actively involved in most aspects of the AT sector in Australia and internationally.

He has established and clinically led new wheeled mobility services in Northern Queensland, established tertiary education programs, led Australia's largest AT research and development centre, and continues to contribute to AT standards development in Australia and at the ISO level. In recent years Lloyd joined the Australian Government and is currently the Director of Assistive Technology with the National Disability Insurance Agency (NDIA).

His presentations at the Symposium will be in his own professional capacity and will not necessarily represent the views of the NDIA or the Australian Government.

Debbie Field

Debbie Field is an Occupational Therapist with over 25 years' experience in working with children, youth and adults with postural control and mobility needs. By working collaboratively with her clients, their families and others involved in their care, she assesses, makes recommendations and provides seating, mobility and other assistive technologies to empower her clients to engage in what they want or need to do in daily life. Working at Sunny Hill Health Centre for Children in Vancouver, Canada has featured prominently throughout her career. She recently obtained her PhD degree in Rehabilitation Science at the University of British Columbia under the guidance of Drs. Bill Miller, Steve Ryan and Tal Jarus, where she investigated measuring participation in daily life with children who benefit from power mobility use. She is currently pursuing a postdoctoral fellowship to advance research evidence supporting power mobility impacts for children under 19 years of age. She has presented at numerous national and international conferences, and has been published in peer-reviewed journals on seating and power mobility.

Giny Paleg

Ginny Paleg is a pediatric PT from Silver Spring, Maryland. She has worked at NIH, HSC Pediatric Center, adult group homes and in schools. For the past 14 years she has worked for her local school system in their early intervention program. Ginny earned her Masters Degree in Physical Therapy at Emory University and her DScPT at the University of Maryland Baltimore. She is on the editorial board of the Rehab Management Magazine. Ginny is an active member of the APTA, having served as a state representative and reimbursement specialist. Recently she has published several articles in peer reviewed journals; one on standing (BMJ, 2016), four on gait trainers (Clin Rehab 2015) and one on wheeled mobility. She became certified in 2014 for the General Movement Assessment, a tool which has a 92 -98% success rate at identifying which two to five month old infants will have cerebral palsy. Ginny specialises in assessment and interventions for children at GMFCS Levels 4 and 5.

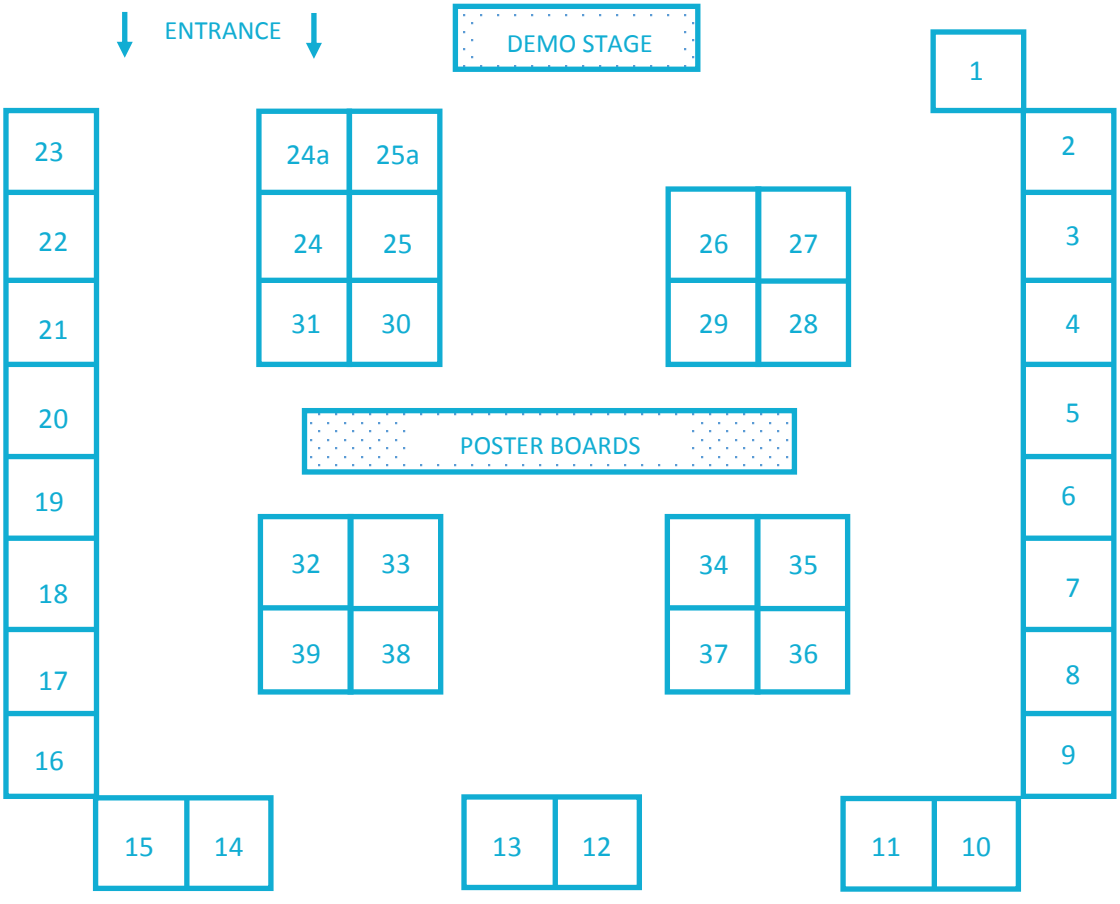
Kelly Waugh

PT, MAPT, ATP

Kelly Waugh is a Senior Research Instructor and the Clinic Coordinator at Assistive Technology Partners, a program in the Department of Bioengineering, University of Colorado Denver, USA. Ms. Waugh has 32 years of clinical experience as a physical therapist and educator, specialising in Wheelchair Seating & Mobility and Nighttime Positioning. Ms. Waugh has served on the ISO Wheelchair Seating Standards Committee for 17 years, with a focus on the development of standardised measures of wheelchair seated posture and seating support parameters.

She is the primary author of *A Clinical Application Guide to Standardized Wheelchair Seating Measures of the Body and Seating Support Surfaces*. Ms. Waugh received both her B.A. degree in Human Biology and her M.A. degree in Physical Therapy from Stanford University in Stanford, California, USA.

Exhibitors



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MONDAY 20TH NOVEMBER

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*Poster sessions are included at the end of this timetable

MONDAY 20TH NOVEMBER						
7.30	**Registration & Exhibition Hall Opens**					
8.30	**Pōwhiri (Welcome Ceremony)**					
9.00	**Keynote:** *Life, Love & Awesomeness – Rethinking the Language of Disability* – **Rachel Callander (New Zealand)**					
9.45	**Plenary:** *Craniopagus Conjoined Twins: The Journey* – **Maureen Story (Canada)**					
10.30	**MORNING TEA / POSTER SESSIONS / EXHIBITION HALL**					
11.15	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**
11.15	***A1**: What are the Attitudes & Practices of Paediatric Therapists Concerning Power Mobility Use in Children?* **Lisa Kenyon (USA)**	***B1**: Peer-led Wheelchair Training Improves How Older Adults in the Community Use Manual Wheelchairs* **Krista Best (Canada)**	***C1**: Wheelchair Provision Education & Training in Low & Lower Middle Income Countries: A Scoping Review* **Rosemary Joan Gowran (Ireland)**	***D1**: Results Based Accountability – How to Decide if Anyone is Better Off* Intermediate – Advanced **Debbie Wilson (New Zealand)** **Kathryn Hall (New Zealand)**	***E1**: Patient and Organisational Risk factors for Pressure Ulcer Development – Implications for Practice. Videoconference.* Intermediate – Advanced **Jane Nixon** **Susanne Coleman (United Kingdom)**	***F1**: Hypotonia Update* Advanced **Ginny Paleg (USA)**
11.35	***A2**: "There is Power in Mobility" A Qualitative Study Exploring How Children Learn to Use a Power Mobility Device* **Lisa Kenyon (USA)**	***B2**: Can Wheelchair Propulsion Training Improve Wheeling Biomechanics in Aging Adults? A Randomised Controlled Trial* **Bonnie Sawatzky (Canada)**	**11.30** ***C2:** An Internationally Recognised Wheelchair Service Professional Certification: A Pilot Study* **Krithika Kandavel (USA)**			
11.55	***A3:** From Buggy to Wheelchair: Do Parents & Clinicians Have the Same Expectations* **Tess Wallis** **Ana Pacheco** **(New Zealand)**	***B3**: Power or Push On? A Review of Wheelchair Provision for MND clients within the ADHB wheelchair service* (Also a Poster session) **Claire Grey** **(New Zealand)**	**11.45** ***C3**: Motivation Australia: 10 years of Strengthening Mobility Device Services in the Pacific* (Also a Poster session) **Lauren Flaherty** **Ray Mines** **(Australia)**			
			12.00 ***C4**: WHO Wheelchair Service Training Packages: Lessons from Implementation* **Lauren Flaherty** **Ray Mines** **(Australia)**			

12.15	LUNCH / EXHIBITION HALL / POSTERS / EXHIBITOR DEMONSTRATIONS					
14.00	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**
	***A4**: Empowering Ability & Function: Power Mobility Training for Children with Multiple Severe Disabilities* Beginner – Intermediate **Lisa Kenyon (USA)**	***B4**: Power Assist: Navigating the Options* Intermediate – Advanced (60mins) **Margaret Blake** **Sandie Grant** **Wendy Hartley** **(New Zealand)**	***C5**: Concepts developed through wheelchair rugby classification and their translation into wheelchair set up for active users* Intermediate – Advanced **Deborah Bowditch (Wales)** **Binnie O'Dwyer (New Zealand)**	***D2:** Custom Contoured Seating: Ensuring Successful Outcomes* Intermediate – Advanced **Kelly Waugh (USA)**	***E2**: The Influence of Disruption in Wheelchair & Seating Innovation: Past, Present & Future* Beginner – Intermediate (60mins) **Rachael McDonald (Australia)** **William C. Miller (Canada)**	***F2**: It IS More than 4 Wheels! How the MAT Assessment Influences the Prescription of Seating & Mobility Devices* Beginner – Intermediate (3 hours) **Sheila Buck (Canada)** **Limited to 30** **FULL**
		***B5**: The Power & Freedom: The Impact of Power Assist* Beginner – Advanced (30mins) **Maria Whitcombe-Shingler** **Sharon Davies** **(New Zealand)**			***E3**: Rationale and evidence for the development of a shear force measurement device* (30mins) **Max Rogmans** **(The Netherlands)**	
15.30	**AFTERNOON TEA / EXHIBITION HALL**					
16.15	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**
	***A5**: The Wheelchair Outcome Measure; How to Use & benefit from a Client-Centred Measure of Participation* Intermediate – Advanced **Debbie Field** **William C. Miller (Canada)** *60mins*	***B6**: These Feet Were Made for Walking* Advanced **Ginny Paleg (USA)** *60mins*	***C6:** Custom Moulded Seating for When You Need to Intimately Match Body Contours for Seating* **Jackie Casey (Northern Ireland)** **Jacinta Maurin (Australia)** *60mins*	***D3**: Assistive Technology for Sports and Recreation – Supporting the Seated Athlete* Beginner – Advanced **Kendra Betz (USA)** *60mins*	***E4**: Centre of Gravity: What does it Really Mean?* **Tina Roesler (Canada)** *60mins*	***F2**: continued…*
17.30	Welcome Reception in the Exhibition Hall – acoustic music set by Lloyd Akroyd. Supported by C1 South.					

TUESDAY 21ST NOVEMBER

Free public access to exhibition hall today between 1.30pm-3pm & 3.30pm-6pm

*Subject to change

*Poster sessions are included at the end of this timetable

TUESDAY 21ST NOVEMBER							
8.00	**Registration & Exhibition Hall Opens**						
8.30	**Welcome & Open Address**						
8.45	**Plenary**: *The Improvement of Quality of Life through Opportunity* – **Ben Lucas (New Zealand)**						
9.25	**Plenary**: *What Matters Most - Hosting a Difficult Conversation* – **Jean Minkel (USA)**						
10.15	**MORNING TEA / POSTER SESSIONS / EXHIBITION HALL**						
11.00	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**	**Session G**
11.00	***A6**: Prescribing Power Standing Wheelchairs: Sharing our Experiences* **Kim Vien Jessica Kuek (Australia)**	***B7**: Is Independent & Separated Eye & Head Movement Essential to Switch Drive a Power Wheelchair?* **Bridget Dickson (New Zealand)**	***C7**: Recent changes in Orthotic Management of Children with Neuropathic Onset Scoliosis: Implications for Seating Provision* **Martin Matthews (United Kingdom)**	***D4:** Adjusting back supports for positioning & function: The Theory & Practice* Beginner – Intermediate **Rachel Brown (New Zealand)**	***E5**: The Wheelchair Skills Programme (WSP): An Evidence-Based Programme for the Assessment & Training of Wheelchair Skills* Beginner - Intermediate **Krista Best (Canada)**	***F3**:Making a Stand* Advanced **Ginny Paleg (USA)**	***G0**: The Benefits that International Standards have Brought Seating Professionals* **Lloyd Walker (Australia)** *40mins*
11.20	***A7**: Benefits of a Standing Wheelchair on Participation and Quality of Life for a Young Mum: A case study* **Tess Wallis (New Zealand)**	***B8**: Insightful Decision Making Strategies: Empowering Comprehensive (24hour) Person-Centred Wheelchair & Seating Procurement* **Rachael Schmidt (Australia)**	***C8**: The Winter Paralympics: South Korea 2018* **Kendra Betz (USA)**				
11.40	***A8**: Therapeutic Reflections – The Functional Effects of Introducing a Dynamic Lycra Splint as Part of Therapy* **Pilar Cerezo-Gomez (New Zealand)**	***B9**: Wheelchair & Seating Provision Queensland: Exploring the Experiences of People Using these Essential Services* **Rosemary Joan Gowran (Ireland)**	***C9**: The Changes in the Role of the Community Seating & Wheelchair Therapist Following the Canterbury Quakes* **Helen Lappin (New Zealand)**				

12.00	**LUNCH / EXHIBITION HALL (PUBLIC ACCESS 13.30 – 15.00) / POSTERS / EXHIBITOR DEMONSTRATIONS**						
13.30	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**	**Session G**
	***A9**: Evaluating of Seating & Mobility Outcomes: Enhancing Evidence-Based Clinical Practice.* Beginner – Intermediate **Lisa Kenyon (USA)**	***B10**: Solution to Complex Driving Systems with the ALS (MND) Population* Intermediate **Pamela Glazener, Gina Strack (USA)**	***C10**: Is Anybody Listening? Facilitating Communication During the Evaluation Process Toward a Functional Outcome* **Lois Brown** **Jean Minkel (USA)**	***D5**: Peer Mentored Wheelchair Skills Training – Putting it into Practice* Beginner – Intermediate **Caroline Simpkins** **Beth Knight** **Glenn McDonald** **Maioro Barton** **Brett Reid** **Robyn Chester** **Paul Hale** **Aaron Curtis** **Cecilia Fifield** **Marcus Madill** **(New Zealand)** **Limited to 24 participants. FULL** **Seats available for observers.**	***E6**: 24 Hour Postural Management: Who, When, How? From Low Tech to Custom* (75mins) **Meredith Miller (New Zealand)**	***F4:** The Development of a Competency Based Framework for Wheeled Mobility & Postural Management assessors in New Zealand* Intermediate – Advanced (60mins) **Debbie Wilson (New Zealand)**	***G1**: Standardized Angular Measures for Seating & Posture: A Practicum* Intermediate to Advanced (3 Hours) **Kelly Waugh (USA)** **Limited to 30 FULL**
						***F5**: Pathway to Success! Qualitative Experiences of Preceptors & Preceptees Following the Wheeled Mobility & Postural Management (WMPM) Pathway* (15mins) **Ana Pacheco, OT (New Zealand)**	
					***E7**: Hip Surveillance – A Local Perspective: How we Roll in the Waikato* (15min) **Karli Joll (New Zealand)** ***E8**: Re-scheduled to A11*	***F6**:A Sustainable Spinal Seating Professional Development Programme in NSW, Australia – The Outcomes & Challenges* (15mins) **Charisse Turnbull (Australia)**	
15.00	**AFTERNOON TEA / EXHIBITION HALL**						
15.30	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**	**Session G**
	***A10**: Paediatric 24hr Postural Management Service Delivery – The Waitemata District Health Board Journey* Beginner – Intermediate (30mins) **Jane Hamer, Roz Cranswick (New Zealand)**	***B11**: Towards Sustainable Wheelchair Provision on the Island of Ireland: Understanding Place, People, Pace & Policy* **Rosemary Joan Gowran (Ireland), Jackie Casey (Northern Ireland)**	***C11**: Can We Improve Comfort, Posture & Functional Outcomes in a 90 Minute Review Clinic Environment?* Intermediate – Advanced **Henry Bertulfo** **Liz Turnbull** **(New Zealand)**	***D6**: How Do We Measure Participation in Daily Life for Children & Youth Needing Power Mobility?* Intermediate – Advanced **Debbie Field (Canada)**	***E9**: Thought Controlled Access to Independent Control of a Mobility Base – From Fantasy to Reality* **Tracee-Lee Maginnity, Robert Wong (Australia)**	***F7:** Immerse Yourself – The Science of Skin Protection* **Judy Rowley (Canada)**	G1: continued…
	***A11**: Cultural Aspects of Sleep – Implications for 24 hr Postural Management Programmes* (30mins) **Jane Hamer (New Zealand)**						
16.30	**16.30 – 18.00** *Wheelchair Rugby – Exhibition Match & 'Have a Go'*						
19.00	**19.00 – 23.30 Conference Dinner & Entertainment by Local Kapa Haka Group and New Zealand Band "Looking for Alaska" . Supported by Invacare**						

WEDNESDAY 22ND NOVEMBER

*Subject to change
*Poster sessions are included at the end of this timetable

WEDNESDAY 22nd November						
8.00	**Registration & Exhibition Hall Opens**					
8.30	**Welcome & Open Address**					
8.45	**Plenary:** *New Wheelchair Technology – Evaluating its Effectiveness* – **Bonnie Sawatzky (Canada) & Catherine Ellens (Canada)**					
9.25	**Plenary**: *Skin & Shoulder Care – Lived, Observed & Applied Principles* – **Malcolm Turnbull (Australia)**					
10.15	**MORNING TEA / POSTER SESSIONS / EXHIBITION HALL**					
11.00	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**
11.00	***A12**: Powered Mobility Innovations: Current Evidence & Emerging Technologies* **Magdalena Love (USA)**	***B12**: How Much Hip Abduction is Optimal in Sitting, Standing & Lying in Children with Cerebral Palsy? A Panel Debate* **Ginny Paleg (USA), Jackie Casey (Northern Ireland), Maureen Story (Canada), Rachael McDonald (Australia)**	***C12**: Applying Clinical Outcome Measures to Mobility & Seating Assessments* **Lois Brown (USA)**	***D7**: The ABC and XYZ of Cushions & Backs* Beginner **Jane Fontein (Canada)**	***E10:** Update on the Functional Mobility Assessment Outcomes Registry: What is the Data Telling Us?* Beginner – Intermediate **Mark Schmeler (USA)**	***F8**: Why Weight Matters* Beginner – Intermediate **Tina Roesler (Canada)**
11.20	***A13**: Using Experience-Based Design Principles to Enhance Service User Feedback* **Joanne Blaiklock (New Zealand)**					
11.40	***A14**: Sociology of wheelchairs and seating: How the non-human world can alter dominant social forces in healthcare provision* **Mary Silcock (New Zealand)**					
12.00	**LUNCH / EXHIBITION HALL (CLOSES 13.30) / POSTERS / EXHIBITOR DEMONSTRATIONS**					
13.30	**Session A**	**Session B**	**Session C**	**Session D**	**Session E**	**Session F**
	***A15**: A Problem Solving Model for Wheelchair Seating Assessment* Intermediate – Advanced **Kelly Waugh (USA)**	***B13**: Innovative Ideas & Solutions for Assistive Technology* Beginner – Intermediate **Rick Escobar (USA), Steven Escobar (USA)**	***C13**: Addressing Complex Spinal Deformities with a Continuous Postural Management Approach in Sitting* Beginner – Intermediate **Joana Santiago (Portugal)**	***D8**: Aging with a Disability; how does it affect wheeled mobility & seating?.* Beginner – Advanced **Rachael McDonald (Australia)** **Lisa Kenyon (USA)**	***E11:** Risk Assessment in Seating & Positioning for Prevention of Deep Tissue Injury* Intermediate – Advanced **Pat Meeker (USA)**	***F9**: Anterior Tilt, Stand, Lateral Tilt, Elevate, Recline Powered Adjustable Seat Positions – Reasonable, Necessary?* Intermediate **Amy Bjornson (Australia)**
14.30	**Closing Keynote:** *There's more to good AT outcomes than froth and bubble* – **Lloyd Walker (Australia)**					
15.10	**15.10 – 15.30 Poroporoaki (Closing Ceremony)**					

Oceania Seating Symposium 2017

POSTER SESSIONS

All posters will be up for the duration of the symposium. Authors will be available during morning tea and lunch breaks on the days indicated below.

P1: *Thermography Measurement to assess Wheelchair Cushion Heat Absorption and Decay*
Angela Rowe (Australia)
Kim Vien (Australia)
Monday 21st Nov

P2: *Development and Evaluation of a 'Smartphone-delivered Peer Physical Activity Counselling' Program for Manual Wheelchair Users*
Krista Best (Canada)
Wednesday 23rd Nov

P3: *Service experience of using the Wheelchair Outcome Measure (WhOM) over a six month period*
Ying Yang (New Zealand)
Tuesday 22nd Nov

P4: *Using Multifunction Power Wheelchairs in Aotearoa*
Maria Whitcombe-Shingler (New Zealand
Sian Griffiths (New Zealand)
Monday 21st Nov

P5: *24hour posture positioning & wheelchair-seating intervention and technology procurement: evidence-based intervention effectiveness*
Rachael Schmidt (Australia)
Tuesday 22nd Nov

P6: *Geographic Information Science (GIS): An Important Tool in Making the World More Accessible*
Steven Escobar (USA)
Tuesday 22nd Nov

P7: *In Sickness and in Health*
Sam Macadaan (New Zealand)
Tuesday 22nd Nov

P8: *Upping the Anti (tips) – An Evaluation of the Effectiveness of Peer Mentored Wheelchair Skills Groups for Adults*
Helen Khouri (New Zealand)
Debbie Wilson (New Zealand)
Wednesday 23rd Nov

P9: *Stand up to pain: A single case study on the multiple and far reaching benefits of using a standing wheelchair for a client with SMA and chronic pain*
Claire Grey (New Zealand)
Monday 21st Nov

P10: *Effects of "Tilt" and "Recline" on Pressure Distribution for People with Tetraplegia*
Luma Carolina Câmara Gradim (Brazil)
Wednesday 23rd Nov

P11: *"Let's talk about Stress, Sanity & Survival" – How stress affects stakeholders in WC clinic settings*
Elaine Vivianne Toskos (USA)
Monday 21st Nov

P12: *Collaboration in Design – A Person Centred Experience to Enabling Mobility through 3D Printing*
Tracee-lee Maginnity (Australia)
Monday 21st Nov

P13: *Power or Push On? A Review of Wheelchair Provision for MND clients within the ADHB wheelchair service*
Claire Grey (New Zealand)
Tuesday 22nd Nov

P14: *Motivation Australia: 10 years of Strengthening Mobility Device Services in the Pacific*
Lauren Flaherty (Australia)
Ray Mines (Australia)
Wednesday 23rd Nov

ABSTRACTS
MONDAY 20TH NOVEMBER

Keynote: Life, Love & Awesomeness – Rethinking the Language of Disability

Rachel Callander

After loving and losing her daughter Evie who was born with a rare chromosomal condition, award winning NZ Wedding and Portrait photographer Rachel Callander turned her talent to capturing the beauty and abilities of other children with 'Super Powers'. Rachel has travelled the length and breadth of NZ meeting ordinary families being made extraordinary through the journeys their children are taking them on.

As a result of her travels, Rachel's insights and images offer a fresh understanding and language regarding disability. The stunning photographs of the children alongside the conversations with their parents are presented in the Super Power Baby Project, a photographic art book launched in 2014. The book is being used and celebrated in schools, neonatal units and by health professionals around New Zealand and the world, where it is making real changes in the way people think about and work with people with disabilities.

"The Super Power Baby Project is a life affirming work. It does not shy from the notion that genetic syndromes bring with them their share of challenge, grief and difficulty. The strong message is that there is much that lies beyond that. Rachel demonstrates that these children have much to teach us about themselves and ourselves, which is to be celebrated as truly exceptional." Stephen Robertson, Curekids Professor of Paediatric Genetics, University of Otago

Plenary: Craniopagus Conjoined Twins: The Journey

Maureen Story, PT

Session description:
Conjoined twins is a rare phenomenon occurring 1 in 200,000 live births. Craniopagus conjoined twins occur 1 out of 2.5 million live births. I have had the unique experience of following a set of craniopagus conjoined twins since their birth. In the absence of commercially available equipment and appropriate developmental assessments for this situation, issues around feeding, sleeping, bathing, transportation and developmental positioning and play needed to be creatively and innovatively addressed. It was also important to include and respect the family, consider quality of life and social participation. Into this mix was thrust the media circus and the very vocal public, and their opinions, that surrounded the girls. In this session I will share my experiences in this incredible journey.

Speaker biography:
Maureen Story is a Physical and Occupational Therapist who has worked in the field of Positioning and Mobility for over 30 years in both private practice and most notably at Sunny Hill Health Centre for Children in Vancouver, B.C. She was part of the team that developed and implemented the Positioning and Mobility Clinic at Sunny Hill Health Centre for Children and is a clinical instructor at the University of B.C. She has presented at numerous conferences both nationally and internationally, and has been involved in a number of research projects including development of the Seated Postural Control Measure. She has been involved in international health projects in both India and China, and has most recently provided training and guidance to the staff at Guangzhou Children's Hospital to assist them in developing and opening the first pediatric seating clinic in mainland China. Maureen has been a member of the International Seating Symposium committee since its inception in 1983 and has been Co-Chair since 2000.

A1: What are the Attitudes & Practices of Paediatric Therapists Concerning Power Mobility use in Children?

Lisa K. Kenyon, PT, DPT, PhD, PCS
Roslyn Livingstone, OT, MSc(RS)
Maria Jones, PT, PhD
Becky Breaux, MS, OTR/L, ATP
Jessica Tsotsoros, MS OTR/L ATP

Learning objectives:
At the completion of this session, attendees will be able to:

1. Describe the survey research methodology used in this study.
2. Identify 3 factors from the perspective of survey respondents that may impact a therapist's decision to trial power mobility (including use of battery powered ride-on toys).
3. Identify 3 factors from the perspective of survey respondents that may impact a therapist's decision to prescribe a power wheelchair.

Session description:
Objectives: The purpose of this study was to explore the current attitudes and practices of pediatric occupational therapists (OTs) and physical therapists (PTs) in Canada and the United States related to power mobility use for children with mobility deficits/limitations. Study Design: Descriptive, cross-sectional survey Study Participants & Setting: Of the 1115 people who accessed the survey, 1009 pediatric OTs and PTs from Canada and the United States met the inclusion/exclusion criteria. Therapists from all 50 United States, all 10 Canadian provinces, and one of the 3 Canadian territories responded to the survey. Sixty-five percent of the respondents practiced in a school system or outpatient setting. Materials/Methods: The web-based survey collected primarily quantitative data and was reviewed and piloted by an expert panel prior to data collection. Questions pertaining to therapists' decisions to trial and use power mobility, agreement or disagreement with various published statements regarding the introduction and use of power mobility, and the frequency of performance of tasks related to power mobility prescription and training were included. Results: A majority of respondents reported that certain child characteristics (e.g., cognition, safety awareness) were important factors in decisions about power mobility, while other child characteristics (e.g., communication abilities, age) were considered less important. Family resources and home accessibility were also not considered as important. Respondents expressed agreement (range 66%-96%) with various published statements regarding the introduction and use of power mobility. Respondents most frequently performed power mobility tasks either 1-2x/year or never. Conclusions/Significance: A majority of respondents appeared to have a positive attitude towards introducing power mobility to young children. However, few therapists appeared to be actively engaged in providing such power mobility experiences and most commonly referred children to specialty clinics. Determining the facilitators of and barriers to implementation of power mobility experiences warrants further exploration.

Content references:

1. Livingstone R, Field D. Systematic review of power mobility outcomes for infants, children and adolescents with mobility limitations. *Clin Rehabil*. 2014;28(10):954-964.
2. Livingstone R, Paleg G. Practice considerations for the introduction and use of power mobility for children. *Dev Med Child Neurol*. 2014;56(3):210-221.
3. Jones M, McEwen IR, Neas BR. Effects of power wheelchairs on the development and function of young children with severe motor impairments. *Pediatr Phys Ther*. 2012;24(2):131-140.
4. Kenyon LK, Farris J, Brockway K, Hannum N, Proctor K. Promoting self-exploration and function through an individualized power mobility training program. *Pediatr Phys Ther*. 2015;27(2):200-206.
5. Kenyon LK, Farris JP, Gallagher C, Hammond L, Webster LM, Aldrich NJ. Power mobility training for young children with multiple, severe impairments: a case series. *Phys Occup Ther Pediatr*. 2017;37:19-34.

A2: “There is Power in Mobility”: A Qualitative Study Exploring How Children Learn to Use a Power Mobility Device

Lisa K. Kenyon, PT, DPT, PhD, PCS
W. Ben Mortenson, PhD, OT
William C. Miller, PhD, OT

Learning objectives:
At the completion of this session, attendees will be able to:

1. Discuss the qualitative research methods used in this study.
2. Identify 3 factors from the perspective of the study participants that may positively impact a child who is learning to use a power mobility device.
3. Identify 3 factors from the perspective of the study participants that may create barriers for a child who is learning to use a power mobility device.

Session description:
Objective: The aim of this study was to explore, from the perspectives of both parents and paediatric therapists, the process of how a child learns to use a power mobility device. Study Design: Qualitative study using focus groups and one-on-one interviews Study Participants & Setting: The purposive sample included 14 parents of children 18 months to 13 years of age who were learning to use or had learned to use a power mobility device and 17 paediatric physical or occupational therapists from a variety of settings. Two additional therapists with extensive research experience in the area of paediatric power mobility also participated in the study as a way to gather and explore data relevant to emerging concepts and codes within the data. Materials/Methods: Separate interview guides were developed for parents and therapists. Data were gathered via 7 focus groups and 8 one-on-one interviews. All focus groups and one-on-one interviews were digitally recorded and transcribed verbatim. Data collection continued until data saturation was reached. Data were analysed throughout the research process. Results: Three main themes were identified: 1) “Power in mobility” – depicted how learning to use power mobility changed more than just a child’s locomotor abilities and was transformative on multiple levels; 2)“There isn’t a cookbook” – revealed how learning to use power mobility occurred along an individualized continuum of skills that often unfolded overtime in a cyclical process; and 3) “Emotional journey” – explored how learning to use power mobility was an emotionally charged process for children, families, and therapists. Conclusions/Significance: Data revealed factors that positively impacted learning to use a power mobility device as well as obstacles that created potential barriers to the learning process.

Content references:
1. Livingstone R, Field D. Systematic review of power mobility outcomes for infants, children and adolescents with mobility limitations. *Clin Rehabil*. 2014;28(10):954-964.
2. Livingstone R, Paleg G. Practice considerations for the introduction and use of power mobility for children. *Dev Med Child Neurol*. 2014;56(3):210-221.
3. Jones MA, McEwen IR, Neas BR. Effects of power wheelchairs on the development and function of young children with severe motor impairments. *Pediatr Phys Ther*. 2012;24(2):131-140.
4. Guerette P, Furumasu J, Teft D. The positive effects of early powered mobility on children’s psychosocial and play skills. *Assist Technol*. 2013;25:39-48.
5. Livingstone R. A critical review of powered mobility assessment and training for children. *Disabil Rehabil Assist Technol*. 2010;5:392-400.

A3: From buggy to wheelchair: Exploring the experiences of whanau/carers

Tess Wallis, PT
Ana Pacheco, OT

Learning objectives:
After the session, the participant will be able to:

- Identify 3 different common themes associated with transitioning children from a buggy into their first wheelchair
- Have an understanding of how a first wheelchair may impact on family life
- Able to take parents and care givers perspectives into account when selecting equipment to transition from buggy to wheelchair

Session description:
Background
Most young children with significantly limited independent mobility will at some point in their lives outgrow their buggy and receive their first wheelchair. In the greater Auckland area in New Zealand, these children will usually be referred by their child development therapist to Mobility Solutions, a government run specialised wheelchair and seating service that caters for people with complex wheelchair and seating needs. A wheelchair clinician will then aim to determine the most appropriate mobility solution, after a thorough assessment and in liaison with caregivers and external therapists.

