FMNMHS Transformative Research Symposium 2024

3 & 4 September 2024

Program & Book of Abstracts

Background

The **Transformative Research Symposium** is a hybrid event which showcases local, national, and international research being conducted by researchers connected to the Faculty of Medicine, Nursing & Midwifery and Health Sciences and affiliated Research Institutes at the University of Notre Dame Australia, spread across Broome, Fremantle and Sydney campuses.

Each year, the Symposium will spotlight the significant and impactful research occurring at Notre Dame that aims to address real world issues and challenges for the communities which the university serves, with a focus on human health.

Taking place on September 3rd and 4th 2024, this Symposium includes a dynamic and eclectic mix of research presentations from various fields, by researchers of varying career stages and High Degree by Research students, across our three campuses, from different Schools and affiliated institutes, including the Institute for Health Research, Nulungu Research Institute and Majarlin Kimberley Centre for Remote Health.

Event Details

The symposium is a one stream multi-day event. It is running concurrently across each campus (i.e., Broome: NDB8/112, Fremantle: ND4/101 and Sydney: NDS5/209) with a mix of live and live-streamed presentations. The concurrent catered breaks provide an opportunity for in-person networking on each respective campus.

Organising Committee

Symposium Chair	Prof Gerard Hoyne, Associate Dean of Research
Symposium Committee Chairs	Dr Anastazja Gorecki, Lecturer, School of Health Sciences Dr Stephen Bested, Acting Program Coordinator, Postgraduate Health and Medical Sciences, School of Medicine
Broome Committee members	A/Prof James Debenham, Director Majarlin Danica Butler, Majarlin Ethan Calleja, Majarlin
Fremantle Committee members	Dr Dana Hince, Institute for Health Research Dr Khaya Morris-Binelli, School of Health Sciences Dr Sheena McChlery, School of Nursing and Midwifery Dr Jo-Aine Hang, School of Health Sciences Reeti Brar, Library
Sydney Committee members	Clare Johnson, Research Grants Office

Program Overview

Day 1	September 3 2024	
9:00 am (AWST) 11:00 am (AEST)	Arrivals and Check-ins	
9:15 am (AWST) 11:15 am (AEST)	Welcome	Welcome Symposium Chair Prof Gerard Hoyne (Fremantle) Acknowledgement of Country Shakayla Walley (Fremantle) University Prayer Tom Gannon (Broome) Opening Address Vice Chancellor Prof Francis Campbell (Fremantle)
9:30 am (AWST) 11:30 am (AEST)	Keynote Session 1	**Professor Charlotte Hespe** Innovations in patient care- use of technologies for improving healthcare: BREATHE Smart (Sydney)
10:00 am (AWST) 12:00 pm (AEST)	**Research Talks 1: Advancing Biomedical and Clinical Science**	**Dr Mervyn Travers** Diagnostic information has an immediate effect on pain with loading in people with Achilles tendinopathy: a randomized clinical experiment (Fremantle)
		Miss Charlotte Sofield Plastic Perils: An In Vitro Study Investigating Microplastic Exposure in the Gut-Brain-Axis (Fremantle)
		Dr Katrina Giskes Time trends in stroke risk management among high-risk patients with non-valvular atrial fibrillation in Australia between 2011-2019 (Sydney)
		Mr Anthony Barrett & Ms Hannah Kamgarpour The Evolution of Soft Drusen (Sydney)
11:00 am (AWST) 1:00 pm (AEST)		*Fremantle/Broome – Tea Break (30 min)* *Sydney – Lunch Break (30 min)*
11:30 am (AWST) 1:30 pm (AEST)	**Research Talks 2: Care for the Vulnerable**	**Ms Kylie Hopkins** Understanding the experience of Community and Public Health Dietetic students implementing a suite of co-designed, remote community nutrition programs throughout the Kimberley (Broome)
		Dr Nameer Van Oosterom A new delirium monitoring system is demonstrating implementation of the Delirium Standard in palliative care units: Interim results of 442 audits within the MODEL-PC study (Sydney)
		Associate Professor Natasha Michael The effect of ambulatory palliative care on improving symptoms in cancer patients: A systematic review and meta-analysis (Sydney)
		Mr Dane Webster How Integrating Oral Health into AOD Recovery can Bridge Siloed Sectors of Healthcare (Fremantle)
12:30 pm (AWST) 2:30 pm (AEST)	**15 min break**	
12:45 pm (AWST) 2:45 pm (AEST)	**3 Min Thesis Session 1**	**See Abstract Booklet for Speaker and Topics Presented**
1:45 pm (AWST) 3:45 pm (AEST)	**Day 1 Close**	

