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Workshop Abstract Table of Contents

65. ARATA Accessible Gaming Special Interest Group (SIG): An Introduction to Accessible Gaming

Authors
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Focus area:
- People
- Products
- Provision

Abstract
The gaming industry has seen a tremendous growth in recent years, with an ever-increasing number of games available on various platforms (Halbrock et al., 2019). In Australia, gaming is immensely popular, with 67% of residents playing video games and spending an average of 89 minutes per day on gaming. The COVID-19 pandemic has further boosted the popularity of gaming as a way to pass time, have fun, and relieve stress (Barr & Copeland-Steward, 2022; Brand et al., 2017).

According to the Accessibility in Gaming Report, 66% of gamers with disabilities experience barriers or gaming-related issues such as the affordability of suitable assistive technology (AT), followed by the lack of knowledge or time required to set up, limited availability of suitable AT, inaccessible consoles, and inaccessible games (Accessibility in gaming report, n/d).

In 2022 The Australian Rehabilitation and Assistive Technology Association (ARATA) hosted an accessible gaming webinar that led to the formation of a new special interest group (SIG) connecting members around Australia with a keen interest and/or expertise in accessible gaming.

This workshop aims to provide an introduction to gaming and the different technologies that can improve access for those with upper limb impairments that may face some challenges using mainstream gaming technologies.

The hands-on experience will allow participants to develop practical skills and understand how the technologies work in real-world scenarios. They will also learn the importance of considering factors such as seating and positioning, function and play style when selecting assistive technology tools for disabled gamers.

This will be similar to the workshop presented at the Oceania Seating Symposium in 2023, but with an extended duration of 3 hours to allow participants to have more opportunity to play games and trial different gaming devices and technologies.

Summary

ARATA's Accessible Gaming Special Interest Group will provide an introduction to gaming and the technologies that can improve access for gamers who face challenges with mainstream gaming technologies. Participants will learn about the different technologies, how they work and will also get to trial a range of gaming equipment during the workshop.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

- Identify strategies for improving the accessibility of gaming for people with physical disabilities, particularly those with upper limb impairments.
- Understand a range of resources, assistive technologies and tools that can be used to enhance gaming accessibility, including adaptive controllers, switches, and environmental modifications.
- Improve awareness of the impact of improved gaming accessibility and participation, both for individuals with disabilities and for the broader gaming community.

What evidence / information was used to develop the workshop content?

Accessibility in gaming report | Disability charity Scope UK. (n.d.). Scope. https://www.scope.org.uk/campaigns/research-policy/accessibility-in-gaming/
Barr, M., & Copeland-Stewart, A. (2022). Playing video games during the COVID-19 pandemic and effects on players' well-being. Games and Culture, 17(1), 122-139.
Brand, J. E., Todhunter, S. & Jervis, J. (2017). Digital Australia 2018. Eveleigh, NSW: IGEA.
Halbrook, Y. J., O'Donnell, A. T., & MsetX, R. M. (2019). When and how video games can be good: A review of the positive effects of video games on well-being. Perspectives on Psychological Science, 14(6), 1096-1104.
Case study examples.
The presenters are OTs who have assisted with the implementation of accessible gaming solutions in their practice.

What is the complexity of the content (introductory, intermediate or advanced)?

Introductory

100. Using assistive technology for cognitive support within everyday activities: Demonstrating products and providing resources for use by assistive technology advisors

Authors
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Focus area
People
Provision
Personnel
Place

Abstract
People with acquired brain injury (ABI) can experience changes in their executive functioning (including remembering, planning, organising or initiating tasks), which mean they require support in everyday activities. Electronic assistive technology (including both ambient assisted living products, customised assistive technology solutions, and mainstream information and communication technology) may add to – or at times replace – human support for the cognitive changes experienced after ABI. However, the rate at which electronic assistive technology is developing means published evidence to guide its use often lags behind clinical practice, or at times is completely lacking. As such, people with ABI, their families, friends, allied health professionals or other assistive technology advisors working with them are often unsure of which assistive products could be most suitable to aid cognitive support in everyday activities, and how to evaluate new products coming onto the market.

Through a four-year project funded by the Transport Accident Commission in Victoria and icare New South Wales, completed in mid 2024, our team has examined existing research and built new evidence of the use of electronic assistive technology for cognitive support in everyday activities after brain injury. Through this project, we have co-designed and co-produced the Framework for Evaluation of Assistive Technology (FEAT) with people with ABI and allied health professionals working with them. We have also collated, developed new approaches to, and demonstrated use of both assessment tools and outcome measures. These resources can be used to ensure two-way conversations between the person with ABI

and/or people working with them, as part of a wholistic assessment, trial and evaluation of assistive technology used for cognitive support.

This workshop will focus on sharing the tools, resources and checklists that allied health professionals or other assistive technology advisors may use with people with ABI and their families or other key supporters. The session will include demonstration of the assistive products we have trialled in collaboration with people with ABI, and the outcomes and challenges experience during the trial phase. Workshop attendees will gain new knowledge and resources that they can apply after the session in their practice.

Summary

This workshop will demonstrate use of a range of assistive products, and information, resources and checklists on how to use technology, for cognitive support in everyday activities after acquired brain injury (ABI) and other conditions that impact executive functioning. Tools for both people with ABI and their families, and health professionals and other technology advisors, will be presented.

Additional Workshop Information

What are the specific workshop learning outcomes?
By attending this workshop, participants will:
1) Be provided with an overview of the types of assistive technology that can be used for cognitive support in everyday activities after acquired brain injury (ABI);
2) Understand a Framework for Evaluation of Assistive Technology used for cognitive support;
3) Gain knowledge on key things to consider when exploring the use of technology for executive function support with people with ABI;
4) Learn about a range of assessment tools and outcome measures that can be used in consideration of the person, their activities, the environments they undertake these activities, and assistive technology that may be suitable for use for cognitive support.

What evidence / information was used to develop the workshop content?

This workshop draws on a four year research project funded by the Transport Accident Commission in Victoria and icare New South Wales (NSW), led by A/Prof Libby Callaway and an interdisciplinary team from Monash University in collaboration with the Ingham Institute in NSW.