Method
The purpose of this study is to explore the experiences of whanau/carers when a child transitions from a buggy to a wheelchair.
A literature review and a file audit will be completed, and carers will be invited to participate. A qualitative questionnaire will be developed and it will be completed with parents of children who have recently transitioned from a buggy to a wheelchair for their essential mobility needs.

Inclusion criteria are: the child must be under the care of Mobility Solutions in the last 5 years and requiring complex wheeled mobility equipment for all essential mobility including indoors.

Depending on the response rate during the data collection period, it is likely that there will be a mix of neurological and musculoskeletal conditions and a varied range of mobility solutions such as self-propelling, transit and power chairs.

Additionally, a questionnaire regarding clinician's expectations will be completed by experienced wheelchair and seating therapists. The collated qualitative data will be analysed and common themes, if available, will be categorised.

Findings
It is hypothesised by the authors that parents and clinicians may have different expectations about potential positive and negative impacts of a child's first wheelchair. Clinicians are likely to consider transportation issues, improved postural support and participation as important aspects regarding to the decision making process and the final equipment solution. To the authors' best knowledge, there is not much information available in New Zealand that highlights parents opinions, experiences and requirements.

Discussion
Depending on the results of this study, it may become clear that service guidelines or a best practice protocol may need to be developed to smooth the transitioning process and to optimise functional outcomes related to wheeled mobility for parents and children.

Content references:

1. Ann Eubank, L. M. S. W., Brown, D., Hoskins, E., Mueller, S., & Marie, A. (2015, February). IC18: Independent Living: Captivating Live Interviews with Wheelchair Users. In *International Seating Symposium* (p. 91).
2. Bray, N., Noyes, J., Edwards, R. T., & Harris, N. (2014). Wheelchair interventions, services and provision for disabled children: a mixed-method systematic review and conceptual framework. *BMC health services research*, *14*(1), 309.
3. Casey, J., McKeown, L., McDonald, R., & Martin, S. (2012). Wheelchairs for children under 12 with physical impairments. *The Cochrane Library*.
4. Cronin, S. (2012). Exploring the lived experiences of children with specialised

wheelchair and seating needs from a family perspective.
5. Shahid, M. (2004). Buggy-to-wheelchair progression for children with cerebral palsy: Parents' and therapists' opinions. *International Journal of Therapy & Rehabilitation*, *11*(12).
6. Tefft, D., Guerette, P., & Furumasu, J. (2011). The impact of early powered mobility on parental stress, negative emotions, and family social interactions. *Physical & occupational therapy in pediatrics*, *31*(1), 4-15.
7. Wiart, L., Darrah, J., Hollis, V., Cook, A., & May, L. (2004). Mothers' perceptions of their children's use of powered mobility. *Physical & occupational therapy in pediatrics*, *24*(4), 3-21.

B1: Peer-led wheelchair training improves how older adults in the community use manual wheelchairs

Krista Best, PhD, PT
William C. Miller, PhD, OT
Francois Routhier, PhD, ME
Janice Eng, PhD, PT

Learning objectives:

1. Describe the potential benefits of peer-led manual wheelchair training.
2. Define the four sources of self-efficacy that are integrated within a peer-led manual wheelchair training program.
3. Explain how peer-led wheelchair training influenced manual wheelchair skills, self-efficacy and satisfaction with participation in meaningful activities for older adults.

Session description:

Rationale

More than 50% of older adults (50+ years) who use manual wheelchairs (MWC) require assistance getting around.1 Mobility and social participation can be enhanced through MWC training.2 However, due to clinician perceived barriers of time, knowledge and resources,3 older adults receive little to no training upon MWC procurement.4 A peer-led 'Wheelchair Self-efficacy Enhanced training for Use' (WheelSeeU) program is a feasible approach to MWC training for older adults.5 The purpose of this study was to provide effect size estimates of WheelSeeU on MWC outcomes.

Method

In a RCT, 40 community-living MWC users (40% female; 65y) with mobility goals were recruited. The experimental group (n=18) received 6x1.5 hours of WheelSeeU, a goal-oriented, peer-led MWC training program that enhanced self-efficacy to pairs of MWC users through skills mastery, vicarious learning, verbal persuasion, and reinterpretation of physiological symptoms. The control group (n=22) completed 6x1.5 hours of iWheel, a professional-led didactic informative program about community MWC use. Outcomes included: MWC skills (capacity; performance), MWC use self-efficacy, and satisfaction with participation.

Results

A mixed-model ANOVA revealed statistically significant group x time interaction effects for subjective MWC skills performance (Cohen's d=0.70; p=0.04) and a trend towards improvement in MWC skills capacity (Cohen's d=0.55; p=0.09). Group x time interactions were not statistically significant for objective MWC skills capacity (p=0.24), MWC use self-efficacy (p=0.13), or satisfaction with participation (p=0.71). Participants in both groups experienced statistically significant within-subject increases in satisfaction with participation from baseline to post-intervention. Improvements in subjective MWC skills capacity and performance and satisfaction with participation remained 3 months later. Conclusion. Peer-led MWC training may be a promising strategy to accommodate training needs of older MWC users. However, goal setting and didactic information may also positively influence MWC outcomes. Further evaluation is needed to examine how to best provide older adults with community-based MWC training.

Content references:

1. Shields M. Use of wheelchairs and other mobility devices. Health Reports 2004;15:37-40
2. Kilkens OJE, Post MWM, Dallmeijer AJ, van Asbeck FWA, van der Woude LHV. Relationship between manual wheelchair skill performance and participation of persons with spinal cord injuries 1 year after discharge from inpatient rehabilitation. J Rehabil Res Devel 2005;42(3):65-74.
3. Best KL, Routhier F, Miller WC. A description of manual wheelchair skills training in clinical practice in Canadian rehabilitation centres. Disabil Rehabil: Assist Tech 2015;10(5):393-400.
4. Kirby RL, Keeler L, Wang S, Thompson K, Theriault C. Proportion of wheelchair users who receive wheelchair skills training during an admission to a Canadian rehabilitation center. Top Geriatr Rehabil 2015; 31(1):58–66.
5. Best KL, Miller WC, Routhier F, Eng JJ. Feasibility of the trial procedures for a randomized controlled trial of a community-based peer-led wheelchair training program for older adults. Submitted to Pilot and Feasibility Studies on January 9, 2017.

B2: Can wheelchair propulsion training improve wheeling biomechanics in aging adults? A randomized controlled trial

Megan K MacGillivray
Elizabeth Dean
Janice Eng
Bonita J Sawatzky

Learning objectives:

1. Understand strategies used in training wheelchair propulsion
2. Identify whether wheeling practice alone can elicit improvement in aging adults
3. Determine the impacts of wheelchair propulsion training incorporating variable practice and sporadic feedback

Session description:

Background
Aging adults are the largest and fastest growing cohort of manual wheelchair users in the Unites States and Canada; however, little is known about optimizing wheeled mobility for this population. This study's purpose was to establish whether training incorporating variable practice and sporadic feedback is superior over blocked (i.e., non-variable) practice or no-practice (i.e. inactive control) among aging adults.

Methods
Thirty-four aging able-bodied adults (>50y) with no wheelchair experience participated in this randomized controlled trial. After completing baseline testing to evaluate wheeling biomechanics, participants were randomized into three groups (training (intervention), practice (active 'dose-matched' control) or control (inactive control)). The intervention consisted of six training sessions involving variable practice and sporadic feedback. Each training session consisted of two 5-minute wheeling blocks on a treadmill separated by 10 minutes of discussion and videos to reinforce training received during wheeling. The practice group received the same duration of wheeling.

Biomechanical data were collected with an instrumented wheel at baseline, post training, and 2-weeks following training with the control group being tested at the same time periods. Data from the final minute of the 5-minute testing trial were averaged and analyzed with mixed effects regression methods.

Results
Training (n=10), practice (n=10), and control (n=14) groups did not differ in age (62.2±9.2y (mean±SD) or other demographic variables. Baseline biomechanical data were similar across groups except for peak negative force. Following training, the intervention group improved push angle (+38.3°, $p<0.001$) and push frequency (-0.64 Hz, $p<0.01$) compared to the control group (-3.0° and 0 Hz, respectively). Furthermore, improvements were retained for 2-weeks following training ($p<0.01$). There were no differences between control and practice groups ($p>0.50$).

Conclusion
Wheelchair propulsion training can be effective for increasing push length and reducing push frequency in aging adults. Practice alone did not appear to impact wheeling biomechanics.

Content references:

1. Leving MT, Vegter RJ, de Groot S, van der Woude LH. Effects of variable practice on the motor learning outcomes in manual wheelchair propulsion. J Neuroeng Rehabil 2016;13(1):100.
2. Morgan KA, Tucker SM, Klaesner JW, Engsberg JR. A motor learning approach to training wheelchair propulsion biomechanics for new manual wheelchair users: A pilot study. J Spinal Cord Med 2015:1-20.
3. Will K, Engsberg JR, Foreman M, Klaesner J, Birkenmeier R, Morgan K. Repetition-based training for efficient propulsion in new manual wheelchair users. J Phys Med Rehabil Disabil 2015;1(001):1-9.

B3: Power or Push on? A review of wheelchair provision for MND clients within the ADHB wheelchair service

Claire Grey, OT

Learning objectives:

1. To explore optimum wheelchair prescription for MND clients
2. To define best practice pathways using current evidence of outcomes
3. To streamline funding approval timelines

Session description:

Using data from Mobility Solutions, Auckland wheelchair service collated between 2007-2010 and 2014-2017 to compare how wheelchair prescription has changed and identify any trends in equipment and timeframes. If any changes are evident to explore why and the implications relating to service delivery and evidence based practice. Studies in the UK (Rolfe, 2012) on 62 patients concluded a timeline could be used by wheelchair services to map resources required for the MND population. Ward et al (2010) found in a USA based study of 32 patient found that 66% felt the chair prescribed was timed correctly, 19% wished they started sooner. All clients exhibited high user satisfaction scores. Looking at these studies I will be relating these to the New Zealand population and practices, using both quantitate and qualitative data including case studies.

Some assumptions and hypothesis that will be robustly evaluated include:

- That rapid service provision is essential for safety and wellbeing of clients with MND.
  - Based on the progression of MND are we in time or out of time with our wheelchair prescription?
- Are clients' needs best met if their changing needs are anticipated and "future proofed"
  - We can use the data to explore the requested versus the provided equipment, asking ourselves do we under or over prescribe?
- That there are themes and consistency between clients experiences in postural needs and comfort.
  - As in the UK can we complete a pathway for our service? If so, how do we best do this? Or does this limit us seeing the client group as individuals

Content references:

1. Metha S (2015) Wheelchairs for Motor Neurone Disease: When speed is of the essence. British Journal of Neuroscience Nursing, Vol II (2) 58
2. Rudunovic A, Matsumoto H, Leigh P.N (2007) Clinical care of patients with Amyotrophic Lateral Sclerosis. Lancet, Neurological; 6:913-25
3. Rolfe J (2012) Planning wheelchair service provision in Motor Neurone Disease: The implications for service delivery and commissioning. British Journal of Occupational Therapy, 75 (5) 217-222
4. Ward A, Sanjak M, Duffy K, Braver E, Williams N, Nichols M, Brooks B (2012) Power wheelchair prescription, utilisation, satisfaction and cost for patients with ALS: Preliminary data for evidence-based guidelines. Archives of Physical Medicine and Rehabilitation, 91 (2), 268-72

C1: Wheelchair provision education and training in low and lower middle income countries: A Scoping Review

Elizabeth Mc Sweeney, MSc OT (PQ)
Dr Rosemary Joan Gowran, PhD, OT

Learning objectives:

1. To highlight the importance of wheelchair provision education and training.
2. To understand the key factors influencing the delivery of appropriate education and training in low and lower middle income countries
3. To consider key recommendations to work toward a sustainable approach to wheelchair provision education and training within context.

Session description:

Purpose

Provision of an appropriate wheelchair to meet individual needs as a basic human right is complicated, given the multifaceted dimensions to be considered within context. The global research agenda for improving access to high quality affordable assistive technology endorses human resource development and education as a priority. Given this, there is a need to identify education and training available to personnel in the field and identify where gaps exist, to develop a sustainable and cohesive system. This paper presents the findings of a scoping review of education and training available within low and lower middle income countries (LLMIC), to ascertain education priorities.

Method

A scoping review collating scientific and grey literature between 1993 and March 2017 was conducted. This included online databases, manual searches and key stakeholder advise. Content analysis organised the literature retrieved and extracted key themes.

Results

The importance of education and training in LLMIC is recognised, with significant efforts being made by the World Health Organisation (WHO) and nongovernmental organisations (NGO) to deliver education programmes in some countries, along with the development of a credentialing test. However, evidence suggests a lack uniformity in availability and delivery of training programmes. There is a diversity of personnel involved in wheelchair provision, with inconsistencies within difference contexts, occupational therapists for example are not clearly recognised as key personnel in many LLMIC. Government commitments to address this at a policy level appears to be lacking.

Conclusions

Who takes overall responsibility for wheelchair provision needs to be established, as the multitude of personnel perspectives impacts on consistency and sustainability. Pilots sights, delivering and credentialing 'appropriate wheelchair' (as defined by the World Health Organisation 2008) provision education and training should be considered. Research measuring outcomes of education and training and transferable skills could be built in to programmes delivery structures.

Content references:

1. Gartz R, Goldberg M, Miles A, Cooper R, Pearlman J, Schmeler M, Jonassen Bittman S, Hale J. Development of a contextually appropriate, reliable and valid basic Wheelchair Service Provision Test, Disability and Rehabilitation: Assistive Technology 2017; 12:4, 333-340.
2. Kirby R L, Cooper R A. 'Applicability of the Wheelchair Skills Program to the Indian context', Disability & Rehabilitation 2007; 29(11-12): 969-972.
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5. World Health Organisation *Guidelines on the provision of manual wheelchairs in less resourced settings.* Geneva: WHO; 2008.

6. World Health Organisation *Global priority research agenda for improving access to high quality affordable assistive technology*. Geneva: WHO 2017 [cited 2017 March 3]. Available from: http://apps.who.int/iris/bitstream/10665/254660/1/WHO-EMP-IAU-2017.02-eng.pdf

C2: An Internationally Recognized Wheelchair Service Professional Credential: A Pilot Study

Alexandria Miles
Mary Goldberg
Krithika Kandavel

Learning objectives:
Upon completion of the session, the audience should be able to:

1. Identify the ISWP and describe its overall goals and objectives.
2. Understand the importance of training, education, and certification in wheelchair service provision.
3. Apply the certification and its relevance to various populations engaged in basic wheelchair services.

Session description:
Credentialing in health professions upholds standards of care by ensuring practitioners have met and maintained education and training criteria (1,2,3). Until recently, there was no internationally recognized credential available for professionals engaged in basic wheelchair service provision. Therefore, the International Society of Wheelchair Professionals (ISWP) developed an evidence-based Wheelchair Service Professional (WSP) certification accessible to a global audience who provides services to wheelchair users at the basic level. The previous Wheelchair Service Provision Basic Test (WSPBT) was expanded from a knowledge certificate upon passing to a certification by including an additional test domain in ethics and professionalism and by requiring minimum training qualifications. A prep-course was also developed as a reference for trainees in preparation for the expanded WSPBT. The cohort of trainees recruited who met both the education and training requirements, participated in and completed the prep-course, and passed the expanded WSPBT became the first to be certified by the ISWP as Wheelchair Service Professionals (WSP). The results of the pilot indicate that earning this credential will be beneficial for the professional development of relevant rehabilitation professionals as well as ensure a do no harm service to wheelchair users. The target population for the credential includes volunteers, students, interns, and entry-level clinicians and is a pathway for additional professional credentials in rehabilitation and disability services. Parallel to ISWP's mission, the credentialing in basic wheelchair services of the populations previously mentioned will promote standardization of the wheelchair sector globally and contribute to the best technology and services being rendered to wheelchair users around the world.

Content references:

1. Duckett SJ. Changing hospitals: the role of hospital accreditation. Social Science & Medicine 1983;17(20):1573-1579. doi:10.1016/0277-9536(83)90102-8.
2. Frencher SK, Ryoo JJ, Ko CY. Emerging importance of certification: Volume, outcomes, and regionalization of care. Journal of Surgical Oncology 2009;99:131-132. doi:10.1002/jso.21183.
3. Kaplow, R. The value of certification. AACN Advanced Critical Care 2011;22.1:25-32.

C3: Motivation Australia: 10 years of strengthening Mobility Device Services in the Pacific

Lauren Flaherty, OT
Ray Mines

Learning objectives:

1. Share key learning points from developing integrated mobility device services in the Pacific Region.
2. Reflect on the evolution of the mobility device service provision sector in developing countries, and the impact of global processes and partnerships.
3. Reflect on how the change in approach, guidelines and training have improved best practice in mobility device service provision in international development.

Session description:
Many lessons have been learned since the foundation of Motivation UK in 1991, and Motivation Australia (MA) in 2007 through working with a variety of Pacific Region and global partners.

In that time we have seen the gradual shift to people with disabilities being at the centre of the process, having an active role in advocating for their right to mobility (20, CRPD), health (25, CRPD), rehabilitation (26, CRPD), rather than being treated as the passive recipients of welfare and charity. Consensus of the international community has created global guidelines and standards relating to services in developing countries including: Convention on the Rights of Persons with Disabilities (CRPD, 2006); WHO Consensus Conference On Wheelchair Provision (2006); WHO Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings (2008); Joint Position Paper On The Provision Of Mobility Devices In Less-Resourced Settings (2011); WHO Wheelchair Service Training Packages (2012-2017); and the push towards increasing use of AT through the WHO's Global Cooperation on Assistive Technology (GATE) project.

In the next decade, countries will be caught in the rising tide of diabetes and other non-communicable diseases that is sweeping through our region. Pacific nations with scarce resources are already struggling to meet the health / rehabilitation needs of their small island populations.

MA in collaboration with our local partners, continue to work towards integrating the provision of wheelchairs, walking aids, prosthetics and orthotics by trained personnel, as an appropriate, cost effective, sustainable response to the Pacific context. MA is strategically expanding our scope to integrate Assistive Technology more broadly into our programmes.

Building the capacity of the workforce using sector standards for training and education from WHO and ISPO is a more sustainable pathway to improved Assistive Technology services and better outcomes for people with disabilities, NCDs and the frail aged.

Content references:

1. United Nations (2006) Convention on the Rights of Persons with Disabilities (UNCRPD). www.un.org
2. World Health Organization (2008). Guidelines On The Provision Of Manual Wheelchairs In Less Resourced Settings. Geneva
3. World Health Organization (2011). Joint position paper on the provision of mobility devices in less-resourced settings. Geneva
4. World Health Organization (2012 / 2013 / 2015 / 2017), Wheelchair Service Training Packages (basic / intermediate / managers / stakeholders / training of trainers). Geneva.

C4: WHO Wheelchair Service Training Packages: Lessons from implementation

Lauren Flaherty, OT
Ray Mines

Learning objectives:

1. Share key learning from utilising the WHO Wheelchair Service Training Packages (WSTP) in different settings, including in developing country contexts.
2. Understand how the WTSP has influenced global wheelchair service provision.
3. Understand how the WSTP can enhance wheelchair service provision in countries with a higher level of training and more resources.

Session description:
The WHO Wheelchair Service Training Packages (WSTP) were written with developing country contexts (less resourced settings) in mind, focused on solutions that can be implemented with limited resources, funding and time.

It has now been five years since the first WSTP training package was launched. In that time, the training packages have been used to train wheelchair service personnel, increase understanding of managers to support service provision and raise the awareness of stakeholders about the need for appropriate wheelchair service provision.

This session will look to answer: What have we learned? How has the training package been utilised in less resourced settings? What impact has the WHO approach had on wheelchair service provision in less resourced settings? How can the training packages support wheelchair service provision in countries with a higher level of training and more resources?

Content references:

1. World Health Organization (2008). Guidelines On The Provision Of Manual Wheelchairs In Less Resourced Settings. Geneva
2. World Health Organization (2012). Wheelchair Service Training Packages, basic level. Geneva.
3. World Health Organization (2013). Wheelchair Service Training Packages, intermediate level. Geneva.
4. World Health Organization (2015). Wheelchair Service Training Packages, managers and stakeholders. Geneva.
5. World Health Organization (2017). Wheelchair Service Training Packages, training of trainers. Geneva.

D1: Results Based Accountability – how to decide "Is anyone better off?"

Kathryn Hall, PT
Debbie Wilson, OT

Learning objectives:
Upon completing this session, participants will:

1. Understand the difference between population accountability and performance accountability
2. Have an insight into how the New Zealand Ministry of Health engages assessment contract holders in developing reportable measures of service delivery
3. Identify 3 performance measures that would apply to a wheelchair and seating assessment service

Session description:
Evidence based outcome measures are increasingly being used to evaluate the impact of intervention with individuals and group programmes, but how do we ensure that services contracted by government departments actually make a difference to the people we see. In an increasingly fiscal environment, Results Based Accountability (RBA) is a simple, practical way for organisations to evaluate the results of their programmes and report on these to their funders. The question, 'How are our communities, whānau and clients better off as a result of our work?' is central to RBA. RBA uses publicly available data and data generated by providers to track the results of a programme on the wellbeing of a population.

In New Zealand RBA is incorporated within the contracting framework as the mechanism to support an increased focus on outcomes in government contracting. This session will outline the background to RBA and how it has been implemented within the Ministry of Health contracts, and the process of collaboration between the Ministry of Health and specialist wheelchair and seating assessment services to determine appropriate measure to report on service delivery. Comparisons of reporting pre and post RBA will be shared and discussed using Seating To Go as a case study.

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E1: Patient and Organisational Risk factors for Pressure Ulcer Development – Implications for Practice

Jane Nixon, PhD, RN
Susanne Colemann, PhD, RN

Session description:

Background

There is good evidence that pressure ulcer risks are associated with patients' health status but also suggestive evidence that the organisation of care can influence their risks. In the Pressure Ulcer Programme (PURPOSE)[1], we aimed to a) describe and explain the ways in which the organisation of treatment and care influences the development of severe pressure ulcers and b) to develop and validate an evidence-based risk assessment framework to guide decision making about the risk of developing pressure ulceration and the risk of progression to more severe ulceration.

Methods

We undertook two related work-packages:

Severe PU

To explore organizational factors associated with severe PU development we undertook a retrospective case-series involving 8 patients [2 Pinkney et al]. We interviewed the patients/carers and multi-professional staff involved in their care and also reviewed records in order to develop a coherent account of events leading up to the development of a severe PU.

Risk Factors and Risk Assessment

To develop an evidence based Risk Assessment Framework (the PURPOSE T) we undertook a series of studies including: (i) systematic review [3]; (ii) consensus study [4]; (iii) conceptual framework development and theoretical causal pathway [5]; (iv) design and pre-testing of draft Risk Assessment Framework; (v) field test to assess reliability, validity, data completeness and clinical usability [1].

Results

Severe PU

For seven of eight patients the general organisational context played a key role in severe PU development and in addition, for four, specific events also contributed to PU development. In only one patient was the PU deemed unavoidable. Severe pressure ulcers were more likely to develop in contexts where-clinicians failed to listen to patients/carers or recognise/respond to high risk or the presence of an existing pressure ulcer, and services were not effectively co-ordinated.

Risk Factors and Risk Assessment

The systematic review identified 15 risk factor domains and 46 sub-domains, with three primary risk factor domains of mobility/activity, skin/pressure ulcer status and perfusion (including diabetes). It suggests that no single factor can explain pressure ulcer development [3]

The consensus study facilitated agreement of risk factors/assessment items of the minimum data set (including immobility, pressure ulcer and skin status, perfusion, diabetes, skin moisture, sensory perception and nutrition), and draft risk assessment framework (PURPOSE T) development [4].

The new conceptual framework incorporates 5 key components (mechanical boundary conditions, physiology and repair, mechanical properties of tissue, geometry of tissue/bone and transport and thermal properties) and their impact on internal strains, stresses and damage thresholds. The theoretical causal pathway identifies direct, key indirect and other potential causal factors for pressure ulcer development [5].

The design and pre-testing of a draft PURPOSE T led to improved usability prior to the field test which demonstrated that inter-rater and test retest agreement for PURPOSE T was 'very good' (Kappa) for the assessment decision overall [1].

Conclusions

The severe PU project illustrates the need to listen and respond to patients and that staff failed to monitor skin status effectively and escalate care when deterioration was observed [2]. The final PURPOSE T has the following features: Minimum Data Set; screening stage to target assessment towards those in

need; full assessment stage; use of colour to weight risk factors; ; and decision pathways which distinguish patients with an existing pressure ulcer or scarring who require secondary prevention and treatment and those at risk who require primary prevention [1, 6]. The results from both studies were drawn together through the development of an active monitoring model of care.

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F1: Hypotonia Update

Ginny Paleg, PT, DScPT

Learning objectives:
At the conclusion of the session, participants will be able to:

1. Describe how hypotonia might be measured
2. Identify which interventions targeting hypotonia are evidence based
3. Create a "Care Pathway" for an individual child with severe to moderate hypotonia

Session description:
Congenital hypotonia can be central or peripheral in origin and the therapeutic management of these two groups is distinct. Central hypotonia may have a genetic basis such as Down syndrome or the cause may be unknown. Hypotonia syndrome is defined by Kathy Martin as "a human movement system syndrome characterized by decreased strength, increased flexibility/muscle extensibility, hypermobility, decreased activity tolerance, delayed motor abilities or skills, leaning on supports, and rounded shoulder posture". This course will identify and evaluate the evidence supporting interventions commonly used by physical (PT) and occupational therapists (OT) for children with central hypotonia.

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A4: Empowering Ability and Function: Power Mobility Training for Children with Multiple Severe Disabilities

Lisa K. Kenyon, PT, DPT, PhD, PCS
John P. Farris, PhD

Learning objectives:
Upon completion of this session, the participant will be able to:

1. Discuss 3 potential benefits of using power mobility training interventions with children and adolescents who have multiple, severe disabilities.
2. Describe 5 steps to creating power mobility training programs to meet the individual needs of children and adolescents who have multiple, severe disabilities.
3. Discuss 3 means by which to evaluate outcomes and expectations for the use of power mobility interventions in this unique population.
4. Discuss the role of an interprofessional team in providing power mobility options and use for children and adolescents who have multiple, severe disabilities.

Session description:
Children with severe motor, cognitive, and communication deficits are often limited in their ability to use self-initiated movement to explore and learn from the world around them. Such children are frequently dismissed as "too involved" or "too low functioning" to use power mobility. This session will provide details related to the interventions used in our power mobility training program for individuals who have multiple, severe disabilities (ages 9 months to 26 years). Potential benefits of power mobility training in this population will be examined and explored. Various intervention techniques focused on creating an engaging environment customized to target the emergence of basic power mobility skills through environmental exploration and play will be presented and discussed. Case studies and examples from our program will be used to illustrate key concepts. Use of a custom-made attendant control unit to "share" control of the power mobility device without having to stop or interrupt the child's driving will be discussed as a fundamental aspect of our training methods. A standardized process to individualize these training methods for research purposes will also be presented. The role of an interprofessional team in providing power mobility options and use for children who have multiple, severe disabilities will be explored. Consideration of outcomes and expectations for the use of power mobility interventions in this unique population will be considered and reviewed.

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B4: Power Assist: Navigating the Options

Margaret Blake, NZROT
Wendy Hartley, NZROT
Sandie Grant, NZROT

Learning objectives:
Upon completion of the session participants will be able to:

1. Compare and contrast a range of Power Assist options for wheelchair users
2. Identify the most appropriate options to consider based on individual client need and the pros and cons of each
3. Use clinical rationale and reasoning to confidently select appropriate Power Assist options ensuring both client need and environmental factors/limitations are considered

Session description:
Over the past decade the availability of Power Assist options for wheelchair users has increased significantly: options now include products designed to remain on the wheelchair as well as units designed to be fitted and removed independently by the user. Selection of the most appropriate option can be daunting. Consideration needs to be given to the type of terrain the client wants to access, how they will transport the item, how it will interface with their manual wheelchair and whether or not it is more appropriate than a power wheelchair. This session will discuss a range of options, present the pros and cons associated with each and include clinical rationale for the selection of a product. The challenges presented by a range of environments will be discussed, with Case Studies used to illustrate the assessment process and outcomes for clients.

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B5: The Power and Freedom: The Impact of Power Assist

Sharon Davies, QSM
Maria Whitcombe-Shingler, NZROT, MOccTher

Learning objectives:

1. To share Sharon's experiences of being assessed for, trialling and using power assist.
2. To share the experience of using the WhOM from a client and therapist perspective.
3. To discuss the benefits of power assist options compared to other power mobility solutions.

Session description:
Sharon as the client, Maria in the role of therapist, share the journey of identifying the need for, obtaining funding, and trialling power assist options to access work, public transport and the wider community

Qualitative single case study design, with a constructivist paradigm, was used with the WhOM (Wheelchair Outcome measure) as one of the outcome measures. A photographic record will also be shared. This is Sharon's story.

More than ever, wheelchair designs are reflecting the desires of people with disabilities to be fully integrated members of society. By borrowing ideas from the bicycle and even the car industry, wheelchair manufacturers are creating ever more mobile, more adaptive means of mobility.

So as a background to Sharon's story, her occupational therapist Maria, will share her clinical assessment and reasoning around Sharon's wheelchair mobility needs and the full range of power assist options considered, with their benefits, costs and possible challenges, to support and enhance Sharon's work and community access.

Conclusion: Power assist offers physical and social benefits for users. Therapists should consider users' overall lifestyles and environments before recommending.

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C5: Concepts developed through wheelchair rugby classification and their translation into wheelchair set up for active users

Deborah Bowditch, OT, MSc
Binnie O'Dwyer, OT

Learning objectives:

1. To achieve an insight into the process of classification of wheelchair rugby athletes and how this process is used to gain an understanding of the athlete's current ability and functional potential.
2. Informed eyes when watching the demo game of Wheelchair Rugby at this conference, being able to identify the difference between a low, high and mid pointer
3. To provide some fresh ideas and tools to use when assessing clients for active user equipment to enable the individual to achieve their true functional potential. Nothing is off limits…

Session description:
Wheelchair Rugby Classification assesses the athletes' trunk, arms and functional techniques awarding a class that reflects their functional potential. The purpose being to allow people with mixed physical abilities from a range of diagnoses to create a team line up with the same potential group ability as the opposing line up and therefore a fair game. It is this role as an international classifier that gives us the awareness of an individual's functional potential, how to assess for it and the equipment features that can enhance or inhibit it.

This session will firstly give a brief tour of the classification assessment process then continue by looking at how this assessment of an individual's functional potential can provide information that informs equipment specification and configuration for the active user. This session will be of interest to delegates who are interested in Paralympic sport classification and active user wheelchair set up.

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D2: Custom Contoured Seating: Ensuring Successful Outcomes

Kelly Waugh, PT, MAPT, ATP

Learning objectives:

1. Describe 4 of the 7 critical determinants of a successful outcome with custom contoured seating that were discussed in this course.
2. Describe one benefit of doing a seating simulation as part of the initial seating assessment, prior to the shape capture.
3. Translate information from three mat exam procedures into a component of a postural alignment plan.

Session description:

What variables contribute to a successful outcome when custom contoured seating is used for an individual with complex postural support needs?

In this course seven elements are proposed as critical determinants of a successful outcome with this type of complex seating intervention. These elements are explained and supported as we discuss the necessary steps and problem solving involved in the assessment and implementation of custom contoured seating. We will begin by reviewing some basic clinical concepts related to custom contoured seating, including clinical indications and contraindications. Next, we will review the critical components of the wheelchair seating assessment and shape capture process that are required for successful outcomes, with an emphasis on how to translate mat exam findings into a Postural Alignment Plan prior to the shape capture. An overview of the differentiating features of various product technologies available for generating custom contoured seating systems will allow the participant to understand how these parameters can affect outcomes for clients with differing clinical presentations. The roles and responsibilities of the therapist and supplier during these processes will be highlighted. The strategies and procedures discussed in this course are not product specific, and can be applied when using any custom contouring system.

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E2: The influence of disruption in wheelchair and seating practice innovation: Past, present and future

Rachael McDonald PhD, OT
William C. Miller PhD, FCAOT

Learning objectives:

1. To define disruptive innovation and contextualize within the field of wheelchair and seating practice.
2. To identify 5 historical innovations in the area of wheelchair and seating practice and the influence these have had on participation of people who use wheelchairs.
3. To identify areas where disruption will change practice related to the practice of wheelchair procurement and seating in the future, and how we can ready ourselves to engage with this.