Day 2	4 September 2024	
9:00 am (AWST) **11:00 am (AEST)**	Arrivals and Check-ins	
9:15 am (AWST) **11:15 am (AEST)**	Welcome	Welcome Symposium Chair Prof Gerard Hoyne (Fremantle) Acknowledgement of Country Shakayla Walley (Fremantle) University Prayer Tom Gannon (Broome) Consumer and Community Involvement (CCI) Introduction Caroline Jones (Fremantle)
9:30 am (AWST) **11:30 am (AEST)**	**Keynote Session 2**	**Dr Robyn Doney** Beyond the Red Dirt: Bridging Research and Practice in Remote Health (Broome)
10:00 am (AWST) **12:00 pm (AEST)**	**Research Talks 3: Advancing Healthcare Systems**	**Dr Kate Levett** The value of national survey data – unpacking implementation in maternity care (Sydney)
		Ms Antonia Gazal What are the costs associated with nausea and vomiting of pregnancy and hyperemesis gravidarum? A Systematic Review (Sydney)
		Professor Caroline Bulsara Innovation evaluation of Western Australia's first Emergency Department Musculoskeletal Diversion Pathway (Fremantle)
		Associate Professor Richard Riley Notifications of doctors to the Medical Board of Australia: who and why? (Fremantle)
11:00 am (AWST) **1:00 pm (AEST)**	*Fremantle/Broome – Tea Break 1 (30 min)* *Sydney – Lunch Break*	
11:30 am (AWST) **1:30 pm (AEST)**	**Keynote Session 3**	**Professor Merrilee Needham** Inclusion Body Myositis - where to next? (Fremantle)
12:00 pm (AWST) **2:00 pm (AEST)**	**3 Min Thesis Session 2**	**See Abstract Booklet for Speaker and Topics Presented**
1:00 pm (AWST) **3:00 pm (AEST)**	**Prize announcements & Symposium Close (15 mins)**	

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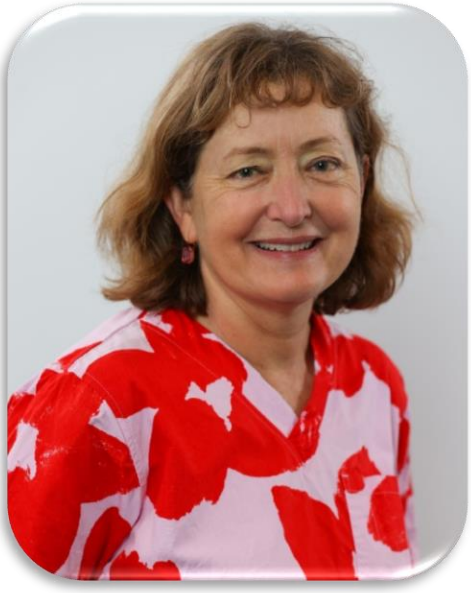
Day 1 Program of Events

September 3 2024

9:15 am (AWST) **11:15 am (AEST)**	**Symposium Welcome & Formalities** **Prof Gerard Hoyne** via Fremantle campus
9:20 am (AWST) **11:20 am (AEST)**	**Acknowledgement of Country** **Shakayla Walley** via Fremantle campus **Acknowledgement of Country** *'Aboriginal and Torres Strait Islander people, as the first peoples of this nation, are the holders of ancestral knowledge, law and wisdom. We acknowledge First Nations people from across Australia, particularly the Yawuru people of Broome, the Whadjuk people of the Noongar nation in Fremantle and the Gadigal people of the Eora nation in Sydney where our University has campuses. We pay respects to Elders past and present across these nations, with whom we live and work closely, and extend that respect to all First Nations people who we collaborate with nationally'.*
9:20 am (AWST) **11:20 am (AEST)**	**University Prayer** **Tom Gannon** via Broome campus
9:25 am (AWST) **11:25 am (AEST)**	**Symposium Opening Address** **Vice Chancellor Prof Francis Campbell** via Fremantle campus

9:30 am (AWST) **11: 30 am (AEST)**	**KEYNOTE PROFESSOR CHARLOTTE HESPE** Innovations in patient care- use of technologies for improving healthcare: BREATHE Smart via Sydney campus



Professor Charlotte Mary Hespe AM

PhD, MBBS (Hons), FRACGP, DCH (Lon), FAICD, GCUT (UNDA)

Professor Charlotte Hespe is Head of General Practice and Primary Care Research for the Sydney School of Medicine, University of Notre Dame, Australia (UNDA). She is responsible for establishing and overseeing a research network specialising in implementing best practice guidelines in General Practice for topics such as preventive care, CVD and Respiratory illnesses. She is also an active GP Clinician and Practice Owner of a medium-sized general practice of 12 Dr (8 FTE) / 3 Practice nurses/ 3 PT Allied health practitioners in Inner City Sydney (Glebe Family Medical Practice, GFMP).