Below are some publications stemming from this work that include the evidence and information used to develop the workshop content:
- Bould, E., Tate, R., Simpson, G., Brusco, N., Licciardi, L., & Callaway, L. (2023). Evaluation of the Effectiveness of Assistive Technology for Executive Function Support for People With Acquired Brain Injury: Protocol for Single-Case Experimental Designs. *JMIR Res Protocols, 12,* e48503. doi: 10.2196/48503.
- Simpson, G., Rendall, R., Liddle, J., & Callaway, L. (2021). Can technology enhance community independence for people with impairments in executive functioning after severe TBI? Presentation to SIRA NSW. Access via https://www.sira.nsw.gov.au/__data/assets/pdf_file/0003/932025/Can-technology-enhance-community-independence-for-people-with-impairments-in-executive-functioning-after-severe-TBI.pdf

- Liddle, J., Callaway, L., & Simpson, G. (2021). Electronic assistive technology to support executive functioning: A scoping review focusing on clinical implications. Presented at the Occupational Therapy Australia 29th National Conference and Exhibition, June 23-25 2021, *Australian Occupational Therapy Journal, 68*(S1), 7-91.
- Layton, N. & Callaway, L. (2020). Person-Centred Approaches To Evaluation Of Assistive Technology Products And Outcomes: An Australian Policy And Practice Perspective. Presentation at the 2020 RESNA annual conference. Access via https://www.resna.org/sites/default/files/conference/2020/GAATO/144Layton.html

There is also a free open access educational website launched in mid 2024 using evidence and activities stemming from this project. This website is called My Technology Space, and it hosts a range of evidence-informed information, tools and resources on the use of technology for cognitive support in everyday activities after brain injury.

What is the complexity of the content (introductory, intermediate or advanced)?
Introductory to intermediate

133. Prevention, identification and measurement of postural asymmetry in lying

Authors

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Focus area

Personnel

Abstract

Adults and children with cerebral palsy (CP) who are wheelchair dependent (Gross Motor Function Classification System, GMFCS, Level IV or V) are particularly vulnerable to chest, spinal, pelvic and hip postural asymmetry arising from neuromuscular dysfunction. Unsupported static postures overnight contribute to body shape distortion with secondary complications including pain, pressure injury risk, contracture, poor sleep quality and reduced family and carer wellbeing impacting on quality of life. Understanding the influence of gravity and sleeping position on a person's potential body shape distortion is an important aspect in the prevention and remediation of postural asymmetry.

There is a lack of robust evidence underpinning sleep positioning in the prevention of secondary complication yet the National Institute for Health and Care Excellence (NICE) guidelines and The Confidential Inquiry into Premature Deaths of People with Learning Disabilities (CIPOLD) are recognising the role of postural care in the prevention of secondary complications including premature death.

Objective clinical measurement of posture is essential for ongoing monitoring and treatment planning. Regular radiographs to monitor skeletal changes in this population are challenging to implement due to cognition and / or an inability to achieve a standardised supine position thus making ongoing surveillance problematic. This can be achieved through the use of the Goldsmith Indices of Body Symmetry (GIoBS). The GIoBS takes an impairment focus to the measurement of postural asymmetry providing a Windsweeping Index (hip and pelvic symmetry), chest right/left ratio (thoracic symmetry), a chest depth/width ratio (thoracic shape) and hip external rotation / abduction calculation.

Interventions for managing supported lying posture will be discussed for common postural asymmetries of windswept hips, scoliosis, pelvic obliquity and limb contracture including the use of commonly available and commercially available products. Case studies utilising the GIoBS as well as modified manual measurement and therapeutic supported lying intervention strategies will be presented.

References:
1. Agustsson, A., Sveinsson, T., & Rodby-Bousquet, E. (2017). The effect of asymmetrical limited hip flexion on seating posture, scoliosis and windswept hip distortion. Res Dev Disabil, 71, 18-23. doi:10.1016/j.ridd.2017.09.019
2. Goldsmith, E., Golding, R. M., Garstang, R. A., & MacRae, A. W. (1992). A Technique to Measure Windswept Deformity. Physiotherapy, 78(4), 235-242.

doi:https://doi.org/10.1016/S0031- 9406(10)61432-0

3. Goldsmith, E., & Goldsmith, J. (2013). Goldsmith Indices of Body Symmetry (3rd ed.). www.simplestuffworks.co.uk: www.simplestuffworks.co.uk.

4. Holmes, C., Brock, K., & Morgan, P. (2018). Postural asymmetry in non-ambulant adults with cerebral palsy: a scoping review. Disability and Rehabilitation, 1-10. doi:10.1080/09638288.2017.1422037

5. Holmes, C., Brock K., & Morgan, P. (2021). Pain and its relationship with postural asymmetry in adults with cerebral palsy: A preliminary exploratory study. Disability and Health Journal, 14(3), 101063-101063

6. Letts M, Shapiro L, Mulder K, Klassen O. The windblown hip syndrome in total body cerebral palsy. Journal of Pediatric Orthopaedics. 1984;4(1):55-62.

7. Sato, H. (2020). Postural deformity in children with cerebral palsy: why it occurs and how is it managed. Physical Therapy research, 23, 8-14.

Summary

Adults and children with cerebral palsy (CP) who are wheelchair dependent are particularly vulnerable to chest, spinal, pelvic and hip postural asymmetry. This workshop will focus on managing supported lying postures: understanding prevention, measurement and intervention strategies for common postural asymmetries, and utilising standardised and modified manual outcome measurement options.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

Understand what clients would benefit from therapeutic supported lying.

Understand how and why the body shape of people with movement problems may distort

Be introduced to objective measurement of body shape asymmetry

Be able to identify direction of chest rotation and possible hip dislocation

Be introduced to the principles of therapeutic supported lying

What evidence / information was used to develop the workshop content?

References:

1. Agustsson, A., Sveinsson, T., & Rodby-Bousquet, E. (2017). The effect of asymmetrical limited hip flexion on seating posture, scoliosis and windswept hip distortion. Res Dev Disabil, 71, 18-23. doi:10.1016/j.ridd.2017.09.019

2. Goldsmith, E., Golding, R. M., Garstang, R. A., & MacRae, A. W. (1992). A Technique to Measure Windswept Deformity. Physiotherapy, 78(4), 235-242. doi:https://doi.org/10.1016/S0031- 9406(10)61432-0

3. Goldsmith, E., & Goldsmith, J. (2013). Goldsmith Indices of Body Symmetry (3rd ed.). www.simplestuffworks.co.uk: www.simplestuffworks.co.uk.