Session description:

Whilst wheelchairs have been around for century's, the last 100 years have seen dramatic improvements that have enabled people to participate fully in their daily lives. The first "invalid's chair" was created around 1595 to assist Philip II of Spain overcome mobility issues associated with gout; prior to this, wheelchairs were purposed simply to move people from one place to another. Further developments include the first folding chair in the 1930s and the first successful motorized chair after WWII. Innovations such as these were revolutionary for those with mobility impairments and in contemporary terms, considered "disruptive".

In recent years we have seen incremental improvements in how we provide service to our clients. Examples included pressure mapping to assess for and prevent not only pressure ulcers but also improvement in positioning; tilt in space, which enables improved comfort, mid wheel drive chairs that enable people greater community access and credentialing of therapists to ensure best practice approaches. So where are we going to with wheelchairs and seating? In 2012 Rory Cooper suggested that the science related to wheelchair and seating intervention was escalating and that the next translational advances would come in the area of power wheelchair interventions.

Disruptive innovation, first defined in the 1990s, describes technologies and practices that replace those that lead to a major change or shift in how we conduct business. What are the advances that have been made in the past 20 years? Are we making sufficient progress to meet the needs of our clients? Are there no more changes to manual wheelchairs that will enable us to advance practice? Could changes to service provision be disrupted to improve practice? Are we focused on high tech approaches when we should be looking at the simple and frugal disruptions? What about ubiquitous smart technologies, and concepts such as precision medicine and big data. Do these concepts apply to mobility and seating also?

In this workshop we will identify the areas of wheelchair and seating practice that have occurred in the past 20-30 years, suggest areas for future development and engage the audience in discussion about where development, science and practice should be focusing efforts in the next 20 years.

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E3: Rationale and evidence for the development of a shear force measurement device

Max Rogmans MD

Learning objectives:

1. Definition and differentiation between different types of shear and friction, introduction of the term Total Shear, clinically referred to as sliding.
2. Identify the negative clinical aspects of sliding and how to prevent these from happening.
3. Clinical application of the iShear: how can it help to improve the wheelchair set-up?

Session description:

There is a lot of confusion around the definition of the terms shear and friction: they are used in conjunction with more extended terms like: Normal force, Shear force, Shear stress, Column Shear, Micro shear, Static and Dynamic friction. Different forms of shear and friction will be further discussed.

There have been numerous attempts in the past to develop devices that can measure shear at the interface between seat and body until now without success.

Sliding as a result of total shear:
The tendency of a wheelchair user to slide is one of the most common problems that we try to overcome in our daily practice of setting up wheelchairs.

The iShear is a newly developed device that is intended to measure the total shear (=sliding force) in the seat resulting from the force that occurs as a result from leaning against the back.

The device is placed in the interface between cushion and seat base underneath the cushion. The force measured by the device is defined as the Total-Shear-Force (TSF).

The iShear can be used in combination with a pressure-mapping device that is placed on top of the cushion. Possibilities for data collection, logging and identifying rotational forces using the iShear will be discussed.

The iShear is the first clinical tool that tells us something about the quality of the set-up of the wheelchair.

Possible applications for clinical use could be:

- Assessing the risk for a wheelchair user to slide.
- Assess the time needed for a wheelchair user to slide, the effect of sliding on the TSF.
- Real time impact measurement of the wheelchair set-up on TSF: determine the influence of back support angle, pelvic position, seat-angle, leg position, cushion adjustment.
- TSF over time: effect of propulsion.
- Documentation of wheelchair set-up.
- Education of junior colleges and users.

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F2: It IS More Than 4 Wheels!: How The Mat Assessment Influences the Prescription of Seating and Mobility Devices

Sheila Buck B.Sc.(OT), Reg. (Ont.), ATP

Learning objectives:

1. Describe surfaces on which to complete a hands on mat assessment
2. List three components of 3 pt positioning
3. List three components of the Mat Assessment
4. List two postural tendencies
5. Describe how centre of mass influences centre of gravity set up of the seating and mobility base.

Session description:

Completing a thorough but yet concise assessment has always been a challenge in seating mobility and is even more of a challenge when carried out in the community setting. It is imperative to gather appropriate assessment data but with time constraints as well as environmental challenges inherent in community settings this can prove to be a daunting task for the community therapist. This workshop will review what information is critical and how to access it in the community setting. A good seating and mobility evaluation involves not only the assessment, but the consideration of many client factors including physical, functional and lifestyle. These factors play a large role in determining the prescription of seating components and wheelchair frames/design to enhance functionality and overall performance for daily quality of life issues. It is imperative that we recognize that seating is not exclusive of mobility or the other way around. One enhances the other and therefore must be considered together when completing an initial MAT assessment to achieve a final assistive technology prescription. Assessment of postural tendencies and simulation of a support system with appropriate forces is imperative before a product prescription can be completed. This must be completed in order to determine if there are deformity tendencies in more than one anatomical plane, as well as to determine balance and dependent sitting concerns. This workshop will review critical points for wheelchair/ seating prescription and set-up based on hands-on assessment and simulation. We will be reviewing complex seating involving 3 point positioning to reduce postural tendencies. Consideration will be given to lines and angles of force based on client centre of mass and positioning. We will also explore seating and mobility base set-up to address pressure issues along with postural concerns. Our goal will be to provide our clients with postural control, and functionality while considering pressure and physiological functions.

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A5: The Wheelchair Outcome Measure; how to use and benefit from a client-centred measure of participation

Debbie Field, PhD
William C. Miller, PhD, FCAOT
W. Ben Mortenson, PhD

Learning objectives:
By the end of the session participants will be able to:

1. Describe two reasons for using the WhOM in clinical practice
2. Illustrate two different administration methods for using the WhOM dependent on the person's age and abilities
3. Articulate the clinical usefulness of the WhOM and WhOM-YP by describing three features that are clinically appealing.

Session description:
Independent mobility provides a foundation for participation in meaningful life situations, such as engaging in family life, establishing and maintaining friendships, learning and contributing to one's community. Wheeled mobility devices such as power and manual wheelchairs are often recommended to enhance independent mobility, when ambulation is difficult or impossible. Clients and their families often work collaboratively with clinicians to achieve individualized client-centred goals. Specialized outcome measures can be used to identify therapeutic goals, measure progress, and evaluate success of interventions. Currently standardized measures are seldom used in rehabilitation to evaluate wheeled mobility interventions (such as provision of new equipment, modification of current equipment, wheelchair skills training, education of support networks, and on-going skill and equipment monitoring). This is especially the case regarding client-identified, participation level outcomes.
The Wheelchair Outcome Measure (WhOM) and its paediatric counterpart, the WhOM- YP for young people under 19 years of age, evaluate the importance of and satisfaction with performance of client-identified participation-related outcomes before and after wheeled mobility-related interventions. Initially known as the Wheelchair Outcome Measure for Adolescents (WhOM-A), the WhOM-YP has been revised to include younger children, as well as input from caregivers (depending on a child's age and abilities). Using a combination of didactic presentation, videos, case studies and group discussion, workshop participants will be introduced to the WhOM and WhOM-YP, and learn how to administer the measure(s) with clients who have a range of ages and abilities.

Purpose: To describe the WhOM and WhOM-YP's development and clinical usefulness, and share clinical practice recommendations.

Clinical Significance: It is anticipated that the Wheelchair Outcome Measure and its paediatric version the WhOM-YP will be valuable additions to clinicians' measurement toolboxes when working with individuals who use wheeled mobility.

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B6: These Feet Were Made for Walking

Ginny Paleg, PT, DScPT

Learning objectives:
At the conclusion of the session, participants will be able to:

1. Describe the evidence supporting Gait Trainer Use
2. Choose the right features and set up of a gait trainer for a specific child
3. Write measurable achievable functional goals for a specific child in a gait trainer

Session description:
Gait trainers are frequently used in hospitals, clinics, schools and homes for children age 0-21 who cannot walk independently for long distances. The ability to independently move and explore one's environment plays a pivotal role in a child's development, including psychological functioning and social interaction. Children who lack mobility are less verbal, interactive and social. Cognition is also negatively impacted. Using evidence-based guidelines and case stories, this course reviews the benefits of gait trainers and provides clinicians information about designing and implementing mobility programs.

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C6: Custom moulded seating for when you need to intimately match body contours for seating

Jackie Casey, OT
Jacinta Maurin, PT

Learning objectives:

1. To understand the benefits of custom moulded seating for persons with postural management needs
2. To discuss when custom moulded seating should be considered as a feasible seating solution
3. To illustrate the process of shape capturing for custom moulded seating

Session description:
Custom moulded seating has often been perceived amongst many clinicians as being a last resort seating option, and only used with those individuals with very limited independent mobility or with significant postural and skeletal asymmetries (Sparacio 2017). However, with an increased understanding of posture and pressure management the use of custom moulded seating continues to increase and be recognized as an optimum seating solution for many users. With custom moulded seating intimately following the curves and contours of the user it can become a vital tool in the overall postural and health management of the user with complex physical disabilities. When moulded correctly it can be used to support physiological, psychological and functional participation.

Progressively more clinicians recognize how the body is a dynamic system, vulnerable to distortion as a result of poor positioning, an inability to transition and subject to gravity; yet it is also inclined to respond to realignment when given correct directional forces (Hill and Goldsmith 2010). This in turn can lead to increased balance and stability in sitting, improved physiological responses, some counter correction to destructive postural forces (Hetzel and Hetzel 2017), and increased functional participation of the user. Subsequently it is vital that custom moulded seating is considered earlier for our users as preventative of further postural destructive asymmetry.

In this presentation we will explore the myths around why custom moulded seating is often not considered as a feasible early solution, and what potential benefits it can offer as a prescribed seating solution. Additionally, we will briefly explore the process of shape capturing and a range of custom moulded seating options available, illustrating the latter through case stories.

Content references:

1. Hetzel TR and Hetzel MC. 2017. Early vs late intervention with custom molded seating. 34th International Seating Symposium, Nashville, USA.
2. Hill S and Goldsmith J. 2010. Biomechanics and prevention of body shape distortion. Tizard Learning Disability Review, 15, 15-30.
3. Sparacio JM. Custom molded seating: back to basics. 34th International Seating Symposium, Nashville, USA.

D3: Assistive Technology for Sports and Recreation – Supporting the Seated Athlete

Kendra Betz, MSPT, ATP

Learning objectives:
Upon completion of this session, participants will be able to:

1. List five professional skills or areas of knowledge that can be directly applied to adaptive sport and recreation technologies.
2. Understand at least six state-of-the-art AT options available to support individuals with disabilities in sport, recreation and leisure pursuits.
3. Discuss three critical considerations when providing seating interventions for adaptive sports equipment.
4. Identify three resources for more information on adaptive sports and recreation

Session description:

Individuals who use assistive technology in home, school, or work environments will typically require adaptive equipment for sports and recreational pursuits as well. Limitations resulting from a disability are the same to the individual, regardless of the environment or context in which he or she is participating. The key is to either adapt the environment or provide specific support to the individual to maximize independence. Professional skills necessary to evaluate a client, prescribe equipment, and provide education and training are similar across AT applications. Many professionals advance their knowledge and skills toward specialization in one or more specific areas of AT, however most working in rehabilitation and AT have little exposure to and knowledge of options for supporting individuals in sports and recreation.

This session highlights the significant roles that AT professionals play in sports and recreation applications. In addition to assisting the client to identify activity options with consideration of disability specific limitations, AT professionals must utilize specific clinical skills and knowledge to facilitate successful implementation of a chosen recreational activity. AT professionals prescribe and modify equipment to optimize performance, biomechanical efficiency, skin protection and comfort. Mobility skills and equipment management training is provided to maximize function while minimizing injury risk. Comprehensive client education promotes consistent integration of a chosen activity in everyday life. Case examples will be utilized to emphasize key points and successful outcomes. To facilitate evidence-based practice, a review of relevant research will be included and topics for necessary further study will be suggested. Additionally, options for adaptive sports and recreation technologies will be reviewed, funding sources will be identified and resources will be shared to encourage AT professionals to “get out there” and get involved in adaptive sports and recreation.

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2. Laferrier J, Teodorski E, Cooper R. Investigation of the impact of sports, exercise, and recreation participation on the psychosocial outcomes in a population of Veterans with disabilities: A cross-sectional study. Arch Phys Med Rehabil. 2015. 94(12): 1026-34.

3. Lieberman S. The right stuff. Sports ‘N Spokes. 2016, May: 32-35.

4. Nasuti G, Temple A. The risks and benefits of snow sports for people with disabilities: a review of the literature. International Journal of Rehabilitation Research. 2010: 33(3):193-8.

E4: Centre of Gravity: What does it really mean?

Tina Roesler, PT

Learning objectives:

1. Participants will identify the optimal COG as it relates to current research.
2. Participants will be able to list three configuration changes that may impact COG.
3. Participants will be able to give at least 2 strategies for maintaining safety with a more forward COG.
4. Participants will understand the education required for clients and caregivers related to wheelchair skills and COG.

Session description:

In the field of wheelchair prescription and wheelchair skills training, you often hear clinicians and users referring to centre of gravity (COG). But, what does it really refer to and how does it impact the function of a manual mobility device? In this program, we will review evidence related to COG selection and optimal manual wheelchair performance, and discuss what it really means from a functional and clinical perspective.

We will help to define COG as it relates to the wheelchair configuration and to the person in the chair. We will examine the impact of changes in COG and discuss clinical rationale and treatment approaches to maximize function, safety and maintain upper extremity health for manual wheelchair users. We will show practical examples of how different configurations and activities may impact COG and how changes can be addressed in the clinic and the community.

As time allows, we will give participants the opportunity to experience changes in COG for themselves and discuss how to make adjustments on available equipment.

Content references:

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Oceania Seating Symposium 2017

TUESDAY 21ST NOVEMBER

Plenary: The Improvement of Quality of Life through Opportunity

Ben Lucas

Speaker biography:
In 1989, Ben Lucas was involved in a motorcycle vs. van accident which resulted in a burst fracture at L3. Following his injury he spent six months working hard on his rehab and consequently has the ability to walk short distances – something he is grateful for. Ben became a world ranked athlete, representing New Zealand in wheelchair racing at both Commonwealth and Paralympic Games, winning bronze in Canada in 1994. His passion for seating arose when working for Allied Medical in sales for 10 years, setting up both manual and power wheelchairs, and paediatric rehab equipment. He was also CEO of the New Zealand Spinal Trust for over four years. His own personal experience, coupled with his impressive work resume made him the ideal candidate for his current role of Voice of the Consumer with Accident Compensation Corporation, New Zealand. Ben is happily married to his wife Tracie with whom he shares two kids.

Plenary: What Matters Most – Hosting a Difficult Conversation

Jean Minkel, PT, ATP

Session description:
Engaging in a discussion around loss and mortality can be treacherous. These subjects evoke a lot of emotion and challenges our own thoughts and reactions to a highly emotional subject. This presentation will present ideas exploring how to prepare yourself to "host" a difficult conversation with a person who is experiencing a progressive decline in physical functioning or is actively dying. We will explore the need for self-reflection to assess your own comfort level with leading and/or participating in a person-centred conversation about what is most important to this person, especially if time is short. We share the importance of planning for an interview, which involves genuine curiosity and openness, about the person's understanding of the situation and his/her desired outcome.

Speaker biography:
Ms. Minkel is a physical therapist and master clinician well recognized for her work in Assistive Technology. She is currently the Senior Vice President for Care Coordination and Rehab Services for Independence Care System, a nonprofit long term care program in New York City. Jean is also an independent consultant who provides educational and consulting service to all members of the A.T. team – consumers, therapists, suppliers, manufacturers and payers.

Prior to entering the private section, Jean was the director of the Seating and Mobility Program at the Center for Rehabilitation Technology at Helen Hayes Hospital in West Haverstaw, NY. She produced the videotape series, Spending or Investing – Funding Assistive Technology. She is co-author of the Wheelchair Selection Guide: How to use the ANSI – RESNA Standards; the Manual Mobility Training Guide and the Power Mobility Training Guide.

The A.T. community has recognized Jean for her contributions by awarding her the RESNA Fellow Award in 1995 and the Sam McFarland Mentor Award in 2012.

A6: Prescribing Power Standing Wheelchairs: Sharing our Experiences

Kim Vien, OT
Jessica Kuek, PT

Learning objectives:
By the end of this session, participants will:

1. Understand the process of exploring the feasibility of a standing power wheelchair based on current evidence
2. Understand the potential risks involved in prescription and use of standing powered wheelchairs
3. Assess and Identify possible users of power standing wheelchairs
4. Identify the key criteria for prescribing power standing wheelchair
5. Understand the need for both occupational therapist and physiotherapist to be involved in prescription of standing wheelchair
6. List three goals for power standing wheelchair prescription

Session description:
As technology advances and powered devices become more accessible, the demand for power standing wheelchairs has increased. Currently there is limited information or guidelines on the prescription of these devices. In the space where the user forces us to go into the unknown, how do we go about prescribing technologies that explore the possibilities?

This presentation includes three case studies of the powered standing wheelchair prescription journey with three different users all with a diagnosis of Cerebral Palsy.

It describes:

- The actual benefits of power standing devices experience
- The physical, cognitive and functional considerations required
- The risks involved when prescribing
- How these factors can be integrated with wheelchair prescription

We also take a look at the relationship between the occupational therapy and physiotherapy roles and how the combined approach can maximise the user's experience from prescription to implementation.

We will outline assessment and prescription guidelines we have developed based on our learnings and the current evidence. This includes details of prescription process including assessment types and implementation strategies of a powered standing device.

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A7: Benefits of a standing wheelchair on participation and quality of life for a young mum: a case study

Tess Wallis, PT

Learning objectives:
At the end of the session, the participant will have:

1. An understanding of the benefits of functional standing on participation and quality of life
2. An awareness that a standing wheelchair may have benefits beyond what is expected
3. An increased ability to identify clients who may benefit from a standing wheelchair

Session description:
Back ground
Multiple sclerosis is a progressive neurological condition and a common cause for decreased mobility in young adults. Within 15 years of diagnosis, about 25% of clients will depend on a wheelchair for their essential indoors mobility.

Evidence suggests that decreased mobility results in a significantly higher prevalence of neural pain, back pain and painful muscle spasms in clients with multiple sclerosis which may affect quality of life.

Method
This descriptive single case study reports the effects of having a standing mode on a power wheelchair for an active young mum on her ability to be the main carer for her 2 young children. Worsening pain levels and increased frequency of back pain and nerve pain resulted in her no longer being able to tolerate sitting in her existing powerchair for a whole day. The passive standing frame had become difficult to use independently due to pain and decreasing hip and knee range of movement.

A multifunction Levo C3 was prescribed to facilitate independent mobility and to benefit independent pain management. Funding was obtained based on the fact that it was thought that frequent standing would allow the client to better manage pain intensity and frequency.

Findings
During trial of a Levo C3 standing chair, it was found that pain was decreasing while in standing. After powered back recline was added to the Levo, the client reported that using frequent standing in combination with back recline whilst seated resulted in effective pain relief and no more pain medication was required.

The multifunction Levo powerchair was purchased and when the client was reviewed three months later, she had made significant gains with lower limb strength, range of movement and independent mobility. She was now able to stand with some upper limb support and walk very short distances with a gutter frame and light assistance. She reported an increase in participation in activities of daily family life and an improved quality of life. She no longer needs to lie down in the day for pain management and is able to stand holding the railing at the sports field to watch her son play soccer.

Discussion
This case study suggests that frequent, functional standing may be beneficial beyond managing pain and outweigh the benefits of passive standing frames in clients with multiple sclerosis. Further research to explore functional outcomes and quality of life for this client group is recommended.

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A8: Therapeutic reflections – The Functional Effects of Introducing a Dynamic Lycra Splint as Part of Therapy

Pilar Cerezo-Gomez, NZRPT, BSc Hons (PT)

Session description:
Objective: Clinical reflection on the expected and unexpected outcomes of introducing a dynamic splint in a community setting as part of therapy.

Design: Case report

Participants: 25 year old female with a diagnosis of Traumatic Brain Injury and severe orthopaedic injuries on the background of learning difficulties.
Findings: The subject is a 25yr old female with a background of Cerebral Palsy who suffered a Traumatic Brain Injury as well as serious orthopaedic injuries 3years prior. At the time of the accident, she was transitioning to living in her own flat with support from carers.

After reaching a plateau in therapy, introducing the provision of a dynamic splint was considered. The clinical rational was to improve postural control through the use of the splint which would in turn influence her participation in functional tasks such as transfers and sit to stand.

Following the fitting of the dynamic splint, she had a period of 13, 1hr therapy sessions over an 8 week period. The sessions focussed on education and support to encourage garment wearing and practising functional tasks such as transfers, sit to stand, standing and reaching and indoor mobility.

At the conclusion of the programme we found "expected" and "unexpected" improvements. Expected improvements included: decreased time to transfer from 45.7s to 18.7s, increased number of repetitions of sit to stand from 5.3 to 9.6 per minute, decreased time in completing the TUAG (Time Up And Go Test) from 2' 15" taking 10 steps to turn to 2' 10" taking 8.5 steps. The introduction of supported standing and reaching during therapy for the first time.

Unexpected improvements as reported by mum: greater participation in conversation, increased concentration in topics discussed, generally more alert, more involved in organising her day.

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1. Blair E, Ballantyne J, Horsman S, Chauvel P. A study of a dynamic proximal stability splint in the management of children with cerebral palsy. Developmental Medicine and Child Neurology. 37 (1995) 544-554
2. Degelaen M, De Borre L, Buy R, Kerckhofs E, De Meirleir L, Dan Bernard Neurorehabilitation 39 (2016) 175 - 181
3. Elliott C, Reid S, Hamer P, Alderson J, Elliott B; Lycra® arm splints improve movement fluency in children with cerebral palsy. Gait and posture (2010).doi:/jgaitpost.2010.11.008
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B7: Is Independent and Separated Eye and Head Movement Essential to Switch Drive a Power Wheelchair?

Bridget Dickson, PT

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

1. Have an introductory understanding of the different eye movements and reflexes involved in steady gaze.
2. Understand the components of one eye gaze rehabilitation programme used in preparation for trial of a power chair using switch controls.
3. Become familiar with a power chair trial outcome measure.

Session description:
Locked-In Syndrome is a rare neurological condition where the individual has no volitional control of voluntary muscles except some eye movements and blinking, but maintain their cortical cognitive functions. The disorder is usually caused by a lesion, such as a stroke, in the pontine area of the brain stem. They typically communicate using partner assisted eye blinking and communication boards. Re-gaining ability to have some independent control of body position, mobility and communication using non-partner assisted communication devices are key goals for individuals who generally require assistance for all activities of daily living, mobility and communication.

The Vestibular Ocular Reflex (VOR) is mediated through the VIII cranial nerve or vestibulocochlear nerve. The nerve originates in the inner ear in the peripheral vestibular system and travels to the vestibulocochlear nucleus in the pons. The VOR's primary function is to produce stable gaze when the head is turned. Therefore it is likely that individuals with Locked-In Syndrome will have impairment in the VOR.

Two switch power chair driving with switches mounted in the head rest requires the individual to rotate their head slightly to the left and right. But in an individual with Locked-In Syndrome who has an impaired VOR they are unable to maintain their gaze fixed on a target in front of them. Instead they initiate their neck rotation by first diagonally elevating the eyes towards the direction of the rotation. This means that the individual's eyes are no longer looking forward in the direction of driving, which is a safety concern.

In preparation for trialling a two switch controlled power chair, an individual with Locked-In Syndrome began an eye-head movement separation programme. As part of the power chair trial an outcome measure was used to determine the safety and effectiveness of achieving the goals of power chair use.

Content references:

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B8: Insightful decision making strategies: Empowering comprehensive (24hr) person-centred wheelchair & seating procurement

Rachael Schmidt, OT

Learning objectives:

1. Enable decision making effectiveness through service transparency: a seven process service pathway;
2. Evaluate decision making efficiency: understand major factors that influence decision-making facilitation/engagement and disengagement;
3. Build trustworthy partnerships: strategy sharing to empower person-centred collaborative decision making;
4. Develop effective clinical reasoning strategies: through critical service effectiveness and intervention satisfaction

Session description:

Introduction

Empowered person-centred 24hour posture-wheelchair-seating intervention for complex postural-mobility disability necessitates multiple stakeholders collaborations (i.e. clinicians, vendors/suppliers, consumers/care providers) (Arledge et al., 2011). Collaborative partnerships encourage effective information exchange that empowers person-directed decision making confidence (Gowran, 2012; Plummer, 2010).

Aim

The workshop provides essential strategies for empowering person-directed decision-making for complex wheelchair-seating procurement success. Method: Data extrapolated from two research activities informs workshop content. An in-depth case study into sixty Australians' experiences of complex wheelchair-seating service and procurement (Schmidt, 2015) is combined with an evidence-based literature critique pertaining to available complex 24 hour postural care and [wheelchair] seating intervention effectiveness (Family & Community Services, 2016). Intervention effectiveness was graded using an Evidence Alert Traffic Light System (Novak et al., 2013).

Findings

Data show effective 24hr posture-wheelchair-seating procurement are influenced at three levels. At a service level, by access to primary and secondary services, at a service provision, by clinical/technical competence, at a consumer level, as defined by consumer capacity to engage.

Evidence-based intervention strategies enhance decision-making effectiveness. For example: at a service level, by enhancing service transparency that builds trustworthy partnerships. At service provider level, by developing confident clinical reasoning skill, to build collaborative stakeholder partnerships that empower knowledge sharing, informed decision-making and collaborative evaluation of intervention satisfaction. Finally, at a consumer level, through a thorough understanding of confluent factors that influence consumer engagement (or not).

Each level impacts on: how well decisions are made, how each affects stakeholder collaboration (or not) and how each can be used to engage/facilitate informed decision making. Understanding the confluence of factors at each level assists service providers empower person-centred decision-making process.

Conclusion

With workshop knowledge – participants, as service providers – can articulate evidence-based strategies to collaboratively facilitate and empower person-directed decision making - with relevant stakeholders – to advocate appropriate 24hr posture and wheelchair-seating solutions according to individual needs/aspirations.

Content references:

1. Arledge, S., Armstrong, W., Babinec, M., Dicianno, B. E., Digiovine, C., Dyson-Hudson, T., . . . Stogner, J. (2011). *The RESNA Wheelchair Service Provision Guide.* Practice Guideleines.
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B9: Wheelchair and Seating Provision Queensland: Exploring the experiences of people using these essential services

Dimitra Solomon
Dr Michele Verdonck, PhD, OT
Dr Rosemary Joan Gowran, PhD, OT

Learning objectives:

1. To highlight the complexity of wheelchair and seating provision systems in context.
2. To consider the impact ad hoc and delayed delivery systems have on people who rely on these services.
3. To engage the audience in reflection and consideration as to the implications this research has for their own practice.

Session description:

Introduction

Providing wheelchair and seating is a complex intervention requiring seamless provision systems. Specialized skills are essential to enhance postural support and mobility to enable equal opportunity to engage in daily life as a basic human right. Every aspect of the provision process has an influence on overall outcomes for people who use wheelchairs. Consequently, it is important that the provision process, as defined by the World Health Organization (2008), is managed and structured in a way that provides 'an appropriate wheelchair' to meet the unique requirements of each individual. In Queensland, there are over twenty-eight thousand people who use wheelchairs. Funding streams vary and individuals are not automatically entitled to a wheelchair free of change, which can lead to delays and compromises regarding appropriate prescription and choice.

Method

To understand the Queensland context, an on-line survey was conducted, engaging with non-governmental organizations to recruit participants. Ethical clearance was provided by the USC Human Research Ethics Committee approval no: S/17/1008. Results are analyzed using SPSS 20.

Results: Detailed results as to the experience and level of satisfaction of wheelchair service users will be presented; these include wheelchair users, their families and carers. Areas highlighted across the wheelchair and seating provision process will be discussed, encompassing access to services, assessment and delivery processes, funding streams, education and training and follow up relating to repairs, servicing and reviews.

Conclusion

The importance of an appropriate wheelchair to meet individual needs is clear. Unpredictable provision will have an impact on the lives of those in receipt of services. Consideration should be given to creating a more streamlined and sustainable provision system where people can access what they require in a timely and appropriate way. It is unclear, how the introduction of the National disability insurance scheme (NDIS) will impact on the overall delivery system.

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C7: Recent changes in Orthotic management of children with neuropathic onset scoliosis: implications for seating provision.

Martin Matthews – Orthotic Clinical Specialist

Learning objectives:
Gain an understanding of the need for early intervention in spinal management
Gain an understanding of how dynamic elastomeric fabric orthoses work
Gain an understanding of the importance of mobility with seating systems

Session description:
Introduction
Spinal orthoses have been used for over 30 years in an attempt to control neuropathic onset scoliosis and not an effective method of controlling the scoliosis. They only improve sitting in wheelchairs (Allam and Schwabe, 2013). Patients often report poor compliance (Tsirikos, 2010) and pain due to atypical spinal loading patterns (Ramstad, 2011).

Method
A retrospective review of clinical practice of 5 paediatric centres in the south of England identified current treatment in 180 children with neurological onset scoliosis. A search matrix ensured all relevant data could be extracted from the clinical notes by a University employed researcher. The data was analysed by the co –authors of this paper.

Results
Out of 180 reports, 121 participants were wearing dynamic elastomeric fabric scoliosis suit orthoses (DEFO). The participants were split into three groups based on presentation:

- Prophylactic prevention consisted 60 (100%) children with low tone trunks
- Scoliosis developing group [22/43 (51% of the group)]
- Confirmed scoliosis [39/77(45%)] Rigid bracing accounted for only [18/77(23%)] of the confirmed scoliosis group showing 41 children not wearing anything at all in the curve developing and confirmed group. Only 8 of 18 children wearing rigid brace continued usage. Eight children using DEFOs and undergoing regular x-ray checks, experienced reduced Cobb angles.

Discussion
Early intervention of children at risk of scoliosis is now understood. Most of the children with worsening curves are wheelchair dependant (Gross Motor Functional classification scale (GMFCS) level 4/5, with most progressing to surgical intervention(Graham, 2013). The use of DEFO scoliosis suits offers an alternative long term management strategy, as the child is taught different postural position, which can continue to adulthood. Increased proprioception through compressive and translationary input from the scoliosis suit improve the client's body self-image resulting in reduced spinal deterioration and surgery in GMFCS Level 4 (Matthews, 2016).

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C8: The Winter Paralympics: South Korea 2018

Kendra Betz, PT

Learning objectives:

Following this session, participants will be able to:

1. List six events that will be competed at the 2018 Winter Paralympic Games in Pyeong Chang, South Korea.
2. Demonstrate an understanding of the Paralympic athletes and the types of disabilities represented at each event.
3. Describe three assistive technologies utilized in Winter Paralympic events.

Session description:

The opportunity to experience the Winter Paralympics is a once in a lifetime opportunity for most. The session will provide a brief history of the Paralympic Games and highlight the six Winter Paralympic sports: Alpine Skiing, Nordic Skiing, Biathlon, Sledge Hockey, Curling and Snowboarding. Athlete qualifications for each of the events will be reviewed including a discussion of the disability populations represented in each of the different sports including amputation, visual impairment, Spinal Cord Injury and Disease (SCI/D), Cerebral Palsy/mild Traumatic Brain Injury and "Les Autres," meaning "all others". The Paralympics is not to be confused with the Special Olympics which is reserved for athletes with intellectual/cognitive impairments. To facilitate audience understanding of fair competition in adaptive sports, an overview of the athlete classification system will be provided. Adaptive technologies utilized for winter sports participation will be highlighted with specific attention focused on mobility devices and custom seating interventions. To stimulate enthusiasm amongst those in the audience who will not have the opportunity to attend the Paralympics, opportunities for viewing the events and reviewing event results online will be shared. Throughout the presentation, key information and examples will be emphasized via the use of attention capturing photos and action-packed videos. This session is guaranteed to be captivating for all attending the Oceania Seating Symposium.

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C9: The changes in the role of a Community Seating and Wheelchair therapist following the Canterbury Quakes

Helen Lappin, OT

Learning objectives:

1. Describe the experience for both health professionals working locally in the community, and clients with disabilities within the Canterbury area following the two major earthquakes
2. Identify key areas for health professionals to consider to optimise function and well-being of client's both pre and post-earthquake
3. Discuss key changes in wheelchair and seating-related equipment provision for local clients based on therapist and technician observations

Session description:

As one of the few therapists involved directly in working with clients pre and post the Christchurch earthquakes of 2011/2012, and the more recent "Kaikoura" earthquakes in 2016, it became apparent that there are specific needs of the people with disabilities following these earthquakes. Given that New Zealand is located on fault lines within the "ring of fire", the chances of this occurring elsewhere within our country is high. By sharing the knowledge that was gained through this experience, I aim to prepare other therapists by detailing the challenges encountered locally following these catastrophic events

The Christchurch and North Canterbury earthquakes provided very different experiences for both staff and clients working on the ground. Both had their own challenges - the gravity of dealing with clients following an earthquake within your own community while trying to deal with the after effects yourself personally, compared with the difficulty of managing client needs remotely due to a significant limitation of communication and physical access to the area.