She also works as a Deputy Director of Professional Services Review, Clinical Lead for Australian Digital Health Agency, and advisor to the NSW Health Department for GP related issues such as the Lumos project and Cancer Institute Primary Care Advisory Panel.

Her General Practice (GFMP) is a teaching Practice for Medical students and GP Registrars in the RACGP training program. Her clinic is a leading general practice in Central and Eastern Sydney PHN and won RACGP Practice of the Year, NSW/ACT, in 2018.

In 2024 Charlotte was awarded Member of the Order of Australia (AM) in the General Division, For significant service to general medicine as a practitioner, academic and mentor.

Professor Hespe was also recognised on 2024 year's COVID-19 Honour Roll for her work leading the COVID-19 response in NSW/ACT., and has transformed the lives of many people experiencing homelessness.

SESSION CHAIRS

Broome: Danica Butler

Fremantle: Dr Raoul Oehmen & Prof Gerard Hoyne

Sydney: Dr Craig Smith

Research Talks 1: Advancing Biomedical and Clinical Science

Oral presentations are ten (10) minutes with four (4) minutes for questions.

10:00 am (AWST) **12:00 pm (AEST)**	**Dr Mervyn Travers** Diagnostic information has an immediate effect on pain with loading in people with Achilles tendinopathy: a randomized clinical experiment. (Fremantle)
	Ms Charlotte Sofield Plastic Perils: An In Vitro Study Investigating Microplastic Exposure in the Gut-Brain-Axis (Fremantle)
	Dr Katrina Giskes Time trends in stroke risk management among high-risk patients with non-valvular atrial fibrillation in Australia between 2011-2019 (Sydney)
	Mr Anthony Barrett & Ms Hannah Kamgarpour The Evolution of Soft Drusen (Sydney)
11:00 am (AWST) **1:00 pm (AEST)**	*Break (30 min)*

Note. Oral presentation abstracts for this session appear below in presentation order.

TRAVERS MERVYN

School of Health Sciences, Fremantle

Diagnostic information has an immediate effect on pain with loading in people with Achilles tendinopathy: a randomized clinical experiment

Mervyn Travers[1], Nigel Travers[1], William Gibson[1], James Debenham[1], Dana Hince[1], Benedict Wand[1]

[1]School of Health Sciences, University of Notre Dame Australia, Fremantle, Western Australia, Australia

Background: Current frameworks for understanding pain and guiding clinical practice stress that a person's thoughts and beliefs about their injury can influence the pain they experience. Accordingly, clinicians are taught to be mindful of the words they use in dispensing a diagnosis. However, no direct evidence exists that diagnostic information influences pain.

Aim: To investigate if diagnostic information influenced pain during function in people with Achilles tendinopathy

Design: Prospectively registered, parallel, two-arm, randomised clinical experiment with concealed allocation, participant and assessor masking and intention-to-treat analyses.

Method: Fifty recreational runners with Achilles tendinopathy participated. To ensure blinding and control for demand characteristics, participants were unaware they were participating in a controlled experiment until after data collection. The experimental group received diagnostic information highlighting changes in (muscle) function as the primary problem. For the control group, the explanation prioritised structural pathology within the tendon. The primary outcome measure was maximal pain intensity (visual analogue scale 0 – 100) experienced during a standardised hopping task. The between-group difference and 95% CI were estimated using regression models.

Results: Immediately post-intervention, pain intensity in the experimental group was 25.4/100 (24.3) and 36.7/100 (28.1) in the control group . The mean difference was 12.3/100 (95% CI 3.2 to 21.5).

Conclusion: The content of diagnostic information influenced pain intensity with loading in people with Achilles tendinopathy. These data demonstrate the oft-hypothesised negative effect of certain types of diagnostic information on pain in a clinical population. The point estimate of the effect size suggests a moderate effect on pain intensity with confidence intervals ranging from values that might be regarded as representing a large or substantial between group difference to values that are unlikely to be clinically meaningful.

