



**Bold ideas,  
better solutions**

**2019** > The Hopkins Centre  
Symposium

ABSTRACT BOOKLET

# BIBS19

OCTOBER 18TH |  
TRANSLATIONAL RESEARCH  
INSTITUTE | PRINCESS  
ALEXANDRA HOSPITAL  
BRISBANE, AU

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## Keynote Presentations

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### Making innovation better: the promise and challenge of new discoveries for disability

Professor Jackie Leach Scully, Director Disability Innovation Institute, UNSW

#### Keynote Address

*New and ongoing discoveries in health technologies, including novel therapies and predictive or diagnostic technologies, have the potential to revolutionize the lives of people with disabilities. No technology is without risks, however, and how a technology is researched, designed, implemented and regulated all have moral and ethical consequences for people with disabilities and society as a whole. In this keynote address I want to explore some of the inherent dangers in the uncritical embrace of new discoveries in disability and rehabilitation, and how we can 'make innovation better' for people with disabilities.*

#### Biography

Jackie is a Professor of Bioethics, and Director of the Disability Innovation Institute at the University of New South Wales, Sydney. A biomedical scientist by training she went on to help establish the first interdisciplinary bioethics institute at the University of Basel, Switzerland, and most recently was Executive Director of the Policy, Ethics and Life Sciences Research Centre at Newcastle University, UK. She has lived experience of disability and disabling illness, and has been an activist for disabled people's rights for over 30 years.



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### Designing sustainable healthcare environments in the 21st century

Professor Marie Elf, Dalarna University, Sweden

#### Keynote Address

*Successful implementation of new methods and models of healthcare to achieve better patient outcomes and safe, person-centered care is dependent on the physical environment of the healthcare architecture in which the healthcare is provided. Thus, decisions concerning healthcare architecture are critical because it affects people and work processes for many years and requires a long-term financial commitment from society. In this presentation, I describe and suggest several strategies (critical factors) to promote shared-decision making when planning and designing new healthcare environments. I will discuss challenges and hindrances observed in the literature and from my extensive experiences in the field of planning and designing healthcare environments and evidence-based design. Planning of new health care environment is more complex than ever, since there are requirements that decisions made about the design of the care environment must be based on research results and well-founded experience, and above all, based on users' needs and expectations.*

#### Biography

Marie is a Professor in Nursing at Dalarna University and at Chalmers University of Technology in the department of architecture. Marie Elf originally qualified as a nurse, receiving her PhD in architecture and has since worked across a number of academic settings within nursing, architecture and healthcare management with the focus on architecture and its impact on patient health and well-being. Marie Elf's research is focused on the healthcare environment (architecture) and how it influences people's health and well-being. She has developed an instrument that can be used for assessing the quality of residential care facilities for older persons. She has also projects going on where the architecture in stroke care from hospital to the home environment is explored. Her expertise is in healthcare architecture, older person's health and well-being, stroke care and person-centred care.



## Oral presentations

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### Predicting outcome to the UPLIFT program for people with persistent back pain

Professor Michel Coppieters, The Hopkins Centre and Professor of Allied Health Research, Menzies Health Institute Queensland, Griffith University

Hayley W Thomson, Kerrie Evans, Jonathon G Dearness, John E Kelley, Kylie J Conway, Collette L Morris, Leanne M Bisset, Gwendolijne G M Scholten-Peeters, Pim Kuipers,

#### Plain language synopsis

*This project aimed to predict which patients with chronic back pain would do well following a 5-week program, consisting of education and exercise. We anticipated that we would be able to predict who would do well, based on a mix of 10 characteristics of the patients. We assessed these 10 characteristics before the participants started the treatment. Although the treatment was successful in approximately half of the participants, we were unable to accurately predict in advance who would do well with the intervention.*

#### Abstract

Low back pain (LBP) has an enormous disease burden, yet it is unknown which patients benefit optimally from interventions, especially in secondary care. People with persistent LBP (N=246) were recruited from a physiotherapy-led neurosurgical screening clinic. They participated in an evidence-informed 5-week program (UPLIFT), consisting of weekly 90-minute interactive group sessions of psychologically-informed education and graded exercise. Building on findings from primary care, 10 baseline patient characteristics (fear-avoidance; self-efficacy; treatment beliefs; pain catastrophising; perceived injustice; depression, anxiety and stress; disability; pain intensity; health status; social connectedness) were selected as potential predictor variables. The Global Rating of Change (GROC) score was the primary outcome to determine success. Multivariable logistic regression analyses, with bootstrapping techniques for internal validation, were used for prognostic model development. Considering the long duration and complexity of initial symptoms, a high proportion of patients (49%) reported clinically meaningful improvement after the UPLIFT program. Although a model could be developed containing 5 predictor variables (self-efficacy; catastrophising; pain intensity; depression, anxiety and stress; fear-avoidance), the explained variance of the model was too low for clinical use. As for many other conditions, predicting outcome accurately for people with a multidimensional pain state from routinely gathered baseline variables remains challenging. Trial registration: ACTRN12618001525279 Funding: Gold Coast Hospital and Health Service and Gold Coast Hospital Foundation (SG0027)

#### Biography

Michel is a Professor in Musculoskeletal Physiotherapy with Griffith University and has many years of teaching experience and research expertise and knowledge. Professor Coppieters did his studies at the University of Leuven in Belgium including his PhD titled '*Physical examination of treatment of neurogenic disorders of the upper quadrant. A Manual therapeutic perspective*'. Since 2005, he has attracted AUD ~2.3 million in research funding as chief investigator. In addition, he was listed as an associate investigator on a successful NHMRC Program Grant (AUD 7.5 million: Musculoskeletal pain, injury and health: improving outcomes through conservative management.



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## Interventions in restoring function in spinal injury with chronic paralysis

*Dr Dinesh Palipana OAM, Emergency Doctor at Gold Coast University Hospital, Researcher with Spinal Cord Injury Project, Griffith University and Ambassador for The Hopkins Centre*

*Pizzolato C, Teng Y and Lloyd D.*

### Plain language synopsis

*Over the last few years, there have been some promising developments in spinal cord injury. Two notable interventions have demonstrated some restoration of motor function in people with complete paralysis. One intervention involves pharmacomodulation of the cord with buspirone augmented by electrical stimulation. Another trial used electroencephalogram driven rehabilitation with tactile feedback. The success of interventions demonstrate that there is potential to induce intrinsic plasticity of the cord under the appropriate stimulus. Our study aims to combine aspects of these interventions to create an additive effect in restoring function in spinal injury with chronic paralysis.*

### Abstract

Over the last few years, there have been some promising developments in spinal cord injury. Two notable interventions have demonstrated some restoration of motor function in people with complete paralysis. One intervention involves pharmacomodulation of the cord with buspirone augmented by electrical stimulation. Another trial used electroencephalogram driven rehabilitation with tactile feedback. The success of interventions demonstrate that there is potential to induce intrinsic plasticity of the cord under the appropriate stimulus. Our study aims to combine aspects of these interventions to create an additive effect in restoring function in spinal injury with chronic paralysis.

### Biography

Dinesh was the first quadriplegic medical intern in Queensland, and the second person to graduate medical school with quadriplegia in Australia. He earned a Bachelor of Laws (LLB), prior to completing his Doctor of Medicine (MD) at the Griffith University. Halfway through medical school, he was involved in a catastrophic motor vehicle accident that caused a cervical spinal cord injury. After graduating from medical school Dinesh faced significant challenges in gaining an internship. As a result of the barriers medical students and doctors with disabilities face, he has advocated for an inclusive medical profession. Dinesh became a founding member of Doctors with Disabilities Australia. Dinesh is currently a resident in emergency medicine at the Gold Coast University Hospital. He is an Associate Lecturer at the Griffith University. Dinesh was the Gold Coast University Hospital's representative in the Australian Medical Association Queensland's Council of Doctors in Training in 2017 & 2018. He is a member of the Scientific Advisory Committee of the Perry Cross Spinal Research Foundation; and the QUT Alumni Board.



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## Virtual Reality in Rehabilitation: Fiction, Fad, or Future

*Dr Daniel Harvie, Research Fellow, The Hopkins Centre, Menzies Health Institute Queensland*

### Abstract:

Virtual reality offers unique features that have potential to enhance rehabilitation, including the ability to: guide and gamify exercise, deliver health-related education in an interactive format, and facilitate psychological therapies using imagery, biofeedback, and graded exposure. Moreover, a range of body-related visual illusions are made possible by VR. These illusions create opportunities for innovative therapies designed to leverage human vulnerability to visual trickery, in order to positively alter body-perception. This talk will summarise the broad state of play regarding VR in pain and injury rehabilitation, while discussing efforts at The Hopkins Centre to innovate in this space, with particular reference to low back pain, neck pain, and spinal cord injury-related pain.

## Biography

Dr Daniel Harvie is an NHMRC Early Career Research Fellow based at The Hopkins Centre in the Menzies Health Institute QLD at Griffith University. His main focus is the investigation of central nervous system contributions to persistent pain, and the development of brain-based treatments for preventing and treating persistent pain, including those that involve sensory re-training, virtual reality, and education.