4. Holmes, C., Brock, K., & Morgan, P. (2018). Postural asymmetry in non-ambulant adults with cerebral palsy: a scoping review. Disability and Rehabilitation, 1-10. doi:10.1080/09638288.2017.1422037

5. Holmes, C., Brock K., & Morgan, P. (2021). Pain and its relationship with postural asymmetry in adults with cerebral palsy: A preliminary exploratory study. Disability and Health Journal, 14(3), 101063-101063

6. Letts M, Shapiro L, Mulder K, Klassen O. The windblown hip syndrome in total body cerebral palsy. Journal of Pediatric Orthopaedics. 1984;4(1):55-62.

7. Sato, H. (2020). Postural deformity in children with cerebral palsy: why it occurs and how is it managed. Physical Therapy research, 23, 8-14.

As well as clinical expertise and analysis

What is the complexity of the content (introductory, intermediated or advanced)?
Introductory

126. Let's 'High Five' Alternate Access - a hands-on workshop. A hands-on workshop, an Introductory workshop for those new to Electronic AT

Authors
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Focus area
People
Products
Provision

Abstract
When people have challenges using products such as computers, tablets, and mobile phones, identifying options to give them control is often a focus of service provision. Customising the inbuilt device settings such as Ease of Access or Accessibility Options may meet the person's need, however alternate hardware or methods of control may be required. Typically, one size does not fit all, and a range of access options may become part of the person's toolbox.

It is important that clinicians working with electronic assistive technology (AT) have knowledge of options that will enable a person with alternate access needs to use everyday products such as mobile phones and more specialised AT like high tech AAC and environmental control. An understanding of frameworks that can support decision making on determining the right tool or method of control to support the task is an important part of service provision.

This workshop is designed to be practical and engaging. It will introduce participants to five methods of control that are commonly considered for people with alternate access needs and decision-making frameworks that can support tool selection. Participants will be assigned to small groups and rotate around 5 different workstations for each method of control. The five methods of control explored in this workshop are:

- touch control – adjusting keyboard and display settings, alternate keyboards, keyguards, styli, arm rests
- mouse control – adjusting mouse settings, alternate types of mice, trackball, joystick, head mouse, onscreen keyboards
- voice control – speech to text and voice control in Windows, iOS and Android
- switch control – switch scanning for text entry, mouse control, target selection, frequency of use layout
- eye gaze control – calibrating and using an eye gaze device for exploratory activities as well as text entry and desktop control

AT will be set up at each workstation so that participants can try text entry, cursor control and target selection using each method of access. Cheat sheets will guide the participants at each workstation.

In addition to the practical component of this workshop participants will be introduced to an access hierarchy, the SETT framework (Zabala, 2005), Toolbelt Theory (Socol, 2010) and the Red Yellow Green – a traffic light analogy (Erickson and Koppenhaver, 2020) as frameworks that can support decision making around alternate access option selection. A case study will highlight how decision-making frameworks can support client outcomes.

Summary

This is an introductory practical workshop for people new to electronic AT. Participants will rotate in small groups around five workstations for different methods of control (touch, mouse, voice, switch and eye gaze). Decision making frameworks to select the right tool for the task will also be explored.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

1. Have hands on experience using and customising five different alternate access options that are commonly used to support people to achieve computer access, communication and environmental control goals
2. Be able to identify at least one framework that can support decisions around alternate access option selection for a person with alternate access needs

What evidence / information was used to develop the workshop content?

This hands on workshop is based on Electronic Assistive Technology training at Cerebral Palsy Alliance to provide clinicians with practical experience using and setting up five key types of alternate access – touch, mouse, voice, switch and eye gaze. The workshop content and the cheat sheets for each of the five workstation rotations has been developed by clinicians with specialist knowledge and skills in assessment and intervention in alternate access for computer, communication and environmental control.

What is the complexity of the content (introductory, intermediated or advanced)?

The content will be introductory. Each workstation will have cheat sheets for participants to work through to guide their exploration of each method of alternate access.

93. Fundamentals of Intermediate Assistive Technology

Authors
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Focus area
People

Abstract
This workshop will introduce learners to the fundamentals of Assistive Technology for emerging AT Assessors. Workshop content will explore topics related to best practice steps for AT interventions according to international literature and contemporary practice. This will include:

- Introduction to assistive technology complexity levels and providing best match support as an AT Assessor
- Core AT assessment skills for basic AT solutions requiring minor scripting or sizing to suit user needs
- Hands-on practice in assessing and measuring people for basic seating
- Considerations when AT is being requested for behaviour management and other scenarios where the AT device is not the only solution
- Translating assessment findings to AT features
- Supporting successful AT trials and team approach with AT suppliers
- Aligning clinical recommendations with funding criteria
- Supporting successful delivery and implementation of mid complexity AT
- Beyond delivery: the AT Assessor role in capacity building, review and maintenance

Workshop participants will be introduced to case examples to assist with applying this new learning to real life scenarios. Learners will be provided with activity worksheets so they can connect with their local AT suppliers to explore and evaluate common AT solutions following completion of the workshop.

Summary
This workshop will introduce learners to the fundamentals of Assistive Technology for emerging AT Assessors. Workshop content will explore topics related to best practice steps for AT interventions and applying these to practical scenarios. It is best suited to occupational therapists and physiotherapists with at least 12 months post-graduate experience, working in the disability and/ or community sector.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

- Understand internationally recognised best practice steps for supporting AT interventions
- Gain practical skills in assessing and measuring for mid complexity AT solutions such as electric lift chairs, adjustable beds and transfer AT
- Apply this learning to clinical scenarios

What evidence / information was used to develop the workshop content?