Key Practice Points:

Mind your words - they can have an immediate and negative effect on pain

SOFIELD CHARLOTTE

HDR, Fremantle

Plastic Perils: An In Vitro Study Investigating Microplastic Exposure in the Gut-Brain-Axis

Charlotte Sofield[1,3], Ryan Anderton[1,2], Anastazja Gorecki[1,3]

[1]School of Health Sciences, University of Notre Dame Australia, Fremantle, Western Australia, Australia

[2]Institute for Health Research, University of Notre Dame Australia, Fremantle, Western Australia, Australia

[3]Curtin Health Innovation Research Institute, Ralph and Patricia Sarich Neuroscience Research Institute, Curtin University, Nedlands, WA, Australia

Microplastics are ubiquitously present in the environment, contaminating drinking water and many dietary staples. Oral ingestion presents an important exposure route for microplastics, yet there are limited studies investigating how microplastics interact with the gut barrier, or the gut-brain-axis. This project aims to model biologically relevant intestinal microplastic exposure and consequent neuronal effects *in vitro,* using intestinal and neuronal cell lines to study microplastic uptake, toxicity and functional consequences. Intestinal epithelial cells and neurons will be exposed to a range of microplastic sizes for 48 hours to examine size-dependent microplastic uptake via confocal microscopy, and to study the functional effects of microplastic exposure using protein assays. In pilot experiments, enteroendocrine and intestinal epithelial cells were exposed to 0 - 80 µg/mL of 2 µm sized polystyrene microplastic for 48 hours. Microplastic uptake was determined using fluorescent absorbance and confocal microscopy, and toxicity was determined by lactate dehydrogenase release. Confocal microscopy with 3D qualitative analysis identified microplastic internalisation by enteroendocrine and intestinal epithelial cells. This was a novel finding in enteroendocrine cells; however, uptake was greater in intestinal epithelial cells. Critically, this pilot evidence indicates that intracellular transport of microplastics through multiple cell populations in the intestinal epithelium may be an important route by which microplastics cross from the gut lumen into peripheral circulation. Microplastics in the circulatory system are transported throughout the body becoming lodged in organs including the kidneys, liver and potentially, the brain. Additionally, microplastic presence within cells is predicted to disturb the homeostatic function of cells particularly in the gut and brain. Thus, robust characterisation of how microplastics affect the gut and brain is critical to understanding the risk of microplastics to human health. Importantly, the current and upcoming findings of this study begin to address the pending question—do microplastics matter?

GISKES KATRINA

School of Medicine, Sydney

Time trends in stroke risk management among high-risk patients with non-valvular atrial fibrillation in Australia between 2011-2019

Background: Atrial fibrillation (AF) is associated with stroke. Major changes to AF management recommendations in 2016-2018 advised that: 1. Stroke risk be estimated using the CHA_2DS_2-VA score; 2. Antiplatelet agents (APAs) do not effectively mitigate stroke risk; 3. Anticoagulation is prioritised above bleeding risk among high-risk patients; and 4. Non-vitamin K oral anticoagulants (NOACs) are used as first-line anticoagulants.

Aim: To examine trends in stroke risk management among high-risk patients with non-valvular AF in Australia between 2011-2019.

Method: De-identified data of patients were obtained from 164 separate general practices. Data included information on patient demographics, diagnoses, health risk factors and recent prescriptions. Patients with a diagnosis of non-valvular AF were identified and stroke risk was calculated by CHA^2DS^2-VA score. High risk patients (i.e. CHA^2DS^2-VA≥2) were categorised as being managed by oral anticoagulants (OACs, i.e., warfarin or NOACs), APAs only, or neither (i.e., no OACs or APAs) and time trends in prescribing were examined. Multivariate analyses examined the characteristics of patients receiving the guideline recommended OAC management.

Results: Data were available for 337964 patients; 8696 (2.6%) had AF. Most patients with AF (85.8%, n= 7116) had high stroke risk. The proportion of high-risk patients managed on OACs increased from 56.7% in 2011 to 73.7% in 2019, while the proportion prescribed APAs declined from 31.1% to 14.0%. Those receiving neither treatment remained steady (around 12%). Overall, 26.3% of patients were inadequately anticoagulated at the end of the study period. There were no age or gender differences in receiving the guideline-recommended therapy, and patients with comorbidities associated with increased stroke risk were more likely to receive OAC therapy.

Conclusions: Stroke risk management among patients with AF has improved between 2011-2019, however there is still scope for further gains as many high-risk patients remain inadequately anticoagulated. Better stroke risk assessment by clinicians coupled with addressing practitioner concerns about bleeding risk may improve management of high-risk patients.

BARRETT ANTHONY & KAMGARPOUR HANNAH

HDR, Fremantle

The Evolution of Soft Drusen

Anthony Barrett[1], Hannah Kamgarpour[1], Jackson Siskovic[1], Svetlana Cherepanoff[1, 2,3]

[1]The University of Notre Dame Australia, School of Medicine

[2]St Vincent's Hospital Sydney

[3]UNSW Sydney

Background: Soft drusen (SD) are the hallmark lesions of early Age-related macular degeneration (AMD)[1–3]. However, SD may regress over time[4,5]. Understanding the natural history of SD will assist in monitoring interventions and risk of disease progression.