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## Perspectives of people with spinal cord injury receiving rehabilitation on virtual reality Intervention

*Mr Col Mackareth, Peer Support Worker, Spinal Life Australia, affiliate partner of The Hopkins Centre*

*Kate Martin, Dr Ali Lakhani, Lyndal Gray, Izak Hollins*

### Plain language synopsis

*During the inpatient rehabilitation phase, people with spinal cord injury (SCI) spend an extended time in hospital. Experiencing a SCI can be associated with adverse psycho-emotional health outcomes, and these outcomes can be exacerbated due to extended time in hospital. People with SCI participated in a virtual reality intervention which involved immersion in three experiential sessions of natural environments delivered via virtual reality over a period of one week. Participants felt as though the intervention provided an escape from the hospital environment, improved their mood, and that they would prefer that this intervention was a part of rehabilitation practice.*

### Abstract

**Background:** During the inpatient rehabilitation phase, people with spinal cord injury (SCI) spend an extended time in hospital. Furthermore, the sub-acute phase of experiencing a SCI can be associated with adverse psycho-emotional health outcomes, and these outcomes can be exacerbated due to extended time in hospital.

**Method:** Twenty-four people with SCI participated in a virtual reality intervention which involved immersion in three experiential sessions of natural environments delivered via virtual reality over a period of one week. Eighteen of these participants participated in a semi-structured interview to establish their perspectives of the intervention and whether it impacted their motivation to engage with rehabilitation programs. A deductive analysis was undertaken, where findings were coded against semi-structured interview questions. Participants felt as though the intervention provided an escape from the hospital environment, improved their mood, and that they would prefer that this intervention was a part of rehabilitation practice.

**Results:** Findings were mixed surrounding the impact of participation on rehabilitation compliance, where participants indicated that it encouraged their participation in programs, or that they were unsure if it had a difference. Findings confirm the notion that virtual reality may be an intervention that favourably impacts the psycho-emotional health of people in hospital for extended periods.

### Biography

Col Mackereth is a spinal injury survivor, Peer Support Worker and Motivational Speaker. Col has over 41 years of experience living with a spinal cord injury, when at the age of 18, he sustained his C6 spinal cord injury as a result of a diving accident. After 11 months in the Spinal Injuries Unit, Col returned home to break the news to his parents, that even though he was unable to; push his wheelchair across the road, transfer in or out of bed, wash himself, dress himself completely, feed himself or prepare his own meals or do housework of any kind, he still intended to leave home and live independently! Just over a year later, after one of the steepest learning curves ever and a lot of hard work, heartbreak and sacrifice, Col found himself living back in Brisbane. *“I was sharing a flat with a bloke that I met in hospital, doing all my own cooking, cleaning, personal care and housework, driving myself to work every day in my own car and getting my wheelchair in and out. I was also training with Sporting Wheelies when I wasn’t busy socialising with friends.”* Col has not been unemployed since he





returned to work in 1980. He's been a goat farmer, draftsman, bookkeeper, adventure camp coordinator, maths tutor, statistician, and a manager at an employment agency. He's even worked in a hardware store. "While I know I have achieved a lot in life already I believe that the best is yet to come. My life is all about what I am going to do not what I have done and I have great expectations for the future".

### **Exploration of the roles and perspectives of neurorehabilitation nurses regarding visual observation and safety monitoring for high risk brain injury patients**

Ms Kirsty Gray, Clinical Nurse Consultant, Brain Injury Rehabilitation Unit, Division of Rehabilitation, Metro South Health

Dr Letitia Burridge, The Hopkins Centre

#### **Plain language synopsis**

Rehabilitation for brain-injured inpatients with complex problems is resource-intensive and challenging. Nurses are risk-averse in deciding to downgrade or cease visual observation of high-risk brain-injured patients. This can mean extra treatment burden for patients who no longer need such care. It also means extra work for staff with scarce resources. This study aimed to identify factors that are key to assessing when it is safe to downgrade or cease visual observation of a patient, and to explore nurses' views on how these factors could be used in practice. The results will be presented and discussed, together with the implications.

#### **Abstract**

**Background:** Patients hospitalised for brain injury are at high risk of falls, absconding and behavioural issues secondary to their injuries. To protect these vulnerable patients within a specialised brain injury service, nurses initiate and conduct additional visual observation and have additional safety measures in place. Ongoing visual observation is resource-intensive and can become intrusive to patients who no longer need such close monitoring. It can also delay their progress toward independence. There is no mechanism to objectively determine appropriate pathways for downgrading or ceasing visual observation of high-risk brain injured inpatients and making such a decision is clinically challenging. This study aimed to identify and rank factors that nurses assess when determining if visual observation should be downgraded or ceased in brain-injured inpatients, and to understand the process nurses use in making confident decisions to modify the visual observation regimen.

**Method:** Phase 1 used a modified nominal group technique to reach consensus on the key factors. Phase 2 used a focus group approach to explore nurses' views regarding strategies for using the factors to support the decision-making process in downgrading or ceasing visual observation.

**Results:** The findings will be presented and discussed, together with implications for practice

#### **Biography:**

Kirsty is currently the Clinical Nurse Consultant of the Brain Injury Rehabilitation Unit at the PA Hospital. She holds a Master's of Science specialising in Rehabilitation and Gerontology and has been working in the field of rehabilitation for 15 years including 8 years in specialist brain injury. In her role in a state-wide service Kirsty manages the consultancy service for referrals to the unit and liaises with staff and family providing feedback and education on brain injury and role of rehabilitation. For the inpatient ward Kirsty manages and reviews patients with behaviours of concerns and other clinical matters and provides education and support for patients, families and staff. She is the first person in the BIRU to commence a nurse led research project approved by ethics in 2018.



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## A multi-disciplinary service model for hypertonicity management post brain injury: Experiences and perceptions of service users in Queensland

Mrs Catherine Cave, Senior Physiotherapist, Division of Rehabilitation, Metro South Health

Dr Letitia Burridge, Maeve O'Neill, Dr Melissa Legg, Mary Kayssar, Micky Nascimento, Janelle Gesch, Janelle Griffin, Dr Rachael Nunan

### Plain language synopsis

Up to 42% of people experience hypertonicity (muscle over-activity) after brain injury. The Princess Alexandra Hospital Hypertonicity Service (PAHTS) currently provides the only specialist multi-disciplinary service in Queensland. We explored experiences and perceptions of PAHTS in discussions with 12 service-users. Major themes will be presented and discussed, including implications for how this service evaluation will translate into improvement initiatives for PAHTS model of care. Service-users made a valuable contribution in evaluation and development of the model of care for hypertonicity management in Queensland. Further research is required to understand the lived experience of hypertonicity following brain injury to deliver patient centred care for future service-users.

### Abstract

**Background:** Up to 42% of people experience hypertonicity (muscle over-activity) after brain injury. Consequences include joint contractures, pressure areas, pain, muscle weakness and tightness leading to disability, reduced quality of life and increased health care costs. The Princess Alexandra Hospital Hypertonicity Service (PAHTS) currently provides the only specialist multi-disciplinary service in Queensland and the team is the recognised state leader in the field.

**Rationale:** Limited evidence exists about service-user perceptions of hypertonicity management and their experience of rehabilitation services. Engaging service-users in service evaluation is essential to improving quality of healthcare.

**Method:** This qualitative health service evaluation project utilised focus group methodology to explore 12 service-user perceptions and experience of PAHTS. Participants (patients/carers) had received care in the previous 18 months. The audio recorded discussions were transcribed and analysed thematically.

**Results:** Major themes will be presented and discussed, including implications for how this service evaluation will translate into improvement initiatives for the PAHTS model of care.

**Conclusions:** Service-users made a valuable contribution in evaluation and development of the model of care for hypertonicity management in Queensland. Further research is required to understand the lived experience of hypertonicity following brain injury to deliver patient centered care for future service users.

### Biography

Catherine Cave is a Senior Physiotherapist who has worked in the Brain Injury Rehabilitation Service at Princess Alexandra Hospital for the past 16 years. Where she has developed her special interest and clinical expertise in brain injury rehabilitation and hypertonicity management. Her current role as the Clinical Research Officer for the Queensland Multidisciplinary Hypertonicity service involves leadership of the current Hopkins seed grant funded translational research project and establishing and coordinating research with Industry representatives. She holds an Adjunct Research Fellow Position with Griffith University.



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## International Spinal Cord Injury Survey: Health characteristics and health service use of long-term spinal cord injury in Queensland

Ms Samantha Borg, Research Assistant, The Hopkins Centre

Prof Michele Foster, Prof Timothy Geraghty

### Plain Language Synopsis

The International Spinal Cord Injury (InSCI) community survey is an international survey that aimed to capture the lived experience of community-dwelling spinal cord injury (SCI) persons. This served to strengthen international data and inform policies and planning for SCI services. The data presented will focus on the Queensland population, identified from Metro South rehabilitation service patient registries. The presentation will provide an overview of the health and service use to provide better insight and understanding into the health problems and trends in health access for long-term SCI. This can assist in providing guidance to current SCI health and community services.

### Abstract

**Introduction:** Inconsistent and inadequate international data on persons with spinal cord injury (SCI) led to the initiation of the International Spinal Cord Injury (InSCI) survey as a means to capture the lived experience of SCI persons on an internationally comparable basis. This presentation focuses on Queensland data from this project.

**Methods:** A cross-sectional design was used. Patients over 18 years who were 12-months post SCI identified from the Metro South patient registry were mailed a survey to complete as paper-based or online. Data was collected from March 2017 to October 2018. Of the 1845 eligible individuals, 480 completed a survey (26.0% participation rate).