- Australian Wound Management Association. Pan Pacific Clinical Practice Guideline for the Prevention and Management of Pressure Injury. Cambridge Media Osborne Park, WA: 2012.
- Borgnis F, Desideri L, Coverti RM, Salatino C. Available Assistive Technology Outcome Measures: Systematic Review. *JMIR Rehabil Assist Technol* 2023;10:e51124.
- Cook, A. M., & Polgar, J. M. (2008). Delivering assistive technology services to the consumer. Cook & Hussey's assistive technologies: Principles and practice (3rd ed., pp. 91-142; 4). St. Louis, MO: Mosby, Inc.
- de Jonge, D., Hoyle, M., Layton, N., & Verdonck, M. (2017). The Occupational Therapist: Enabling Activities and Participation using Assistive Technology. In S. Federici & M. J. Scherer (Eds.), *Assistive technology assessment handbook* (pp. 229–244). Boca Raton: CRC Press.
- European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Quick Reference Guide. Emily Haesler (Ed.). EPUAP/NPIAP/PPPIA: 2019
- Layton, N., & Brusco, N. (2022). The Australian assistive technology equity studies: Improving access to assistive technology for people with disability who are not eligible for the NDIS. Monash University; COTA Victoria. https://doi.org/10.26180/21113887.
- Motivation Australia Factsheet: Abandonment of Assistive Technology (2018). Link: MA-Abandonment-Oct21-RevC-web.pdf
- Summers, M., & Walker, L. (2013). National Credentialing and Accreditation for Assistive Technology Practitioners and Suppliers An Options Paper. Parramatta: Assistive Technology Suppliers Australasia and Australian Rehabilitation and Assistive Technology Association.
- Victorian Department of Health and Human Services. (2016) Allied Health: credentialing, competency and capability framework (revised edition).
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What is the complexity of the content (introductory, intermediated or advanced)?

Intermediate. Best suited to occupational therapists and/ or physiotherapists with at least 12 months post-graduate clinical experience, working in the disability and/ or community sector. Content is targeted towards practitioners who are wishing to expand their general OT/PT scope of practice to prescribe mid complexity assistive technology (not scripted/ high cost/ postural considerations). Suited to practitioners supporting people through the NDIS.

20. Mobile phone access and Infra-red controls from Powered wheelchairs

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Focus area
    Personnel
    Products
    Provision

Abstract
Access to smartphones is a gateway to the digital world we live in, and mobile phones are no longer just used for making phone calls but also to manage a range of day-to-day operations such as internet banking, navigation and online shopping. Significant barriers exist for people with disabilities to access the full capabilities of their mobile phone and the current Ease of Access features are not utilised to their fullest potential. The three main barriers are:

1. Lack of awareness about the possibilities within this realm
2. Lack of access to personnel with expertise that can setup robust, reliable, and efficient access to mobile phones from powered wheelchair users
3. Lack of technological improvements to facilitate and improve current the ease of access features

This workshop aims to address the first two barriers by increasing the knowledge of the audience as to what is possible and giving them the tools to gain expertise by providing them a step-by-step guide on how to optimise the settings in a smart phone for increased ease of function from the wheelchair.

Popular smart phones such as the Samsung Galaxy or iPhone Series have robust operating systems that incorporate several accessibility features for people with physical or cognitive disability. The accessibility features allow external hardware (such as a switch or powered wheelchair) to interface with the mobile phone and carry out some or all of the standard functions such as making phone calls or posting a photo on Instagram.

The popular control systems used in a powered chairs such as Qlogic and Rnet utilise Bluetooth technology to interface with mobile phones. The chairs also have Infra-red (IR) transmitters that emit IR signals to control a range of IR operated devices such as TV, DVD and other home appliances.

This workshop will deliver a hands-on experience for the attendees by utilising their personal mobile phones (both Android and iOS operating systems) optimally setup accessibility features and interface with a powered wheelchair. The areas that would be covered include but not limited to iOS switch control, utilising iOS assistive touch as a mouse pointer and interacting with android phones as well from the wheelchair.

In addition, a step-by-step how-to-guide will be provided on how to activate a variety of features on the powered wheelchair and enabling Bluetooth operation of a smart phone from the wheelchair. Creating IR menus on the wheelchair displays and copying the codes from infra-red remotes into the powered wheelchair will also be demonstrated.

Summary

This workshop will deliver hands-on experience to attendees on how to optimise accessibility and interface features between power wheelchairs and their own Android or iOS phone. Aswell as setting up Infra-red (IR) control of IR operated devices such as a TV from a PWC

Additional Workshop Information
 By attending this workshop, participants will:
- Understand the concepts of interfacing smart phones from Powered wheelchairs
- Learn about optimising the accessibility features on smartphone
- Learn about programming wheelchairs to set up Bluetooth and Infra-red commands

What evidence / information was used to develop the workshop content?
Rehab engineering Clinic (REC) has been setting up access to mobile phones and Infra-red controls for more than 5 years and the presentation draws information from their experience

What is the complexity of the content (introductory, intermediated or advanced)?
Intermediate ~ advanced

96. Minor modifications, equipment, and technology: A complementary partnership to achieve transformative outcomes

Authors
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[1]Home Design For Living, Brisbane, Australia, [2]SmartAT4U, Brisbane , Australia

Focus area
    People
    Products
    Process

Abstract
There is limited understanding of the value of minor modifications. There is also naive understanding of home modification practice resulting in the perception that minor modifications are simple and able to be undertaken by anyone (Ainsworth & de Jonge, 2019). Additionally, there is little consideration being given by practitioners to the pairing of home technologies with equipment and minor home modification solutions to achieve greater accessibility for inclusive living within the home environment.

This workshop will explore the complexity associated with determining the most appropriate home modification, equipment, and technology solutions for people who present with a range of needs. It will seek to provide an international overview of the definitions of minor and major/complex modifications, and the framework for home modification service delivery that was developed in Australia that has been further refined and implemented in policy and practice in the United Kingdom. There will be problem solving associated with specific client scenarios that highlight the complexity associated with the minor modification process. The workshop will explore equipment and home technology options that can be paired with minor modifications to provide creative solutions in the home.

This presentation will encourage people with a disability and practitioners to reconsider their thinking about any minor modification process being simple and a "do it yourself" approach that anyone can undertake.   It will challenge practitioners to link with technology experts to expand their knowledge about solutions for the home. It will also encourage workshop attendees to think about how the Australian framework for home modification complexity could be applied in their own practice and the continuing professional education that they require to enhance their professional knowledge and skills. Finally, there will be discussion about how international initiatives using the original Australian model can influence Australian policy and practice.