Methods: 80 eyes (45 patients; 39M/6F) with SD were selected from a clinically and histologically validated archive of over 600 eyes. Eyes were excluded if there was other ocular pathology or inadequate fundus visualisation. All study eyes were examined during life (best-corrected visual acuity, direct fundoscopy, fundus photography). 51 eyes were prepared for light microscopy (LM) and 29 eyes for electron microscopy (EM) according to published protocols[6,7]. SD size, morphology, contents and clinical fundus appearance were correlated to known AMD features including early/late type basal lamina deposits (BLamD), retinal pigment epithelium (RPE) abnormalities and presence of subclinical choroidal neovascularisation.

Results: SD were only found in eyes with a continuous layer of BLamD. In eyes with early BLamD, SD contents had a pale, washed out appearance on LM and consisted of lipid rich membranous vesicles on EM. In eyes with late BLamD, SD contents were more likely to have a granular appearance, staining red and blue with picro-Mallory stain on LM, and appearing more electron-dense on EM. These regressing SD were associated with increased RPE attenuation. In eyes with geographic atrophy, SD contents are lost, often replaced by dystrophic calcification or by fibrocytes, pigmented cells or glia. Clinically, regressing SD appeared whiter, with more distinct margins. SD regression is followed by areas of geographic atrophy.

Conclusion: SD undergo a life-cycle of formation and regression. SD regression is marked by the presence of granular contents, collapse, calcification and replacement by cells and is associated with the formation of late BLamD and RPE failure. SD regression precedes global atrophy and is a sign of disease progression.

References:

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RESEARCH TALKS 2: CARE FOR THE VULNERABLE

Oral presentations are ten (10) minutes with four (4) minutes for questions.

11:30 am (AWST) **1:30 pm (AEST)**	**Ms Kylie Hopkins** Understanding the experience of Community and Public Health Dietetic students implementing a suite of co-designed, remote community nutrition programs throughout the Kimberley. (Broome)
	Dr Nameer Van Oosterom A new delirium monitoring system is demonstrating implementation of the Delirium Standard in palliative care units: Interim results of 442 audits within the MODEL-PC study. (Sydney)
	Rajvi Shah presented by Associate Professor Natasha Michael The effect of ambulatory palliative care on improving symptoms in cancer patients: A systematic review and meta-analysis (Sydney)
	Mr Dane Webster How Integrating Oral Health into AOD Recovery can Bridge Siloed Sectors of Healthcare (Fremantle)
12:30 pm (AWST) **2:30 pm (AEST)**	*15 min break*

Note. Oral presentation abstracts for this session appear below in presentation order.

HOPKINS KYLIE

HDR, Broome

Understanding the experience of Community and Public Health Dietetic students implementing a suite of co-designed, remote community nutrition programs throughout the Kimberley.

Kylie Hopkins, Dr Robyn Doney, Dr Alice Munro, Dr James Debenham, Maria Morgan and Chenae King

Dietitians are a key part of the rural and remote health professional workforce. They apply the science of food and nutrition to promote health, prevent, and manage nutrition-related disease which disproportionately impacts First Nations peoples. The dietetic workforce in Australia is largely non-Aboriginal and trained within the evidence-based paradigm of a biomedical, Western knowledge system which is misaligned with First Nations peoples' ways of knowing and being. Evidence suggests therefore that dietetic students are ill-prepared to provide culturally safe and resonant dietetic care to First Nations peoples in culturally diverse rural, remote communities settings, where services are most needed. The literature highlights strategies to improve 'cultural awareness, sensitivity and competency' of the dietetic workforce as inclusive of opportunities for cultural mentoring or teaching, co-designing culturally safe nutrition programs with communities and opportunities for cultural immersion experiences. These teaching modalities support learning as a social, two-way process and better align with First Nations epistemologies and pedagogies.

This study aims to explore the cultural immersion experiences of Dietetics students implementing a suite of co-designed dietetics projects in remote Kimberley communities while completing their Community Public Health Nutrition (CPHN) placement with Majarlin. Located in the Kimberley, Majarlin is uniquely placed to support cultural immersion experiences and the workplace-readiness of students through meaningful, practical, real-world learning experiences.

This study adopts a mixed methods study design, with qualitative data from semi-structured interview transcripts analysed using Appreciative Inquiry. Descriptive data summarised the suite of co-designed community-based projects from the students' final project reports. A total of 19 students completed their clinical placements in remote locations across the Kimberley. Five co-designed community-led projects were developed and implemented over the five-month study timeframe. Findings from preliminary analysis with be presented. This research contributes to the development of a culturally competent nutrition and dietetic health professional workforce.