**Results:** Participants were 59.1 (SD, 13.2) years, predominantly male (73.5%) and on average, 22.6 (SD, 13.2) years post SCI. There was a higher proportion of paraplegia (59.7%) and the majority of the sample had an incomplete injury (72.5%). The most prevalent secondary health conditions were pain, sleep, sexual dysfunction, bowel dysfunction and muscle spasms/spasticity, with each condition affecting more than three-quarters of the population. Additional health and health care use data will be presented.

**Discussion/Conclusions:** Better understanding of health and secondary issues affecting community-dwelling persons with long-term SCI can assist in prioritising future direction of SCI services.

### Biography

Samantha has a bachelor of health science, majoring in Nutrition and Dietetics from QUT. She has been a research assistant at the University of Queensland and Mater Research working in health services research and integrated primary-secondary models of care since 2014. From 2017, Samantha has been a researcher with the Hopkins Centre and Princess Alexandra Hospital, working on the International Spinal Cord Injury Community Survey World Health Organisation project.



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## Online inter-organisational relationships in the disability service sector

Associate Professor Paul Henman, University of Queensland

Dan Dai

### Abstract

Inter-organisational collaboration by disability, health and other organisations play an important role in delivering the objectives of the NDIS. In an online world, where people find information about public, private and not-for-profit services, as well as interact with these organisations, the structure and nature of inter-organisational online connections can be similarly important. This paper reports on an innovative hyperlink network analysis of the online relationship between government, advocacy and specialist disability provider's websites. It is found that key government organisations are central to this hyperlink network, with important roles of social media sites. The analysis also points to online inter-organisational relationships between disability service providers. Such inter-organisational relationships gives rise to questions about their purpose and to what extent they reflect actual on-the-ground, collaborative working relationships. The paper demonstrates the exciting opportunities of new digital research methods for disability studies.

### Biography

Paul holds degrees in sociology, social policy, computer science and education. His main research interest is the nexus between social policy, administration and digital information technologies. His research interests include: social policy; welfare state; welfare reform; e-government; the administration of policy; costs of raising children. Social policy; electronic government; internet studies; costs of children; welfare state; living standards & wellbeing.



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## Access and unmet need as predictors of psychosocial wellbeing and quality of life in rehabilitation patients

Dr David Borg, Research Fellow, The Hopkins Centre

Prof Michele Foster, Dr Melissa Legg, Rachel Jones, Prof Elizabeth Kendall, Jennifer Fleming, Mandy Nielsen, Prof Timothy Geraghty

### Plain Language Synopsis

*Recovery after acquired brain injury (ABI) and spinal cord injury (SCI) is complex, and typically requires engagement with multiple health and rehabilitation services to meet an individual's need. This study aimed to explore the influence of health and rehabilitation service use and incidence of unmet need on psychological wellbeing and quality-of-life after ABI and SCI. The study found evidence that in the first year after hospital discharge (1) unmet need may be inversely associated with quality of life after ABI and SCI; and (2) strategies that mitigate transportation as a service obstacle may have the potential to positively impact patients perceived health state and anxiety levels.*

### Abstract

**Background:** This study aimed to explore the influence of health and rehabilitation service use and incidence of unmet need on psychological wellbeing and quality-of-life after acquired brain injury (ABI) and spinal cord injury (SCI).

**Method:** 123 patients (ABI=68; SCI=55) completed an access and supports questionnaire, the EuroQol-5D-5L, DASS-21, and Service Obstacles Scale at 6- and/or 12-months after discharge. Predictors of outcome were general practitioner (GP), medical specialist, allied health, and nursing service use; and incidence of hospital stay, unmet need, and transportation and financial obstacles. Data were modelled using Bayesian hierarchical regression

**Results:** Unmet need (odds ratio, OR [95% CI]=1.4 [1.1, 1.8]) and financial obstacles (OR=1.3 [1.2, 2.0]) were associated with poorer (lower) EQ-5D-5L utility scores (Cohen's  $d$ = -2.20 and -2.35, respectively). Hospital stay (OR=1.5 [1.1, 2.0]) and transportation obstacles (OR=1.30 [1.01, 1.72]) were associated with poorer (lower) EQ-VAS ratings ( $d$ =-2.96 and -1.89, respectively). Allied health service use (OR=1.7 [1.1, 2.7]) and transportation obstacles (OR=1.33 [1.02, 1.80]) were associated with worse (higher) anxiety scores ( $d$ =2.33 and 1.66, respectively).

**Conclusions:** This study showed that (1) unmet need may be inversely associated with quality of life after ABI and SCI; and (2) mitigating transportation as a service obstacle may also positively impact patients perceived health status and anxiety level.

### Biography

David Borg is a postdoctoral Research Fellow at The Hopkins Centre, working on the Trajectories of Rehabilitation across Complex Environments (TRaCE) project, based at the Princess Alexandra Hospital. David was recently awarded his PhD through the Queensland University of Technology, titled 'The perception of effort, training load and exercise performance in the heat'. David's research interests include laboratory-based examinations of the regulation of fatigue and performance in healthy and clinical populations.



### 'It gave her that soft landing': Perspectives on a new transitional rehabilitation service for people with acquired brain injury

*Ms Jaycie Bohan, Research Assistant, Acquired Brain Injury Transitional Rehabilitation Service, Division of Rehabilitation, Metro South Health*

*Mandy Neilsen, Kerrin Watter, Areti Kennedy*

#### Abstract

**Background:** The time of transition from hospital-to-home following acquired brain injury (ABI) is a formative phase in rehabilitation, warranting inter-disciplinary support. The Acquired Brain Injury Transitional Rehabilitation Service (ABITRS) is a 5-year pilot project designed to support community reintegration after ABI.

**Rationale:** Exploring the experience of ABITRS from service user and adjacent service provider perspectives will highlight valued service design features that facilitate participant community reintegration.

**Method:** A mixed-method research evaluation of ABITRS is in progress, incorporating a qualitative arm whereby perspectives of three key stakeholder groups were sought: clients of ABITRS ( $n=10$ ), their family members ( $n=10$ ), and service providers from brain injury rehabilitation services (BIRS) Queensland and the National Injury Insurance Scheme Queensland (NIISQ) ( $n=10$ ). Semi-structured interview transcripts were analysed based on the Framework Method.

**Results:** Analysis indicates that ABITRS bolsters the BIRS continuum and its provision of transition support benefits clients and families, serving as a 'soft landing' after hospital discharge. Enablers to implementing the service include the availability of funding, responsive inter-service communication, and the quality of service management and clinical staff.

**Conclusion:** Preliminary qualitative results indicate ABITRS is successfully integrating within an existing service continuum and positively impacting outcomes for clients and families beyond service discharge.

## Biography

Jaycie Bohan is a research assistant working on the evaluation of the Acquired Brain Injury Transitional Rehabilitation Service (ABI TRS). She has worked in research roles in non-profit, government and university settings. Her area of research interest is the psychosocial wellbeing of individuals living with acquired disability, particularly ABI, and/or communication difficulties (including post-stroke aphasia) and their families. She also works as a paediatric speech pathologist.



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## BEEHIVE Neurorehabilitation Lab

*Professor Heidi Zeeman, Principal Research Fellow, The Hopkins Centre, Menzies Health Institute Queensland*

### Abstract

BEEHIVE is a dedicated research lab at GCUH developed to test virtual reality software, processes and hardware in a rehabilitation setting. A suite of VR systems and related hardware provide brain injury and stroke patients with enriched sensory experiences, opportunities to practice cognitive and motor skills in revolutionary ways, and an objective and naturalistic means of promoting and assessing recovery.

The BEEHIVE project establishes The Hopkins Centre and Griffith University as one of the few Australian research institutions taking this approach to rehabilitation. It aligns with the strengths of the clinical unit at GCUH, combined with a strong THC team led by Professor Heidi Zeeman in environmental health and neuroscience.

This project brings evidence-based understanding of how environments, advances in technology and neuroscientific rehabilitation knowledge can promote optimum functioning after injury or illness in cognitive, motor, sensory and how social capacity will provide opportunities for enriched experiences from hospital to home

### Biography

Professor Heidi Zeeman is a Principal Research Fellow at the Menzies Health Institute Queensland, Griffith University. Prof Zeeman has conducted applied research in the area of Neuro-rehabilitation over the past 17 years, beginning her career as a clinical neuropsychologist. Her research has centred on understanding the experiences of people following catastrophic injury and illness and the environments in which they live, recover and work. In partnership with architects, construction professionals, neuroscientists, artists and access consultants, she is currently pursuing research into how built environments (particularly public infrastructure, greenspace, workplaces) can be further optimised for the general population, inclusive of people with neurosensitivities. Prof Heidi Zeeman has engaged in multi-year evaluations of major public health programs and health facilities in Australia over the past decade and outcomes of these evaluations have included workforce training programs, predictive models of health, guidelines for practice and tools for assessment. She is a recipient of multiple competitive grants and research excellence awards over her academic career including a number of Australian Research Council grants, a Fulbright Scholarship (2014), and Churchill Scholarship (2009). She is widely published in international journals.