Summary
This workshop will discuss the complexity of decision making that is highlighted in an Australian framework of minor and major home modification service delivery. Attendees will also discuss the value of combining minor modifications and equipment with home technologies to create solutions that result in transformative outcomes for users.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

- Understand the complexity associated with minor modifications.
- Understand a framework for practice that can shape thinking about the complexity of solutions.
- Understand the value of combining minor modifications and equipment with home technologies to create innovative solutions.

What evidence / information was used to develop the workshop content?

Ainsworth, E., & de Jonge, D. (2019). Minor modifications: It's not as simple as "Do It Yourself" (DIY). In E. Ainsworth & D. de Jonge (Eds.). *An occupational therapist's guide to home modification practice*. Second edition. (pp 381-388). Thorofare, NJ: SLACK Inc.

What is the complexity of the content (introductory, intermediated or advanced)?

Introductory, intermediated and advanced

112. Wheelie early: A global perspective on empowering early powered mobility

Authors
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Focus area
    People
    Personnel
    Policy

Abstract
Mobility is recognised as a basic human right [1], however often children are denied this right, despite the repeated international recommendation that powered mobility should be considered earlier than at present [2]. Early emerging evidence demonstrates that access to independent mobility has positive effects on children developing their identify [3] and gaining skills such as motivation to move [4] and self-exploration [5], even in the children with the most complex issues. The access to early powered mobility does not have to be in a traditional sense; in a scoping review, James et al (2019) demonstrated that access to independent mobility including ride on cars encouraged development of social emotional as well as mobility skills in children as young as 6 years old [6].

Young children with multiple and severe impairments are often denied the ability to access powered mobility due to misguided policy and practical advice and poor evidence. Recently, the exploration of case series and other novel ways of collecting robust information have been developed and accepted [7]. One way of improving evidence to convince policyholders of the benefits of early powered mobility is to pool information with national and international partners.

This workshop will begin with an exploration of the evidence for early powered mobility on childhood development and identify, and a discussion as to the key benefits and challenges experienced by the workshop participants. This will then move into exploring readiness for accessing powered mobility, including selecting equipment that is matched to the child's developmental and sensory needs. International case studies will be presented, including children with different abilities and how their therapists set up the environment for success. Following this, how to create a supportive environment for early powered mobility will be discussed, with workshop attendees designing their own early powered mobility programs in a small group environment; which will include how to overcome implementation challenges. The workshop will finish with a discussion on global perspectives and collaboration; sharing of success stories and challenges and a discussion on the establishment of a network of researchers and participants who can pool information to further develop the evidence base for policy and practice in supporting children and young people to have access to early powered mobility, to enable them to achieve their basic human rights.

Summary

Early access to powered mobility has shown multiple benefits in addition to mobility. This workshop will review the emerging evidence, gain an understanding of international expertise and finish with a call to action for future to participants to become engaged in data collection to grow the evidence base and influence policy.

Additional Workshop Information

What are the specific workshop learning outcomes?

1. By attending this workshop, participants will gain a deeper understanding of the current evidence of early powered mobility for young children and children with cognitive impairments.
2. Participants will gain an understanding of different ways to engage children in early powered mobility, even when the child has very limited communication styles.
3. The workshop will raise awareness of the participants as to the importance of early powered mobility in improving skills such as
4. By the end of the workshop, we will form a network of interested researchers and practitioners to add to the excellent multiple single case study designs piloted by Kenyon, in order to add to the international pool of evidence to support research and influence policy in provision and training in early powered mobility.

What evidence / information was used to develop the workshop content?

The evidence used to develop the workshop content was multimodal:

1. A Literature review of current evidence
2. Workshops and attendance at conferences (International Seating Symposium 2023, 2020, European Seating Symposium, 2024, Oceania Seating Symposium, 2022) and liaison with international experts in this field through these workshops
3. Attendance at University of Washington early powered mobility clinics
4. Academic liaison with international experts, including development of joint research proposals and development of research projects.

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What is the complexity of the content (introductory, intermediated or advanced)?
Intermediate to advanced

24. U-BEACH Workshop for Beach Accessibility

Authors
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Focus area
- People
- Personnel
- Place
- Policy
- Products
- Provision

Abstract
Background: With 15% of the world's population living with disability, it is considered a global human rights and public health issue. Compared to people without disability, people with disability have poorer self-reported and mental health, higher rates of chronic illness, and shorter life expectancy. Because of the aging population and pressure on disability services, novel strategies that address the key health inequalities between people with and without disability are needed.

The beach is Australia's most popular recreational destination. The recreational value of the beach is widely reported in terms of its immense economic, social, and environmental significance; however, the lack of blue space health research in Australia highlights the potential oversight of the true value of the beach. Research shows that visiting the beach is associated with enjoyment, relaxation, and social interaction, as well as improved physiological, psychological, and social health and wellbeing. Beaches also provide a sense of place and offer participation opportunities for activities that promote and improve wellbeing.

Unfortunately, access to beach environments is not possible for all Australians. Our research investigating the barriers and facilitators of beach access for older people and people with disability has identified that two thirds of this population is unable to visit the beach as often as they would like to, with half unable to visit at all. The most frequently reported barriers to beach access included difficulty moving on soft sand (87%), no specialised mobility equipment (75%), and inaccessible lead-up pathways (81%). If beach access was improved, respondents reported they would visit the beach more often (85%), for longer (83%), and have an improved experience (91%).

Elements of an accessible beach should include the consideration of the built environment (e.g., accessible parking, accessible lead-up pathways and ramps to the beach), physical equipment (sand walkway or access mats, specialised beach mobility equipment), and services to support beach use (e.g., beach accessibility calendars and booking systems, physical assistance for beach and ocean activities).

There is currently significant social momentum for accessible beaches. We aim to leverage this momentum to use the beach as a platform for innovative beach-based healthcare, support, social, recreation, and tourism services. We recognise that a critical missing piece to achieve this is training to support the execution of accessible beaches (i.e., place, products, policy) and establishment of beach-based services (i.e., provision, people, personnel).

Aim: This workshop aims to present a comprehensive model for beach accessibility and offer introductory training to support its implementation.

Take home messages:
- People with disability have limited beach access, excluding them from a wide range of health and wellbeing benefits.
- The health value of the beach is recognised, with use of the beach as a therapeutic setting widely accepted.
- The elements of an accessible beach should include both equipment and services to support equipment use.
- Innovative practice opportunities include beach mobility assessments, specialised equipment prescription, services to support participation in beach-based activities, beach-based healthcare treatments, and accessibility consultation.