VAN OOSTEROM NAMEER

School of Nursing, Sydney

A new delirium monitoring system is demonstrating implementation of the Delirium Standard in palliative care units: Interim results of 442 audits within the MODEL-PC study.

Nameer van Oosterom & Annmarie Hosie

Background: Delirium is an acute neurocognitive condition experienced by half of patients in palliative care units (PCUs). Proactive systems for evidence-based delirium care are missing in this setting and innovation is needed.

Aim: To report PCU achievement of the Delirium Standard before and after implementing a new delirium monitoring system.

Methods: The MODEL-PC study is a two-staged exploratory sequential mixed methods implementation project (2022-24) involving development and piloting of a new delirium monitoring system in three PCUs. Based on stage 1 clinical audits, process mapping, interviews, and consultation with stakeholders, the new system included two daily items within Palliative Care Outcomes Collaboration, patient outcome measurement (delirium presence and degree of related distress) and staff education and regular receipt of monthly Delirium Standard-aligned clinical audits and PCOC delirium items results (stage 2). Chi-square analyses were used to compare stage 1 and 2 audit results.

Results: A total of 240 and 202 patients were included in stage 1 and 2 audits, respectively. Patient demographics were similar across the two datasets: 45.6% vs 42.3% female, median (IQR) age 78 (19) vs 77 (18) years, 62.5% vs 74.1% malignant diagnosis, and 74.9% vs 74% mortality during admission. Stage 2 audits demonstrated an overall average of 16.3% improved achievement of the 15 Delirium Standard quality indicators, compared to stage 1. Compared to stage 1, a greater number of quality indicators were achieved (2 vs 4) or partially achieved (11 vs 4) in stage 2, and far fewer quality indicators were not achieved (11 vs 4). There was a statistically significant improvement in 11 of the 13 quality indicators assessed $p<0.05$, including reduced antipsychotic and benzodiazepine use for delirium.

Conclusion: The MODEL-PC study's new delirium monitoring system in three PCUs has demonstrated statistically significant improvements in nearly all Delirium Standard quality.

MICHAEL NATASHA

School of Medicine, Sydney

The effect of ambulatory palliative care on improving symptoms in cancer patients: A systematic review and meta-analysis

Rajvi Shah, Rachel Everitt, Dana Hince, David Kissane, Natasha Michael

Background: Ambulatory palliative care clinics are associated with improved outcomes including short term quality of life. However, the impact of ambulatory palliative care on individual patient reported symptoms is not well understood.

Aim: We evaluated the impact of ambulatory palliative care on individual symptom related outcomes in adult cancer patients.

Design: Following a standard protocol (PROSPERO: CRD42022321909), investigators independently screened reports to identify studies that utilised validated symptom assessment scales to assess symptom outcomes at initial and follow-up ambulatory palliative care review. Data were synthesised using random-effects meta-analyses supplemented with narrative synthesis when necessary.

Data Sources: English-language peer-reviewed publications in PubMed, CINAHL, EMBASE, PsycINFO and Cochrane Central through April 2022. We subsequently updated our PubMed search through September 2023.

Results: Of the twenty included studies, there were four prospective cohort studies, one randomised control trial and fifteen retrospective studies. Most studies focused on cohorts with mixed primary malignant diagnoses, involved review in ambulatory palliative care clinics either co-located within or with established links to a tertiary cancer center and assessed symptoms via the Edmonton Symptom Assessment Scale. In a meta-analysis there was evidence for improvement in pain (SMD 0.31, 95% CI 0.18 to 0.43), fatigue (SMD 0.27, 95% CI 0.07 to 0.47), depression (SMD 0.22, 95% CI 0.06 to 0.37), anxiety (SMD 0.28, 95% CI 0.09 to 0.46), drowsiness (SMD 0.20, 95% CI 0.08 to 0.32), wellbeing (SMD 0.25, 95% CI 0.08 to 0.42), insomnia (SMD 0.29, 95% CI 0.15 to 0.42) and overall symptom burden (SMD 0.29, 95% CI 0.22 to 0.36) following ambulatory palliative care intervention.

Conclusions: Amongst patients with cancer ambulatory palliative care intervention had positive effects on multiple symptoms. Further research is needed to determine numerical cut-offs on symptom assessment scales to guide urgency of initial ambulatory care review, timing of follow-up and optimal multi-disciplinary staff involvement.