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## Evaluating the effectiveness of on-road driving remediation following acquired brain injury: a wait-list feasibility study with follow-up

Ms Louise Bassingthwaite, Occupational Therapist, Driver Assessment and Rehabilitation Service, Metro South Health, PhD Candidate

Janelle Griffin; Jennifer Fleming

### Plain Language Synopsis

People who attend an occupational therapy driving assessment following acquired brain injury may receive a recommendation for further on-road driving training. This study followed eight people with acquired brain injury who received the on-road driver training to better understand the outcomes. The results were that five people improved their driving skill and were able to return to driving after the training, however there was some deterioration of skill when re-tested at 6-month follow-up and one person was assessed as no longer able to drive. A larger study is required to explore these outcomes and inform development of clinical practice.

### Abstract

**Background:** Occupational therapy driving assessments following acquired brain injury may recommend further on-road driving remediation. There is limited evidence concerning the efficacy of on-road driving remediation and this study sought to test feasibility of a RCT and explore efficacy post-intervention and at 6-month follow-up.

**Methods:** Eight participants (seven male, mean 46 years), with a diagnosis of TBI (n = 6) and stroke (n = 2) were recruited to a waitlist RCT. All participants received on-road driving remediation immediately (n = 3) or after a 6-week waitlist period (n = 5). A driving assessment was repeated post-remediation and at 6-month follow-up.

**Results:** The RCT protocol was feasible with two intervention and no waitlist participants achieving fitness to drive. Five of the eight participants achieved fitness to drive following the waitlist period, however a universal deterioration in driving skills was noted at 6-month follow-up and one participant failed to retain their clearance to drive.

**Discussion:** The results provide preliminary evidence for post-intervention effectiveness but highlight the deterioration of skills at 6-month follow-up. A larger trial is required to further investigate these outcomes and inform clinical practice to ensure road safety for the person returning to driving, other road users, and the broader community.

### Biography

Louise is one of the principals of Ability Driving, an occupational therapist with over 20 years' experience. She provides comprehensive on and off road assessments of medical fitness to drive as well driving rehabilitation programs and evaluation and prescription of suitable vehicle modifications. Louise is recognised as an expert in her field and is among Queensland's first specialist driver trained occupational therapists. She has a strong involvement in a variety of research projects designed to enhance their own service provision and to improve clinical standards within the profession. Louise has recently commenced her PhD studies through Griffith University and she is very appreciative of the opportunities The Hopkins Centre have provided in supporting this endeavour.



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## Why start with the end in mind? A tool to help understand communication needs in the Workplace

Ms Kate Cameron, Senior Speech Pathologist, Acquired Brain Injury Transitional Rehabilitation Service, Division of Rehabilitation, Metro South Health

Nina Wegener; Kerrin Watter; Areti Kennedy

### Plain Language Synopsis

Speech Pathologists at the Acquired Brain Injury Transitional Rehabilitation Service (ABI TRS) have developed processes and a tool to assist with the assessment of a person's communication requirements when looking at returning to work. This has been an important addition to the service's interdisciplinary return to work pathway and is helping Speech Pathologists provide enhanced advice around workplace communication. The presentation will discuss the background related to workplace communication and ABI, and an analysis of the new tool that is being utilised within rehabilitation team.

### Abstract

A substantial societal cost related to Acquired Brain Injury (ABI) is underemployment. Impaired communication and interpersonal skills are a factor in this sequela. Despite this, many people with ABI wish to return to work (RTW) post-injury. For rehabilitation to be successful, therapy needs to be personalised and there must be a clear understanding of the communication requirements of the role they intend on returning to. To do this, SPs within the ABI Transitional Rehabilitation Service (ABITRS) investigated and translated clinical, research and contextual evidence to develop a clinical tool to support VR – the Workplace Communication Needs Analysis Tool (Work-CNAT). There are two parts to the tool – a client version, performed as a semi-structured interview; and a shorter employer version, that can be completed as a checklist by an Occupational Therapist or SP on a worksite visit. Clinical indicators suggest the Work-CNAT is helping SPs at ABI TRS better understand a person's communication requirements and plan associated and personalised therapy and contribute to the interdisciplinary team plan for return to work. It is also helping SPs provide enhanced advice to the interdisciplinary team regarding a person's current communication skills/ needs and integrates with the service's vocational rehabilitation pathway.

### Biography

Kate is a Senior Speech Pathologist in the Acquired Brain Injury Transitional Rehabilitation Service (ABI TRS), at Princess Alexandra Hospital. ABI TRS is a pilot project for the state-wide Brain Injury Rehabilitation Service, providing post-hospital interdisciplinary therapy to adults with acquired brain injury. In this role, Kate has been involved in the development and implementation of an innovative communication partner training program, cognitive communication group program and the practical application of communication therapy in the ABI TRS vocational rehabilitation pathway. Kate also leads portfolios in service promotion, workplace culture and family orientated service. Kate combines her role as a clinical speech pathologist with roles in media and corporate communications, giving her a deep understanding of communication skills required in a range of different workplaces.





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## **“I am a whole person that happens to have an injury”: The effectiveness of social prescribing as an intervention for people with work-related injuries and psychosocial difficulties**

*Dr J.R (James) Baker, CEO, Primary & Community Care Services Limited*

*Theresa Caruana; Dr Christina Aggar*

### **Plain Language Synopsis**

*People in the audience will gain an understanding of what social prescribing involves, and how it can meet the unmet health and wellbeing needs of injured workers with psychosocial difficulties. This topic is relevant to mental health services and mental health issues because psychosocial support services can promote coping skills and strategies to limit and manage negative health and wellbeing impacts of workplace injury and status loss, including pain, distress, and loneliness.*

### **Abstract**

Psychosocial interventions that encourage optimism and connectedness have been shown to promote workplace injury recovery and improve overall wellbeing. Plus Social for injured workers with psychosocial difficulties is a pilot twelve-week social prescribing program operating in the greater Sydney area that aims to increase social and economic participation, improve psychological functioning and quality of life, and decrease health service utilisation. This presentation will describe the model of care and discuss the findings of a mixed-methods exploratory study involving pre- and post-intervention participant data (n = 175), activity reports, and participant interviews. A person-centred, holistic care approach to assisting injured workers can contribute to meaningful improvements in wellbeing that include greater self-awareness, reduced pain and distress, stronger social connections, reduced welfare needs, and improved motivation and capability to recover from injury and employment loss.

### **Biography**

James is the Chief Executive Officer at Primary & Community Care Services Limited. He enjoys working on a macro-level analysing the functioning of organisational and societal systems, and attempting through both qualitative and quantitative research methods to improve said systems. James also works on a more micro-level counselling individual and group clients, and teaching small groups of students. His main objective is simply to leave things better, whether through training future generations to be socially responsible and proficiently skilled, through improving the functioning and well-being of individuals and groups, or through creating larger strategic change in organisations and in society.



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## Designing the social environment for people with ABI in the community using communication partner training: A blueprint for social connection

Ms Clare Morgan, Rehabilitation Coordinator (Speech Pathologist), Division of Rehabilitation, Metro South Health & Research Fellow with THC Acquired Brain Injury Outreach Service (ABIOS), co-presenting with, Ms Sue Wright, STEPS Program, Division of Rehabilitation, Metro South Health

Prof Leanne Togher; Prof Elizabeth Kendall; Assoc Prof Emma Power; Dr Emma Finch

### Plain Language Synopsis

Communication difficulties are a common and persisting consequence of Acquired Brain Injury (ABI). People with impaired communication following ABI are vulnerable and often experience social exclusion, isolation and poor quality of life, particularly in the community. Community support networks, such as STEPS (Skills to Enable People and communities) run by ABIOS, has been a response to supporting people with ABI and aims to achieve full participation. However, the same communication barriers that prevent people from broader social participation also impact on these networks. My project examines if re-designing the way we support ABI communities (by training STEPS Leaders in an evidence based communication partner training program) is worthwhile. Preliminary data indicates this approach as not only being suitable and effective, but also creating a sense of self-worth, competence and purpose among STEPS Leaders.

### Abstract

Communication difficulties are a common and persisting consequence of Acquired Brain Injury (ABI). People with communication impairment following ABI are vulnerable and highly susceptible to social exclusion, isolation and poor quality of life, particularly in the community context. The development of support networks has been a response to assisting people with ABI after discharge from formal health services. Networks, such as STEPS (Skills To Enable People and communities) run by ABIOS, support people with ABI at the same time as creating understanding and accepting communities that allow people with ABI to achieve full participation. However, the same communication challenges associated with ABI that exclude people from broader social participation also impact on these networks and their leaders. So how can we design socially-supportive communities that allow a person with impaired communication to become connected? My project examines the effectiveness of an evidence based communication partner training (CPT) program (TBI Express; Togher, et al) to support STEPS leaders. This approach aims to alter the way in which the STEPS community communicates with people who have ABI, helping them to manage challenging communication barriers. Preliminary data indicates acceptability and effectiveness, but also a sense of self-worth, competence and purpose among STEPS Leaders.

### Biography:

Clare is a Speech Pathologist who has worked with people with impaired communication for 18 years; the last 10 years have been as a Rehabilitation Coordinator in the Acquired Brain Injury Outreach Service (ABIOS), PAH, Metro South Health. Clare is a research fellow with Griffith University, and is the current recipient of The Hopkins Centre Research Fellowship for her research involving communication partner training. Clare's strong community and person-centred focus recognises the importance of educating communication partners of adults with acquired brain injury to have better conversations and enhance the social participation of adults with ABI within the community setting.