Summary
With increasing community demand and assistive technology for beach access, a critical missing piece to improve beach accessibility is training. This workshop presents key barriers to beach access and evidence-based facilitators and practical ideas to overcome them. This will support the execution of accessible beaches and establishment of beach-based services.

Additional Workshop Information
What are the specific workshop learning outcomes?
By attending this workshop, participants will develop knowledge and skills to:
- Understand the elements of an accessible beach.
- Create a communication-friendly environment at the beach.
- Outline strategies to stay safe on accessible beaches.
- Identify widely available beach accessibility equipment and how it can be accessed for community use.
- Compare features of widely available beach mobility equipment.
- Recognise how to safely assist people with disability with their movement at the beach (e.g., walking, wheeling, transfers).
- Reflect on how to support people with disability to participate in their preferred beach-based activities.

What evidence / information was used to develop the workshop content?
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What is the complexity of the content (introductory, intermediated or advanced)?

Introductory

82. Getting the Best out of Custom Seating

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Focus area
People
Products
Provision

Abstract
Fully bespoke, custom-moulded wheelchair seating products are now readily available to clinicians, and advances in custom moulded seating, based on orthotic and prosthetic principles, have incorporated lighter, breathable and less bulky materials into manufacturing. Lightweight, streamlined products, created in real time from digitised moulds can now be easily created from the field, with the client sitting in their own mobility base, in their own home. This ease of moulding and digitising makes bespoke products now more easily accessible to clinicians and clients than ever before. The quality and utility of the end product has significantly expanded the potential for custom seating application across a broader range of needs, including as a potential option for early intervention.

While bespoke products are now more accessible than ever, off-the-shelf products have also become increasingly modular, adjustable and customisable, to better meet the needs of clients with atypical posture and anatomy.

So, for which clients should clinicians consider a fully bespoke system instead of a customisable off-the-shelf item? What are the key strategies for success when using bespoke products, and what are the potential pitfalls? When should early intervention be considered? What processes are required, to successfully assess, prescribe, mould and fit bespoke seating?

This workshop will explore seating strategies for early custom seating intervention as well as adult applications. It will include a review of custom shaped seats and back supports, an overview of the importance of correct orientation of seating for a constructive relationship with gravity, and the importance of optimal wheelchair configuration and seating interface to maximize the potential for mobility, function, and skin care. The need to establish clear linkages between clinical findings and the seating set-up, to achieve optimal outcomes, will be illustrated.

The process for identifying need will be explored, assessment requirements highlighted and tips for success shared. Real life case studies and outcomes will highlight the various applications of fully bespoke custom seating, including clients with severe global physical impairment as well as clients using active wheelchairs, early and later intervention, and sports applications. This workshop will include a "live" demonstration of the Ride moulding and fitting process.

Summary

When should clinicians consider a fully bespoke system instead of a customisable off-the-shelf item, and when should early intervention be considered? What are the key strategies for success, and what are the potential pitfalls? What processes are required, to successfully assess, prescribe, mould and fit bespoke seating? Hear the theory, see the case studies, and join us for a practical demonstration.

Additional Workshop Information

What are the specific workshop learning outcomes?

By the end of the workshop, participants will be able to:

Describe three potential evaluation findings that help build justification for use of fully bespoke custom seating.

Discuss how seating shape and orientation work together to optimize postural alignment and postural tendencies.

Explain 2 common errors often seen with indirect custom moulded simulation and how to overcome them.

Understand how to assess and explain deviations in 3 planes of motion, and link assessment findings to custom seating set-up.

Appreciate the physical process of taking a bespoke custom seating mould.

What evidence / information was used to develop the workshop content?

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Kittleson-Aldred, T., Russell, G. (2016) The Link Between Lying and Sitting: Implications for practice Abstract for 2017 International Seating Symposium .

Persson-Bunke, M. Hagglund, G., Lauge-Pederson, H., Westbom, L. (2012) Scoliosis in a Total Population of Children with Cerebral Palsy Spine, 37, pp 708-713.

What is the complexity of the content (introductory, intermediated or advanced)?
Intermediate

Conflict of Interest Disclosure

David Fagan is the Managing Director of Paragon Mobility, an importer and distributor of wheelchairs, commodes, and seating equipment located in Brisbane Australia.

131. Artificial Intelligence and Assistive Technology: What Do You Need to Know?

Authors

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[1]RMIT University, Melbourne, Australia, [2]Massey University, Palmerston North, New Zealand, [3]University of Adelaide, Adelaide, Australia, [4]Deakin University, Geelong, Australia
Australian Assistive Technology Conference (AATC) 2024
Sun Sea & AT: The rising tide of innovation and inclusive technology

Abstract

Artificial Intelligence (AI) has played an increasing role in Assistive Technology (AT) over several decades, powering features including text-to-speech technologies, voice recognition, optical character and image recognition, and GPS navigation. Newer innovations such as AI companions (e.g., (Portacolone et al., 2020), self-driving wheelchairs (e.g., Grigioni et al., 2024) and AT recommendation systems (Ran, Banes & Scherer, 2022) present new opportunities and challenges for the AT community. Many people with disability and diversity are also turning to mainstream AI (e.g., Chat GPT, image generation software, and virtual assistants) to boost their productivity, independence, and participation. More subtly, AI also informs many of the decisions made about us, shaping our access to finance, healthcare, education, marketing, entertainment, and online engagement.

Despite being an important consumer group, people who use AT are rarely included as genuine partners in the design of AI or represented in data sets used to "train" AI technologies. As a result, the market is flooded with 'intelligent' assistive technologies that don't address the needs of their intended users, or neglect users' rights to privacy and informed consent (Milne & Brayne, 2020). Research also indicates that mainstream AI products may also show bias against people with disability or intersectional diversity (Coeckelbergh, 2010; Lillywhite & Wolbring, 2019; Newman-Griffis et al., 2022; Smith & Smith, 2021). These issues risk discrimination and human rights violations for people with disability/diversity in health, education, finance, business, employment, and justice.