WEBSTER DANE

HDR, Fremantle

How Integrating Oral Health into AOD Recovery can Bridge Siloed Sectors of Healthcare

Health program funding is often siloed around a particular health condition or risk factor. But co-occurring health issues are common, and many people value a more holistic approach to health and wellbeing. For people in Alcohol and Drug (AOD) recovery, chronic dental issues are widespread, often caused or exacerbated by AOD use. Missing teeth or poor oral health impacts has a ripple effect on what people can eat, confidence, self-worth, interactions with other people and motivation to change. But cost and stigma are barriers to addressing this, with AOD programs rarely offering support for dental treatment within their programs.

Through a collaboration between an AOD organisation, a community homelessness service with a dental clinic, and a retired volunteer dentist, free comprehensive dental care has been offered to all residents at 'The farm' [residential rehabilitation program] for the last two years. The pilot program was codesigned with clients and has been evaluated by The University of Notre Dame. The evaluation includes dental treatment data, pre and post surveys, client interviews and staff feedback.

The integration of this trauma informed oral healthcare program within AOD recovery has yielded substantial benefits for individuals and the organisation and has enhanced motivation to address AOD issues and remain in the recovery program. It has now been adapted for one of the regional communities Palmerston is based in, and findings informed a submission to a federal inquiry on access to dental services, advocating for people with AOD dependence to be recognised as a priority group.

While this program is implemented in an AOD residential setting, its findings are highly relevant to other populations facing barriers to accessing oral healthcare, and individuals or communities embarking on recovery.

3 Minute Thesis Session 1

Oral presentations are 3 (3) minutes using a maximum of 4 slides.

12:45 pm (AWST) **2:45 pm (AEST)**	**Mitchell Searston** Tactical performance in youth soccer: The influence of gender, age and playing position (Fremantle)
12:49 pm (AWST) **2:49 pm (AEST)**	**Rachel Buckingham** Perspectives on robot-assisted lower limb and gait neurorehabilitation: people with neurological conditions (Fremantle)

12:53 pm (AWST) **2:53 pm (AEST)**	**Dr Lauren Bloomfield** Using data linkage to improve vaccination in collaboration with the WA Department of Health (Fremantle)
12:57 pm (AWST) **2:57 pm (AEST)**	**Angela Gazey** Bombarded by specials: research in Western Australian supermarkets (Fremantle)
1:01 pm (AWST) **3:01 pm (AEST)**	**Professor Kylie Russell** The Andrew Russell Veteran Living program: A mixed method evaluation study. (Fremantle)
1:05 pm (AWST) **3:05 pm (AEST)**	**Laura Hynes** Pandemic Paradox: Unmasking The Impact Of COVID-19 On Australia's Nursing And Midwifery Workforce Job Satisfaction And Retention (Fremantle)
1:09 pm (AWST) **3:09 pm (AEST)**	**Zachariah Hoyne** Simulator Fidelity and Decision-Making in Sport (Fremantle)
1:13 pm (AWST) **3:13 pm (AEST)**	**Dr Rachel Skoss** Improving health literacy of the disability sector - the translation journey (Fremantle)
1:17 pm (AWST) **3:17 pm (AEST)**	**Associate Professor Diane Arnold-Reed** Opportunities for transformative research through general practice – a Western Australian cross institutional collaboration (Fremantle)
1:21 pm (AWST) **3:21 pm (AEST)**	**Isla Baughman** Targeting Cholesterol Metabolism to Enhance Immunotherapy for Mesothelioma (Fremantle)
1:25 pm (AWST) **3:25 pm (AEST)**	**Dr Andrew Sortwell** The Force Awakens: plyometric active breaks enhance movement skills, muscular fitness and self-perception in young learners (Sydney)
1:29 pm (AWST) **3:29 pm (AEST)**	**Dr Claudia Ng** Inclusive health professional education: a cross-sectional study (Sydney)
1:33 pm (AWST) **3:33 pm (AEST)**	**Merlina Sulistio** Cancer Induced Bone Pain – Classification and Management of Refractory Pain (Sydney)
1:37 pm (AWST) **3:37 pm (AEST)**	**Shabnam Shafiq** Interlinked incidences of breast and thyroid cancers in women – an update (Sydney)
1:41 pm (AWST) **3:41 pm (AEST)**	**Amlan Chowdhury** Multiple Water Clear Cell Parathyroid Adenomata: A Rare Case Report and Systematic Review of the Literature (Sydney)

Note. Oral presentation abstracts for this session appear below in presentation order.