The images everyone saw repeatedly around the world on the News, did not accurately portray the daily challenges we struck as health professionals on the ground. Therapeutic input, regardless of location, begins with the initial emergency related needs, but should not ever underplay the prolonged effect on everyone within the area. Many Cantabrians are still dealing with housing repairs, job loss, and PTSD. Understandably these things are often more compounded for my client group when dealing with this on top of the general day to day challenge/s of living with a disability. The aim of this presentation is to stock other professional's "disaster kits" with valuable skills and knowledge from our experience and what we have learnt locally, including specific seating and wheelchair related changes.

D4: Adjusting back supports for positioning and function: The theory and practice

Rachel Brown, NZROT

Learning objectives:
Upon completion of the session participants will be able to:

1. Identify two components of back supports that impact on positioning and function.
2. Describe how to accommodate or correct a lordosis, kyphosis or rib distortion within a back support.
3. Compare and contrast two back supports that have multiple adjustments.

Session Description:
Wheelchair positioning is critical for function, comfort, prevention of pressure and fixed deformities.

The pelvis is considered the foundation of seating and a physical assessment starts with the pelvis (1). The trunk naturally follows the pelvis and back supports should be considered along with cushions for optimal positioning. For example: accommodating the curve of a kyphosis within an adjustable back support along with a cushion to accommodate posterior pelvic tilt for optimal pelvis, trunk and head position.

Over the past two years back supports with multiple adjustments have come onto the New Zealand market. These can be adjusted to meet specific positioning needs and offer an alternative to custom fabrication.

There is limited research on how back supports can be adjusted for positioning and function. The results from a literature review will be discussed in relation to recline (2, 3, 4), back support angle (5), height (1, 6, 7) and shape (8, 9, 10).

The International Classification of Function will be used to identify factors to consider when prescribing back supports.

During the presentation, participants will be shown how to adjust back supports for people with kyphosis, lordosis, scoliosis, rotation and rib distortion. Photographs of back supports that have been set up for specific positioning will be presented.

A brief overview of the back supports available within New Zealand will be given.

Back supports will be on display from a variety of suppliers giving participants a unique opportunity to experiment, compare and contrast.

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E5: The Wheelchair Skills Program (WSP): An evidence-based program for the assessment and training of wheelchair skills

Krista Best, PhD, PT

Learning objectives:
At the end of this workshop, participants will be able to:

1. Describe the development and underlying framework supporting the WSP.
2. Describe the rationale and evidence supporting wheelchair skills assessment and training.
3. Demonstrate ability to administer the Wheelchair Skills Test.
4. Explain the influence of wheelchair skills on participation.

Session description:
The wheelchair is an important form of assistive technology that can enable mobility and social participation for individuals with mobility limitations. However, acquisition of a wheelchair alone does not ensure safe or efficient use. The World Health Organization (WHO) recognizes the critical importance of assessment and training as part of optimal wheelchair service provision, a position well supported by evidence.

The Wheelchair Skills Program (WSP), established by Dr. Lee Kirby at Dalhousie University (Halifax, Canada), comprises assessment (Wheelchair Skills Test (WST)) and training (Wheelchair Skills Training Program (WSTP)) tools that may meet the wheelchair service provision needs for assessment and training. There is scientific evidence supporting the WST and WSTP for manual wheelchair, power wheelchair and scooter skills in device users, caregivers, and clinicians in institutional and community-based settings. The current version of the WSP (version 4.3.3) is a result of more than 20 years of development. The WSP material is freely accessible online at (www.wheelchairskillsprogram.ca).

In 2004, a representative of the WHO described the WSP as 'low tech, high-impact'. According the WHO's International Classification of Functioning Disability and Health, wheelchair skills are foundational 'activities' that are necessity for enabling social and community 'participation' among wheelchair users and their caregivers. Therefore, wheelchair skills training may enable users to overcome environmental barriers and thus permit wheelchair users to fulfill desired societal roles. Other potential benefits of wheelchair-skills training include fewer accidents and injuries, an improved sense of wellbeing (i.e., through self-esteem, self-efficacy, personal control, and empowerment), and reduced burden on caregivers.

The purpose of this workshop is to provide attendees with an overview of the development of the WSP and foundational training in the standardized administration of assessment (WST) and training (WSTP) tools.

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F3: Making a Stand

Ginny Paleg, PT, DScPT

Learning objectives:
At the conclusion of the session, participants will be able to:

1. Describe 3 research articles and their evidence for standing
2. Describe how many degrees of abduction is optimal to support hip health
3. Write 3 measurable achievable functional goals for a specific child in a stander

Session description:
Designing and implementing a supported-standing program requires in-depth knowledge of evidence-based outcomes, best practices and effective dosing. Knowledge of the types of standers and their available options is also needed. We begin with a systematic review and clinical practice guidelines for supported standing programs, using case stories. We will also review how standing can impact hip biomechanics, range of motion and bone mineral density. Understanding of best-practice guidelines, case stories and photographs of children using standers will help participants design and implement evidence-based standing programs with measurable goals and outcomes. Participants will leave understanding how standers can prevent and even improve hip contractures, hip subluxations and pathological fractures.

Content references:

1. Livingstone R and Paleg G. Measuring Outcomes for Children with Cerebral Palsy Who Use Gait Trainers. Technologies 2016, 4(3), 22; doi:10.3390/technologies4030022
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G0: The Benefits that International Standards have Brought Seating Professionals

Lloyd Walker, BE(Hons), MTheolSt (Bioethics), PhD(Bioeng), CPEng, GAICD, FIEAust

Barend ter Haar BSc,DPhil,

Session description:

What have international standards brought to seating specialists? In a nutshell, the means to be more objective and quantitative in the prescription of seating.

One standard has given us an objective means (ISO 16840-1) to measure both patients and their seating systems – a means where different parts of the body, for example, the degree of pelvic obliquity, can be quantified, and changes over time measured consistently. This standard separates static measures from ROM measures, and rationalises vocabulary, differentiating the terms for height from length, absolute from relative angles, etc.

There are standards which separate flammability testing for cushions and postural support devices from the earlier tests for furnishing, and which separate flame from 'match' tests, recognising the clinical needs for tissue integrity and positioning of the items being tested, rather than their being just a piece of furniture.

Other standards in the ISO 16840 series look at the physical characteristics of cushions which can be relevant to their efficacy in tissue protection, and for positioning. Measuring the effects of time and use on these characteristics are also covered, with particular reference to the conditions for which the cushion has been designed to be used e.g. sports vs normal use.

There's a standard giving guidance to the use of pressure mapping, and there's a standard in the pipeline to help understanding of the differences between pressure, shear and friction, and their respective effects on tissues.

The outcome of these practical documents is that it is clear that seating is not something that can be commoditised, despite the desires of procurement agencies: seating items are prescription items, and the needs of each individual requires to be assessed before an item is prescribed.

A9: Evaluating of Seating and Mobility Outcomes: Enhancing Evidence-Based Clinical Practice

Lisa K. Kenyon PT, DPT, PhD, PCS
William C. Miller PhD, OT

Learning objectives:
At the completion of this session, attendees will be able to:

1. Identify five elements of an effective single-subject research design.
2. Discuss three key points in the clinical application of single-subject research designs within seating and mobility practice.
3. Discuss the seven steps in designing a single-subject research study to evaluate specific seating and mobility outcomes within clinical practice.

Session description:
Given the ever increasing demands for evidence-based therapeutic outcomes, clinicians often grapple with how to effectively evaluate client-centred outcomes of seating and mobility interventions. This session will introduce the use of single-subject research designs (SSRDs) as a way to promote evidence-based evaluation of outcomes through a clinically oriented yet rigorous approach that allows clinicians to quantitatively evaluate and validate outcomes within their everyday practice. SSRDs utilize repeated measurements to study a client's individual responses to the systematic application and sometimes withdrawal of an intervention. By using the individual client as his/her own control, SSRDs not only accommodate specific client-related factors but allow these factors to become part of the outcome assessment process. Additionally, data analysis in SSRDs minimal statistical manipulation. Finally, SSRDs offer clinicians a viable and effective way to contribute to research within the confines of a busy clinical practice. Attendees are encouraged to bring outcome evaluation needs from their own practice to the session so that they can initiate the process of planning an SSRD to validate their seating and mobility practices.

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B10: Solution to Complex Drive Systems with the ALS Population

Pamela Glazener, OTR, ATP
Gina Strack

Learning objectives:

1. Discuss specific features and two situations when modified proportional controls are indicated for ALS patients based on the disease progression.
2. Discuss specific features and two situations when non-traditional drive controls are indicated for ALS patients based on the disease progression.
3. Discuss specific features and two situations when non-proportional controls are indicated for ALS patients based on the disease progression.

Session description:

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease, is a progressive neurodegenerative disease involving loss of both upper and lower motor neurons resulting in limb muscle weakness, muscle atrophy, speech and swallowing difficulties and respiratory compromise. The progression of symptoms can be rapid, average, or slow. Life expectancy from symptom onset can range widely but is typically referenced to be 3-5 years and there is no known cure for ALS at this time.

The management of patients with ALS has changed and improved dramatically in the past 20 years. Power mobility plays a large role in the current care for these patients. When choosing the appropriate power mobility device and drive controls needs to be carefully evaluated and chosen based on the patient's abilities, disabilities, rate of disease progression, and anticipated changes in the future.

Several ALS patients will be presented in this course - each presenting with varied symptoms, level of function, abilities and rate of progression. Specifics regarding complex drive systems for the different stages of ALS will be discussed.

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C10: Is Anybody Listening? Facilitating Communication during the Evaluation Process Toward a Functional Outcome

Lois Brown, MPT, ATP/SMS
Jean Minkel, ATP, PT

Learning objectives:

1. Participant will be able to state at least 2 verbal and non-verbal styles of communication paramount to communicating to a client during the evaluation process.
2. Participant will be able to identify at least two different learning styles and how to address them during the interview/evaluation process.
3. Participant will be able to name at least 3 pertinent questions specific to client "story" that will directly impact addressing their functional outcome.

Session description:

In our field of seating and mobility, there seems to be far more demand than there are experienced people to provide services. It is not unusual for one or more of the team members to lack experience. It becomes incumbent on the team members to ensure the necessary information is collected for the best possible outcome for the client. Part of that is ensuring that good communication is exchanged. Client "stories" enable us to understand as much as we can, the heart and soul of the person sitting in the evaluation. The way we should approach individuals and, when relevant, families and caregivers, has a lot to do with who they are: or, especially in the case of a severe new injury or illness, who they were. We need to move from "what's the matter", to "what matters to you". There are many things that get in the way of good communication:

- Electronic means of recording medical records has certainly had its advantages: but in many ways, it has made it more difficult to record that information and pay attention to the client.
- Team members have sometimes widely varying levels of experience, and have different information needs from the evaluation.

This course will address verbal and non-verbal communication on the part of the team as well as the client through the evaluation process. We will begin with a section on communication styles, what constitutes good verbal and non-verbal communication. Specific case studies (video and slide) will be presented in parts so that that the participants can address what they would ask in breakout groups. Rather than focusing on specific solutions, they will be asked to suggest questions to ask that could affect the outcome.

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D5: Peer Mentored Wheelchair Skills Training – putting it into practice

Caroline Simpkins, NZROT
Beth Knight, NZROT
Wheelchair skills mentors: Glenn McDonald, Maioro Barton, Brett Reid, Robyn Chester, Paul Hale, Aaron Curtis, Cecilia Fifield, Marcus Madill

Learning objectives:
Upon completing this session, participants will:

1. Experience a condensed wheelchair skills training session as a 'user' and as a 'spotter'.
2. Have an awareness of the benefits (celebrations) and pitfalls of wheelchair skills sessions from the perspective of the user, spotter, mentor and therapist involved.
3. Have a starting point of how to implement a wheelchair skills training program with a group or 1:1.

Session description:
This is a practical workshop for up to 20 participants based on the Wheelchair Skills Programme developed by the Wheelchair Research team at Dalhousie University, Canada. The focus will be on experiencing using both manual and power wheelchairs to navigate a condensed wheelchair skills course as both user and spotter (safety person). Participants will negotiate ramps, platforms, directional changes and manoeuver through narrow spaces in their wheelchairs, and learn practical tips and life applications from experienced wheelchair users who work at Seating To Go as peer mentors. Presenters will speak about their experiences of;

- Implementing wheelchair skills sessions with adults, primary school, and preschool age children.
- The highs, lows, benefits, celebrations and pitfalls of attending wheelchair skills from the perspective of the participant, mentor and spotter.
- Balancing safety and risk (how much cotton wool is actually required?)
- What is required to train responsible spotters and mentors when setting up a wheelchair skills session
- The role of the therapist within the group (not necessarily the one 'in control').
- How skills are adapted during the sessions to remain responsive to the needs of the participants.
- How we see Wheelchair Skills training evolving in the future within our service.

There will be opportunity for the workshop participants to ask questions.

Content references:

1. Worobey, L. A., Kirby, R. L., Heinemann, A. W., Krobot, E. A., Dyson-Hudson, T. A., Cowan, R.,Presperin Pederson, J., Shea, M., & Boninger, M. L. (2016). Effectiveness of Group Wheelchair Skills Training for People with Spinal Cord Injury: A Randomized Controlled Trial. *Archives of physical medicine and rehabilitation*.
2. Dalhousie University. (n.d.). *Wheelchair Skills Program.* Retrieved from http://www.wheelchairskillsprogram.ca
3. Smith, E. M., Sakakibara, B. M., & Miller, W. C. (2014). A review of factors influencing participation in social and community activities for wheelchair users. *Disability and Rehabilitation: Assistive Technology*, 1-14. doi: 10.3109/17483107.2014.989420
4. Axelson, P., Chesney, D., Minkel, J. & Perr, A. (1998). *Manual Wheelchair Training Guide.* Santa Cruz, USA: PAX Press.

E6: 24 Hour Postural Management: Who, When, How? From Low Tech to Custom

Meredith Miller, NZROT

Learning objectives:

1. Understand the concept of 24hour postural management
2. Understand potential client presentations lending to suitability of lying supports.
3. Utilise low tech solutions to provide simple postural support for at risk client groups
4. Identify 3 clinical presentations when custom solutions may be indicated vs. off-the-shelf products

Session description:

Therapists are frequently involved in assessing for mattresses and specialised beds to address pressure and pain related issues. It is important to consider not only what surfaces people are lying on, but also, how they are positioned, how often they move, and what is contributing to any persistent postures.

Seating To Go assess for and prescribe postural management equipment to clients with a wide range of complex physical disabilities. During this involvement we have become increasingly aware that many persistent postural problems in lying were evident prior to the person becoming a full time wheelchair user

This session will outline the importance of therapists to have an understanding of postural management theory and will include simple educational guidelines for managing 'at risk' postures.

Postural management can impact on the maintenance of existing function, management of posture into the future, and contribute to minimising secondary complications such as orthopedic deformity and pressure injury.

An educational handout will be provided that will assist therapists in helping their clients, and client's caregivers, to understand their bodies and self-manage positioning in bed without the need for funded equipment. With education, our clients are more empowered to seek assistance as changes occur vs. waiting until serious problems develop.

In addition to our role as seating specialists, we provide a 24hour postural management advisory role to occupational therapists and physiotherapists in the community. In this role we are often providing advice for lying supports for the same client's we have provided custom seating solutions for.

In the same way that these complex clients are unable to manage off the shelf seating; off the shelf lying supports are often unable to adequately accommodate or correct the complex postural presentations of these clients.

For this complex group of clients, upright postures often require a compromise between positioning & functional requirements. Night time positioning provides long periods of stretch/alignment and it is advantageous that this occur to relaxed muscles (during sleep). Further to this, client's sitting or standing tolerance may be compromised due to significant fixed deformity causing pain or pressure issues.

Case studies will be presented that demonstrate the need for complex custom solutions for clients needing lying supports that are 'outside of the box'. We will outline the assessment, prescription and trial process and explore the pro's and cons of this type of solution.

Content references:

1. Mayson T. Surveillance & Management of Hip Displacement & Dislocation in Children with Neuromotor Disorders Including Cerebral Palsy. (2011) www.childdevelopment.ca
2. Porter 2008. Is there a relationship between preferred posture & positioning in early life & the direction of subsequent asymmetrical postural deformity in non-ambulant people with cerebral palsy? *Child: care, health & development, 35, 5, 635 – 641*
3. Koop S. Scoliosis in cerebral palsy. Developmental Medicine & Child Neurology. 2009; 51 (Suppl 4): 92-98
4. Pope, P (2007) Night time postural support for People with Multiple Sclerosis. *http://www.mstrust.org.uk/professionals/information/wayahead*

5. Pope, P (2007). Severe and Complex Neurological Disability – Management of the Physical Condition. *Butterworth, Heinmann*
6. Robertson J et al, Postural care for people with intellectual disabilities and severely impaired motor function: A Scoping review. *J Appl Res Intellect Disabil 2016; 1-18*

E7: Hip Surveillance – A Local Perspective: How we roll in the Waikato

Karli Joll, PT

Learning objectives:

1. Participants will have an understanding of the purpose of hip surveillance.
2. Participants will know which children to refer for hip surveillance.
3. Participants will have an understanding of how hip surveillance works at a local level.

Session description:

Hip Surveillance is the process of identifying and monitoring the critical early signs of progressive hip displacement in children with cerebral palsy or "cerebral palsy-like" conditions. Early identification is a crucial step in the strategy for prevention of hip displacement and ongoing hip disease. Australian population studies have identified the rate of hip displacement to be around 30% in children with CP, and other studies have identified even higher rates.

This paper presentation will outline what Hip Surveillance is and which children should be included in a hip surveillance programme. It will describe how surveillance works according to the Australasian Hip Surveillance Guidelines which were developed in 2010 and reviewed in 2014. The importance of a child's Gross Motor Function Classification System (GMFCS) level will be outlined, as the rate of hip displacement is not necessarily related to the movement disorder but is related directly to the child's level of gross motor function.

The presentation will further explore how this is put into practice at a local level, in particular how the surveillance team attempts to include the child's wider therapy team in information sharing and decision making. Examples will be given about how this may impact decisions around seating and postural management, and other aspects of a child's care. Further local perspectives will be shared including how hip surveillance fits in with the child's orthopaedic care and ongoing follow up. Finally areas that we have identified for improvement will be discussed, including possible ideas from the audience.

Content references:

1. Wynter M et al (2014) Australian Hip Surveillance Guidelines for Children with Cerebral Palsy. 2014
2. Kentish M et al (2011) Five-year outcome of state-wide surveillance of children and adolescents with cerebral palsy. *J Pediatr Rehabil Med* 4(3): 201-217
3. Palisano RJ et al (2008) Content validity of the expanded and revised Gross Motor Function Classification System. *Dev Med Child Neurol* 50(10): 744-750
4. Wynter M et al (2011) The Consensus Statement on Hip Surveillance for Children with Cerebral Palsy: Australian Standards of Care. *J Pediatr Rehabil Med* 4(3): 183-195

E8: Re-scheduled to A 11

F4: The Development of a Competency Based Framework for Wheeled Mobility and Postural Management Assessors in New Zealand

Debbie Wilson, NZROT

Learning objectives:
Upon completing this session, participants will:

1. Be familiar with the background to the competency based framework used by the Ministry of Health in New Zealand for Wheeled Mobility and Postural Management assessors.
2. Consider how clinical reasoning can be incorporated into assessment forms used by wheelchair services for the purposes of providing mentoring for less experienced therapists.
3. Be familiar with the use of a case study submission for therapists applying for the Level 2 (Complex) credential.

Session description:
In August 2010, the New Zealand Ministry of Health, Disability Support Services, introduced a competency based credentialing framework for therapists assessing and prescribing equipment for people with wheeled mobility and postural management needs. This came from recommendations made in the Disability Resource Centre (DRC) report commissioned by the Ministry of Health (2005) *Environmental Support Services Review and Framework Plan. Summary Report: August 2005* which identified a number of opportunities to improve the way in which services are delivered. Specific findings which are relevant to this presentation included:

- The (then) current Accredited Assessors Scheme lacked competency based standards
- Competence of assessors was variable
- Assessor training was inconsistent and lacked structure
- The professional standards monitoring role was not well implemented

This session will outline the background and pathway from the DRC report to the implementation, in 2010, of the Competency Framework for Wheeled Mobility and Postural Management assessors, the rationale for refinements of the case study requirements for therapists applying for the Level 2 (Complex) credential, and key learnings along the way from the presenter's perspective.

Content references:

1. Ministry of Health, New Zealand (2016) *Competency Framework: Wheeled Mobility & Postural Management.* Retrieved from https://www.disabilityfunding.co.nz/__data/assets/pdf_file/0006/54681/Competency-Framework-Wheeled-Mobility-Postural-Management.pdf
2. Disability Resource Centre. (2005) *Environmental Support Services Review and Framework Plan. Summary Report: August 2005.* Auckland, New Zealand: Disability Resource Centre
3. RESNA (2009). Seating & Mobility Specialist Certification Exam Readiness Tool. Retrieved from http://www.resna.org/sites/default/files/dotAsset/SMS_Exam_Readiness_Tool_FINAL.pdf

F5: Pathway to Success! Qualitative Experiences of Preceptors and Preceptees following the Wheeled Mobility and Postural Management (WMPM) Credentialing Pathway

Ana Pacheco, OT

Learning objectives:

1. To provide a brief outline of the WMPM Level 1 and 2 credentialing pathway
2. To provide an insight into preceptor and preceptees experiences of working through the credentialing pathway
3. To promote the credentialing pathway as a structured learning programme for therapists working in wheeled mobility and postural management.

Session Description:

New Zealand registered occupational therapists and physiotherapists are required to hold Wheeled Mobility and Postural Management accreditation to allow them to access Ministry of Health funding for equipment. It is also recognised that the accreditation pathway supports clinicians to gain professional competence in wheelchair and seating. This presentation will include an overview of the wheeled mobility and postural management credentialing pathway (Levels 1 & 2), and how this fits within the New Zealand Health System. The presentation will further focus on the wider experiences of preceptors and preceptees working through the credentialing pathway. Common themes and experiences will be captured using two different semi-structured questionnaires; one for the preceptors and one for preceptees. Thematic analysis will then be used to analyse both sets of data. Conclusions will be drawn to encapsulate the unique programme of teaching and learning which is undertaken in this complex field. Recommendations for the future will be made to encourage other countries to embrace the WMPM credentialing pathway as a way of standardising wheelchair prescription and practice, and to encourage therapists to gain a recognised qualification in pursuit of a career in wheelchair and seating.

Content References:

1. Cohen, L., Greer, N,. Berliner, E. And Sprigle, S (2013) Mobility RERC State of the Science Conference: considerations for developing an evidence base for wheeled mobility and seating service delivery. *Disability and Rehabilitation: Assistive Technology*, 8 (6), 462-471.
2. Dolan, M.J., (2013) Clinical standards for National Health Service wheelchair and seating services in Scotland. *Disability and Rehabilitation: Assistive Technology*, 8 (5), 363-372.
3. Du Toit, S.H.J., Wilkinson, A. And Adam, K. (2010) Role of research in occupational therapy clinical practice: Applying action learning and action research in pursuit of evidence-based practice. *Australian Occupational Therapy Journal* , 57, 318–330.
4. Earle, V., Myrick, F. and Yonge, O. (2011) Preceptorship in the intergenerational context: An integrative review of the literature. *Nurse Education Today*, Nurse Education Today, 31, 82–87.
5. Isaacson, M. (2011) Best Practices by Occupational and Physical Therapists Performing Seating and Mobility Evaluations. *Assistive Technology*, 23 (1), 13-21.
6. O'Connor, A., Mairead, C. and McKay, E.A. (2012) Revisiting 1:1 and 2:1 clinical placement models: Student and clinical educator perspectives. *Australian Occupational Therapy Journal,* 59, 276–283.
7. Whitcombe-Shingler, M. (2006) The history of the wheelchair assessment service in New Zealand: From client centred to client directed. *New Zealand Journal of Occupational Therapy*, 53 (2), 27-31

F6: A Sustainable Spinal Seating Professional Development Program in NSW, Australia - The Outcomes and Challenges

Charisse Turnbull, OT

Learning objectives:

1. To describe the need of professional development in prescribing seating and wheeled mobility for clients with a spinal cord injury in NSW
2. To demonstrate the newly revised 2017 Spinal Seating Education Website which is funded by the Agency for Clinical Innovation (ACI)
3. To discuss the outcomes and future challenges of the professional development program

Session description

In NSW, seating and wheeled mobility are predominantly prescribed through the client's hospital ward therapist or community local health services. There is no competency pathway for clinicians to be an accredited prescriber. Many clinicians have limited knowledge and experience in prescribing seating and wheeled mobility equipment for clients with a spinal cord injury. The short and long term consequences of an incorrectly prescribed seating can be profound, e.g. pressure injuries, postural deformities and pain; as are the safety issues associated with wheelchair use.

This presentation hopes to raise awareness of the free and newly revised 2017 Spinal Seating Education Website funded by the ACI State Spinal Cord Injury Service. As a component of the Spinal Seating Professional Development Program developed in 2008, the seating education modules aim to:

- Provide accessible clinical knowledge for seating and wheeled mobility assessment and intervention to clinicians
- Encourage clinicians to adopt a structured, client-focused and goal-orientated approach to clinical practice through a process of systematic assessment and documentation of seating outcomes
- Improve clinical reasoning to select appropriate seating and wheeled mobility solutions using key seating intervention principles
- Prepare workshop participants to maximise hands-on learning opportunities during the seating workshops which were provided through Assistive Technology and Seating

The Spinal Seating Education Website features:

- 10 learning modules
- Downloads of sample assessment forms and prompt sheets
- 5 teaching videos
- Downloads of handy hints, selected useful resource and practical ideas
- Self-assessment quizzes or case studies with answers

(A walk through of the live website demonstration to navigate the Spinal Seating Education Website modules is part of the paper presentation. https://www.aci.health.nsw.gov.au/networks/spinal-cord-injury/spinal-seating)

The paper will conclude with the evaluation of the education website and seating workshops, and discussion of future challenges of the professional development program in relation to the National Disability Insurance Scheme.

Content references:

1. Canadian Best Practice Guidelines for the Prevention and Management of Pressure Injuries in People with Spinal Cord Injury- A Resource Handbook for Clinicians; Houghton PE, Campbell KE and CPG Panel (2013). ISBN 978-0-9919094-0-7 http://onf.org/system/attachments/168/original/Pressure_Ulcers_Best_Practice_Guideline_Final_web4.pdf#page=280
2. Guidelines for the prescription of a seated wheelchair or mobility scooter for people with a traumatic brain injury or spinal cord injury; EnableNSW and Lifetime Care & Support

Authority Editor, 2011, Sydney. https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0003/167286/Guidelines-on-Wheelchair-Prescription.pdf#page=46 https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0003/167286/Guidelines-on-Wheelchair-Prescription.pdf#page=26

3. RESNA Position on the Application of Ultralight Manual Wheelchairs; Rehabilitation Engineering & Assistive Technology Society of North America. Approved by RESNA Board of Directors March 27, 2012 http://www.rstce.pitt.edu/RSTCE_Resources/RSTCE_Res_Doc/RESNAPosUltralightManWheelchairs.pdf#page=4

G1: Standardized Angular Measures for Seating and Posture: A Practicum

Kelly Waugh, PT, MAPT, ATP

Learning objectives:

1. Participants will be able to describe the difference between absolute and relative angles of body segments and seating support surfaces.
2. Participants will be able to explain the difference between the thigh to trunk angle and the thigh to pelvic angle.
3. Participants will be able to demonstrate measurement procedures for 4 relative body segment angles, 5 relative seating support surface angles and 9 absolute body segment angles.

Session description:

The purpose of the workshop is to promote the adoption and use of standardized terminology and measures for the quantification of seated posture, and for the documentation and prescription of angular body and seating dimensions during assessment. In this workshop, participants will learn how to take angular measurements of a seated person's body and their seating support surfaces, based on "A Clinical Application Guide to Standardized Wheelchair Seating Measures of the Body and Seating Support Surfaces." This guide, developed by the instructor through a grant from the Paralyzed Veteran's of America Education Foundation, was written to facilitate adoption of the principles and measures contained in *ISO 16840-1:2006 Wheelchair seating – Part 1: Vocabulary, reference axis convention and measures for body segments, posture and postural support surfaces*. Participants will be required to download the clinical application guide, and read chapter one in preparation for this hands on workshop. Only a brief review of the foundational principles contained in this chapter will be provided at the beginning of the workshop, to allow more time for hands on practice in measurement. Selected angular measures from the guide will be explained in detail and measurement methodologies will be demonstrated. Participants will be divided into groups and will practice measuring the selected angles following each demonstration. Selected measures include relative body segment angles (thigh to trunk, thigh to pelvis, thigh to lower leg, lower leg to foot); relative seating support surface angles (seat to back support, seat to lower leg support, lower leg support to foot support); and absolute body segment angles (frontal pelvic, frontal sternal, frontal trunk, sagittal trunk, sagittal pelvic, sagittal thigh, transverse trunk, transverse pelvic, transverse thigh). The clinical application of these measures will be emphasized throughout the course.

Content references:

1. Waugh, K., and Crane, B. (2013). A Clinical Application Guide to Standardized Wheelchair Seating Measures of the Body and Seating Support Surfaces *(Rev. Ed).* Denver, CO: University of Colorado Denver (363 pgs). Available from: www.assistivetechnologypartners.org
2. ISO 7176-26 (2007): Wheelchairs, Part 26: Vocabulary. International Organisation for Standardization, TC-173, SC-1, WG-11.
3. Waugh, K. (2013). Glossary of Wheelchair Terms and Definitions, Version 1.0, December 2013. Denver, CO: University of Colorado Denver (120 pgs). Available from: www.assistivetechnologypartners.org

A10: Paediatric 24-hr Postural Management Service Development - The Waitemata District Health Board Journey

Jane Hamer, PT
Roz Cranswick, VNT
Kelly Curreen, OT

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

1. Describe the quality improvement programme for paediatric 24-hr postural management within Waitemata DHB
2. Use the information to consider similar Guidelines within their area of practice
3. Identify key practice points for training of clinicians

Session description:
An international consensus statement recommends 24-hr postural management programmes (24-hr PMP) for children with complex disabilities to prevent or minimise postural deformities (1).

Whilst therapists receive mandatory training, and must be credentialed (WMPM1 and Lying) to prescribe this specialist equipment, there is variance within our practice (WDHB), primarily due to unclear protocols; range of clinical experience and confidence amongst therapists.

Our key goals have been to achieve a consistent and quality service in the provision of postural management to all clients, and that consideration of sleep function is integral to the assessment of every child within our service. We have taken a focused approach to on-going training emphasising the importance of positioning for function across all areas of life and considering all affected body systems (cardiorespiratory, gastrointestinal, musculoskeletal etc.). A clinical guideline and pathway development was commenced, with support from the CWF Leadership Team.

This session will describe findings from staff surveys, an overview of initial WDHB Training, Literature Reviews, the influence of SUDI guidelines, and development of the WDHB Paediatric 24-hr Postural Management Pathway – an interactive tool designed to assist the MDT in providing consistent care for these children. It will also demonstrate our wide collaborative approach with family, medical, nursing and therapy teams.

Key Practice Points: Development of a clinical guideline/ pathway tool for paediatric 24-hr Postural Management service assists MDT collaboration, and clinician skill and confidence when providing care to children with complex neurodevelopmental disabilities within WDHB.
Regular and on-going training and collaborative work practices aim to ensure consistency and quality of care for these children and families.
Further work is needed in collaborative development of protocols for safe management of alternative sleep positions. Further research is needed - to determine those children for whom this approach is not successful; what strategies may improve adherence.

Content references:

1. Gericke, T. (2006). Postural management for children with cerebral palsy: consensus statement. Developmental Medicine and Child Neurology, 48, 244. doi:10.1017/S0012162206000685
2. Blake, S., Logan, S., Humphreys, G., Mathews, J., Rogers, M., Thompson-Coon, J., . . . Morris, C. (2015). Sleep positioning systems for children with cerebral palsy (Review). Cochrane Database of Systematic Reviews, 11.
3. Castle, D., Stubbs, B., Clayton, S., & Soundy, A. (2014). A 24-hour postural care service: Views, understanding and training needs of referring multidisciplinary staff. International Journal of Therapy and Rehabilitation, 21(3), 132-139.
4. Humphreys, G., & Poutney, T. (2006). The development and implementation of an integrated care pathway for 24-hour postural management: a study of the views of staff and carers. Physiotherapy, 92(4), 233-239.