What is AI Literacy?
Information about AI is often hidden from users, presented in inaccessible document formats, or difficult to understand. This prevents many assistive technology users from making truly informed decisions about the way AI impacts their life. Nonetheless, having good "AI literacy" will be increasingly essential if we want to thrive in the digital world. AI literacy is an emerging concept describing the diverse range of skills required to know, understand, use, apply, evaluate, and create artificial intelligence technologies (Ng et al., 2021), and to effectively communicate about AI with others (Long & Magerko, 2020). Research is yet to confirm which AI literacy skills are most important for people who use AT and their supporters, but these are likely to include the ability to a) recognise and critique AI applications in AT, b) communicate information about AI in accessible ways, c) make and document decisions about AI use, and d) collaborate effectively with other disciplines and stakeholders in the pursuit of AI solutions.

This workshop will address essential AI literacy skills for the assistive technology community. You will learn how to identify safe, equitable, and empowering uses of AI, and how to recognise risks. You will have an opportunity to assess your own AI literacy, draft a personal/team learning plan, and contribute to plain language summaries of significant AI concepts. Along the way, we will also share reliable resources for further learning and advice.

Summary

This workshop is for anyone. We will explore how artificial intelligence (AI) is being used in assistive technologies, and how to tell the difference between responsible and risky AI. Participants will draft an AI learning plan for themselves or their team, and co-develop plain language explanations of important AI concepts.

Additional Workshop Information

What are the specific workshop learning outcomes?

By attending this workshop, participants will:

- Understand how AI is being used in assistive technologies
- Understand what makes AI responsible, equitable, and safe
- Recognise 'red flags' that indicate inappropriate or unsafe AI use.
- Be able to seek further information about data privacy and bias, as an AI/AT consumer.
- Draft a learning plan that will help build their own AI literacy, or that of their team.
- Develop plain-language explanations of AI concepts that are important to them or the people they work with
- Shape future learning needs and research priorities for the AT community.

What evidence / information was used to develop the workshop content?

This workshop has been developed based on scoping reviews addressing 1) AI literacy and 2) responsible use of AI in AT. The content is informed by ongoing collaborations and research projects with national stakeholder organisations representing: Autistic and Neurodivergent people; the Deaf community; people with vision impairment, chronic illness, complex communication needs or intellectual disability; artists with disability; and First Nations people with disability.

References:

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Ran, M., Banes, D., & Scherer, M. J. (2022). Basic principles for the development of an AI-based tool for assistive technology decision making. *Disability and Rehabilitation: Assistive Technology*, *17*(7), 778-781.

Smith, P., & Smith, L. (2021). Artificial intelligence and disability: too much promise, yet too little substance? *AI and Ethics*, *1*(1), 81-86.

What is the complexity of the content (introductory, intermediated or advanced)?
Introductory

144. Addressing complexity to create inclusive and innovative housing and technology solutions

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Focus area
People
Products
Process

Abstract
This workshop will explore complex home modifications and new construction housing solutions in combination with technology and examine two home environments that achieve different outcomes for the same consumer. The lived experience of the consumer will be showcased to provide a rich understanding of these outcomes. There will be information provided about options considered and solutions selected relating to planning home modifications vs creating a new construction solution, and the technology considered for these two housing solutions for this specific consumer. In addition, there will be discussion about the role of the stakeholders in the two planning processes.

The workshop will describe various frameworks for service delivery (Ainsworth & de Jonge, 2019) and the process for determining the most appropriate housing and technology solutions in relation to these frameworks. There will be discussion about the assessment and clinical reasoning processes, and the role and contribution of a range of stakeholders operating within these frameworks and using these processes.

The workshop will encourage people with a disability and their providers to discuss and devise strategies to address complexity associated with policy, programs, practice, and complicated solutions for the built environment. It will challenge attendees to link with a broad team of stakeholders including those who specialise in the delivery of complex home modifications and new construction design, and technology for automating the built environment. It will also encourage them to seek out Australian and international resources to assist them as they plan similar housing and technology solutions. Discussion will occur about the range of resources available internationally to enhance practitioner knowledge, skill, and practice.

Summary
This workshop will showcase the housing experience of a client with complex needs. Attendees will explore the range of complexities associated with achieving innovative and inclusive housing and technology solutions, and ways to address these complexities. There will also be discussion about industry resources to assist practice.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

- Understand solutions that could be proposed for an existing home and a newly constructed home, to meet the needs of someone with complex housing needs
- Understand a framework for practice that can shape thinking about the complexity of solutions.
- Understand the value of combining home modifications and equipment with home technologies to create clever solutions.
- Understand the range of resources available to assist practice in this area.

What evidence / information was used to develop the workshop content?

Ainsworth, E., Aplin, T., de Jonge, D., & Bennett, S. (2022): Understanding home modification outcomes from the perspective of older people and people with a disability: informing home modification evaluation, *Disability and Rehabilitation*, DOI:10.1080/09638288.2022.2146765

Ainsworth, E., & de Jonge, D. (2019). Minor modifications: It's not as simple as "Do It Yourself" (DIY). In E. Ainsworth & D. de Jonge (Eds.). *An occupational therapist's guide to home modification practice*. Second edition. (pp 381-388). Thorofare, NJ: SLACK Inc.

Client's lived experience

Therapist's practice experience

What is the complexity of the content (introductory, intermediated or advanced)?

Introductory, intermediated and advanced

27. Best Practice Guidelines for Assessment and Selection of Mobile Shower Commode Chairs

Authors

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Focus area

Products
Provision

Abstract

This will be a two-hour practical for prescribing therapists to support people with complex pressure and postural needs in assessing and prescribing mobile shower commode chairs. The session will be structured as follows:

Part One:

- Discussion around the assessment framework for goal setting with shower commode chairs
- Reviewing current best practice guidelines and assessment tools in the prescription of shower commodes
- Review of postural and pressure care considerations
- Presentation of case studies

Part Two:

- Demonstration of different off the shelf and customisable mobile shower commodes (supported by product suppliers at AATC).
- Hands on opportunity for participants to look at several types of commodes, and critically analyse against the clinical framework and considerations.
- Process to apply the framework/ practice taking important measurements discussed and then bring this back to wider group for reflection.

Summary

This will be a two-hour practical for prescribing therapists to support people with complex pressure and postural needs in assessing and prescribing mobile shower commode chairs.