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## Speech pathology management of adults with cognitive-communication disorders following traumatic brain injury: A mixed methods investigation

Ms Crystal Kelly, Speech Pathologist & PhD candidate Griffith University

A/Prof Petrea Cornwell; Dr Anna Copley; Dr Ronelle Hewetson

### Plain Language Synopsis

*This project involved an investigation of the current clinical practices of speech pathologists when managing adults with cognitive-communication disorders following traumatic brain injury. This involved collecting in-depth survey data and conducting one-on-one interviews with clinicians working in community-based rehabilitation services across Australia and New Zealand. Overall participants reported a range of approaches which are currently being implemented when providing rehabilitation to this complex client population. In addition, the speech pathologists identified ways in which services could be improved as well as important elements to consider when developing future community-based rehabilitation models of care for this population.*

### Abstract

**Background and objectives:** Speech pathologists play an integral role in the provision of rehabilitation to adults with cognitive-communication disorders following traumatic brain injury. However, little is known about the clinical processes utilised by speech pathologists when managing this population in community-based settings. The aim of this study was to explore the current practices of clinicians when managing this client group, and to identify their recommendations to enhance future health services.

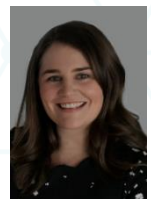
**Methods:** A sequential explanatory mixed methods design involving two distinct data collection phases was completed. The initial phase involved an in-depth survey of speech pathologists, followed by a qualitative design using one-on-one interviews.

**Results:** A total of 51 participants completed the survey and 14 speech pathologists participated in an interview. Participants reported implementing a range of approaches when managing this population, with many of their services' core elements aligning with current evidence in the field. Participants' highlighted areas in which further service optimisation could occur including routinely running group therapy and inclusion of significant others in rehabilitation programs.

**Conclusions:** The findings from this study provide a snapshot of current practices employed by a range of services across Australia and New Zealand. Further research is required to identify the perspectives of other key stakeholders of these services when planning future models of care.

### Biography

Crystal is a speech pathologist and PhD candidate with research and clinical experience in the areas of adult neurological communication and swallowing disorders. Her current research interests include cognitive-communication functioning following acquired brain injury and optimising community-based rehabilitation services. Crystal has worked clinically in a variety of settings including acute inpatient settings, rehabilitation services and community-based rehabilitation models of care.



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## Effective pain management in everyday life: contextualising a model of peer support in the local context of persistent pain

Dr Melissa Legg, Research Fellow, The Hopkins Centre

Michael Deen; Dr Mandy Nielsen; Suzanne Wright; Dr Aston Wan; Elizabeth Carrigan & Professor Michele Foster.

### Plain Language Synopsis

Effective management of persistent pain is complex and difficult to sustain. Problematically, specialised interdisciplinary pain services which build skills in pain management are not adequately resourced to help patients incorporate complex regimens in their everyday lives. Trained peer supporters who are role models for pain management could provide unique and complementary support which addresses this gap in care. Using interviews with patients with persistent pain and peer support providers, this study explores how peer support could meet the needs of patients at interdisciplinary pain management services and whether it would be acceptable.

### Abstract

**Background:** Effective management of persistent pain is complex and difficult to sustain. Problematically, specialised interdisciplinary pain services which build skills in pain management are not adequately resourced to help patients incorporate complex regimens in their everyday lives. Trained peer supporters who are role models for pain management could provide unique and complementary support which addresses this gap in care.

**Rationale:** To inform the development of a conceptual model, this study aims to contextualise the main functions of peer support in the local context of persistent pain management.

**Method:** Qualitative semi-structured interviews were conducted with patients at the Persistent Pain Management Service (Division of Rehabilitation, Metro South Health), and support group members and peer support providers from the Australian Pain Management Association.

**Results:** Preliminary findings from a deductive thematic analysis of interview transcripts will be presented. This analysis is guided by an evidence-based model of peer support in order to identify the needs a trained peer supporter ought to address for patients and how in the context of interdisciplinary persistent pain management.

**Conclusion:** This study generates new knowledge on the needs of patients with persistent pain and the acceptability of peer support as part of interdisciplinary pain management.

### Biography

Dr Melissa Legg's general area of expertise is resilience in disability and chronic disease. Her current research focuses on how the healthcare system can be optimised to promote psychosocial wellbeing for people with disability. Emphases of her work include the application of: a) longitudinal research methods and analysis; b) secondary data analysis; and c) theoretical frameworks on behaviour and wellbeing that attend to the impact of factors in the social context or the system. Dr Legg was trained in health and social psychology and prior to joining The Hopkins Centre, she worked with the Menzies Health Institute Queensland and Cancer Council Queensland in cancer survivorship. Her PhD research examined the use and acceptability of peer support services amongst women newly diagnosed with breast cancer. This involved a prospective and population-based survey on women's attitudes about peer support for coping with breast cancer and how this influenced their use of services throughout Queensland, Australia.



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## Establishing baseline measures of sleep and environmental factors impacting sleep for inpatients with an acquired brain injury

Dr Ali Lakhani, The Hopkins Centre

Dr Benjamin Chen; Ms Susan Jones; Mr Luke Hands

### Plain Language Synopsis

*Sleep is integral to promote recovery subsequent to a traumatic injury. The need for increased sleep during the acute and sub-acute stages of injury is problematic when we consider that many people with a traumatic injury spend an extended time in hospital, where sleep may be adversely impacted by environmental determinants overnight. The current pilot study aimed to establish baseline measures of sleep, and environmental factors impacting sleep for inpatients with an acquired brain injury at the Gold Coast University Hospital Rehabilitation Unit.*

### Abstract

Sleep is integral to promote recovery subsequent to a traumatic injury. This is especially so during acute and sub-acute stages, where increased sleep is associated with favourable functional rehabilitation outcomes. The need for increased sleep during this time is problematic when we consider that many people with a traumatic injury spend an extended time in hospital, where sleep may be adversely impacted by environmental determinants overnight. The current pilot study aimed to establish baseline measures of sleep, and environmental factors impacting sleep for inpatients with an acquired brain injury at the Gold Coast University Hospital Rehabilitation Unit. For one week, sleep time was measured nightly using a combination of self-reported (subjective) and wrist-actigraph (objective) data. Furthermore, environmental determinants – noise, light, temperature and humidity – were measured nightly over the suggested period via an environmental sensor system. Descriptive statistics clarify baseline levels of sleep experienced by inpatients while a correlational matrix clarifies environmental determinants which may have an impact on sleep. The findings from this study will inform future studies investigating the impact of environmental factors overnight on the sleep of people with a traumatic injury in hospital.

### Biography

Ali is a Research Fellow with The Hopkins Centre, Menzies Health Institute Queensland. He has over 7 years' experience working within community based research projects that have partnered with health and social service organisations. His Program of Research utilises innovative methods and technologies to investigate features contributing to enabling environments for people with injury and/or disability. In particular, his Program considers how public and private places in the community impact the health of people with injury. The suite of projects that he is currently leading investigate how health and rehabilitation outcomes are impacted by: (i) health facility environmental features and (ii) increased engagement with greenspaces, private establishments, and public facilities within the community.



## Panel Discussions

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### Revolutions in technology discovery and design for disability rehabilitation

The panel will provide varied perceptions on the revolutions in technology, as it links with the symposium theme, 'discovery and design for disability and rehabilitation'. The panel will look at how inclusive and equitable technology discoveries and new designs are revolutionizing the disability and rehabilitation field.

#### Facilitator

*Kelly Higgins-Devine, ABC Journalist*

#### Biography

Kelly is a Journalist, ABC Radio Brisbane Evening Show, Reality TV or real people with real stories — the choice is yours. She loves seeking out the ordinary in the extraordinary and the extraordinary in the ordinary and sharing the outcome with her Evenings listeners. She started her ABC career in 1999 after spending a number of years in commercial radio. Kelly has worked across most facets of broadcasting from reporting and news reading to presenting local radio programs. In 2004 she was offered the Statewide Afternoons program where she loved being part of the Queensland conversation. She then kept Brisbane commuters up to date on the drive home for six years on Drive before returning to her home turf of Afternoons in 2012. In 2007 Kelly was named ABC Local Radio Broadcaster of the Year.



#### Panel Speakers

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*Mrs Angel Dixon, THC Ambassador, Qld Young Australian of the Year & Disability Advocate*

#### Biography

Angel is 2019 QLD Young Australian of the Year & Advocate for people with disability. She is the first agency signed model with a physical impairment to feature in a national television campaign, Angel Dixon's mission is to challenge society's perception of disability. The international Mercedes Benz Fashion Week model and 2019 QLD Young Australian of the Year is a passionate activist for universal design and inclusion. Aware of the power that the media has in forming perceptions, Angel is advocacy manager for not-for-profit organisation, *Starting With Julius*, and CEO of the *Attitude Foundation*. Both organisations seek to accelerate the inclusion of people with disability through the creation of authentic media and education on inclusive principals. Learn more about: [attitude.org.au](http://attitude.org.au) and [startingwithjulius.org.au](http://startingwithjulius.org.au)



*Dr Libby Callaway, Senior Occupational Therapist, Monash University*

#### Biography

Libby Callaway is a registered occupational therapist, having worked for the past 25 years in the field of neurological rehabilitation in Australia and the USA. Since 1999, Libby has been the director and principal occupational therapist at Neuroskills, a community based practice providing allied health services to people with neurological disability. Libby consulted to the National Disability Insurance Agency during development of the National Disability Insurance Scheme (NDIS) Specialist Disability Accommodation Framework, and works with current and future NDIS participants on pre-planning and NDIS plan implementation. In addition to this clinical work, Libby is a senior lecturer and researcher in the Occupational Therapy department at Monash University in Victoria. At Monash, Libby leads a \$2.4M national collaborative research program on housing, technology, support, and community design for people with neurological disability. This program is aimed at informing state-based injury insurance scheme and NDIS design and implementation.