A11: Cultural aspects of Sleep – Implications for 24-hr Postural Management Programmes

Jane Hamer, PT

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

1. Describe sleep in children with neurodevelopmental disabilities
2. Identify 4 cultural aspects of sleep
3. Identify clinical considerations of sleep within the context of 24-hr postural management programmes

Session description:
Introduction: An international consensus statement recommends 24-hr postural management programmes (24-hr PMP) for children with complex disabilities to prevent or minimise postural deformities (1). One aspect of 24hr PMP involves positioning equipment for lying, sleeping and night-time use. Assessment of the families' normal night-time routine is important and therapists must consider cultural aspects of sleep when exploring families' normal practises. Use of a standardised "Sleep questionnaire" may assist clinicians in better understanding individual family situations when assessing for and prescribing 24-hr PMP. In preparation for clinical guideline development, a literature review was completed to find evidence in relation to cultural aspects of, and approaches to sleep, within the context of children with complex neurodevelopmental disabilities. To then use this information in developing a paediatric Integrated Care Pathway for Postural Management Programmes within WDHB.

Method: Two literature searches were conducted in 2015 using the keywords *disabled child, sleep questionnaires,* and *cultural approaches/ competence/ diversity/values/ safety/ bias.* Databases searched included EBSCOhost and CINAHL using specific search criteria. Articles were appraised using the Critical Appraisal Skills Programme.

Results: Following abstract and full text review 17 articles were selected. No articles addressing all three search terms were sourced. Evidence included six literature reviews, two prospective studies, two cross-sectional surveys, six cohort studies, and one case control study. There was limited high-level evidence sourced in the literature. Findings of the Literature Review will be presented and use of Sleep Questionnaires will be discussed.

Key Practice Points: Clinicians need to consider cultural aspects of sleep when assessing for and implementing 24hr PMP and equipment. Routine use of standardised sleep questionnaires as part of future 24hr PMP Guidelines would assist with this. Use of 'The Chailey Sleep Questionnaire', and Cultural awareness training for all clinicians (through EMS credentialing and service-led training) is recommended.

Content references:

1. Gericke, T. (2006). Postural management for children with cerebral palsy: consensus statement. Developmental Medicine and Child Neurology, 48, 244. doi:10.1017/S0012162206000685
2. Angriman, M., Caravale, B., Novelli., Ferri, F., & Bruni, O., Sleep in children with neurodevelopmental disabilities. Neuropaediatrics. Doi: 10.1055/s-0035-1550151
3. Gough, M. (2009). Continuous postural management and the prevention of deformity in children with cerebral palsy: an appraisal. Developmental Medicine and Child Neurology, 51(2), 105-110. doi:10.1111/j.1469-8749.2008.03160.
4. Gianotti, F., & Cortesi, F. (2009). Family and cultural influences on sleep development. Child Adolsecent Psychiatric Clinical North America, 18, 849-861. DOI: 10.1016/j.chc.2009.04.003
5. Jenni, O., & Werner, H. (2011). Cultural issues in children's sleep: A model for clinical practice. Pediatric Clinics of North America., 58: 755-763. DOI: 10.1016/j.pcl.2011.03.008
6. Jenni, O., O'Connor, B. (2005). Childrens sleep: An interplay between culture and biology. Pediatrics 115 (1): 204-216. DOI: 10.1542/peds.2004-0815B

7. Mindell, J., Sadeh, A., Kwon, R., & Goh, D. (2013). Cross-cultural differences in the sleep of preschool children. Sleep Medicine 14, 1283-1289
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9. Sagheri, D., Wiater, A., Steffen, P., Owens, J. (2010). Applying principles of good practice for translation and cross-cultural adaptation of sleep-screening instruments in children. Behavioural sleep Medicine. 8: 151-156. DOI: 10.1080/15402002.2010.487460

B11: Towards Sustainable Wheelchair Provision on the Island of Ireland: Understanding Place, People, Pace and Policy

Dr Rosemary Joan Gowran, PhD, OT
Jackie Casey, OT
Jean Daly Lynn, OT

Learning objectives:

1. To understand contextual issues towards building sustainable wheelchair provision systems.
2. To discuss historical and cultural nuances which have impacted on service development.
3. To consider the importance of mutual understanding among stakeholders when building sustainable wheelchair provision communities, focusing on engaging and empowering wheelchair service users, personnel and policy makers to work collaboratively within the system.
4. To engage the audience in discussion and debate about wheelchair provision within their own context.

Session description:

Introduction: Wheelchair and seating provision services internationally face enormous challenges to provide appropriate wheelchairs for the 70 million people who need them. The complexity of service delivery systems is evident throughout the literature, with users, providers, educators and researchers reporting on different aspects of the process from wheelchair design, assessment and delivery, education and training to outcome measures. Particularly concerning, is that wheelchair users are often left with limited choice and control within the wheelchair provision system, leaving people vulnerable and powerless, undoubtedly impacting on their essential freedoms. Despite much effort globally, evidence suggests a lack of uniformity across the board with poor infrastructures to support the wheelchair provision process to adequately meet people's personal mobility, as a basic human right.

Workshop: This workshop will present the concept of applying a sustainable community of practice model to understand the value placed on wheelchair services within context, the vital meaning of wheelchairs services to the people or key stakeholders involved and the viability of the system to ensure it flows well and responds appropriately. Wheelchair provision on the island of Ireland, which is made up of two countries the Republic of Ireland (Ireland) and Northern Ireland (NI), provides a historical overview of wheelchair services in two differing jurisdictions, social, economic and political. Utilizing the SCOP model provides a stakeholder-centred platform, enabling active participation of wheelchair service users and promotes collaboration. Given this, solutions are proposed to work toward an all-Ireland strategy through collective action and ownership to build a sustainable wheelchair and seating provision system as a community of practice.

Conclusion: Workshop participants will be given the opportunity to apply the sustainable community of practice model within their own contexts, compare practices and find solutions to provide appropriate wheelchair and seating assistive technology meeting this primary need now and in the future.

Content references:

1. Gowran RJ, Casey J, Daly J. 'Utilising a Sustainable Community of Practice Model to build best practice in Wheelchair provision on the Island of Ireland' in Pollard N, Sakellariou D. Occupational Therapy Without Borders: integrating justice with practice, 2nd Ed. Elsevier; 2017
2. Gowran R J, McKay EA, O'Regan B. Sustainable solutions for wheelchair and seating assistive technology provision: Presenting a cosmopolitan narrative with rich pictures. Technology and Disability 2014; 26(2-3): 137-152. doi:10.3233/TAD-140408
3. World Health Organisation (WHO) Guidelines for the Provision of Manual Wheelchairs in Less Resourced Settings. Geneva: WHO; 2008

C11: Can we improve comfort, posture and functional outcomes in a 90 minute clinic environment?

Henry Bertulfo, OT
Liz Turnbull, OT

Learning objectives:
Following this session attendees will be able to:

1. Understand the benefit of regular review for clients with complex wheelchair and seating needs
2. Understand the assessment and intervention process used in Review Clinic at Mobility Solutions
3. Understand the clinical outcomes achievable in the clinic context

Session description:
Mobility Solutions is a wheelchair and seating service that works with people of all ages who have complex wheelchair and seating needs. We have a contract with the Ministry of Health and in addition to a referral based intervention to meet new needs; we are contractually required to review known service users on a regular basis.

During this session we will share how our Review delivery model has evolved over the past 10 years. We will outline the pre-assessment phone review process, the concise and problem solving focussed assessment phase and present case studies to demonstrate intervention that can be carried out within a 90 minute clinic.

Feedback from clients who have attended clinic will be reviewed and discussed.

Our current model of service delivery will be compared and critiqued against international practice.

The case studies presented will cover three clinical scenarios and will include an instructional aspect related to seating modification

1. "Off the shelf" commercially available seating individualised to a client
2. Customised foam carved seating
3. Wheelchair modifications

Content references:

1. Kenny, S., & Gowran, R. J. (2014). Outcome measures for wheelchair and seating provision: a critical appraisal. *The British Journal of Occupational Therapy*, *77*(2), 67-77.
2. White, E., & Lemmer, B. (1998). Effectiveness in wheelchair service provision. *British journal of occupational Therapy*, *61*(7), 301-305.
3. Coggrave, M. J., & Rose, L. S. (2003). A specialist seating assessment clinic: changing pressure relief practice. *Spinal Cord*, *41*(12), 692-695.
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D6: How do we measure participation in daily life for children and youth needing power mobility?

Debbie Field, PhD
William C. Miller, PhD, FCAOT
Tal Jarus, PhD
Stephen E. Ryan, PhD, PEng

Learning objectives:
By the end of the session participants will be able to

1. Describe two instances when using participation measures may be helpful in clinical practice;
2. Describe three elements of participation important to measure for children with power mobility needs;
3. Contrast two paediatric participation measures when considering use with children who have mobility limitations.

Session description
Participation in meaningful life experiences such as being a family member, playing with friends, learning at school, and engaging in community events benefit all children. Yet, participation in daily life is often restricted for those with mobility limitations. Understanding children's participation is important for improving seating and mobility interventions, but little is known about how best to measure participation for children who need power mobility.

The POWER (Paediatric Participation Outcomes for Wheelchair Evaluation in Rehabilitation) Mobility study sought to answer the following questions: 'What paediatric participation measures are available?' 'What evidence supports the use of these measures with children with significant mobility limitations?' and 'What does participation in daily life look like for children with power mobility needs?'

Using a combination of didactic presentation, case studies, videos, small and large group discussion, workshop participants will have opportunity to reflect on benefits and challenges of measuring children's participation in their practice; compare their priorities to top-ranked elements that reached consensus in an online modified Delphi survey describing the 'who, what, where, when and how' of measuring participation for children using power mobility; and contrast three participation measures including the Participation and Environment Measure for Children and Youth (evaluating parents' perspective of participation in home, school and community); Children's Assessment of Participation and Enjoyment (evaluating children's perspective in out-of-school leisure pursuits); and the individualized Wheelchair Outcome Measure for Young People (evaluating participation in meaningful situations deemed important by children and parents). A systematic review of paediatric participation measures and Delphi panelists' (74 parents, therapists and researchers) suitability ratings informed the selection of these measures.

Clinical Significance: Similarities and differences exist between how measures evaluate children's participation in daily life. Understanding which elements of children's participation to measure will help guide appropriate selection of measures and power mobility interventions.

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E9: Thought Controlled Access to Independent Control of a Mobility Base – From Fantasy to Reality

Tracee-lee Maginnity, OT
Rob Wong
Peter Ford

Learning objectives:

1. By the end of the session participants will be able to identify at least 3 barriers to mechanical switch access
2. Following this session participants will be able to identify clients who have potential to use neural switching
3. Participants will gain an understanding of how EMG can be used to operate a switch

Session description:
Over the past few years technological advancements have brought the concept of thought control of assistive technology devices into reality via neural switching. Single switch scanning and developments in eye gaze technology has been a viable way to provide independent mobility for individuals with limited active muscle control but still presents significant limitations and occlusions

This session will look at some of the limitations and considerations required for switch activation in relation to accessing assistive technology including mobility and introduce participants to the concept of neural switching.

What is neural switching and how it works will be explained and demonstrated. We will look at what devices can currently communicate with neural switching and how this technology can be integrated into enabling independent control of powered mobility bases in the future.

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F7: Immerse Yourself – The Science of Skin Protection

Judy Rowley OT

Learning objectives:

1. Describe the difference between flexible and fixed seated postural deviations and explain the intervention for accommodation or correction as indicated.
2. Describe the concepts of immersion, envelopment and off-loading in context of seat cushion design and the applications of each.
3. List 2 or more intrinsic factors and 2 or more extrinsic variables which can compromise skin integrity for seated individuals.

Session description:

Appropriate technology application can greatly enhance the functional outcomes for clients who utilize seating and wheeled mobility systems. Once the mat assessment is completed, it is necessary to interpret that data and convert it to equipment selection & configuration. Common seated postures will be presented and the principles of accommodation or reduction of orthopedic changes will be presented. Considerations for the selection of seat cushions and back supports with a goal of maximizing consumer function will be reviewed using a clinical approach. This course follows the guidelines published in the "RESNA Wheelchair Service Provision Guide."

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Oceania Seating Symposium 2017

WEDNESDAY 22ND NOVEMBER

Plenary: New Wheelchair Technology – Evaluating its effectiveness

Bonita Sawatzky, PhD
Catherine Ellens, BScOT

Session description:

Although the manual wheelchair has not looked like it has changed in terms of its overall look in over 50 years, we are continually getting newer designs and new add-ons which hopefully make using a wheelchair for daily tasks easier and more efficient. The innovations can be intriguing and exciting to provide to clients, but how do you evaluate whether they really work? What should clinicians do when new technology comes around? Just try it with their client? Find evidence? What are ways we can look at evaluating effectiveness of new designs in manual wheelchairs?

In this presentation, a clinician and a researcher will present their perspectives on how they evaluate new technologies. What sources of information, tools and clinical questions do they use to guide their approaches? How can these approaches be integrated? We will also discuss the challenges around evaluating new technologies as they are changing quickly.

Speaker biography:

Bonita Sawatzky
Researcher and medical educator, Bonita (Bonnie) Sawatzky is passionate about all things wheeled and making research practical. An Associate Professor in Orthopaedics at the University of British Columbia and a Principal Investigator at ICORD (International Collaboration on Repair Discoveries), she focuses on the measurable physiological and biomechanical effects of wheelchair propulsion and explores new innovations which may help to decrease pain, fatigue and long-term overuse injuries in adults and children. She also helps to bring together therapists, engineers, students and physicians from around the world to present ideas, innovations and research to improve mobility at the Vancouver International Seating Symposium.

Catherine Ellens

Catherine is an occupational therapist who has worked at Sunny Hill Health Centre for Children on the Positioning and Mobility Team since 1997 and has been the team leader since 2014. Catherine graduated from the University of British Columbia with her B.Sc in OT in 1997 and is currently Clinical Faculty at the University. She has presented at the ISS in Canada and the US. Catherine has coordinated and taught many student placements and clinics and has won awards as a result of her work. Catherine has been a member of the ISS Vancouver committee since 2008.

Plenary: Skin and Shoulder Care – Lived, Observed and Applied Principles

Malcolm Turnbull

Session description:
In 1980 Mal's life changed for ever as a result of a motor vehicle accident. At the age of 19 the reality of pressure injury as a spinal cord injured person came into sharp focus. 37 years later skin integrity is even more of a priority as the wear and tear on shoulders impacts on functional ability. This talk is about how the research and science that continues to evolve regards pressure and shoulder injuries has been applied for the long haul of life with a spinal cord injury. It will draw on lived experiences, observed experiences and the vital link between research, best practise and the application in real life.

Speaker biography:
In January 1980, at age 19, Mal Turnbull was a passenger in a motor vehicle accident which resulted in a complete spinal cord injury at T5 level. The experience of the acute post injury care, the subsequent rehab period and exposure to the real-life impact of pressure injury left a deep and abiding impact which resulted in some habits that are still a part of his daily routine. Since 1992 Mal has been involved in the Assistive Technology industry with a focus on equipment supply that deals with prevention of pressure injury and shoulder preservation. Having access to a worldwide network of therapists, clinicians, researchers, manufacturers and end-users, Mal has an exceptional understanding of evidence based best practice. Coupled with 36 years of lived experience of managing pressure injury risk and shoulder injury prevention, Mal has an all rounded approach to maintaining an active lifestyle.

A12: Powered Mobility Innovations: Current Evidence and Emerging Technologies

Magdalena Love, OTR, ATP

Learning objectives:

1. Differentiate two benefits and potential drawbacks of five different power seat functions.
2. Identify two functional benefits of integrating anterior tilt and/or standing into a client's wheelchair base.
3. Verbalise three ways that integrating smart technology connected to the wheelchair can positively impact participation and activity outcomes for the wheelchair user.

Session description:

Power seating is often prescribed to manage the risk of pressure injuries as well as improve a client's independence. Through a clinical applications approach, this course will review various client examples and applications of seating/mobility technology. Included in each example will be a review of clinical needs and the rationale for various seating and mobility solutions as they relate to funding and best practice. Utilizing parameters for best practice and the ICF model, participants will also learn how to better determine the most appropriate power wheelchair and seating system for client success and function while mitigating complications. This presentation will also discuss emerging technology and how clinically connecting the wheelchair with emerging technology and applications provides new opportunities to facilitate client health, function, and compliance. Lastly, a call to arms will be made to clinician researchers – with an example of how a partnership with a technology company can open new doors on what research outcomes can be explored.

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A13: Using Experience-Based Design Principles to Enhance Service User Feedback

Joanne Blaiklock, NZROT

Learning objectives:

1. Identify a way to capture client experiences of a service
2. Describe how client experiences can inform and guide service development activities

Session description:

Introduction / Rationale: Services often seek feedback from clients using satisfaction surveys; however satisfaction ratings do not provide rich data to inform practice innovations. Seeking data which promotes understanding of how clients experience the service received and the provision of equipment solutions is beneficial to enhancing practitioner insights and contribute to service development.

Methods: The Mobility Solutions Service User Feedback (SUF) tool was redesigned using Experience-Based Design (EBD) principles to gain specific information about clients' lived experiences at different stages of service provision, rather than simply gaining a satisfaction rating alone. Discharged clients were routinely sent the SUF with a self-addressed envelope over a seven month period; the approximate return rate being a third of all discharges in that period. Data was thematically analyzed and a report written to inform staff, management and the Ministry of Health, and used to implement change where required.

Results: Rich data was gained through implementation of the EBD redesigned SUF. Client experiences were most frequently described as 'happy and content' through all stages of service provision. Feelings of 'frustration', 'confusion', 'worry' and 'upset' were more apparent during 'waiting for assessment', 'equipment trial' and 'decision making' stages. The top three reported differences from equipment solutions included 'improved independence', 'improved comfort' and 'improved postural support'. Therapist qualities valued by clients related to staff being 'knowledgeable', 'professional' and 'helpful'. Such data would not have been revealed in the standard satisfaction rating survey.

Conclusion/ Practice Implications: Seeking client feedback should extend beyond capturing satisfaction ratings to gaining in-depth data that supports better understanding of what it is like for clients during various stages of service provision. This in turn will support quality initiatives to better serve clients' journey through the service.

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A14: Sociology of wheelchairs and seating: How the non-human world can alter dominant social forces in healthcare provision

Mary Silcock, OT
Maxine Campbell, PhD
Clare Hocking, PhD
Craig Hight, PhD

Learning objectives:

1. To stimulate thinking about wheelchairs and seating as being part of networks of power
2. To encourage reflection on micro-level practice and the opportunities this presents
3. To draw attention to how practice is part of wider societal structures

Session description:

Wheelchair and seating services have a highly specialised niche of service provision in Aotearoa New Zealand that cuts across all funding streams, socioeconomic classes and cultural groups. This presentation reports a case study, which contributed to a larger project which involved observations of the day to day activities of occupational therapists working for a wheelchair service. In this everyday work, wheelchairs, seating products, equipment and other non-human elements were seen to exert a significant influence on the therapists' practice, suggesting they were imbued with a power of their own. The therapists spent a lot of their time accommodating the non-human world by tinkering with products and in practical tasks such as filing, writing detailed records and storing essential objects, photos and spare parts. This directly involved the non-human world in ways that were not immediately connected to the usual directives of healthcare provision - enterprise, the law and political governance. Wheelchairs and seating products do not respond to financial, legal or political power. Instead, the combined capacity of human and non-human agency creates a different set of power relations that enabled the wheelchair therapists to bypass other forces that might shape their practice. I present a critical analysis of when and how this bypassing took place. This micro-level analysis of practice allows us to understand opportunities available to wheelchair services. These opportunities are largely unspoken but have the ability to alter the trajectory of the dominant forces currently shaping healthcare in ways that directly impact on real outcomes for people who use wheelchairs.

B12: How Much Hip Abduction is Optimal in Sitting, Standing and Lying for Children with Cerebral Palsy?

Ginny Paleg, PT, DScPT
Rachael McDonald, PhD, OT
Maureen Story, PT, BSR (PT/OT)
Jacqueline Casey, OT

Session description:
Recent publications specifically used 60 degrees of hip abduction in a standing device when studying the impact of standing on hip location and hip adductor extensibility (Martinsson & Himmelmann, 2011; Macias-Merlo, Bagu-Calafat, Girabent-Farrés, & Stuberg, 2015a; Macias-Merlo, Bagu-Calafat, Girabent-Farrés, & Stuberg, 2015b). When the authors were asked why they chose that amount, Martinsson stated "that's how far the stander went" and Macias stated "that's what the orthopedists recommend". The manufacturers of the standing frame used in the Martinsson, et al. (2011) study were asked why the stander is able to position a child in 30 degrees of hip abduction on each side. They replied, "That's what the therapists requested." Piccolini, et al. (2016) published the results of a study on the benefits of sitting in hip abduction, Hankinson, et al. (2002) has advocated lying in hip abduction and Poutney, et. al. (2002 & 2008), showed that to best support hip health, a child with CP must sit, stand and lie in abduction. All of these studies are lower levels of evidence, American Academy of Cerebral Palsy and Developmental Medicine (AACPDM) levels of evidence III-V (see Additional Resources, 1), or "yellow" light evidence" (Novak, 2012). Despite the lack of strong supporting evidence in the literature, there is a consistent trend towards positioning children with CP in hip abduction.
Every child with motor impairments or risk for deformity should be enrolled in a hip surveillance or a "whole child" (i.e. includes gross motor, fine motor, tone management, spine, and hip) surveillance program by one year of age, even before a formal diagnosis of cerebral palsy is received. Positioning in abduction should be initiated for all children with abnormal muscle tone in the lower extremities, and for children not sitting by 9 months. It should be continued for those individuals who are at risk for hip displacement. The position (amount of abduction and rotation) must reflect the needs of each individual child, there can be no "recipe". Clinicians must assess femoral ante/retro version/torsion as well as the head shaft angle. They must know the migration percentage and the health of the acetabulum. As the body of literature grows and the impact of positioning on hip health is better studied and understood, these recommendations will continue to evolve.
This presentation will take the form of a debate with a judge and two opposing sides. At the end of the debate the audience will be polled to get a consensus as to be what best practice should be as regards to abduction for positioning and hip health.

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C12: Applying Clinical Outcome Measures to Mobility and Seating Assessments

Lois Brown, MPT, ATP/SMS

Learning objectives:

1. The participant will be able to name at least two outcome measure for each manual and power chair prescription.
2. The participant will be able to state at least three specific features/programming parameters for both manual and power wheelchair setup which can have an impact on the applied outcome measure.
3. The participant will be able to describe the application of these resources for documentation and funding for complex rehab equipment.

Session description:

Clinical evaluation, whether it be traditional therapy or wheelchair assessment, is no more than a case study of one. The wheelchair provision process varies widely from client choice without clinical input to a fully- scripted wheelchair with clinical advanced knowledge including clinical assessment, clinical reasoning, trials, client participation and feedback. Yet until recent years we have not implemented evidenced based clinical outcome evaluation tools to justify those recommendations. The intervention, in this case, the specific mobility device can vary in performance and affect functional performance. An outcome assessment tool can help quantitatively and qualitatively assess the intervention. They also have application in the training, fit and adjustment of the device to decrease repetitive strain syndromes, energy conservation and establish safety in the use of the device. Documenting the results of an applied outcome measure can provide supportive justification to the prescribing body such as a funder to support the provision of the intervention. An active learning model, such as demonstration and discussion, video, audio and PowerPoint will be used to provide transfer of learning. Specific models of practice and assessment tools will be shared with references for clinical application. These measures can significantly improve the quality of our clinical practice.

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D7: The ABC and XYZ of Cushions and Backs

Jane Fontein, OT

Learning objectives:

1. Upon completion of the session participants will be able to list 3 measurements that are performed to assist in a back and cushion support prescription for a wheelchair user.
2. Upon completion of the session participants will be able to relate 3 features of back and cushions supports to the functional needs and abilities of their clients who use wheelchairs.
3. Upon completion of the session participants will be able to list at least 3 factors that can contribute to the development of skin injuries.

Session description:

Often when a referral for a skin injury is sent to a therapist the referral will request the therapist to change the cushion. When this occurs the therapist should reply "no", I need to do a full seating assessment. Perhaps look at the cushion to see if it is set up correctly, but after that it is important to determine the cause of the skin injury, it could be from a transfer, or lack of nutrition, or from the commode seat and the actual cushion may be fine. When it comes to skin health the cushion is only one aspect of seating and needs to be examined in combination with the back, the overall wheelchair set up perhaps, the foot plates for instance. As per Jocelyn Macauley "The prescription process is only two thirds complete when the mobility base and cushion have been chosen The back support is an integral part of the seating system and needs to be considered as an equal partner to the cushion and the choice of the mobility device."

The mat evaluation will help determine how much and where the client needs support and from that information it is important to list the properties of the seating system that is required, in conjunction with the goals of the client.

This workshop will discuss the purposes of both the cushions and backs supports, the properties of both and their impact on seating and positioning as well as their clinical implications. Is a tall back needed if the client is tall? Where is support needed? Is weight the most important property of the cushion? What if the client is sliding out of the chair?

If possible there will be a hands on portion exploring where and what to measure with regards to back and cushion support.

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E10: Update on the Functional Mobility Assessment Outcomes Registry; What is the Data Telling Us?

Mark R. Schmeler, PhD, OTR/L, ATP
Richard M. Schein, PhD, MPH
Vince Schiappa, MS
Andi Saptono, PhD

Learning objectives:

1. List two characteristics of a validated outcome measurement tool.
2. Be familiar with the 10 items and scoring of the Functional Mobility Assessment (FMA)
3. List 3 elements of the associated FMA Database/UDS
4. Identify two analyses of recent data

Session description:

Standardized outcome measures and associated datasets are necessary to improve evidence and accountability in the field of mobility assistive equipment. This session will review challenges and strategies associated with the implementation of standardized measures in the clinical routine and associated data collection, aggregation, and analyses will be discussed. To further illustrate strategies, the Functional Mobility Assessment (FMA) will be presented. The FMA is a simple yet validated 10 item questionnaire to assess consumer-satisfaction with functional mobility and the use of mobility devices (i.e. walking aids, manual wheelchairs, power wheelchairs, and scooters). Along with the FMA is an associated Minimum/Uniform Dataset (M/UDS). Collectively, the FMA M/UDS is a systematic outcomes management system developed by clinicians, consumers, and researchers at the University of Pittsburgh. This presentation will discuss the systematic development and validation of the FMA Database and strategies for implementation into clinical practice, case management, and utilization review. Secondary analyses of aggregated data will be shared indicating trends in practice and associated outcomes.

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F8: Why Weight Matters

Tina Roesler

Learning objectives:

1. The participants will be able to explain how different wheelchair frame style and materials impact the overall weight and efficiency of a wheelchair
2. The participants will be able to explain 3 situations where weight matters when prescribing a manual wheelchair
3. The participants will be able to list 3 accessory options that will reduce overall wheelchair weight by at least 1 pound each
4. The participants will be able to list 3 ways to effect user weight distribution through wheelchair set up to maximize propulsion efficiency.

Session description:
Wheelchair manufacturers often promote having the lightest wheelchairs made of the lightest materials. Does this matter? And, if so how much? Understanding the benefits of a lighter wheelchair is important for the user and anyone involved in the wheelchair industry. The decisions you make when ordering and setting up a wheelchair will impact wheelchair weight and efficiency and can have a significant effect on user function, independence and safety.

There is research evidence which suggests a lighter wheelchair will be easier to propel and clinical practice guidelines support the use of the lightest adjustable wheelchair available for upper limb function preservation. There is also evidence indicating wheelchair non-use among older adults is linked to wheelchair weight and weight impacts the user or caregiver who must lift the wheelchair. Knowing and understanding the evidence-based recommendations for wheelchair weight, configuration and set-up are essential for anyone using, prescribing or selling wheelchairs. Making informed decisions when ordering a wheelchair and selecting components as well as adhering to best practice recommendations during set up can result in big benefits for the user and the caregiver. Understanding of the evidence can help avoid or minimize common problems, such as wheelchairs, which are difficult to propel, injury to the upper extremities and even wheelchair non-use.

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A15: A Problem Solving Model for Wheelchair Seating Assessment

Kelly Waugh, PT, MAPT, ATP

Learning objectives:

1. Describe the problem solving model presented in the course and list one benefit of its use during a seating assessment
2. List 4 examples of features of a seating system or seating product
3. Be able to write a specific seating objective and describe two equipment features which will address the objective.

Session description:

This course presents a client-centered problem solving model which can guide the thought process during a wheelchair seating assessment, helping practitioners analyze, articulate and then translate a client's problems and potentials into product parameters and solutions. This model is based on the paradigm that the primary purpose of the clinical assessment is not to identify products which are "known" to address certain types of problems, but rather to determine the features that are required to address the health and functional objectives of the individual being assessed. Being able to describe desired equipment features facilitates communication between the clinician and supplier, and leads to a more accurate choice of product. Using this model, the client's ***problems and potentials*** in all areas are translated into ***specific seating objectives***. These objectives then drive the formulation of a ***list of properties, or features,*** which the team has determined will address the objectives, and the list of properties will in aggregate describe ***the end product***. Use of this model helps keep the assessment process client centered rather than product driven, helping to insure the accuracy and appropriateness of final product choices. Used in reverse, the model can be used to analyze the features and potential benefits of commercially available products. Additionally, the model can be used to help delineate team member roles, improve communication during the assessment, document your intervention strategy, assist with writing letters of justification and help to measure outcomes. Participants will be provided with a problem solving grid which will facilitate the use and integration of this model into their practice.

Content references:

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B13: Innovative Ideas and Solutions for Assistive Technology

Rick Escobar, ATP
Steven Escobar, MS

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

1. Describe the basic process for designing, building, and modifying assistive technology (AT) devices based on client needs, as well as, identify simple tricks and inexpensive materials that can be used.
2. Discuss examples of modified AT devices and how these devices were developed; as well as, how the devices improved the client's ability to explore and socialize.
3. Identify resources that inspire ideas and innovation for new AT projects.

Session description:
This session will discuss various types of assistive technology (AT), and innovative solutions to design, build, or modify adaptive equipment based on client needs. We will identify the process to get started on developing your own AT device. We will also identify the basic tools, materials, and tricks that can be used to produce life-changing, inexpensive AT solutions.

We will explore how AT designs and modifications have been developed on some previous projects. Some AT equipment that will be discussed include hand trikes, power wheelchair go-karts, motorized rocking chairs, scooters, rockers, and exercise and sports equipment. The purpose of the new or modified device will be discussed, as well as, the thought process behind design and choice of material used. We will also explore how small changes or modification on an already manufactured product can tremendously help a client with customized function and comfort. Additionally, we will discuss how you can create an AT device from readily available materials, that is low cost, and have both fun and functional use.

Assistive technology does not have to be boring! Studies have shown that when AT devices had fun, colourful, innovative designs, more social interaction occurred (3). Not only can AT devices make physical and social activities easier, they allow individuals to become more independent and to interact with their environment through exploration. For children, this is incredibly important, as early exploration and socialization directly impacts physical and cognitive functions (1,2,3,4). AT devices can be developed for various activities that allow people of all ages and physical ability to participate in a more independent, interactive, and exploratory fashion. We will provide insight as to where you can gain inspiration for your own AT projects and working with the client to identify their needs and goals to a more independent and active lifestyle. We will provide various international resources that you can explore on your own.

Content references:

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C13: Addressing complex spinal deformities with a continuous postural management approach in sitting

Joana Santiago, OT

Learning objectives:

1. List 3 risk factors/complications for poor postural management
2. Refer 2 biomechanical principles to take in consideration when addressing clients with complex postural needs
3. Describe 3 pros and cons of custom contoured seating systems

Session description:

A rigid back support is often recommended to provide back support for wheelchair occupants with spinal cord and other neurological injuries and disorders. The cushion forms a close fit to the shape of the occupant's back; the rigid frame provides a stable base of the support for the spinal column. However, rigid back supports are often not user-adjustable and are based on measurements collected during an evaluation for a wheelchair (Crytzer, 2016), thus, may not accommodate those with postural deformities such as neuro-muscular scoliosis, bony deformity and/or scar tissue from scoliosis surgery or extreme lumbar lordosis or thoracic kyphosis (Alm, 2003).

Dealing with complex postural needs may require applying intimate surface contact to areas of the body which are contoured (Waugh, 2013). Contoured seating conforms to the shape of the body, allowing for more contact with the seating surface and providing increased support and control, especially for those with complex deformities. There are several advantages as it addresses clinical objectives better than planar contoured seating; it has greater surface area contact which creates increased stability, alignment, and skin protection and it's easy to maintain (Waugh, 2013). Its disadvantages are also documented. Cook and Hussey (2002) underpins its limited ability to allow for growth of the individual, difficulty with transfers and its lack of dynamic properties as the individual is held in a fixed posture.