Additional Workshop Information

By attending this workshop, participants will be able to:
1. Name 5 clinical considerations in the selection and prescription of Mobile Shower Commode Chair
2. Name 5 product parameters associated with prescribing Mobile Shower Commode Chair
3. Be able complete the body measures for the prescription of a Mobile Shower Commode Chair.

What evidence / information was used to develop the workshop content?

European Pressure Ulcer Advisory Panel, National Pressure Ulcer Advisory Panel and Pan Pacific Pressure ulcer Alliance. Prevention and Treatmentof of Pressure Ulcers / Injuries : Clinical Practice Guideline. The International Guideline. Emily Haesler (Ed.) EPUAP/ NPIP/PPIA: 2019

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Lange. M & Minkel.J 2017, Seating and Wheeled Mobility: A Clinical Resource, Slack Incorporated, New Jersey

What is the complexity of the content (introductory, intermediated or advanced)?

Intermediate and advanced

72. Tool Time with Manual Wheelchairs.
Tips and Tricks for MWC adjustments – Improving Posture and Functional Outcomes

Authors

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Focus area
    Products
    Provision

Abstract

When prescribing manual wheelchairs, frame selection is just the beginning. Configurations, set up and wheelchair options must also be considered to achieve optimal outcomes. In this workshop, we'll quickly review the evidence surrounding clients using wheelchairs full time then quickly get **Hands On!** We'll demonstrate and feel the effects of wheelchair set up on a user's propulsion efficiency. We'll learn how to make common adjustments for both postural support and propulsion efficiency. Tips and tricks will be provided to make these adjustments easier and more effective at improving both sitting comfort and maximising functional skills. Bring your tools and a snack for extra energy. We'll be hands-on!!!

Summary

Don't let the lack of confidence prevent you from making changes to your client's manual wheelchair. During this workshop, attendees will have the opportunity to adjust the wheelchair set up and seating system. We'll show you how to easily make these adjustments. Attendees will feel how these changes effect posture and function first-hand.

Additional Workshop Information
By attending this workshop, participants will:
Understand the importance of proper configuration of MWC on health and function
Be able to assess a clients current MWC set up and offer suggestions to improve posture and efficient propulsion
Be able to perform simple adjustments to postural supports in a manual wheelchair such as leg length, arm rest position and height, back support angles.

What evidence / information was used to develop the workshop content?
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Sheila Buck   B. Sc.(OT), ATT, More Than 4 Wheels: Applying clinical practice to seating, mobility and assistive technology Therapy Now 2009 (revised 2017)
Lange, Michelle; Minkel, Jean, Seating and Wheeled Mobility: A Clinical Resource Guide; Slack Incorporated 2017

Rodby-Bousquet, E., Agustsson, A., Jonsdottir, G., Czuba, T., Johansson, A. C., & Hägglund, G. (2014). Interrater reliability and construct validity of the posture and postural ability scale in adults with cerebral palsy in supine, prone: Sitting and standing positions. Clinical Rehabilitation, 28, 82–90.

What is the complexity of the content (introductory, intermediated or advance?
Introductory intermediate

32. Application of interface pressure mapping for pressure management and clinical intervention

Authors
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Focus area
Products

Abstract
Interface pressure mapping is a widely used tool in the assessment, prescription, provision, and manufacturing of both commercial and non-commercial support surfaces for pressure management.

The equipment used to carry out interface pressure mapping typically involves using a computer, pressure mapping software, an array of sensors (pressure mapping mat), interface electronics and a power source. The procedure involves positioning a pressure mapping mat between the area of interest and the support surface, and a digital reading of pressure information appears on the computer screen. The colors and numbers on the screen correspond to pressure readings expressed as millimeters of mercury (mmHg) with each cell having its own pressure reading value.

In a clinic setting pressure mapping is mainly used to evaluate the pressure redistribution properties of the support surfaces such as wheelchair cushions, educating the client benefits of tilting and offloading and lastly carry out any minor modifications to improve the pressure redistribution.

The Rehabilitation Engineering Clinic (REC) has been a pioneer in designing and developing custom support surfaces for postural seating and pressure management for over 35 years in WA. The clinic has prescribed and manufactured several complex seating set ups for many 1000s of clients with high level spinal cord injuries, motor neuron disease, multiple sclerosis etc.

This workshop will cover concepts of pressure mapping, how to use the pressure mapping system, interpreting the results, case studies on where pressure mapping was used and the recommendations that were made, artefacts and misinterpretations associated and how to carry out pressure mapping remotely and the equipment required to complete this. The session will also discuss the various types of pressure mapping equipment that is currently available in the market and pros and cons of the type of technology used for pressure mapping – for example (piezo resistive vs capacitive sensors).

REC has successfully trialed pressure mapping assessments in remote areas of WA by training the therapist via telehealth and sending the necessary equipment via post to carry out the pressure mapping session. The set up involves REC staff remoting into the computer that is being used offsite at the client's home and controlling the pressure mapping software and hardware from Perth. The set up also utilizes the inbuilt webcam of the computer to view the patient's seated posture.

This workshop will be delivered by an Occupational Therapist and Rehabilitation Engineer from Rehabilitation Engineering Clinic, East Metropolitan Health Service (Perth - WA) who have significant experience using the Boditrak pressure mapping systems. The workshop will also have hands on experience on driving the pressure mapping software and following the SA/SNZ TR ISO 16840.9:2015 - Wheelchair seating, Part 9: Clinical interface pressure mapping guidelines for seating.

Summary

This workshop will cover concepts of pressure mapping, how to use the system, interpreting the results, artefacts and misinterpretations associated, and how to carry out pressure mapping remotely and the equipment required to do it. Case studies will be used to demonstrate use of the pressure mapping system to assist with clinical reasoning and practice.

Additional Workshop Information

What are the specific workshop learning outcomes? By attending this workshop, participants will:

- *Understand the concepts and application of pressure mapping*
- *Hands on experience with using the system and the equipment required to carry out remotely*

What evidence / information was used to develop the workshop content?

The SA/SNZ TR ISO 16840.9:2015 - Wheelchair seating, Part 9: Clinical interface pressure mapping guidelines for seating will be used to carry out pressure mapping. REC has been using this technology for over 10 years and have successfully completed more than 3 trials in carry out pressure mapping remotely

What is the complexity of the content (introductory, intermediated or advanced)?

Introductory to intermediate