## Posters

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### Should the paracycling classification system be reclassified?

Dr David Borg, Research Fellow, The Hopkins Centre

John Osborne; Johanna Liljedahl, Michele Foster; Carla Nooijen

#### Plain language synopsis

*This study investigated the effectiveness of the current classification system to differentiate competition between adjacent classes, based on performance. The standardised difference in mean velocity between adjacent classes was found to be inconsistent for the disciplines of cycling and tricycling. This variability could disadvantage some athletes and discourage participation. The international governing body of paracycling should consider the introduction of a third tricycling class to ensure the difference between classes is similar across all paracycling disciplines.*

#### Abstract

**Aim:** In paracycling, athletes with various disabilities compete within classes in the disciplines of cycling, tricycling and handcycling. There are five cycling (C1–C5; most to least impaired, respectively) and two tricycling (T1–T2) classes. The paracycling classification system aims to minimise the influence of impairment on the outcome of competition by grouping athletes of similar impairment. Unfortunately, little evaluation of the system has been undertaken. This study investigated the effectiveness of the current classification system to differentiate competition between adjacent classes, based on performance.

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### What factors are associated with rehabilitation compliance amongst Logan Hospital orthopaedic rehabilitation inpatients?

Dr Ali Lakhani, Research Fellow, The Hopkins Centre

Dr Leslie Gan

#### Plain language synopsis

*Orthopaedic rehabilitation has a significant economic contribution to health care costs in Australia. Engaging with rehabilitation programs is associated with favourable rehabilitation outcomes. Limited research has established the factors which promote rehabilitation engagement. A chart audit of Logan Hospital orthopaedic rehabilitation inpatients was conducted to establish the factors associated with rehabilitation compliance. Mental health concerns on admission to rehabilitation, experiencing delirium and oncological disease, and unfavourable motor functional independent scores on admission remained associated with limited rehabilitation compliance. Findings confirm that programs and interventions that aim to improve psycho-emotional health may promote rehabilitation compliance, and potentially result in improved rehabilitation outcomes.*

#### Abstract

Orthopaedic rehabilitation has a significant economic contribution to health care costs in Australia. With an ageing demographic, the incidences of fractures are set to increase, and a higher level of resources will be directed towards orthopaedic rehabilitation. Rehabilitation compliance is associated with favourable rehabilitation outcomes however limited research has established the factors which promote rehabilitation compliance. A chart audit of Logan Hospital orthopaedic rehabilitation inpatients over two years (n=188) was conducted to establish the factors associated with rehabilitation compliance. Univariate linear regression analyses established that experiencing delirium, mental health concerns on admission to rehabilitation, oncological disease, pre-morbid cognitive health issues, and unfavourable cognitive and motor functional independence scores on admission to rehabilitation were all associated with limited compliance to rehabilitation. Mental health concerns on admission to rehabilitation, experiencing delirium and oncological disease, and unfavourable motor functional independent scores on admission to rehabilitation remained associated with limited rehabilitation compliance during a subsequent multiple linear regression analysis. The findings from this study provide evidence to inform programs which aim to improve rehabilitation compliance for inpatients. In particular, findings confirm that programs and interventions that aim to improve psycho-

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emotional health may promote rehabilitation compliance, and subsequently result in improved rehabilitation outcomes.

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### Clarifying the geographic dispersion of essential health services for people with spinal cord injury in rural and remote Queensland: A spatial study

Dr Ali Lakhani, Research Fellow, The Hopkins Centre

#### Plain language synopsis

*The impact that remoteness has on the proximate availability of health services for people who have a spinal cord injury (SCI) in Australia is unclear. This study aimed to ascertain the impact of remoteness on the proximate availability of health services for people with a SCI in Queensland. Findings conclude that people with SCI in Rural and Remote Queensland have significantly less GPs and pharmacies within a one hour drive compared to those in Major Cities of Queensland. Practitioners must continue to employ innovative methods to improve access to health services for people with SCI in Rural and Remote Queensland.*

#### Abstract

Proximally available health services are essential to promote favourable health and wellbeing outcomes. Alarming, the impact that remoteness has on the proximate availability of health services for people who have a spinal cord injury (SCI) in Australia is unclear. Consequently, this study aimed to ascertain the impact of remoteness on the proximate availability of health services for people with a SCI in Queensland. Fifty-seven people with SCI residing in Rural and Remote Queensland (n=19), Inner Regional Queensland (n=19) and Major Cities in Queensland (n=19) participated in this study. Outcome measures consisted of (i) the number of general practitioners (GPs) and pharmacies within a 60 minute drive, and (ii) travel time to the closest hospital. Network analyses were conducted in ArcMap 10.4.1 to clarify the geographic distribution of these essential health services in relation to people with SCI residing in the three regional classifications. After, a series of non-parametric tests were undertaken in SPSS to clarify if significant differences in proximate availability existed. People with SCI in Rural and Remote Queensland have significantly less GPs and pharmacies within a one hour drive compared to those in Major Cities of Queensland, while, travel times to the closest hospital are comparable. Practitioners must continue to employ innovative methods to improve access to health services for people with SCI in Rural and Remote Queensland. Given the paucity of research in this area, additional studies utilizing spatial methods are necessary to elucidate the geographic dispersion of health services for people in Rural and Remote Australia.

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### Integrating telehealth in to a community based interdisciplinary brain injury service – 1 year on

Elizabeth Beadle, Neuropsychologist, Acquired Brain Injury Transitional Rehabilitation Service

Karen Lucas; Jessica Dawber; Matt Page; Kerrin Watter; Alena Murray; Prof Tim Geraghty; Areti Kennedy

#### Plain language synopsis

*The Acquired Brain Injury Transition Rehabilitation Service (ABI TRS) provides community brain injury rehabilitation. Clients from this service often face challenges accessing rehabilitation services, including transport access. Our service identified telehealth (i.e., providing therapy online through real time video conferencing) as a way for clients in the community to better access our service. Several strategies were used to explore and trial telehealth within the service, including researching evidence-based approaches, providing team education and training, establishing our own service processes, and training clients to best use telehealth. Client access to rehabilitation has improved.*

#### Abstract

There is emerging evidence to support telehealth use within brain injury rehabilitation. The objectives of this project were to investigate the role of telehealth within a community-based interdisciplinary



brain injury service, with an aim to increase intensity of and improve access to community rehabilitation.

A combined knowledge translation (Theodoros et al., 2016) and change management approach was used to identify specific service requirements and staff, client training needs. This included reviewing literature, discipline-specific ethical guidelines, client considerations, equipment needs, and benchmarking. Clinician barriers/facilitators were also examined.

Staff focus groups revealed common barriers, including poor staff perceptions and confidence, restricted client access, and limited practical support. A local training package was created to address some of these needs. Service processes developed included: an e-helper package to up-skill clients, suitability criteria, instructions, checklists, scripts, and troubleshooting documentation. Processes were also embedded into established service components. Ongoing staff training was provided as required. Telehealth occasions of service have increased from limited sporadic activity to multiple disciplines offering several services.

Overall, telehealth was integrated into a community brain injury service, enabling greater access to rehabilitation. Ongoing staff and consumer feedback will be necessary to continue developing and maintaining the service.

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### **Equine-assisted activities provide psychological benefits to young people 'at-risk'**

*Mr Michael Norwood, Research Fellow, Griffith University*

*Professor Elizabeth Kendall; Dr Ali Lakhani; Dr Snick Maujean; Professor Simone Fullagar; Professor Anna Stewart; Professor Bonnie Barber; Dr Martin Downes & Professor Jason Byrne*

#### **Abstract**

Evidence suggests equine-assisted activities provide psychological benefits to young people 'at-risk'. We present findings from three studies across several equine programs which support this notion. Young people aged 13 – 16 who were mostly boys and attending a flexi school in Australia, participated in a 5-7 week equine activities program. Unlike many equine programs there was no therapist or therapeutic content. Key qualitative themes suggest that the young people benefitted from positive engagement, social connectedness, increased confidence and improved relationships and attachment. Quantitative data suggests some aspects of behaviour and attention regulation improved. Mechanisms underlying these outcomes included motivation and ability to connect with the horse and a positive environment. Furthermore, the compatible student-environment interactions provided a backdrop which makes other positive changes possible.