Individuals with complex spinal deformities may experience progressing changes of their seating posture as a direct or indirect consequence of a disease. In both cases, biological or skeletal changes may arise along the process that if not addressed may become progressive and tending to reinforce deviations and asymmetrical postures.

Delivering customisable solutions, capable of meeting current body presentations as well as being readjusted to meet clients postural changes over time, is then absolutely vital! Not just to reassure the seating intervention goals but also to comply with funding sources who require seating systems to last for years.

This session will cover the biomechanics behind complex spinal deformities, analyse the pro's and con's of custom contoured seating and outline adjustable, sustainable and flexible methods of delivering a continuous postural solution throughout the process.

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D8: Ageing with a Disability; how does it affect wheeled mobility and seating?

Rachael McDonald, PhD, OT
Lisa K. Kenyon PT, DPT, PhD, PCS

Learning objectives:

1. To discuss the effect of ageing on underlying conditions such as cerebral palsy and down syndrome, and likely sequence of age related deterioration.
2. To identify the specific issues faced by these population and how to anticipate them.
3. To work together to provide a blueprint for active healthy ageing for populations living with a disability.

Session description:

Approximately 1.1 million people (24% of the population) in New Zealand, and 4 million people (18.5% of the population) identify as having a disability. These figures are from 2013 and 2010 respectively, so these numbers are likely to increase, as the rate of disability tends to increase with age. For example, in New Zealand, 11% of children but 27% of adults identify as having core functional limitations.

Ageing is a continuation of the regular developmental process. Ageing and rate of ageing is affected by biological, social, economic and other personal circumstances. People with intellectual and other developmental disabilities appear to be particularly prone to age-related problems and risk factors; such as cardiovascular disease and diabetes. There are some particular areas of prevalence that have been established through research; for example, 30% of people with Down Syndrome will develop Alzheimer's disease in their 50's. A similar percentage of adults with cerebral palsy and GMFCS levels 1 and 2 will start falling in their 20s and 30s.

In addition to these genetic or biological factors, there are also specific personal and social factors that affect this population. Negative attitudes and misconceptions due to lack of awareness of the growing needs of adults ageing with disability prevail amongst health and social care providers; and a lack of awareness of factors such as increased isolation due to mobility issues compound these effects. As people age, they need staff with increased skills and experience to support them to participate; and to be aware of when equipment needs change or develop.

This workshop will discuss with participants the effect of this combination of identified genetic, biological and other risk factors have on mobility and posture? We will further discuss when it is the 'right' time to start to intervene with postural and seating interventions? There further appears to be a lack of concern by health professionals about active and healthy ageing of people with disabilities; even though the effects of compounding impairments through ageing would suggest that enthusiastic care is required to anticipate the effects of aged related issues. Workshop participants will discuss both their efforts with this group, combined with what social and policy changes are required. Finally, a consensus as to what stages postural seating and mobility should be considered will be discussed.

E11: Risk assessment in seating and positioning for prevention of deep tissue injury

Patrick Meeker, MS PT

Learning objectives:

1. Understand the important role risk management assessment plays in preventing deep tissue injury
2. Learn the critical differences in wound grading and assessment of deep tissue injury
3. Review the latest evidence examining deep tissue injury etiology and prevention
4. Apply the risk assessment principles into your everyday clinical assessment and treatment regimen

Session description:

As new evidence begins to unravel the mysteries of pressure injury etiology, new risk assessment guidelines are in need of being updated for seating and positioning professionals. Preventable tissue injury can be significantly reduced through team education, assessment and treatment protocols. This program aims to define the critical assessment pathways for the seating and positioning professional in managing moderate to high pressure injury risk clients. The latest research findings will demonstrate the paramount importance of a comprehensive assessment methodology for managing pressure injury and preventing deep tissue injury altogether. Updated terminology, visual indicators, scientific research along with key researcher's input will all be shared such that the attendee will leave with a better understanding of tissue damage, assessment and prevention.

Content references:

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F9: Anterior Tilt, Stand, Lateral Tilt, Elevate, Recline Powered Adjustable Seat Positions - Reasonable, Necessary?? How Do I Get My Clients To Use Them Effectively?

Amy Bjornson, PT, ATP, SMS

Learning objectives:

1. Participants will understand 2 clinical, wellness or functional, indicators for lateral tilt
2. Participants will identify 2 contraindications and 2 precautions for use of power standing function
3. Participants will identify 3 strategies to increase compliance with usage plan
4. State 2 outcome measures tracking compliance

Session description:

As therapists working with full time wheelchair users with complex needs, we understand, anecdotally, the benefit of power seat functions for enhanced comfort, improved postural alignment, enhanced digestion and respiratory function and skin health management. We also know from experience that client compliance with use of these power functions can be mixed.

How do we decide what is reasonable and necessary? How can we maximize their use and benefit?

It's the aim of this workshop to analyze the evidence: determining what power seat functions offer for pressure relief, position change and management of other physiologic issues. Participants will develop a framework for objectively evaluating devices to support practical clinical recommendations regarding current as well as emerging technologies.

To address compliance issues, we'll look at the evidence regarding real -time usage of these power functions: why or why aren't clients using their seat functions? What are client's perceptions regarding power seat functions? This course will provide strategies to increase compliance with recommended use. Roadblocks to usage and strategies to overcome them will also be discussed.

Content References:

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Closing Keynote: There's more to good AT outcomes than froth and bubble

Lloyd Walker, BE(Hons), MTheolSt (Bioethics), PhD(Bioeng), CPEng, GAICD, FIEAust

Abstract:
Symposiums offer so many opportunities; what did you come looking for? What will be the impact of the OSS on your practice in the following weeks and months? This session will reflect on over 25 years of service and development in assistive technology, and ponder whether it's technology or mindset that has changed the most. Do the next 10 years promise more rapid, or different change, and what should you do to prepare?

Speaker biography:
Lloyd is a professional rehabilitation engineer who has been working in Assistive Technology (AT) for over 25 years. As a user of AT, he has always had an interest in improvements in technology and its application to enhanced participation. He has been actively involved in most aspects of the AT sector in Australia and internationally. He has established and clinically led new wheeled mobility services in Northern Queensland, established tertiary education programs, led Australia's largest AT research and development centre, and continues to contribute to AT standards development in Australia and at the ISO level. In recent years Lloyd joined the Australian Government and is currently the Director of Assistive Technology with the National Disability Insurance Agency (NDIA). His presentations at the Symposium will be in his own professional capacity and will not necessarily represent the views of the NDIA or the Australian Government.

POSTER SESSIONS

P1: Thermography Measurement to assess Wheelchair Cushion Heat Absorption and Decay

Angela Rowe, PT
Kim Vien, OT
Bill Contoyannis
Catherine Young, OT
A/Prof Leigh Johnston
Melissa Munanto
Naomi Sutanto

Learning Objectives:

1. Understand the current evidence around the impact of thermal characteristics on pressure injuries
2. Understand that different thermal characteristics of pressure cushion materials
3. Application of knowledge to clinical reasoning in the prescription of pressure cushions

Session description:
The poster will outline the research carried out. The following is a summary of the research.

Objective:
To determine the thermal characteristics of commonly used cushions and materials in order to make better clinical decisions for cases where temperature is an issue.

Abstract:
Thermography has been used to assess how quickly a number of commonly used wheelchair cushion (and materials) absorb heat when used conventionally. This research uses a thermal camera to view cushion temperatures following use and define both the time and decay profile of the temperature cushions when the heat source (the seated patient) was removed. The cushions which were trailed were:

- Foam Cushion (Foam)
- Roho High Profile® Single Compartment (Roho)
- Supracor Stimulite® SlimlineTM XS Cushion (Supracor)
- Vicair Academy Adjuster 10 (Vicair)
- Action PilotTM Cushion (Gel)

Temperature decay and pressure temperature correlations were analysed on the cushions. The effect of applied pressure on skin temperature was also tracked.

Results:
All cushions heat up and cool down at different rates. From these findings, recommendations for potential clinical applications and further studies were made. Comprehensive graphs of the thermal properties of the cushions above will be presented.

Summary:
While clinical reasoning regarding the thermal effects of wheelchair cushions are considered by clinician, there are few guidelines regarding what temperatures and temperature variations. All of the cushions both heat up and cool down at different rates. A definition of these characteristics which has a direct clinical application is required.

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P2: Development and Evaluation of a 'Smartphone-delivered Peer Physical Activity Counselling' Program for Manual Wheelchair Users

Krista Best
Francois Routhier
Shane Sweet
Kelly Arbour-Nicitopoulos
Jaimie Borisoff
Luc Noreau
Kathleen Martin Ginis

Learning Objectives:

1. Describe the amplified importance of physical activity for individuals with spinal cord injury who use manual wheelchair users.
2. Explain how a Smartphone and a peer-trainer can be used to implement important psychological variables (i.e., autonomy, motivation, self-efficacy) in a physical activity intervention.
3. Discuss the perceived pros and cons for a Smartphone-delivered peer-led physical activity program for manual wheelchair users with spinal cord injury.

Session description:

Background: The importance of physical activity (PA) is amplified for manual wheelchair (MWC) users who have spinal cord injury (SCI), yet participation is rarely sufficient to elicit health benefits.[1] Existing community-based PA programs for MWC users appear to work, but adherence is low.[2,3] The proposed ***Smartphone Peer Physical Activity Counselling (SPPAC)*** program targets behaviour change through theoretical psychosocial precursors to PA,[4] the use of peers, and the application of technology.
Objectives: According to the first 3 steps of the Medical Research Council framework,[5] describe the protocol (development, refinement, and evaluation) for the SPPAC program.

Methods: **1. Pre-clinical (Development):** Systematic reviews will identify barriers and facilitators to PA, important psychological factors for predicting PA, use of peers for community-based interventions, and use of smartphone for delivering health programs. **2. Modelling (Refinement):** Focus groups and subsequent Delphi surveys with experts (SCI clinicians, knowledge users, MWC users with SCI) will discuss and attain consensus on content, delivery method, and perceived barriers of the SPPAC program. Thematic analyses from focus groups will create the Delphi surveys, and then experts will rate their level of agreement with statements regarding the SPPAC program (>70% agreement). **3. Exploratory trial (Pilot evaluation):** A pre-post design with n=12 individual with SCI who use MWCs will be used to explore the feasibility and influence of the SPPAC on PA, MWC skill, self-efficacy for PA and MWC use, perceived autonomy, and motivation.
Clinical Significance: If feasible, SPPAC may offer a PA program that can reduce burden on health care professionals, overcome the barriers of inaccessible physical environments and transportation, provide of social supports for participants, and potential cost-savings. The minimal expenses required to deliver SPPAC may allow for application to a large number individuals with SCI and other diagnoses.

Funded by the Craig H Neilsen Foundation, Fonds de Recherche du Québec – Santé (FRQS), and the Canadian Disability Participation Project (CDPP).

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P3: Service experience of using the Wheelchair Outcome Measure (WhOM) over a six month period

Ying Yang, NZROT

Learning objectives:

1. To demonstrate how the WhOM will guide our intervention provision and determine the success of intervention.
2. To demonstrate the experience that therapists gained of how to improve clinical utility of the WhOM.
3. To advocate the use of the WhOM.

Session description:

Provision of wheelchairs and seating can have a large influence on quality of lives as they may improve comfort level of individuals in wheelchairs, enable independent mobility and participation in meaningful occupations. However, it is difficult for practitioners to evaluate whether the interventions that they provide have met clients' needs as there were no existing measuring tools to capture the efficacy of interventions. Therefore, the Wheelchair Outcome Measure (WhOM) was created to provide individualised goal –orientated measure of outcome after wheelchair and seating provision. As the WhOM has not yet been well known to New Zealand, there are very few practitioners using the WhOM and using it effectively. There are areas that the author intends to explore, such as when to best administer and re-administer the WhOM as well as how to interpret the scores. As one of the specialised complex wheelchair and seating assessment services in New Zealand, Mobility Solutions has gradually incorporated the WhOM into their clinical practice from the beginning of 2017. In this study, twenty cases where the WhOM has been used will be randomly selected over a six month period of time. Data will be collected on when in the clinical journey the WhOM was administered and re-administered, the scores from the two administrations, how the scores have influenced intervention provided and the challenges and positive experience by therapists using the WhOM. Data will be presented in text description, photos, tables and diagrams in the poster to meet the three objectives that listed above.

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P4: Using Multifunction Power Wheelchairs in Aotearoa

Maria Whitcombe-Shingler, MOccTher
Sian Griffiths, MSc

Learning objectives:
To enable users' voices to be heard by providing detailed description of their day to day experiences and perspectives of multifunction power wheelchairs.

Session description:
Method: Participants: A convenience sample of 10 adults (being over 16 years old, with long term physical disability and fulltime use of a multifunction power wheelchair for longer than 6 months). Data collection: Individual semi structured interviews (Northern X Regional Ethics Committee Approved). Participants included 5 males and 5 females with a range of diagnoses: amputation, neuromuscular, MS, polio, CVA, SCI (tetraplegia). Qualitative descriptive methodology (Ontology: relativism; epistemology: social constructionism) provided the focus for understanding the participants' perspectives and the meaning and context in which they used their wheelchairs. Thematic analysis found repeated, meaningful patterns descriptive of users' perspectives and experiences: *Power mobility* was the basis for getting to where the living is, However, the *environment* can be a facilitator or an inhibitor to mobility and engagement in living, so this was the next consideration. Thirdly, the *functionality* of power wheelchairs enabled people to engage in the occupations of daily living once the user is able to access the relevant environment. Fourthly, *independence in meaningful occupations "well-doing"* made possible by the improved mobility and functionality was highlighted as important by all participants. This included social independence. However, there were barriers to independence identified. Fifthly, the impact on *personal and social identity* was an important consideration. Finally, the culmination for participants, of having an effective multifunction power wheelchair available for use within an inclusive environment was *"well-living"* the sixth theme. These themes flowed from power mobility to the actualisation of "*well-living."*

Results Practice Implication: The literature and results show that individuals with significant physical impairments can benefit greatly from multifunction power wheelchair use. Therefore the criterion for provision needs to be broad because of the benefits and potential they offer individuals. Enhanced person centred practice that incorporates person centred outcome measures and increased collaboration challenging practice norms. User empowerment through transparent debate including the use of public funding for access to technology, and inclusive environments are essential. Addressing issues such as repairability, affordability and future proofing solutions through closer independent appraisal of new equipment and technology, including increasing the number of backup power wheelchairs available need to be addressed.

Conclusion: This study goes some way to capturing the voice of people who represent users of power wheelchairs, whose lives may be either enhanced or limited by the type of mobility solution provided and the environment they live in. The value of multifunction power wheelchair use cannot be ignored because of the potential for increased independence and occupational engagement.

P5: 24hour posture positioning & wheelchair-seating intervention and technology procurement: evidence-based intervention effectiveness

Rachael Schmidt

Learning objectives:

1. Evaluate 24hr PPw-S intervention effectiveness according to Evidence Alert Traffic Light System
2. Develop evidence-based 24hr PPw-S best practice principles as a service provider (clinical/technical)
3. Justify funding 24hr PPw-S intervention effectiveness best on evidence-based data

Session description:

Introduction: An evolving approach to combined person-directed 24 hour Posture, Positioning management with wheelchair-seating procurement is designed to promote health and wellness for people living with complex disabilities (Coyne, 2016). Combining 24hour Posture, Positioning and Seating management with wheelchair-seating (24hr PPw-S) technology solutions involves multiple stakeholders, working collaboratively with expert service providers (clinicians/vendors), empowered consumers/care providers and informed funding agencies. Comprehensive 24hr PPw-S management and technology procurement is complex. It requires a multi-modal, multi-disciplinary approach and management success is linked to effective person-centred collaborations, information exchange that empowers confident personalised decision making (Dolan, 2013; Eggers et al., 2009; Schmidt, 2015).

Aim: The poster describes the essential components for empowering person-directed selection of appropriate 24hour posture, positioning and wheelchair-seating solutions (intervention and technology) for complex disabilities.

Method: A combined data analysis of two recent research activities informs the content. The first, findings from an in-depth case study of Australian wheelchair-seating service and procurement. The case study findings were augmented with a data analysis of available evidence pertaining to 24 hour Posture Positioning & (wheelchair) seating assistive technology, management, programme and intervention. Combining case study findings with data analysis exposed essential evidence-based facts that influence person-centred service provision and decision making during selection of positioning-postural and wheelchair-seating intervention, procurement and service provision practices.

Findings: Available data pertaining to current 24hr PPw-S interventions were graded for effectiveness using an Evidence Alert Traffic Light System (Novak et al., 2013). This grades intervention effectiveness by traffic lights: e.g. GREEN for 'GO' intervention supported by sound evidence; AMBER for 'MEASURE INTERVENTION' ongoing effectiveness due to inadequate evidential support and RED to 'STOP' intervention with poor evidential support.

Conclusion: Poster critiques current 24hr PPw-S management and technology procurement according to Evidence Alert Traffic Light System. Understanding the effectiveness of current 24hr PP&w-S evidence-based interventions ensures ongoing evidence-based clinical/technical best practice and intervention appraisal.

Content references:

1. Coyne, D. (2016). *24 hour Poisitioning (including Seating and Wheeled Mobility) Practice Guide V 1*. (AH16/7251). Family & Community Services (FACS),: NSW Government.
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5. Schmidt, R. E. (2015). *In-depth case study of Australian seating service experience.* (PhD), Deakin Waterfront Campus, Geelong. Retrieved from http://dro.deakin.edu.au/view/DU:30074802

P6: Geographic Information Science (GIS): An Important Tool in Making the World More Accessible

Steven Escobar, MS

Learning objectives:
Upon reviewing the poster, participants will be able to:

1. Describe how Geographic Information Systems (GIS) is used to enhance individual's mobility and accessibility, and be able to give specific examples.
2. Discuss how GIS can help with city planning as it pertains to accessibility and mobility challenges and used to create innovative solutions.
3. Identify resources using GIS (e.g., websites, programs, apps) that allow everyday errands, tasks, and travel more convenient and accessible for someone with hearing, visual, or mobility challenges.

Session description:
Geographic Information Science (GIS) is a powerful digital tool that allows users to collect, analyse, and present spatial and geographic data. For people with mobility challenges, GIS can be used to effectively identify the most efficient and accessible route from one location to another. GIS can map out geographical barriers such as the how steep a slope (DEM) is, the type of surface the street is made of (e.g., cobblestone, brick, asphalt), and the location of street curbs (e.g., with and without ramp availability) (2,3). Individuals can access GIS applications to personalize their route based on preferences and limitations, thereby reducing the stress of exploring a city or new location.

GIS is being used in many cities worldwide to help with their city planning and accessibility endeavours. For example, GIS can be used to identify locations where curbs need to be fixed/ installed and to position accessible public transportation near important locations such as hospitals (1). Cities can use GIS information to develop apps that can identity the most accessible routes, to visually showing problematic access issues for the mobility challenged. Additionally, GIS can be used to visually communicate ideas to policymakers and the public, thereby enabling them to review, analyse, and understand patterns and relationships more efficiently in hopes of making more educated decisions on accessibility and inclusion for people of all abilities(4).

GIS programs, interactive maps, and apps range from free open-source apps to expensive proprietary programs. I will identify various current products and how they can be used and their limitations. I will also provide information on several free interactive accessibility mapping apps, some of which are used to improve accessibility and decrease stress for travellers.

Content references:

1. Baumann J. Using GIS to meet ADA accessibility requirements; how one city is using a geodatabase to update/install 15,000 curb ramps by 2017. Public Works Magazine. 2012. http://www.pwmag.com/administration/gis-asset-management/using-gis-to-meet-ada-accessibililty-requirements_o
2. Beale L, Field K, Briggs D, Picton P, Matthews H. Mapping for wheelchair users: route navigation in urban spaces. The Cartographic Journal. 2013; 68-81.
3. Kasemsuppakorn P, Karimi H, Ding D, Ojeda M. Understanding route choices for wheelchair navigation. Disability and Rehabilitation: Assistive Technology. 2014; 198-210.
4. Raiees-Dana D, "Navigation and accessibility for persons with disabilities: an anthropological study using GIS on the University of Arkansas Campus. Thesis and Dissertation. 2012; 427.

P7: In Sickness and in Health

Sam Macadaan, OT

Learning objectives:

1. To provide a personal perspective from a member of the ageing population of life at home.
2. To allow for reflection on how we can provide opportunities for the elderly to maintain independence at home without compromising their safety.
3. To empower the elderly by creating a partnership that will support their sense of wellbeing and retain control over their lives.

Session description:

New Zealand's older population is increasing. Over the last three decades, our over 65+ population have nearly doubled.

With the ever increase in numbers, our Ministry of Social development has come up with the New Zealand Positive Ageing Strategy where it promotes the value and participation of older people in communities. One of its policies is to provide opportunities for older people to participate in and contribute to family, whanau, and community.

This poster will be shedding light from a positive viewpoint, displaying a successful case of a 95 year old gentleman who still cares for his wife within his own home, with the help of his wheelchair; showcasing independence, participation, nurture, and family.

This poster will challenge some of the assumptions made by New Zealanders that our older population ought to live in Residential care.

It will include information gathered from the client by way of in-depth interview and photographs depicting his routine, his challenges, his life, his story.

References:

1. Wiles, J.L., Allen, R.E.S., Palmer, A.J., Hayman, K.J., Keeling, S., Kerse, N. (2008). Older people and their social spaces: *A study of well-being and attachment to place in Aotearoa, New Zealand*, *68*(4), 664-671.
2. Statistics New Zealand (2007). New Zealand's 65+ population: *A Statistical Volume,* Wellington.
3. Clowes, A. C. (2016). Absolutely Positively Ageing: *positive ageing and volunteering in Wellington, Aotearoa New Zealand.* Victoria, University of Wellington.

P8: Upping the Anti (tips) – An Evaluation of the Effectiveness of Peer Mentored Wheelchair Skills Groups for Adults

Helen Khouri, OT
Debbie Wilson, OT

Learning objectives:
Upon viewing this poster, participants will:

1. Identify 3 features of peer led wheelchair skills groups that contribute to their success
2. Understand how wheelchair configuration can limit or enhance the development of skills
3. Understand how the Wheelchair Skills Test can be used to measure a change in skill level in adults.

Session description:
In 2013, Seating To Go introduced peer led wheelchair skills groups modelled on the Wheelchair Skills Programme developed by the Wheelchair Research team at Dalhousie University, Canada.

The initial pilot in 2013 was evaluated by administering the Wheelchair Skills Test pre and post attendance, and a post group survey. The use of wheelchair users as training mentors was rated as the most important factor in the success of the groups during the pilot.

In 2016, we reviewed the literature and re-evaluated the impact of peer led wheelchair skills groups with adults. The poster outlines the outcomes achieved and survey feedback from 10 adults participating in 2 x 2hr group sessions.

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. *Archives of physical medicine and rehabilitation.* 2016 Jan 31;97(1):37-44.
2. Worobey LA, Kirby RL, Heinemann AW, Krobot EA, Dyson-Hudson TA, Cowan R, Pedersen J, Shea M, Boninger ML. Effectiveness of Group Wheelchair Skills Training for People with Spinal Cord Injury: A Randomized Control Trial. *Archives of Physical Medicine and Rehabilitation*. 2016 May 3
3. Kirby RL, Miller WC, Routhier F, Demers L, Mihailidis A, Polgar JM, Rushton PW, Titus L, Smith C, Mcallister M, Theriault C, Thompson K, Sawatzky B. Effectiveness of a Wheelchair Skills Training Program for Powered Wheelchair Users: A Randomised Controlled Trial. *Archives of Physical Medicine and Rehabilitation.* 2015 Nov;96(11): 2017-2026.e3
4. Dalhousie University. (n.d.) *Wheelchair Skills Program.* Retrieved from http://www.wheelchairskillsprogram.ca/eng/index.php

P9: Stand up to pain: A single case study on the multiple and far reaching benefits of using a standing wheelchair for a client with SMA and chronic pain

Claire Grey, OT

Learning objectives:

1. To inform and educate participants of the potential benefits of standing wheelchairs
2. To encourage dialogue and reflection on the often unexplored gain areas for individuals when using standing wheelchairs
3. To support participants to "think out of the box" when it comes to pain management and maintaining range

Session description:

Background: Engel Et al (2009) concluded in a study on pain in youths with neuromuscular disease "Pain is a commonly experienced symptom in youths with NMD. Over 70% of parents reported chronic pain in their children with NMD and more than half of the youths self-reported chronic pain…the loss of mobility and physical function is likely playing a major role in the experience and processing of pain in youths with NMD… optimal treatment would likely be multimodal, involving not only pharmaceutical agents but also physical rehabilitation and psychosocial interventions."

S is a 17 year old young woman with a diagnosis of Spinal muscular atrophy (type 3). S had chronic muscle pain previously managed by the pain service and by high levels of pharmaceuticals. As a result of chronic pain client often missed school, social events and required 24hr care and support. S had chronic constipation resulting in hospital admissions.

Pain alleviated when in standing frame, however x2 assistance and high dose of pain medication required before being able to transfer S into frame, as a result frame only used at home.

Therapy MDT priority to maintain hip and knee ROM. Hip and knee contractors already evident.

Client's self-confidence and mood were described by mum as "very low."

Some benefits of levo use include:

- Client stopped taking several pain medications by the second week of the trial. Initially client's pain was self-rated at mean scores of 6-9. 3 months post levo provision rated as 0.
- Client is able to make herself food and drink independently.
- Mum went out and left daughter alone in the house for the first time in 16 years!
- Client has attended and remained in class for the full class duration at school
- Hip range increased by 5° and knee range by 8° in 4 months.

Poster: Photographs, pain charts, client quotes and dialogue boxes will be used to show change and impact of Levo.

Content references:

1. Nordstrom B, Nyberg L, Ekenberg L, Naslund A, (2014) The Psychosocial impact on Standing Devices. Disability and Rehabilitation, 9 (4):299-306
2. Engel JM, Kartin D, Carter GT, et al. (2009) Pain in youths with neuromuscular disease. American Journal of Hospital Palliative Medicine, 26:405-12
3. Myer A, (2010) the necessity of Standing: There is no alternative. Rehab and community care Medicine, 9-13

P10: Effects of "Tilt" and "Recline" on Pressure Distribution for People with Tetraplegia

Luma Carolina Câmara Gradim
Daniel Marinho Cezar da Cruz
Ana Luiza Allegretti, PhD, ATP, OTR

Learning objectives:

1. To evaluate the pressure redistribution in buttock/cushion interface in areas susceptible to pressure injuries (sacrum, ischial tuberosities) for the positions of tilt and recline in the wheelchair, in people with tetraplegia by spinal cord injury;
2. To compare the effects of nine positions at different angles (10 °, 20 °, 30 ° tilt and 100 ° and 120 ° recline) on the seat pressure redistribution of a wheelchair simulator in people with tetraplegia;
3. Analyze the pressure average in buttock/cushion interface with respect to the positioning performed, the contact area, the peak pressure and Peak Pressure Index maximum (PPIm) for the ischial tuberosities;

Session description:

Introduction: The development of pressure ulcers (PU) in people with spinal cord injury (SCI) is a relevant factor and directly affects their health. Several preventive methods in a wheelchair have been researched for pressure relief, health promotion and disease prevention, such as PU. Some methods such as seating positioning system, different cushions and variable positions as tilt and recline seating systems, are most commonly used to relieve the pressure, and have been studied and achieved significant results for people with SCI in wheelchair (SPRIGLE; SONENBLUM, 2011; GEFEN, 2014).

Tilting and reclining periodically in a wheelchair favors the reperfusion of ischemic tissues in the buttocks, pressure distribution between the seat and backrest of the wheelchair, decrease of stress at pressure points and allow changes to occur in the position of users to suit the activity in their context (DICCIANO et al, 2009; FUJITA et al, 2010; HARRAND; BANNIGAN, 2014).

Objectives: To evaluate the pressure redistribution in buttock/cushion interface in areas susceptible to UP (sacrum, ischia) for the positions of tilt and recline in people with tetraplegia.

Methods: there were 5 participants in the study. Their level of injury was tetraplegia, and they were between 18 and 60 years. Data was collected using a wheelchair simulator, ROHO ®High Profile Quadtro Select ™ cushion and a pressure mapping system.

Results: The pressure relief in the buttocks was better in higher angles, such as 10° tilt with 120° of recline, 20° tilt with 120° of recline and 30° tilt with 120° recline. But, even the smaller angulation positions resulted in pressure relief.

Conclusions: Our results indicate that a greater angle of tilt and recline is needed to improve pressure redistribution compared to smaller angles. A position of 30° tilt with 120° recline is effective in relieving pressure on the ischial tuberosities and the buttocks.

Content references:

1. DICIANNO, B. E.; LIEBERMAN, J.; SCHMELER, M. R.; SOUZA, A.; COOPER, R.; LANGE,M., et al. Rehabilitation Engineering and Assistive Technology Society of North America's Position on the Application of Tilt, Recline, and Elevating Legrests. Developed through RESNA's Special Interest Group in Seating and Wheeled Mobility (SIG-09). 2009.
2. FUJITA, D.; MORI, A.; CLEMINSON, T., et al. Using Seating Techniques as a Preventative Measure against Lower Limb Edema-The Effect of Combining Tilt Angle and Reclining Mechanisms on Wheelchairs. Journal of Physical Therapy Science, v. 22,p.:437-441. 2010.
3. GEFEN,A. Tissue changes in patients following spinal cord injury and implications for wheelchair cushions and tissue loading: a literature review. Ostomy Wound Manage, v. 60, p.: 34–45.2014.
4. HARRAND, J.; BANNIGAN, K. Do tilt-in-space wheelchairs increase occupational engagement: a critical literature review. Disabil Rehabil Assist Technol., v. 27, p.:1-10.2014.
5. SPRIGLE, S.; SONENBLUM, S. Assessing evidence supporting redistribution of pressure

for pressure ulcer prevention: A review.
JRRD., v. 48, n. 3. 2011.

P11: "Let's talk about Stress, Sanity & Survival" – How stress affects stakeholders in WC clinic settings

Elaine Vivianne Toskos MAOTR/L, ATP/SMS

Learning objectives:

1. List two elements of best practice impeded by clinician stress & burnout.
2. State three aspects of health which are impacted by stress & burnout.
3. Be aware of at least one example demonstrating burnout prevention in ATPs.

Session description:

It is a well-known fact that *work* is very important for the *self* & *society*. When the *work* is treating or caring for individuals that are injured, chronically ill or disabled, this fundamental feature of *identity* can clash against normal day work challenges, with devastating effects.

Simply put, *work overload* contributes to stress. Prolonged stress leads to *burnout*.

Both of these factors intimidate the core values of everyone involved in a care profession; specifically those of wheelchair service delivery & outcomes.

This module through analysis of a survey, the Maslach Burnout Inventory (MBI) given to assistive technology professionals (ATP) & focused discussion will explore how stress affects the patient, caregivers & care team in WC clinic settings and bring attention to a serious issue that is not new, but rarely highlighted.

The wellbeing of *all* involved is threatened. We need to talk!

Content references:

1. Spinelli WM[1], Fernstrom KM, Britt H, Pratt R., "Seeing the Patient Is the Joy:" A Focus Group Analysis of Burnout in Outpatient Providers, Family Medicine, Apr. 2016, vol. 48(4), pages 273-8.
2. Hakanen JJ, Bakker AB., Born and Bred to Burn out: A Life-Course View and Reflections on Job Burnout.,Journal of Occupational Health Psychology, Oct 10 2016, Epub ahead of print
3. Spataro BM[1,2], Tilstra SA[1], Rubio DM[1], McNeil MA[1]., The Toxicity of Self-Blame: Sex Differences in Burnout and Coping in Internal Medicine Trainees., Journal of Womens Health, Oct. 12 2016, [Epub ahead of print]
4. Austin CL, Saylor R, Finley PJ., Moral Distress in Physicians and Nurses: Impact on Professional Quality of Life and Turnover., Psychology Trauma, Oct.31 2016, [Epub ahead of print]

P12: Collaboration in Design – A Person Centred Experience to Enabling Mobility through 3D Printing

Tracee-lee Maginnity

Session description:
This session will look at a recent initiative that used a collaborative client centred approach to enabling the occupation of driving an already prescribed mobility base. Abandonment of AT is an ongoing issue and more likely when AT is not meeting needs. A Client /person centred approach is not a new concept however it needs to be more than just goal orientated practice. By truly putting the person at the centre of the process and enabling them to actively participate in the process will facilitate functional goals and outcomes.

Ability Mate is a for purpose enterprise working towards a future where custom designed products can be accessed affordably and timely by people with disabilities. Ability Mates vision statement is that it is their "mission is to find ways of making the world inclusive for and with people of all abilities!" As part of Ability Mates start up initiatives they developed a program called a make-a-thon. This session will look at one of these makers days; the Toggle-a-Thon held in Sydney.