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### **Clinicians' perceptions of facilitators and barriers that influence the provision of persistent pain relief to refugees.**

*Associate Professor Saras Henderson, Academic and Researcher, Griffith University*

*Dr Aston Wan; Mr Patrick Hawker; Ms Cara Cabilan; Clinical Nurse, Ms Hannah Chen*

#### **Plain Language Synopsis**

*Treating refugees with chronic pain can be difficult for clinicians due to cultural differences. Literature shows culture plays a key role in how refugees interpret and manage their chronic pain. A chart audit on refugees attending the Persistent Pain Clinic at Princess Alexandra Hospital showed how differing cultural views can lead to inadequate pain management for refugees. The aim of our study was to collect data, using focus group interviews, on clinicians' views of the facilitators and barriers that influence the provision of pain management for refugees, including their views on cultural competence skills. The findings can be helpful to clinicians to develop guidelines to enable them to provide culturally appropriate pain relief to refugees to improve their health outcomes and quality of life.*

## **Abstract**

**Background:** Persistent pain management in refugees is problematic (Lin et al., 2013). Researchers report that clinicians need to understand how culture influences refugees' interpretation and pain management (Teal et al., 2009). A chart audit on refugees attending the Persistent Pain Clinic at Princess Alexandra Hospital showed how differing cultural views can lead to inadequate pain management for refugees.

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## **Rehabilitation for participation in life after spinal cord injury – clinician feedback on a new conceptual framework**

*Ms Delena Amsters, Senior Research Officer, Spinal Outreach Team*

*Professor Elizabeth Kendall; Dr Ali Lakhani; Dr Annick Maujean*

### **Plain language synopsis**

The HEAR Framework, which stands for Help, Encourage, Accept and Respond is new way of thinking about spinal cord injury (SCI) rehabilitation. The first step in testing this Framework to see if it would work in practice is to ask the opinions of SCI rehabilitation professionals.

## **Abstract**

**Introduction:** The HEAR Framework emerged from a research agenda aimed at understanding the determinants of participation in life after spinal cord injury (SCI). It is based on the insights of key informants living with SCI. The Framework has three components – Help, Encourage and Accept. The components are enacted through Responsive Communication. The Framework needs to be thoroughly tested before it can be incorporated into rehabilitation theory and practice.

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## **Vocational Rehabilitation: It Is Our Business, Embedding speech pathology into vocational rehabilitation in an interdisciplinary service**

*Ms Kate Cameron, Senior Speech Pathologist, Acquired Brain Injury Transitional Rehabilitation Service, Division of Rehabilitation, Metro South Health*

*Nina Wegener; Kerrin Watter; Areti Kennedy*

### **Plain Language Synopsis**

*There is emerging strong evidence that interpersonal and communication skills are a key contributor in successful return to work after acquired brain injury. Despite the growing evidence, there has been little in the way of clinical application of this knowledge. With many clients presenting to our service with return to work goals, it was identified that a better understanding of this area, processes and tools needed to be developed. This presentation discusses the current knowledge related to communication and interpersonal skills in return to work and presents the steps that ABI TRS has taken to introduce evidence-based processes and tools.*

## **Abstract**

Many people with acquired brain injury (ABI) have return to work (RTW) goals. Overall, RTW rates following ABI globally are poor (in Australia and New Zealand, employment rates are 40-45% at two years post injury). Although occupational therapists are traditional facilitators of vocational rehabilitation (VR), there is emerging strong evidence that interpersonal and communication skills are a key contributor to a successful RTW after ABI. As ABI often results in communication and interpersonal skill deficits, speech pathologists (SPs) can be a helpful resource for RTW/VR. SPs at the ABI Transitional Rehabilitation Service (ABI-TRS) identified a literature-translation gap, with limited resources and practice guidelines for SP-VR. A service development activity was undertaken to: a) develop evidence-based processes and resources to address clients' RTW goals and communication needs during ABI-TRS rehabilitation, and b) to embed SP in VR processes within ABI-TRS. Outcomes include: SP involvement in workplace liaison; communication task-analysis; evidence-based assessment; individualised therapy targeting vocational communication skills; employer liaison ensuring strategy application in workplace and informing follow-up SP services for ongoing VR. These SP-VR processes are now embedded in interdisciplinary team practices.

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This presentation will discuss development of evidence-based clinical processes and resources to address clients' RTW goals and communication needs.

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## Choice and Outcomes in Worker Injury Treatment

Ms Olwen Anderson, Student, Griffith University

### Plain language synopsis

*An effective injury management system can relieve the economic burden of injury rehabilitation for government and the personal burden for workers. A mixed methods study was undertaken to explore the connection between choice of provider and treatment type for injured workers and the outcome of their rehabilitation. Preliminary results indicate workers believe there is a connection between the choice available to them and the outcome of their rehabilitation. Access to choice is bolstered by knowing it is available, and supportive relationships between the worker and stakeholders; but can be hampered by ineffective or ruptured relationships between the worker and stakeholders.;*

### Abstract

Rehabilitation of injured workers is a financial burden for government and a personal burden for workers. A mixed methods study was undertaken to explore whether the concept of choice in regard to provider and treatment type for injured workers impacts the outcome of work injury rehabilitation. The study explored what choice workers were offered, what hindered or helped their ability to choose their provider and treatment type, and whether the worker perceived that the degree of choice available to them influenced the outcome of their rehabilitation. Preliminary results indicate that workers perceived the degree of choice available to them did affect the outcome of their rehabilitation. Access to choice was hindered by lack of knowledge of the rehabilitation system, misinformation, communication difficulties between the worker and stakeholders, and by rupture of the occupational bond. Engaging choice during injury rehabilitation was supported by a good occupational bond. These results indicate that access to choice does play a meaningful role in injury treatment rehabilitation for workers. Further research is needed into the factors that lead to this disconnect between the choices that are available and those which are accessible, in order to generate better outcomes for workers.

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## Investigating the utility and feasibility of brain screening protocol in the Murri Court

Dr Michelle McIntyre, Research Fellow, Synapse

Dr Michelle McIntyre & Jennifer Cullen

### Plain Language Synopsis

*This mixed-methods study sought to investigate the utility and feasibility of undertaking a screening process for cognitive and complex disability in an Indigenous sentencing court to improve information provided to the court about offenders. There is an absence of culturally safe assessment processes to inform the court about offender disabilities, and their functional impact. This impacts on the court's ability to determine appropriate sentencing, diversionary programs and post-release support. High levels of complex disability and functional impairment were found. The court found the protocol was useful to inform sentencing decisions, and it was well accepted by stakeholders*

### Abstract

Background: The need for improved processes to identify and respond to Indigenous offenders with cognitive and complex disabilities (including co-morbid mental health disorders; alcohol and drug misuse; trauma and social disadvantage) in the Criminal Justice System (CJS) is well recognised (COAG, 2016; Sofronoff, 2016). There is an absence of culturally safe assessment processes to inform the court about offender disabilities, and their functional impact. This impacts on the court's ability to determine appropriate sentencing, diversionary programs and post-release support.

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## Getting research closer to practice: Using a research capacity building framework to design and deliver a clinician-research position in occupational therapy

Ms Kylie Bower, Occupational Therapist & Clinical Researcher, Metro South Health

Professor Michele Foster; Janelle Griffin; Mary Whitehead

### Plain Language Synopsis

*There are many benefits to having clinicians involved in research. But getting research embedded in clinical practice, and evaluating the outcomes, can be challenging. This poster describes how a framework (Cooke, 2005) was used to design and establish a clinician-researcher position in an occupational therapy team of a brain injury rehabilitation service. The enablers and barriers are discussed in relation to the framework, as well its benefits, and what value there could be in continuing or replicating the position elsewhere.*

### Abstract

Research that is conducted by clinicians can have benefits over research conducted by – or even with – academic staff, in relation to both patient outcomes and building skills and structures for ongoing research and knowledge translation activity. However, designing and evaluating clinician-researcher activity can involve multiple challenges. A framework (Cooke, 2005) has been proposed to help address these challenges. This paper describes how Cooke’s framework was used to design and evaluate a pilot occupational therapy researcher-clinician position in a brain injury rehabilitation service. The enablers, barriers and outcomes of the position are discussed in relation to individuals, clinical teams, the hospital organisation and organisations beyond the hospital. Recommendations are proposed for designing future service delivery to achieve research capacity building.

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## Pacing PLUS: Can a Brief Interdisciplinary Group Pacing Program Improve Outcomes for People with Long Term Pain?

Ms Elizabeth Spitzer, Senior Psychologist, Metro South Health

Rebecca Madden; Melissa Legg; Michael Deen; Aston Wan

### Plain Language Synopsis

*People with persistent pain often have difficulty pacing their daily activities. We wanted to find out if giving people education about pacing activity and strategies to manage their thoughts and emotions would help them to do more things and feel better. We ran groups for people with pain to help them to learn to manage it better. We found that many people told us that they were able to do more things after attending and that they had changed the way that they think about the pain. We will use this information to continue to make the group sessions better.*

### Abstract

Activity pacing is a strategy recommended to help individuals with persistent pain better manage their pain. Current literature indicates that brief interventions focussed on implementing activity pacing strategies as a means of improving interference have had little success.

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## Exploring occupational engagement following mild stroke through the use of the Occupational Gaps Questionnaire

Ms Tenelle Hodson, PhD Candidate, University of Queensland

Professor Louise Gustafsson; Mrs Bronwyn Wall; Dr. Gunilla Eriksson & A/Prof. Petrea Cornwell

### Plain Language Synopsis

Recent research has identified that a mild stroke can have ongoing implications for the person who experiences it. Such implications can impact on the way people chose to spend their time and the things they engage in, also known as “occupations”; however, limited research has been conducted in relation to this. The Occupational Gaps Questionnaire (OGQ) is a tool that can assist in identifying gaps in people’s occupational engagement that is the difference between what they engage in and what they desire to engage in. This study used the OGQ with people with mild stroke in an Australian context and identified that it was feasible and able to identify gaps.

### Abstract

**Background:** Recent studies have highlighted the ongoing implications that can result from a mild stroke. Knowledge remains scarce though in regards to occupational engagement within this population. The Occupational Gaps Questionnaire (OGQ) measures the difference between a person’s actual and preferred occupational engagement and may be useful in exploring this area further.

**Aim:** To test the feasibility of the English version of the OGQ and describe the occupational gaps of people with mild stroke within an Australian context. **Methods:** A mixed methods, cross-sectional study involving 10 people with mild stroke at 1 and/or 9 months after stroke. Quantitative data was analysed descriptively, and thematic analysis was used for qualitative data.

**Results:** Participants reported a mean of 6.7 (SD 5.1) and 3.00 (SD 2.1) gaps at 1- and 9-months, respectively. Two themes emerged from the qualitative analysis: "Drivers of occupation" and "Occupations can be challenged or enabled". An additional finding in terms of feasibility was drawn from qualitative data: "Feasibility of Conducting the OGQ with people with mild stroke".

**Conclusions:** The English version of the OGQ proved to be a feasible instrument to identify occupational gaps in people with mild stroke, within an Australian context. This tool may support research and clinical practice in this population.

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## Current Practice Trends of Oedema Management in the hands of people with Tetraplegia in Australia

Ms Soo Oh, Occupational Therapist, HabITec Manager

Professor Louise Gustafsson; Dr Sally Eames; Dr Michelle Bissett

### Plain Language Synopsis

People who sustain tetraplegia report that their hand and arm function is the most important factor in improving their quality of life. The perception from participants is that oedema occurs often but does not occur in all people with tetraplegia nor did it follow a predictable timeline after injury. To date, there is insufficient evidence to guide how therapists should address this oedema in practice. This study explored the oedema management practices of occupational therapists in Australia, its perception on effectiveness of current assessment tools and treatment methods and challenges with oedema management. These results will be used to guide formal evaluation of common practice techniques.

## Abstract

Background: The development of oedema in the hands of people who sustain tetraplegia can have significant implications on hand function and participation in rehabilitation. Limited research specific to oedema in the hands of people with tetraplegia exists and there is a consequent need to develop the evidence-base.

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## Innovative practices for optimising adult physical and psychological rehabilitation

Dr. Robyn Grote, Transitioning to Senior Fellow in System Innovation, Queensland Health

### Plain Language Synopsis

*Technology is part of our everyday life at home, at work, in entertainment and play. People are accustomed to, in fact, dependent on, the use of technology. So why not use the best technology has to offer in robots, anti-gravitational machines and virtual reality environments to enhance and hasten rehabilitation- and make it fun? This paper discusses practices currently occurring in international leading rehabilitation sectors- in particular those in the military.*

## Abstract

There is a growing cohort of rehabilitation patient's consequent to increasing survival from once fatal accidents. I visited leading international adult physical rehabilitation centres. The use of robots was prevalent to support and guide inpatients in early therapy, allowing them to "walk" upright and symmetrically. Patients progressed to antigravity treadmills gradually allowing full weight-bearing.

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## Perceived costs and benefits of mandating and regulating Livable Housing Design

Dr Courtney Wright, Research Fellow, The Hopkins Centre

Dr Jacinta Colley; Dr Margaret Ward

### Plain Language synopsis

*Housing plays an important role in helping people to rebuild their lives after a serious injury. However, there remains a limited number of accessible housing in the community to support the needs of people who have experienced a serious physical injury. Despite an ambitious goal for all new homes to be built to an agreed accessible standard by 2020, there has only been a small number of new accessible housing that have been built. It is thought that the public do not want accessible housing. This research aimed to understand people's views on the costs and benefits to Australian society if all new homes were built to be accessible. The results identified conflicting views of participants about the rights of different groups of people (and whose rights are considered more important), as well as the financial cost of making all new homes accessible.*

## Abstract

Many thousands of Australians living with brain and spinal injuries face significant housing challenges post discharge from hospital. This is in part due to existing housing design standards and a subsequent lack of physically accessible housing in the private sector. Despite an industry-led voluntary approach over 10 years, a national guideline, and a strategic plan for all new homes to be an agreed Livable Housing Design standard by 2020, there has been limited uptake by the housing and construction sector, which is often attributed to a perceived lack of consumer demand.

**Rationale:** This research aimed to investigate the perceived costs and benefits to Australian society if all new homes were built to an agreed Livable Housing Design standard.

**Method:** An online mixed-methods survey was available for completion over a three month period. Convenience and snowball strategies were used to recruit a total of 1,329 participants. The sample predominantly reflected the voice of home owners and people whose needs are not met through the current mainstream housing system.

**Results:** Findings from this research revealed conflicting views of participants surrounding a persons' rights (and whose rights take priority), as well as the perceived financial impact of change.

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Conclusion: The reliable provision of Livable Housing will have a major impact on government policies and financial investments in programs to keep people socially and economically included and participating in family and community life.

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## **Housing for people with an acquired brain or spina injury: Mapping the Australian funding landscape**

*Dr Courtney Wright, Research Fellow, The Hopkins Centre*

*Dr Jacinta Colley; Ms Kate Knudsen & Prof Elizabeth Kendall*

### **Plain Language synopsis**

*Funding is often sought from National or State/Territory-based insurance schemes to assist a person with ABI or SCI to make changes to their housing situation and improve their quality of life. Given the crucial role of insurance schemes in contributing toward housing improvements for individuals with ABI and SCI, this scoping review aimed to synthesize publicly available information regarding scheme eligibility and housing funding contributions for people who have sustained an ABI or SCI. The findings have allowed comparison of funded supports across different insurance Schemes, and on a national scale, to inform future decision-making in this area.*

### **Abstract**

Due to several personal and systemic factors, individuals with an acquired brain injury (ABI) or spinal cord injury (SCI) are often unable to afford the extent of support required to address their housing needs. Funding is often sought from National or State/Territory-based insurance schemes to assist a person with ABI or SCI to make changes to their housing situation and improve their quality of life.

Rationale/Method: Given the crucial role of insurance schemes in contributing toward housing improvements for individuals with ABI and SCI, this scoping review aimed to synthesize scheme eligibility and funding contributions of the NDIS, interstate NIS schemes, interstate workers compensation schemes, and CTP Insurance schemes in relation to housing infrastructure, tenancy, and service delivery for people who have sustained an ABI or SCI.

Results: There were notable differences in available information between different Scheme types and on a national scale (i.e., between different Australian States and Territories). There were also notable differences in the housing infrastructure, tenancy, and service delivery supports that were funded across the Schemes.

Conclusion: This research has provided individuals with an ABI or SCI, and their families, an overview of available funding for housing supports across Australia (from publicly available information). The findings have also enabled comparison of funded supports across the diverse Schemes, and on a national scale, to inform future decision-making in this area.

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## **Altered pain processing in patients with diabetes: a systematic review of pain thresholds and pain modulation mechanisms**

*Eva Sierra-Silvestre, PhD Candidate, Griffith University*

*Mari Somerville; Leanne Bisset; Michel W. Coppieters*

### **Plain Language Synopsis**

*Diabetes affects nerve function over time. The findings of this review demonstrate that loss of small diameter nerve function (responsible for the perception of temperature and pain) already occurs in patients with diabetes without clinical signs of DSPN. Moreover, this loss of nerve function is progressive across the diabetes groups (diabetes without DSPN versus diabetes with non-painful DSPN; diabetes with non-painful DSPN versus diabetes with painful DSPN). Pain modulation mechanisms which evaluate how well a person can regulate pain perception are understudied in diabetes.*

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## Abstract

Diabetes and diabetic neuropathies affect somatosensory function. There is a gap in the literature regarding how the perception and modulation of pain are in patients with diabetes with and without neuropathies. This systematic review aimed to synthesise the evidence for somatosensory function, measured via static and dynamic quantitative sensory testing, in patients with diabetes, with non-painful diabetic neuropathy, with painful diabetic neuropathy and healthy individuals. Electronic databases were searched to identify studies with at least one measure of pain threshold, contact heat-evoked potentials, temporal summation or conditioned pain modulation. Meta-analysis was conducted on data from 18 studies. Our results showed a progressive loss of function in patients with diabetes, with diabetic neuropathies and painful diabetic neuropathies. Compared to healthy participants, patients with diabetes without neuropathy already showed signs of loss of nerve function in heat (SMD: 0.52;  $p < 0.001$ ), cold (SMD: -0.71;  $p = 0.01$ ) and electrical pain thresholds (SMD: 1.26;  $p = 0.01$ ). Compared to patients with diabetes, patients with non-painful neuropathy had more loss of function detected in heat (SMD: 1.02;  $p = 0.01$ ) and electrical pain threshold (SMD: 1.26;  $p < 0.001$ ). Patients with painful diabetic neuropathy exhibited the highest loss of function in heat pain threshold compared to patients with non-painful neuropathy (SMD: 0.53;  $p < 0.001$ ). Patients with diabetes, with and without neuropathies, exhibit altered pain perception suggestive of loss of nerve function regardless of the presence of pain.