Following an open invitation to any powerchair user that was struggling to operate their wheelchair due to interface access issues, Ability Mate hosted a day at a Makers space in Sydney. Others invited to the day included family, friends, carers , designers, 3d Printers and allied health professionals all in a voluntary capacity.

The goal of the day was that each wheelchair user would leave with a customised joystick, The users were central to the process, articulating issues they had and guiding the team towards the solution. A potential solution was made in moulding clay for further input before printing for trial. Modifications and further changes were made to the prototype design following the trial prior to the final result being printed.

Content references:

1. Descriptive study about congruence in wheelchair prescription article (PDF Available) in European journal of physical and rehabilitation medicine 48(2):217-22 · June 2011 http://www.r2d2.uwm.edu/atoms/archive/technicalreports/tr-discontinuance.html
2. The role of choice in Assistive Technology provision in Europe Conference Paper (PDF Available) in Assistive technology research series 29:IOS Press-1232 · January 2011
3. *Measuring Assistive Technology Outcomes:* A User Centered Approach Assistive Technology Outcomes and Benefits Volume 10, Summer 2016, Volume 1 pp 94-110 https://www.atia.org/wp-content/uploads/2016/11/ATOBN1V10_ART6.pdf

P13: Power or Push on? A review of wheelchair provision for MND clients within the ADHB wheelchair service

Claire Grey, OT

Learning objectives:

4. To explore optimum wheelchair prescription for MND clients
5. To define best practice pathways using current evidence of outcomes
6. To streamline funding approval timelines

Session description:

Using data from Mobility Solutions, Auckland wheelchair service collated between 2007-2010 and 2014-2017 to compare how wheelchair prescription has changed and identify any trends in equipment and timeframes. If any changes are evident to explore why and the implications relating to service delivery and evidence based practice. Studies in the UK (Rolfe, 2012) on 62 patients concluded a timeline could be used by wheelchair services to map resources required for the MND population. Ward et al (2010) found in a USA based study of 32 patient found that 66% felt the chair prescribed was timed correctly, 19% wished they started sooner. All clients exhibited high user satisfaction scores. Looking at these studies I will be relating these to the New Zealand population and practices, using both quantitate and qualitative data including case studies.

Some assumptions and hypothesis that will be robustly evaluated include:

- That rapid service provision is essential for safety and wellbeing of clients with MND.
  - Based on the progression of MND are we in time or out of time with our wheelchair prescription?
- Are clients' needs best met if their changing needs are anticipated and "future proofed"
  - We can use the data to explore the requested versus the provided equipment, asking ourselves do we under or over prescribe?
- That there are themes and consistency between clients experiences in postural needs and comfort.
  - As in the UK can we complete a pathway for our service? If so, how do we best do this? Or does this limit us seeing the client group as individuals

Content references:

5. Metha S (2015) Wheelchairs for Motor Neurone Disease: When speed is of the essence. British Journal of Neuroscience Nursing, Vol II (2) 58
6. Rudunovic A, Matsumoto H, Leigh P.N (2007) Clinical care of patients with Amyotrophic Lateral Sclerosis. Lancet, Neurological; 6:913-25
7. Rolfe J (2012) Planning wheelchair service provision in Motor Neurone Disease: The implications for service delivery and commissioning. British Journal of Occupational Therapy, 75 (5) 217-222
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P14: Motivation Australia: 10 years of strengthening Mobility Device Services in the Pacific

Lauren Flaherty, OT
Ray Mines

Learning objectives:

4. Share key learning points from developing integrated mobility device services in the Pacific Region.
5. Reflect on the evolution of the mobility device service provision sector in developing countries, and the impact of global processes and partnerships.
6. Reflect on how the change in approach, guidelines and training have improved best practice in mobility device service provision in international development.

Session description:
Many lessons have been learned since the foundation of Motivation UK in 1991, and Motivation Australia (MA) in 2007 through working with a variety of Pacific Region and global partners.

In that time we have seen the gradual shift to people with disabilities being at the centre of the process, having an active role in advocating for their right to mobility (20, CRPD), health (25, CRPD), rehabilitation (26, CRPD), rather than being treated as the passive recipients of welfare and charity. Consensus of the international community has created global guidelines and standards relating to services in developing countries including: Convention on the Rights of Persons with Disabilities (CRPD, 2006); WHO Consensus Conference On Wheelchair Provision (2006); WHO Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings (2008); Joint Position Paper On The Provision Of Mobility Devices In Less-Resourced Settings (2011); WHO Wheelchair Service Training Packages (2012-2017); and the push towards increasing use of AT through the WHO's Global Cooperation on Assistive Technology (GATE) project.

In the next decade, countries will be caught in the rising tide of diabetes and other non-communicable diseases that is sweeping through our region. Pacific nations with scarce resources are already struggling to meet the health / rehabilitation needs of their small island populations.

MA in collaboration with our local partners, continue to work towards integrating the provision of wheelchairs, walking aids, prosthetics and orthotics by trained personnel, as an appropriate, cost effective, sustainable response to the Pacific context. MA is strategically expanding our scope to integrate Assistive Technology more broadly into our programmes.

Building the capacity of the workforce using sector standards for training and education from WHO and ISPO is a more sustainable pathway to improved Assistive Technology services and better outcomes for people with disabilities, NCDs and the frail aged.

Content references:

5. United Nations (2006) Convention on the Rights of Persons with Disabilities (UNCRPD). www.un.org
6. World Health Organization (2008). Guidelines On The Provision Of Manual Wheelchairs In Less Resourced Settings. Geneva
7. World Health Organization (2011). Joint position paper on the provision of mobility devices in less-resourced settings. Geneva
8. World Health Organization (2012 / 2013 / 2015 / 2017), Wheelchair Service Training Packages (basic / intermediate / managers / stakeholders / training of trainers). Geneva.

PRESENTER BIOS

A

Amy Bjornson
amy.bjornson@sunmed.com; Australia, Clinical Education Manager, Sunrise Medical
Trained as a Physical Therapist in the United States, Amy has over 20 years' experience working with the adult and pediatric neurologic populations, with specialties in the treatment of spinal cord injury, and evaluation and provision of assistive technology for clients with physical challenges. She was the director of the Seating and Mobility Clinic in Boston, MA USA and provided consultation services to the United Cerebral Palsy Foundation.

Ana Pacheco
apacheco@adhb.govt.nz; New Zealand, Mobility Solutions
I graduated in Brazil as Occupational Therapist and post-graduated in Neuro-Paediatric Rehabilitation. My background is in community and neurological rehabilitation settings, especially paediatrics. My attention was drawn to wheelchair and seating and its impact in someone's life when I first started working with neuro-paediatric rehabilitation. I started working as a Wheelchair and Seating Therapist at Mobility Solutions only 6 months ago and it constantly amazes me how much the client and carers can achieve in participation and quality of life when the best mobility solution is organized.

Angela Rowe
Australia, Royal Melbourne Hospital
Angela Rowe is a physiotherapist with over 18 years' experience, specialising in neurological physiotherapy and wheelchair and seating. Having completed post graduate studies in postural management in the UK, Angela has extensive experience in wheelchair assessment and prescription. Angela is part of the wheelchair and seating clinic at the Royal Melbourne Hospital in Australia.

B

Beth Knight
beth@seatingtogo.co.nz; New Zealand, Seating To Go
Beth is a Wheelchair and Seating Therapist with Seating to Go in Tauranga. Graduating from Otago Polytechnic she went on to a post graduate diploma in teaching hoping to consolidate and integrate therapy concepts more into 'school life'. After a few years teaching and being an Occupational Therapist in schools she began a community role working with adults with intellectual disabilities. This sparked her interest in 24 hour postural management - lying. So it was a great opportunity to join the Seating to Go team a few years ago to go deeper into wheeled mobility with postural management aspects. Facilitating wheelchair skills groups is a great combination of these experiences. Beth's greatest reward for these sessions comes from being a part of the interactions between the peer mentors and clients - putting the textbook concepts into REAL life skills and scenarios.

Binnie O'Dwyer
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Binnie O'Dwyer has a sports background having competed in numerous codes at a regional and national level. She completed a Bachelor of Health Science (Occupational Therapy) at Auckland University of Technology (2004), and Diploma of Sport Studies at Bay of Plenty Polytechnic (2000). An International Classifier in Wheelchair Rugby since 2004 she has level IV (highest level) Classifier status. As the Asia Oceania, Zonal Head of Classification for IWRF (2007-2013) Binnie has contributed to the development of Classifiers, coordination of classification at tournaments and development of the classification process. Amongst numerous National and International Tournaments Binnie has classified at the Beijing and London Paralympics.This classification experience assists with her present occupation as a Wheelchair and Seating Therapist in understanding how a person moves, and how best to enable maximum potential.

Bonita Sawatzky
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Researcher and medical educator, Bonita (Bonnie) Sawatzky is passionate about all things wheeled and making research practical. An Associate Professor in Orthopaedics at the University of British Columbia and a Principal Investigator at ICORD (International Collaboration on Repair Discoveries), she focuses on the measurable physiological and biomechanical effects of wheelchair propulsion and explores new innovations which may help to decrease pain, fatigue and long-term overuse injuries in adults and children. She also helps to bring together therapists, engineers, students and physicians from around the world to present ideas, innovations and research to improve mobility at the Vancouver International Seating Symposium.

Bridget Dickson
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Bridget Dickson is a Senior Physiotherapist at the Southern District Health Board. She coordinates the Specialist Seating and Wheelchair Clinic at Wakari Hospital in Dunedin holding Enable New Zealand's Wheeled Mobility and Postural Management level 2 credentialing. She also has clinical interest and expertise in vestibular rehabilitation having completed the vestibular competency course run Herdman et al in 2012 and more recently the advanced vestibular course in 2017.

C

Caroline Simpkins
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Caroline has worked as a Wheelchair and Seating therapist for Seating To Go in Hamilton for the past 12 years. She graduated from CIT with a Diploma in Occupational Therapy in 1992. Since then she has worked as an Occupational Therapist in the USA as well as in the North and South Islands of New Zealand, in the areas of community and hospital based Occupational Therapy, Long term care facilities and Intellectual Disability. She lives in Hamilton, New Zealand and is a mum to an active 5 year old boy. Caroline enjoys the tangible benefits that wheelchair skills training offers wheelchair users in their daily lives.

Catherine Ellens
cellens@shaw.ca; Canada, Sunny Hill Health Centre
Catherine Ellens is an occupational therapist who has worked at Sunny Hill Health Centre for Children on the Positioning and Mobility Team since 1997 and has been the team leader since 2014. Catherine graduated from the University of British Columbia with her B.Sc in OT in 1997 and is currently Clinical Faculty at the University. She has presented at the ISS in Canada and the US. Catherine has coordinated and taught many student placements and clinics and has won awards as a result of her work. Catherine has been a member of the ISS Vancouver committee since 2008.

Charisse Turnbull
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Charisse Turnbull has 26 years of experience as an occupational therapist and has worked in NSW Health seating services since 2003. She is certified in Training and Assessment through the Vocational Education and Training Advisory Board. In 2006-2008, she was the project manager for the Spinal Seating Professional Development Program and was the key author of the Seating Education Website. She participated in seating working parties and prescriber guidelines for seated wheelchair for people with a traumatic brain injury or spinal cord injury. She has presented papers in the International Seating Symposium and ARATA. She is currently working for Assistive Technology and Seating which provides seating consultations to most areas of NSW and conducts regular rural spinal seating clinics to remote areas. She continues to be passionate in delivering the best seating outcomes to her clients and to inspire other clinicians to do so through mentorship and hands-on seating workshops.

Claire Grey
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Claire Grey, Qualified in the UK (University of Southampton) worked as an OT in the UK, Australia, India and New Zealand. Career in various fields of physical OT with the last 7 years in wheelchair provision within the NHS, Not for profit organisations and DHB. Special interest in long term chronic and

palliative conditions and the importance of wheelchair provision to enable individuals to optimise all areas of life. Moved to New Zealand in 2014 and has been loving it ever since.

D

Debbie Field
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Debbie Field is an Occupational Therapist with over 30 years' experience in working with children, youth and adults with postural control and mobility needs. By working collaboratively with her clients, their families and others involved in their care, she assesses, makes recommendations and provides seating, mobility and other assistive technologies to empower her clients to engage in what they want or need to do in daily life. She recently obtained her PhD degree in Rehabilitation Science at the University of British Columbia under the guidance of Drs. Bill Miller, Steve Ryan and Tal Jarus, where she investigated measuring participation in daily life with children under 19 years of age who benefit from power mobility use.

Debbie Wilson
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Deb Wilson graduated from Cumberland College of Health Sciences with a Bachelor of Applied Science Degree in Occupational Therapy in 1982. She has over 30 years clinical experience working with people of all ages in the area of wheeled mobility and postural management. Deb was project lead for the Ministry of Health pilot of a two tiered competency pathway for occupational therapists and physiotherapists assessing people for wheeled mobility and postural management (lying and sitting) in 2009. The pilot resulted in the development of the current credentialing framework for Wheeled Mobility and Postural Management assessors in New Zealand. Deb enjoys the combination of innovative clinical practice in a team environment and collaborative service development.

Deborah Bowditch
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Deborah Bowditch graduated from Dorset House School of Occupational Therapy, Oxford in 1986; completed her Masters in Design and Research for Disability in London, Guildhall University in 1994 and Media Arts BA Honours in 2010. She has practiced as a Wheelchair Seating Therapist and International Wheelchair Rugby Classifier, Level IV, since 1996 with no desire to change the perfect combination. In summary, she shares her time between working with Seating to Go in New Zealand and New Zealand Wheelchair Rugby (NZWR), Wheel of Health in the UK and Great Britain Wheelchair Rugby (GBWR), Bali Sports Foundation (BSF) in Indonesia where she is involved in development of Wheelchair rugby classification in S.E Asia and numerous International destinations at International Wheelchair Rugby Federation (IWRF) sanctioned tournaments. Forever Classifying and advising on posture at every opportunity.

E

Elaine Vivianne Toskos
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Elaine Toskos is an occupational therapist with over 23 years of clinical practice experience in the areas of assistive technology, seating & mobility and rehabilitation services.She is currently the Program Manager at Rusk Rehabilitation for Seating & Mobility, responsible for development & clinical oversight to the continuum of wheelchair services at NYU Lanqone Medical Center in New York City.She has taught as an Adjunct Faculty member for the Occupational Therapy Department at Long Island University. Her graduate teaching responsibilities have been in the areas of clinical application for wheelchair seating and mobility assessment as well as assistive technology funding, policy & advocacy. Elaine received a MA in Occupational Therapy from New York University in 1993 and obtained an Assistive Technology Professional- ATP certification from RESNA in 1998. She holds a Seating & Mobility Specialist-SMS certification since 2016."

F

G

Ginny Paleg
ginny@paleg.com; USA, Montgomery County Infants and Toddlers Program
Ginny Paleg is a pediatric PT from Silver Spring, Maryland. She has worked at NIH, HSC Pediatric Center, adult group homes and in schools. For the past 14 years she has worked for her local school system in their early intervention program. Ginny earned her Masters Degree in Physical Therapy at Emory University and her DScPT at the University of Maryland Baltimore. She is on the editorial board of the Rehab Management Magazine. Ginny is an active member of the APTA, having served as a state representative and reimbursement specialist. Recently she has published several articles in peer reviewed journals; one on standing (BMJ, 2016), four on gait trainers (Clin Rehab 2015) and one on wheeled mobility. She became certified in 2014 for the General Movement Assessment, a tool which has a 92-98% success rate at identifying which two to five month old infants will have cerebral palsy. Ginny specialises in assessment and interventions for children at GMFCS Levels 4 and 5.

H

Helen Khouri
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Helen trained in New Zealand and graduated in 1977 as an Occupational Therapist. She worked in a variety of settings before focusing on wheelchair and seating assessments with people across the lifespan. Initially this was as a component of her role working within education with school aged children. She then moved to a specialist Wheelchair and Seating therapist role within the Community Health team at Waikato District Health Board. Helen left this position to work with Seating To Go twenty years ago and is now a Therapy Manager. Helen understands the importance of "getting it right" and continues to provide clinical interventions in addition to her management role.

Helen Lappin
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Following graduation from Otago Polytechnic in 1998 as an Occupational Therapist, I have worked in New Zealand, Australia and the UK in a number of practice areas including elderly rehab, neuro rehab, and assistive technology (predominantly for people with visual impairment). Following my return to New Zealand in 2008, I have been working solely as a Seating and Wheelchair Therapist for the CDHB. This role works with MOH funded clients over 16, and my catchment area is from Rakaia to Kaikoura. I love the challenges that this role brings as we only see complex seating clients within this service. No two solutions are ever the same, which promotes continued new learning, and a sound enthusiasm to stay abreast of the knowledge and products that are available for this very specialised field of work.

Henry Bertulfo
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Henry is a registered occupational therapist in New Zealand and Philippines. He earned his degree in Bachelor of Science in Occupational Therapy in 1997 from Perpetual Help College (Manila Philippines). He has worked in areas of adult physical health encompassing both acute inpatient and community rehabilitation practice setting. His interest and passion with wheelchair and seating dates back to his time working in spinal rehabilitation unit at Riyadh Armed Forces Hospital in Saudi Arabia from 2000 to 2004. He migrated to Zealand in 2004, and joined Mobility Solutions 2005, a specialist wheelchair and seating service in Auckland New Zealand, where he is currently working.

I

J

Jacinta Maurin
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Jacinta Maurin is a Physiotherapist with over 20 years' experience in the area postural assessment and complex seating. After many years in the clinical arena, Jacinta Maurin joined Ottobock as a Business Manager. Jacinta's particular areas of expertise are complex positioning, modular and customised seating systems. Jacinta has presented previously on: Complex solutions for complex postures, A practical guide to wheelchair cushion selection, Positioning Children for Sleep, Matching Equipment Solutions with Postural Needs, Development of Standing and Walking

Jackie Casey
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Jackie is presently working as a clinical specialist for Ottobock, North America, delivering training, education and consultant seating and positioning advice for persons with complex physical disabilities. She has particular responsibility for education and training in the area of customized seating, custom configured and custom moulded seating options, and 24 hour postural management. She is also a lecturer in occupational therapy at the University of Ulster, with a particular focus on seating, wheelchairs and postural management; and her clinical research has been in this area. She is also responsible for the coordination and delivery of postgraduate modules: Seating for Complex Disabilities, and Wheelchair Mobility, and provides masters level research project supervision. She has collaborated with partners in industry to promote the development of, and testing of, assistive technology products to improve the lives of the end users and their caregivers.

Jane Hamer;
jane.hamer@waitematadhb.govt.nz; New Zealand, Waitemata DHB
Jane is a paediatric physiotherapist and also the Clinical Leader of Physiotherapy (part-time), for WDHB (West Auckland and North Shore of Auckland). She has worked with children for 25+years, and is currently undertaking post Graduate study at AUT. With WDHB colleagues she is developing a clinical guideline for the management of 24-hr Postural management programmes for children with complex neurodevelopmental disability within WDHB.

Jane Fontein
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Jane Fontein has been an Occupational Therapist for 30 years, working in a variety of areas including long-term care and rehab, as a manufacturer educator and as a supplier. She worked at GF Strong Rehab Centre on the spinal cord unit and coordinated the out-patient seating programme. Jane has provided education seminars and in-services across North America and internationally for both a wheelchair manufacturer, and also for seating companies. She has spoken at many conferences including ISS, RESNA, ESS and CSMC. Jane is currently self-employed and working as an independent manufacturer educator for Dynamic Health Care Solutions and Motion Composites

Jane Nixon
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Professor Jane Nixon PhD, RN
Deputy Director Institute Clinical Trials
Professor of Tissue Viability and Clinical Trials Research
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Jessica Kuek
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Jess, is a physiotherapist who has worked with children and adults with disabilities for the past 8 years. She has worked in community, school, and hospital settings across Victoria and New South Wales in Government and Non-Government Organisations. She has had senior physiotherapy roles and has held teaching positions at Charles Sturt University. Jess currently works with Yooralla, holding a position in the Quality, Innovation and Safeguards team, where she supports adults with disability through transdisciplinary therapy input around complex physical, functional and participation goals including complex wheelchair prescription. She is passionate around supporting people with disabilities and their families to be empowered to make informed choices and direct services to better meet their needs around complex equipment and technology prescription.

Joana Santiago
joana.santiago@medifab.com; Australia, Medifab
Joana Santiago completed her training in Occupational Therapy in Portugal in 2004. Her initial clinical practice enabled her to work closely with a diverse range of clients with neurological and traumatic injuries. From this experience, she developed a passion for seating and positioning equipment as she understands that a comprehensive postural management can have a strong influence on functionality, health and the ability to lead a positive lifestyle! Over the past 10 years Joana has worked within the Assistive Technology industry in several countries and takes pride in her flexible ability to reach good clinical outcomes by considering the individual, cultural and social needs of those she works with. She is now based in Australia as a Clinical

Business Development for Medifab where she is able to have a positive influence on the development, supply and training of their extensive range of products. Joana has presented at the European Seating Symposium, Asia-Pacific Occupational Therapy Congress, Australian Assistive Technology Conference and at ATSA Independent Living EXPO.

Joanne Blaiklock
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Jo graduated as an Occupational Therapist in 1981 when the school was at CIT in Upper Hutt. Foundation years were spent working in mental health, then in establishing a day programme for people with Alzheimer's disease. Since 2009 she has worked in the area of complex wheelchair and seating provision at Mobility Solutions (Wheelchair and Seating Assessment Service at Auckland DHB) becoming the Practice Supervisor in 2015. An early influence on this direction was her mother, who became a quadriplegic following a motor accident when Jo was 6 years old. This lived experience stirred a desire for removing barriers to participation and promoting well-being for all. Jo is also keenly involved with Building for Education, a charity that provides funding and skills to develop education and humanitarian programmes to benefit children affected by poverty, HIV/Aids and abuse in East Africa.

Judy Rowley
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Judy Rowley began her career as an OT, and has been specializing in the field of Seating and Mobility for over thirty years. She is currently VP at Motion Concepts, managing Invacare Matrx Seating and Positioning line. She works with a global Product Development and Clinical team, and speaks on the topic of Seating and Positioning internationally. Judy is a board member of the Canadian Seating and Mobility Conference (CSMC), and is a past recipient of the CASMA Mundy Award, in recognition of outstanding contributions in this field."

K

Karli Joll
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Karli is a senior physiotherapist at the Child Development Centre where she has worked as a physiotherapist for 17 years. She set up the Waikato DHB Hip Surveillance programme in 2010. Karli works part time and is also a proud mum to 8 year old twin boys.

Kathryn Hall
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Kathryn Hall graduated from Otago University with a Bachelor of Physiotherapy in 1995 and worked in clinical practice for 10 years. With a move to Wellington, she completed a Post Graduate Diploma in Business Management and had a change in career, working in the Government sector for the past 10 years. Kathryn has previously worked at ACC as the Programme Manager of Allied Health Services and Senior Policy Advisor roles and is now at the Ministry of Health, Disability Support Services in a Development Manager role. Kathryn enjoys analysing how services are operating and working with the sector to make improvements for disabled people to ensure they enjoy living ordinary lives.

Kelly Waugh
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Kelly Waugh, PT, MAPT, ATP, is a Senior Research Instructor and the Clinic Coordinator at Assistive Technology Partners, Department of Bioengineering, at the University of Colorado Denver, USA. She is a physical therapist with over 30 years of experience as an educator and clinician, specializing in the areas of wheelchair seating/mobility and postural care. Ms. Waugh has lectured extensively on the topics of wheelchair seating assessment, standardized seating measurement, custom contoured seating and night time positioning to varied audiences, both nationally and internationally. She received a B.A. in human biology and a M.A. in physical therapy from Stanford University, in Stanford, California, USA.

Kendra Betz
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Kendra Betz is a PT and RESNA Assistive Technology Professional who is speaking at OSS as adjunct faculty for the University of Pittsburgh. She has also worked for the Veterans Health Administration in the USA since 1993. Kendra's areas of clinical specialization include SCI rehabilitation, assistive technology, and adaptive sports. Her adaptive sports leadership spans over 20 years supporting novice to elite athletes, and providing education and mentorship for clinicians, coaches, instructors and manufacturers. She implemented the AT and Prosthetics program for the National Disabled Veterans Winter Sports Clinic and Summer Sports Clinic and is an athlete Classifier for the National Veterans Wheelchair Games. Kendra teaches regularly at national and international forums. Her expertise is recognized in the USA by induction into the National SCI Association Hall of Fame, the Air Force Association's Employee of the Year Award, and the Clinical Excellence Award from the Academy of SCI Professionals.

Kim Vien
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Kim is a Senior Occupational Therapist working in the disability community sector and part of the therapy team at the Royal Melbourne's Wheelchair and Seating clinic. Her keen interest is in wheelchair prescription and the impact of technology on the life of various users. Over the past ten years she has had experience in both hospital and community sectors working closely with clients, their support network and other allied health professionals to obtain the best possible outcomes for people with disabilities.

Krista Best
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Dr. Krista Best is a postdoctoral fellow at Université Laval in Québec City, Canada. During her postdoctoral studies she received funding from the Paralyzed Veterans of America to help develop a quality of life outcomes toolkit on quality of life in spinal cord injury; and from the Fonds de Recherche du Québec santé and the Craig H Neilsen Foundation to develop and evaluate a smartphone-delivered peer physical activity counseling program for manual wheelchair users. As a Vanier Canada Graduate Scholar, she received her PhD in Rehabilitation Sciences from the University of British Columbia in Vancouver, Canada. Her research focus was on wheelchair use self-efficacy, wheelchair skills and participation in adult manual wheelchair users. With funding from the BC Rehab Foundation and the Canadian Institutes of Health Research, Dr. Best contributed to the development and evaluation of a novel peer-led approach to wheelchair training. Her presentation will describe some of the current evidence for peer-led wheelchair training.

Krithika Kandavel
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Krithika Kandavel holds a bachelors in computer science and engineering and received her MS for knowledge management at Nanyang Technological University in Singapore. She has experiences as a software developer in a public sector in Singapore. Her work at the United Nations ESCAP at New Delhi includes developing a Social Hub for SATNET Asia, a project funded by the European Union. Together with UN CAPSA in Indonesia, she has organized training programs for key stakeholders in South and Southeast Asian countries to facilitate electronic trade in Agriculture.

L

Lauren Flaherty
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Lauren Flaherty works in the international disability and development sector with Motivation Australia as their Senior Clinical Coordinator joining in 2010. In this role she works to: provide clinical leadership; inputs into new programme designs; develops and delivers training courses with in country personnel and; provides remote and in country support of our programme partners. Lauren has a background in wheelchairs, seating and neuro-rehabilitation. She has been involved in the development of the WHO Wheelchair Service Training Packages (WSTP), and is an Author / Editor of the WHO WSTP Training of Trainers package launched in 2017. Her development work has taken her to Islands throughout the Pacific Region as well as global project work in Thailand,

India, South Africa and Haiti. She has a BhS(OT) from Auckland University of Technology and a Post. Grad. Dip from Otago Polytechnic.

Lisa Kenyon
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Dr Kenyon is an Associate Professor in the Department of Physical Therapy at Grand Valley State University in Grand Rapids, Michigan. Dr Kenyon heads the Grand Valley Power Mobility Project, an inter-professional research and service project that provides power mobility training for children and young adults who are not typically considered to be candidates for power mobility use. Dr Kenyon presents nationally and internationally on topics related to paediatric physical therapist practice and has published multiple journal articles and book chapters pertaining to topics in paediatrics. Dr Kenyon currently serves on the Committee of Content Experts for the Paediatric Specialty Council of the American Board of Physical Therapy Specialties.

Liz Turnbull
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Liz Turnbull is the Team Leader for Mobility Solutions, Wheelchair and Seating service for people with complex needs in the greater Auckland region. Liz graduated in 1997 and has worked in NZ and the UK in acute medicine and orthopaedics, neuro rehabilitation, older adults health, community rehabilitation and needs assessment. Liz joined the Mobility Solutions team in 2005 when her keen interest in achieving great wheelchair and seating outcomes was ignited. Since then she has worked in a clinical role and mentored and supervised staff. She has been involved in service development, working groups and professional forums with the Ministry of Health and Accessable. She now manages the team and service on a day to day basis. Liz is also involved in the Enable Panel for the credentialing of therapists in Wheeled Mobility and Postural Management – Level 2 and complex custom fabrication

Lloyd Walker
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Lloyd is a professional rehabilitation engineer who has been working in Assistive Technology (AT) for over 25 years. As a user of AT, he has always had an interest in improvements in technology and its application to enhanced participation. He has been actively involved in most aspects of the AT sector in Australia and internationally. He has established and clinically led new wheeled mobility services in Northern Queensland, established tertiary education programs, led Australia's largest AT research and development centre, and continues to contribute to AT standards development in Australia and at the ISO level. In recent years Lloyd joined the Australian Government and is currently the Director of Assistive Technology with the National Disability Insurance Agency (NDIA).

Lois Brown
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Lois Brown, MPT, ATP/SMS is currently an Assistive Technology Consultant for GTK in Sydney Australia. Lois is a physical therapist with 25 years of experience, and has worked in wheeled seating and mobility as a prescribing therapist, as an ATP for a US National Supplier, Manager of Medicare review for a US National Supplier and as the Manager of Clinical Education for US Manufacturers. Lois has presented nationally and internationally on Wheeled Mobility and Seating and Assistive Technology, International Seating Symposium, US and CA, European Seating Symposium, Canadian Seating and Mobility Conference and RESNA (Rehab Engineering Society of North America). Lois has been published in a variety of Rehab Publications and is considered an expert in her field.

Luma Gradim
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Luma is an Occupational Therapist with a Masters in Occupational Therapy by the Federal University of São Carlos (UFSCar). PhD student for the graduate program in electrical engineering at the University of São Paulo (USP).

M

Magdalena Love
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Magdalena received her Masters of Occupational Therapy from University of Florida. Following a specialty affiliation as a research assistant at the National Institute of Health (NIH), she worked as an OT in the New York School system and at an

outpatient pediatric clinic. In 2011, she went on to hold an OT position at The Institute for Rehabilitation and Research (TIRR) in Houston, Texas on both the Brain Injury then the Spinal Cord Injury/Specialty Rehab team. Magdalena was actively involved in seating and mobility clinics during her career at TIRR. She currently works for Permobil as Clinical Education Specialist, is an Assistive Technology Professional (ATP), and an active member of AOTA and RESNA. In 2016, Magdalena relocated to Sydney, Australia to assume the role of Clinical Education Specialist for Permobil in the Australia & New Zealand regions.

Margaret Blake
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Margaret trained in Dublin, Ireland as an Occupational Therapist in the 1980's. She has since practiced in Ireland, Wales and New Zealand and has worked as a Wheelchair and Seating therapist for 20 years, the last 14 of these with Seating To Go, assessing people with complex needs. She is one of the Therapy Managers at Seating To Go and regularly presents the Level 1 training workshops for therapist credentialing in New Zealand.

Maria Whitcombe-Shingler
mariaWS@adhb.govt.nz; New Zealand, Mobility Solutions
I have clinical and student supervisory experience ranging over 30 years, as well as experience precepting new staff, which gives me a wealth of experience to draw on. I have worked at Mobility Solutions for the last 17 years since its inception. I am a reflective practitioner, and believe my Masters research using qualitative methodology to look at adult users' experiences and perspectives of using multifunction power wheelchairs in Aotearoa, New Zealand, demonstrates this.

Mark Schmeler
schmeler@pitt.edu; USA, University of Pittsburgh
Mark R. Schmeler, PhD, OTR/L, ATP - Mark is an Associate Professor, Graduate Faculty, and Director of the Continuing Education Program in the Department of Rehabilitation Science & Technology. He is the course director for the International Seating Symposium hosted in the USA and directs several other continuing education venues including web-based post-professional education and training. He also directs a national contract to develop Assistive Technology Clinics within the Veterans Administration's Polytrauma & Spinal Cord Injury Systems of Care. He has over 25 years of clinical practice experience and currently practices as an Occupational Therapist and Assistive Technology Professional in the Center for Assistive Technology at the University of Pittsburgh Medical Center which he helped establish and directed until 2005. His graduate teaching responsibilities are in the area of assistive technology funding & policy as well as clinical applications of wheelchair seating and mobility applying case-based and evidence based practice. His area of research is in the development and application of functional outcomes measures, product development, and telerehabilitation.

Martin Matthews
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DM Orthotics Ltd / University of Plymouth
Martin Matthews qualified in 1981 as an orthotist from Salford Polytechnic College before moving to Norwich in 1991. He developed his speciality in paediatrics and scoliosis management, working closely with other allied health professions in combined therapy / orthotics clinics at the Norfolk & Norwich University Hospital NHS Trust.
He has always encompassed innovation in the field of orthotics and has developed the use and design options of dynamic elastomeric fabric orthoses (DEFOs) over the last 18 years. In 2008 he gained a research Masters Degree (University of East Anglia) investigating the effects of DEFOs on the child with bilateral cerebral palsy and has presented at international conferences on scoliosis orthotic intervention in children with neuropathic onset scoliosis. He has published numerous papers in international peer reviewed journals and presented at many international orthotic and physiotherapy conferences.
He is a Honoray Associate Professor at the University of Plymouth.

Mary Goldberg
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Mary Goldberg serves as the Education & Outreach Project Director at the Human Engineering Research Laboratories and also is an Assistant Professor in the Department of Rehabilitation Science and Technology at the University of Pittsburgh. She

has a background in education with a concentration in rehabilitation science, psychology and Spanish. She has served as co primary investigator on several training programs in the field of assistive technology for undergraduates, veterans, and graduate students, with a particular emphasis on students with disabilities. Dr. Goldberg received her PhD in Administrative and Policy Studies of Education from the University of Pittsburgh, with a focus on online learning in assistive technology. Her additional research interests include program evaluation, STEM education and international capacity building in assistive technology.

Mary Silcock
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PhD Candidate, Faculty of Arts and Social Science, University of Waikato, New Zealand.
Mary is an occupational therapist and has worked in Aotearoa New Zealand for over 20 years, including as a wheelchair therapist. She is currently nearing completion of her PhD which is a sociological analysis of occupational therapy.

Maureen Story
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Maureen Story is a Physical and Occupational Therapist who has worked in the field of Positioning and Mobility for over 30 years in both private practice and most notably at Sunny Hill Health Centre for Children in Vancouver, B.C. She was part of the team that developed and implemented the Positioning and Mobility Clinic at Sunny Hill Health Centre for Children and is a clinical instructor at the University of B.C. She has presented at numerous conferences both nationally and internationally, and has been involved in a number of research projects including development of the Seated Postural Control Measure. She has been involved in international health projects in both India and China, and has most recently provided training and guidance to the staff at Guangzhou Children's Hospital to assist them in developing and opening the first pediatric seating clinic in mainland China. Maureen has been a member of the International Seating Symposium committee since its inception in 1983 and has been Co-Chair since 2000.

Max Rogmans
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He was born in 1957 in Kerkrade, The Netherlands. After two years working as a surgeon he moved into the Pharmaceutical Industry specializing in product development and licensing. In 1990 he started his own consultancy company Medical Developments, in which he was involved in several clinical studies in the burn and skin wound treatment area. He founded Vicair BV in 1993 on the basis of an invention of the Amsterdam Rehab Clinic concerning a new method for body support.

Megan MacGillivray
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Megan MacGillivray is a PhD candidate in Rehabilitation Sciences at the University of British Columbia and the International Collaboration on Repair DIscoveries. Her PhD research has focused on understanding wheelchair propulsion biomechanics and the impact of training. Furthermore, she has evaluated new forms of assistive devices and has helped to develop and test a self-management mobile app for SCI. Megan is passionate about helping individuals maintain their independent mobility through improving wheelchair skills such as wheelchair propulsion.

Meredith Miller.
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Meredith graduated from the Otago Polytechnic in 1999 with a Bachelor of Occupational Therapy and has been a Wheelchair and Seating Specialist for 15 years working in both the UK and NZ. Meredith completed her Post Graduate Certificate in Postural Management for People with Complex Disability whilst in the UK, and has a particular interest in Custom Seating. Meredith has been employed by Seating To Go since 2007 as a Wheelchair and Seating Clinical Specialist. She has a key role in supporting therapists within the Bay of Plenty and Lakes regions with lying solutions via the 24hour Postural Management Advisory Role. Meredith regularly presents the level 1 Wheelchair and Seating training workshop, and 24hour Postural Management workshop.

N

Pamela Glazener
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Pamela Glazener is a senior Occupational Therapist at Houston Methodist Hospital. Mrs. Glazener graduated from Texas Woman's University in 1991 with her Masters in Occupational Therapy and became an ATP in 2016. She has worked at Houston Methodist Hospital for 25 years and with the ALS clinic for 21 years. She has developed a neck brace that is designed for head drop in the neuro population and is currently working on the patent for this device. Mrs. Glazener also presented at the International Seating Symposium in 2015 and 2017 on power mobility needs in the ALS population.

Patrick Meeker
patrick.meeker@permobil.com; USA, Permobil
Patrick Meeker is a Physical Therapist from St Louis Missouri, USA. He graduated with Baccalaureate degrees in Exercise Science and Health Sciences as well as a Master's degree in Physical Therapy, all from the University of Kentucky. Patrick is an invited speaker at educational seminars held at various international and national symposia, universities and hospitals for rehabilitation and wound care professionals. He had been an active member of the ISO WG11 workgroup on wheelchair seating, co-chair of the ISO workgroup on IPM Clinical Use Guidelines, Support Surface Standards Initiative (S3i), a National Pressure Ulcer Advisory Panel (NPUAP) task force member and was co- chair of the Terms and Definitions workgroup. As part of his professional responsibilities, he has also consulted with seating and wound care clinicians and clients in over 65 countries during his 18 years with ROHO. Patrick is currently Vice President Global Sales for ROHO Seating and Positioning, a business unit of Permobil.

Pilar Cerezo-Gomez
cerezaspcg@gmail.com; New Zealand, Mobility Solutions
Pilar is a physiotherapist with a background in neuro rehabilitation and the prescription of wheelchairs and seating. She started her career in England and for the past 15 year has been based in New Zealand working in a community setting.

Rachael Schmidt
rachael@olexports.com.au; Australia
Rachael Schmidt is an occupational therapist with four decades of multi-modal experience (clinical, education & academia) in complex assistive technology procurement/practice across all age groups in rural, regional and metro-based Australian services. Her PhD research studied Australian Seating Service: insiders' experiences within an in-depth case study methodology. Further consultancy research has highlighted the importance of cementing wheelchair-seating procurement with 24 hour posture, positioning and seating principles, as standard clinical practice.

Rachael McDonald
rachaelmcdonald@swin.edu.au; Australia, Swinburne Institute of Technology
Associate Professor Rachael McDonald is a clinical, research and teaching Health Professional with an interest in enabling people with lifelong disabilities to participate in life situations. She has worked extensively in this field, within both children's services and adult settings, and has worked in the area of wheelchair and seating provision and evaluation for over 20 years across the UK and Australia. She supervises research (honour's, MSc and PhD) students specialising in the care of people with complex disability, and has published widely. She previously held a joint appointment with the Department of Occupational Therapy and the Centre for Developmental Disability Health Victoria at Monash University. Her role at CDDHV included health professional education and leading research activities, however her interest in using technology as an enabler but also as a tool for collecting objective evidence was a feature of her occupational therapy research. This interest has led to her recent appointment as the Chair of the Department of Health and Medical Science at Swinburne University of Technology, where this research is developing further and she is looking forward to more in depth applications of technology to improving the

experience of people who use seating and wheelchairs.

Rachel Brown
rachel.brown@enable.co.nz; New Zealand, Enable New Zealand.
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 with elements of seating involved. Rachel is passionate about seating and the use of lying supports. She has been in her current role with Enable New Zealand since 2010.

Ray Mines
raymines@motivation.org.au; Australia, Motivation Australia
Ray is an Industrial Designer and Project Manager who has been working in developing countries since joining Motivation in the UK in 1996. He has designed, built, adapted and fitted manual wheelchairs and seating systems; delivering training and capacity building in a wide range of cross cultural situations in more than thirty countries in Eastern Europe, Asia, Africa and the Pacific. As Director of Design & Innovation for Motivation Australia, Ray delivers product design, visual communication & brand image, strategic planning, programme design, training development & delivery, staff mentoring and in-country capacity building

Rick Escobar
rickescobar62@gmail.com; USA, Assistive Technology Designs
Rick Escobar, formerly a farmer for 25 years, is the owner of Assistive Technology Designs, Inc. (ATD); where he develops mobility equipment and modifications to assist people in their everyday lives. Since 2001, Rick has worked as an Assistive Technology Professional, and has contributed his expertise on over 20 U.S. National Science Foundation Projects to aid persons with disabilities. Rick is co-patent holder of the KidWalk Dynamic Mobility System, a hands-free gait training device (manufactured by Prime Engineering). Additionally, Rick was the AT Coordinator for AgrAbility of Utah Project, the Director of the Assistive Technology Development and Fabrication Laboratory for the Center for Persons with Disabilities at Utah State University, and a Rehabilitation Technologist at Stanford University's Rehabilitation Technology Center.

Robert Wong
robwong@controlbionics.com; Australia, Control Bionics
Rob is the CEO of Control Bionics. Control Bionics have developed and now manufacture NeuroNode a wearable EMG assistive technology device

Rosemary Joan Gowran
Rgowran@usc.edu.au; University of Limerick (Ireland); University of the Sunshine Coast (Australia)
Dr Gowran lecturers in Occupational Therapy at the University of Limerick, Ireland and is Adjunct Senior Lecturer, at the University of the Sunshine Coast, Australia. Building sustainable wheelchair and seating provision infrastructures through participatory and inclusive methodologies, is her passion. Awarded a Health Research Board Fellowship (2008) she completed her doctoral studies. The has resulted in continual research impact at both academic and societal levels, gaining national and international media coverage and recognition for research, education, political and advocacy partnership developments. She is member of the, WHO Global Cooperation on Assistive Technology (GATE): Research Group; International Society of Wheelchair Professionals (ISWP): Universities and training sub-committee and affiliate coordinator for wheelchair provision in less resourced countries; European Seating Symposium (ESS) 2016 Scientific Committee. Rosie gave the opening keynote address at the Australian Assistive Technology Conference (AATC2016) discussing national and global reforms to AT provision, bringing a human rights and sustainability perspective.

S

Sam Macadaan
sam.macadaan@gmail.com; New Zealand, Mobility Solutions
Sam Macadaan is an Occupational Therapist, specializing in the field of Wheelchairs and Seating, currently working for Mobility Solutions in Auckland, New Zealand. He has received a bachelor's degree in Health science, occupational therapy from Auckland University of Technology in 2010, and has been

working for the Auckland District Health Board since 2011. Sam has been involved in the health board's rotational programme, where he has worked within departments of Orthopedics, Geriatrics Rehab, Stroke, and Wheelchair and seating.

Sandie Grant
sandie@seatingtogo.co.nz; New Zealand, Seating To Go
Sandie is a Wheelchair and Seating therapist who graduated with a Diploma in Occupational Therapy from Central Institute of Technology, New Zealand, in 1992. Sandie worked in a number of physical rehabilitation settings, both adult and paediatric, throughout the USA between 1992-1999, before returning to New Zealand. Sandie became a member of the Seating To Go team in 2000 and is currently the Team Coordinator for the Tauranga branch.

Sharon Davies
Sharon Davies, QSM, was the winner of the Attitude Award in 2012. She works fulltime for Auckland Council as a Personal Assistant to the Waitakere Ranges Local Board. Sharon plays an active role in her local community participating in a variety of committees and voluntary organisations.

Sheila Buck
therapynow@cogeco.ca; Canada, Therapy Now
Sheila Buck is the owner of Therapy NOW! Inc., in Southern Ontario, CANADA. Therapy NOW! Is an Occupational Therapy company providing private consultation and education on seating and mobility assessments and prescription. Sheila is an Occupational Therapist who has been working in the Seating and Mobility field for over 30 years. Sheila has presented papers and workshops at National and International conferences on topics of basic and advanced positioning with emphasis on pressure management, cognitive functioning and maintaining independent living skills and restraint reduction. Sheila's clinical skills have been developed from experience as an RTS as well as her current involvement as a clinician in long term care facilities, group homes, and client homes in the community. For five years, Sheila presented her own workshop series, Back To Basics...and Beyond. Most recently, Sheila has authored a clinical guide for seating and mobility with a current 2017 revision. It is titled, More Than 4 Wheels: Applying clinical practice to seating, mobility and assistive technology. Available at www.sheilabuck.ca.

Steven Escobar
escobarscience@live.com; USA, Assistive Technology Designs
Steven Escobar has worked at Assistive Technology Designs, Inc. (ATD) for the last 10 years, where he has assisted in the design and development of mobility devices (prototypes, modifications, fabricated custom equipment and complex seating). Steven is also the web and graphic designer, photographer, and Geographic information science (GIS) Specialist for ATD. Steven has a B.S. in Zoology, Biology, and Art from Humboldt State University, and received a Master of Science in Geographic Information Science (GIS) from California State University, Long Beach.

Susanne Coleman
S.B.Coleman@leeds.ac.uk

T

Tess Wallis
TWallis@adhb.govt.nz; New Zealand, Mobility Solutions.
I graduated in the Netherlands as a physiotherapist and have worked in private practise settings as well as neurological rehabilitation. My interest in working in the field of wheelchairs and seating started while working with neuro rehab clients. I have been working as a wheelchair and seating therapist with Mobility Solutions for 5 years and I am now fiercely passionate about getting the best functional outcomes possible for my clients.

Tina Roesler
tina@motioncomposites.com; Canada
Tina Roesler is a Physical Therapist with over 20 years of experience in seating and wheeled mobility. She has practiced in Rehabilitation, Long Term Care, Pediatrics and sports. Tina presents regularly at conferences including ISS, Posture and Mobility, ATSA, Asia ISS, and Latin American Seating Symposium. She is currently in charge of International Business Development for Motion Composites, a manufacturer of ultralightweight carbon wheelchairs. She participates in education and product development.

Tracee-lee Maginnity
traceelee@yahoo.com; Australia
Tracee-lee is a registered OT currently working as a Clinical Consultant and Educator in Sydney Australia. Initially trained in New Zealand where she developed a passion in seating and mobility before moving to Australia. Tracee-lee has worked in various capacities within the industry including as a prescribing therapist, custom seating fabricator, supplier and educator.

U
V
W

Wendy Hartley
wendy@seatingtogo.co.nz. New Zealand, Seating To Go
Wendy is an Occupational Therapist who graduated from the Auckland Institute of Technology in 1998. She has worked in a range of physical and mental health settings before choosing to specialise in Wheelchair and Seating intervention with Seating To Go 12 years ago. Wendy is the Team Coordinator in the Rotorua base of Seating To Go and has a particular interest in Power Assist technology.

William C. Miller
bill.miller@ubc.ca; Canada, University of British Columbia
Dr Bill Miller is a Professor in the Department of Occupational Science and Occupational Therapy at the University of British Columbia. His research focuses on the epidemiology, measurement, and evaluation of interventions that are designed to remediate mobility disability with the goal of improving the social participation of older adults. His current work focuses on the design, development and evaluation of innovative solutions including smart technologies, gaming software and m-health approaches. Bill is a fellow of the Canadian Association of Occupational Therapists and the Canadian Institutes of Health Research. He has > 400 peer reviewed contributions including >150 journal papers and 12 book chapters. He has developed 6 outcome tools designed for clinical practice and research some translated into multiple languages.

X
Y

Ying Yang
yingy@adhb.govt.nz; New Zealand, Mobility Solutions
Ying Yang comes from China; she came to New Zealand for study in 2012. Ying graduated at the end of 2016 from AUT, currently working at Mobility Solutions as a wheelchair and seating therapist. Ying developed her passion for wheelchair and seating during her final placement at Mobility Solutions. Ying was the first person utilised the WhOM in the service and she presented a case study. The case study has introduced the WhOM and its benefits in the clinical practice to the team.

Z

Exhibitors

Permobil New Zealand

Permobil is a leading global company of advanced rehab technology, with a strong focus on improving the daily lives of people with disabilities. Permobil products include power wheelchairs, manual wheelchairs and seating solutions. With headquarters in Sweden, Permobil has 1500 employees in 17 countries.

In August 2017 Permobil took over operations of Durable Medical Equipment Ltd. (DME). The acquisition was an important step for Permobil in its strategy to drive user access in New Zealand, providing innovative advanced rehabilitation solutions for people with disabilities.

Permobil is dedicated to building a leading healthcare company by providing advanced rehabilitation technology driving growth through education and outcomes, delivered with passion and first-class service.

sales@dme.co.nz
0800 115 222
www.permobil.co.nz

Allied Medical Limited

Allied Medical is an established rehabilitation products importer and distributor into the New Zealand market. Each product in our range has been carefully selected to meet the needs of this market, as a response to feedback, input and advice from the end users of our products, and the clinicians who prescribe them.

Our primary focus is to provide our customers – along with their clients – world leading rehabilitation products, supported with strong product knowledge, readily available technical support and on-going product training.

Established in 1998 by father and daughter team, Ken and Katie Noble, Allied Medical has grown to become a leading rehabilitation products supplier in the New Zealand market. Now with a team of 25 skilled professionals offering nationwide coverage, we have two warehouses – one at our head office in Auckland and a second one located in Christchurch supporting our South Island customers.

We are proud to be the exclusive New Zealand distributor for Quantum Rehab, Ottobock Mobility Solutions, Varilite, Karma Medical and Dreamline seating, amongst others.

Please contact us for more information:
www.alliedmedical.co.nz
sales@alliedmedical.co.nz
Phone: 0800 31 61 81

Invacare

Invacare is the global leader in the manufacture and distribution of innovative home, health care and medical mobility products.

Our global strength and our commitment to providing care, enables us to offer products and services that provide confidence to make life's experiences possible.

As the need of individuals change, our broad range of products are designed to provide solutions that meet those changing environments.

We take pride in supplying quality products that use technology to promote recovery and active lifestyles.

To find out how we can help, contact our customer service team on 0800 468 222 or visit www.invacare.co.nz

C1 South Ltd

C1 South is a New Zealand owned company that specialises in wheelchair seating and provides a range of innovative equipment to promote *function, independence* and *choice* for people with a disability.

We are a small growing company that is managed by an Occupational Therapist with over 30 years' experience in the wheelchair seating field and with the support of a great team in the office/warehouse and technical/fabrication skills we can assist both therapists and users to make the right choice around their functional and postural support needs.

We have selected products from around the world that reflect great research, innovation and quality control and offer a large range of off the shelf sizing with the ability to customise to individual needs.

C1 South believes in playing an active role in supporting community organisations and giving back and supporting those with a disability is an integral part of our company values. Earlier this year, we were awarded for Best Community Impact at the 2017 Business Excellence Forum and Awards.

www.c1south.co.nz
Ph: 0800 212333
E: info@c1south.co.nz

A1 Wheelchair Services

Magic Mobility Powerchairs - So people can live the life they choose.

"Its (Frontier) given my wife independence back. Yesterday- out with family at a local country show, today- brother & sister in laws for coffee, then home via cafe for lunch, to the shop in for a loaf of bread. Last weekend down to the skate park with our kids, (it's) taking a long time to get down the Main Street! Lots of stopping & chatting with friends."

"As soon as I trialled the X8, it was "love at first sight"! Finally, I could turn right in the mountains and drive on the sandy beach. It's easy to drive. I just love the outdoors, I can go either to a nearby park or along the sandy beaches or …. even both in the same day!"

Everything is possible in the right wheelchair.

READY TO TRIAL
Contact: Brent Lane
Ph: 021 246 9343
brentlane@a1wheelchairs.co.nz
www.a1wheelchairs.co.nz

Active Healthcare

Active Healthcare specialises in fast supply and full support for Quickie Power and Manual Chairs and Jay clinical seating products.

Our legendary service and delivery are what make us unique. We make power chair prescription and supply faster and simpler for you, so you can support your clients when they need it.

Full Service and Support on all Trials and Orders

Stocked Locally

Easy Delivery and Set Up

Fully Customisable to Ensure the Right Fit

0800 336 339
sales@activehealthcare.co.nz
www.activehealthcare.co.nz

Cubro

Cubro is a New Zealand owned and operated family company, committed to providing innovative, quality healthcare equipment solutions to aged care, therapy and healthcare groups across New Zealand.

Our diverse team of experienced and forward thinking people are committed to understanding our customers and their client's equipment needs, through a very strong company ethos of care. We have people dedicated to complex equipment that can prescribe individualised customisation, two occupational therapists that contribute field experience and clinical insight, and a customer care team whose sole purpose is to make the Cubro experience as positive and easy as possible. And because understanding our customers and their clients is so important to us, our team of equipment specialists spend most of their time with end users across New Zealand, assessing their environment, their physical ability, and above all, ensuring there is no compromise on their dignity and comfort.

www.cubro.co.nz

Custom Technologies Limited

CUSTOM SEATING AND POSITIONING SPECIALISTS

For more than 20 years Custom Technologies Ltd has been providing high quality custom and off the shelf adaptive rehabilitation equipment to clients throughout New Zealand and parts of the South Pacific. While the bulk of our focus is in the area of Seating, Positioning and Mobility systems we also have a full design and build service with the ability to provide solutions to a number of different problems.

Custom Technologies has a growing range of 'off the shelf products' for both the paediatric and adult user. The range includes;

- The Motion Composite lightweight wheelchair range offering the worlds lightest folding wheelchair and the new award winning Apex wheelchair
- The Panthera ultra light weight wheelchair range offering the worlds lightest fixed frame wheelchair
- The innovative Tarta and Emys backrest and now the new Tarta Kids buggy and seating system
- The exciting GyroSet technologies for powerchair control
- The Equa gel pressure relieving cushions
- The easy to adjust Papillon headrest range
- The AEL accessories and more

www.customtech.kiwi

EBOS Healthcare

A proudly New Zealand-owned business, EBOS Healthcare offers you the widest range of medical, continence, daily consumable products and equipment in New Zealand. We are focused on delivering the right products to your clients to ensure the best outcome.

One of our major strengths in doing so, is our dedicated teams that support each individual channel. The specialist teams understand your specific needs and your business responds quickly to your changing environment and maintains a strong partnership with you.

Our dedicated EBOS Rehabilitation Team (EBOS Rehab) together with our manufacturers Sunrise Medical and Bodypoint is proud to be able to offer a complete range of products.

Our Rehabilitation Specialists will help and support you to achieve an outcome that suit your client's needs and the funder's budget in a timely manner.

Our team members have a wealth of knowledge (product- and technical) and receive regular training to stay up-to-date with the changing demands of market, funders and client's.

Our Rehab team is focused on providing clients with mobility- and seating needs maximum mobility, functionality, positioning and safety.

Euromedical

Euromedical has been supplying niche European disability products for over a decade. With a combined industry experience of over 40 years their knowledge and experience is hard to beat.

Our core focus and desire is to help people regain independence, mobility and quality of life both in the paediatric and adult sector.

On display will be our full range of standing wheelchairs from Levo of Switzerland. These will include not only the full power versions but manual standing wheelchairs including the new Summit, the first truly active standing wheelchair.

Also on display the new Optimus RS outdoor range of power chair from Meyra of Germany, built for strength and long distance driving. A range of selected paediatric seating products from R82 of Denmark including the new Scallop seating aid. Wheelchair ramps from Feal of Sweden featuring the new iRamp carbon series will also be on display.

www.euromedical.co.nz

Life Unlimited Charitable Trust

Our mission is to keep everyone in charge of their own life by offering information and equipment to provide those living with a disability or condition a chance to live the life they choose.

Life Unlimited Store can support your independent living with an extensive range of mobility equipment and daily living aids available for purchase or hire, including:

- Mobility scooters and power wheelchairs
- Wheelchairs and walkers
- Bathroom equipment and safety rails
- Incontinence products
- Living and bedroom furniture
- Dressing aids

Life Unlimited Stores are central sources of independent information on disability issues and community resources. Our friendly, knowledgeable staff provides up-to-date information so you can make informed decisions about the supports you need for an independent life.

Four locations (Hamilton, Tauranga, Rotorua and Gisborne) or visit our online store www.lifeunlimitedstore.co.nz

Life Unlimited Stores are brought to you by Life Unlimited, a charitable trust with over 30 years' experience in independent living services and products.

Medifab

Our mission is 'Shaping better lives'.
Medifab make a positive difference to lives of persons with a disability, therapists and carers globally by providing leading edge postural support solutions for a wide range of special needs.

OUR PRODUCTS

- SPEX modular wheelchair seating for all ages: Adaptable seating which installs onto any wheelchair base. Catering for all wheelchair users from basic needs to severely complex asymmetric body contours, SPEX provides on-the-spot results.

- Shuttle Discovery Stroller for infants and young children: Discovery caters for very small children from six months of age upward, giving it a unique standpoint in the market. Achieve the best possible positioning for an infant or small child with special needs, while meeting the parents' aesthetic values.

Visit our websites:
www.medifab.com
www.spexseating.com
www.shuttlediscovery.com

Melrose Kiwi Concept Chairs

Melrose Kiwi Concept Chairs is the largest manufacturer of lightweight wheelchairs in New Zealand. Its strength is in providing custom built lightweight, high performance wheelchairs of quality and style. Standard models of wheelchairs are made individually to the client's measurements and requirements.

Phil, innovator and designer, himself in a wheelchair, understands the needs of the customers. Phil had an accident in January 1991, which put him in a wheelchair. With a number of frustrations with his own wheelchair he started building wheelchairs for himself out of lightweight titanium. This was so successful he gradually had more built as he sold them to friends and acquaintances.

The philosophy of the company is one which focuses on quality lightweight wheelchairs for individual needs. The strength of the company lies in its flexibility of design to accommodate individual needs and including sports wheelchair - basketball, rugby and tennis.

We also have a large range of parts and accessories including powered devices for wheelchairs.

If you require further information on any products phone us on +64 3 354 5616 or email sales@melrosechairs.co.nz

www.wheelchairs.co.nz

Morton Perry

Founded in 1997 we strive to provide high quality, clinically proven, technologically advanced equipment solutions for clients, carers, therapists and funders.

Also present at OSS will be Max Rogmans CEO founder of Vicair & iShear, Torben Andersen CEO founder of TA Service.

iShear : The world's first Total shear measurement device. A clinical tool to assist therapists in minimising the clients sliding forces when setting up a wheelchair , significantly improving the quality of your service and reducing the clients shear risk. Set up is very easy, quick. Simply download the free iShear app, engage bluetooth to the iShear device and off you go.

Vicair : Exceptional Air cushions with unique technology. Benefits, ready to go as is, no inflation, lower maintenance, lighter, more comfort, easier to adjust for positioning and stability. Now the new Vector 02, the worlds first machine washable cushion, wash at up to 60 degrees celicius.

Dynamic Healthcare Systems : Nxt Back systems, faster to fit, removable in seconds with one hand. Angle, back height and asymmetry adjustable with minimum fuss . Once you have experienced you will say can they make it any easier ? See the Height adjustable , Armadillo and Contour backs.

TA Service : Power chairs from Denmark. Design can be seen in their simplicity. The philosophy is enhanced function and comfort should not be an option but standard. The new benchmark for standard is , super low 38cm/15" from ground to seatplate, hilow elevate 30 cm, suspension that is very soft and accommodating over kerbs and terrain. Now the new TAiQ Standing chair see it for yourself.

Seatara : The Wheelable it is the worlds lightest easy to fold in seconds, shower commode wheelchair. Be spontaneous, take anywhere anytime.

To Contact the Morton Perry team :

Call 0800 238 423 sales@mortonperry.co.nz www.mortonperry.co.nz

Our Partners Websites :
www.ishear.com
www.vicair.com
www.dynamichcs.com
www.ta-service.dk
www.seatara.com

Ottobock

All around the world, the Ottobock name stands for high quality and technologically outstanding products and services. With 50 sales, service subsidiaries, and export activities in over 140 countries across the globe, we are constantly in close contact with our customers.

Otto Bock Australia delivers quality, innovative mobility solutions. From paediatric through to geriatric, the Human Mobility product portfolio addresses a broad spectrum of needs across a wide range of age groups. Working with our distribution partners, we aim to deliver industry leading advice, support and service to patients, their therapists and institutions.

"Quality for life", the quality of life enjoyed by the people who use Ottobock products every day.

Quantum

Quantum Rehab, a Pride Mobility Products Corporation company, designs and manufacturers complex rehabilitation solutions for individuals with comprehensive mobility needs. Quantum Rehab offers consumers complete rehab solutions with many of the most highly regarded products and brands on the market today: iLevel Power Chairs, The Q6 Power Chair Series, TRU-Balance Power Positioning System and Q-Logic 3 Drive Control System. Quantum Rehab is dedicated to providing products with the industry's most innovative features, distinctive styles, and performance-driven designs, helping consumers lead healthy, active, independent lives.

20-24, Apollo Drive, Hallam 3803 VIC
Phone: 1800 800 990
Email: sales@quantumrehab.com.au
Web: www.quantumrehab.com.au

RGK New Zealand

Established in 2005 RGK New Zealand has always had a clear focus – to provide unique custom bespoke Wheelchairs and on/ off road Bike solutions, that enable maximum mobility, usability and comfort. No one solution is the same in our world and solving complex requirements is what we strive to uphold. We believe that a chair solution should be 'made to measure', it should be lightweight and it should meet all of the needs of a user.

Specialising in RGK and Quickie we have the range and options to match our expertise in providing a 'true' seating solution. While all chairs ultimately have four wheels and a frame, our research and understanding of what best matches a certain client and/ or situation is what sets us aside.

Visit our product range;
www.rgklife.com
www.sunrisemedical.eu/wheelchairs/quickie/lightweight-wheelchairs
www.lashersport.com/products

We're always available for an honest straight up chat
Brendon Stratton
0274660028
brendon@rgkwheelchairs.co.nz

Second Skin

Second Skin is a world leader in the design, manufacture and service delivery of custom made dynamic splints for the management of children and adults with neurological conditions. Our dynamic splints are prescribed for clients with cerebral palsy, acquired brain injury, cerebrovascular accident (CVA/stroke), autistic spectrum disorders and congenital abnormalities.

Each of our products is prescribed on an individual basis to meet our client's specific medical and therapeutic needs, in conjunction with their seating system, other equipment and therapy goals. Second Skin provides services in Australia, United Kingdom, Ireland and New Zealand.

www.secondskin.com.au
brisbane@secondskin.com.au
Brisbane: +61 7 3084 4319
Sydney: +61 2 9386 0812

Speedy Snail Mobility

Speedy Snail Mobility (previously Mobility Solutions Centre Dunedin) focuses on three core objectives:

The first is to provide a range of chairs that are not only lightweight, functional and energy efficient but allow the users unique personality to shine through. Ensuring their chair feels more like an extension of self rather then just a mobility aid.
We achieve this by providing a full range of Carbon Fibre, Aluminium (Progeo) Wheelchairs, Physio Backrests, Dynamic seating systems and Curve Handrims.

Secondly we find solutions to getting Adventurous Kiwis off the pavement and back into our beautiful natural enviroments.
Track Chairs, Suspension Wheels, Carbon Fibre SideStix (Crutches) and powered Handbikes are a few of the tools that open up our beaches and forests once more.

Lastly we pride ourselves on keeping up with leading edge therapeutic technologies such as Rewalk Exoskeletons and RTI FES machines.

Shanon Arnold
0277271471
www.speedysnailmobility.co.nz

Sunrise Medical

At Sunrise Medical Australia our daily goal is to improve the lives of people by creating innovative, high quality products designed to promote independent and involved lifestyles.

We pride ourselves as being a global leader in the development, design, manufacture and distribution of a wide range of rehabilitation and mobility products such as:

- Manual wheelchairs
- Power wheelchairs
- Sports & recreation wheelchairs
- Customised seating solutions
- Pressure cushions
- Positioning systems
- Mobility scooters
- Everyday living aids

Our key products, marketed under the Quickie, Zippie, Breezy, Sterling, JAY, and Breezy Everyday proprietary brands, are available to the public through our extended dealer network, who we provide ongoing training and support to ensure they are highly experienced and educated, enabling you to get the best product solutions using the latest technology and after sales help & support.

Visit our website for more information: www.sunrisemedical.com.au

WS Medical

Multi- C- Air rise & recline chair

A chair to meet your long term needs – solving the challenge of continual changing care demands.

A dual motor Tilt in Space lift and recline chair with a difference. The Multi C-Air chair is variable and adaptable meeting comfort, pressure care, positioning and transfer needs whilst maximising independence.

It's easily interchangeable pressure seat, backrest and headrest cushions mean it offers much more than the average lift and recline chair. The Multi C-Air chair ensures long term success even if needs are changing, resulting in great value for money and versatility.

The Multi-C-Air chair (on display) is one of a number of chairs designed for those who must sit for long periods of time. Come along to the stand.....you will be surprised

Have a great symposium.

W.S. Medical contacts:

Mobile: 027 4867-779
Phone: +64 9 306-4095
Freephone: 0800 330 331
FreeFax: 0800 330 332

don@wsmedical.co.nz
www.wsmedical.co.nz

Oceania
SEATING 2017
SYMPOSIUM
MAURIORA | Empowerment, Control and Choice