SEARSTON MITCHELL

Dean's Student Research Award, Fremantle

Tactical performance in youth soccer: The influence of gender, age and playing position

Mitchell Searston, Dr Christopher Joyce and Mikayla Lyons

Soccer is an ever-growing sport in Australia. Since 2009, the number of individuals aged between 15 and 17 years who play soccer has increased significantly with an estimated 212,000 youths and 179,000 junior players (12-14 years) playing soccer in 2022. This rise in participation has continued with the recent success of the Matilda's (Australia's national women's soccer team), particularly in youth female players. As a result, a growing interest in assessing the tactical performance of youth male and female soccer players has been observed, although between-gender comparisons remain considerably understudied. This study aimed to explore the between-gender, between-age and between-position tactical ability of state-level soccer players in Western Australia. Participants included male Perth Glory Academy players (n=48) U13, U14, U15 & U16 and female Football West National Training Centre players (n=46) U13, U14, U15 & U19. Tactical performance was assessed via four-minute GK+3 versus 3+GK small-sided games, utilising FUT-SAT video examination to formulate Tactical Performance Index (TPI) scores comprising of offensive, defensive, and overall game performance. Generalised linear models were produced for overall game, offensive and defensive TPI with each model's TPI score as the dependent variable and gender, age-cohort, and preferred position (i.e. defender, midfielder, forward) entered as factors. Although no main or interaction effects were reported for overall TPI, offensive TPI scores were higher for males and forwards; and defensive TPI scores were higher for females and defenders. U15 males reported lower defensive TPI scores than U13 and U16 males, and U14, U15 and U19 females. The results of this study show most notably that males report superior offensive tactical performance, yet inferior defensive tactical performance than females overall. Playing position also exemplified TPI scores. Practitioners and coaches should consider the use of the TPI as a tool to assess player tactical performance for identification and development purposes.

BUCKINGHAM RACHEL

HDR, Fremantle

Perspectives on robot-assisted lower limb and gait neurorehabilitation: people with neurological conditions

Purpose: Robot-Assisted Technology (RAT) is designed to assist people with neurological conditions to mobilise, complete activities of daily living and participate in their community. Several forms of RAT are available in Western Australia (WA). Perspective and experience of people with neurological conditions regarding use or access to RAT is limited, with no studies representing the views of people in WA. This study aims to explore the perspectives and lived experience of people with neurological conditions regarding RAT in WA.

Methods: This study involved face to face focus groups of people with neurological conditions in Perth, WA. Focus groups were guided by a trained facilitator with lived experience of a neurological condition. Participants were required to have current or past experience in rehabilitation, although experience with RAT was not required. A co-designed semi-structured discussion guide was used to evaluate the perspectives, lived experience and the needs and requirements of RAT Thematic analysis of transcripts was conducted to identify themes to address study aims.

Results: Twenty-nine participants expressed interest in the study, and 24 attended focus groups. Three participants withdrew, one participant did not attend, and one participant did not meet inclusion criteria. Three neurological conditions were commonly represented (spinal cord injury n=11, stroke n=3, multiple sclerosis n=2, other n=8), with thirteen participants having experience in using RAT. Four main themes on lower limb robotic rehabilitation were established from focus groups: experience and understanding, perceived benefits, barriers and challenges, future implementation in WA.

Conclusion: This qualitative study provides insight into the lived experience of people with neurological conditions and their understanding of RAT. The study also provides guidance for further implementation. The findings suggest that there is a need for RAT, however several barriers such as access, funding, awareness, and design need to be considered.

BLOOMFIELD LAUREN

School of Medicine, Fremantle

Using data linkage to improve vaccination in collaboration with the WA Department of Health

Lauren Bloomfield[1,2] & Paul Effler[2]

[1]Population and Preventive Health Domain, School of Medicine, The University of Notre Dame Australia

[2]Communicable Disease Control Directorate, WA Department of Health

Vaccination remains a core preventive public health measure to prevent morbidity and mortality across the life course. The recent COVID-19 pandemic has highlighted the need for robust data systems to monitor vaccine coverage, safety, and effectiveness. Data linkage affords the opportunity to gain new insights, as it allows the interrogation of joined administrative datasets.

Since 2021, WA Health has routinely linked immunisation data from the Australian Immunisation Register with several routine data collections that measure morbidity and mortality. Linking AIR to hospitalisation data allows for prospective monitoring of serious adverse events following immunisation without relying on passive reporting from the public or immunisation providers

We have implemented rapid cycle analysis and case-finding methods to prospectively monitor new vaccines as they are introduced in WA, including seasonal influenza, COVID-19, shingles, and RSV vaccines. Having these methods in place ensures a robust safety system which can detect signals early, adding to public confidence in vaccines. Recently, a collaboration with Murdoch Children's Research Institute has culminated in a joint safety investigation of a rare adverse event, highlighting the potential of such systems to strengthen signal detection capabilities across jurisdictions. These findings will soon be submitted for publication.

Assessing the effectiveness of vaccines is also a critical part of achieving and maintaining high vaccination rates, as concerns regarding safety and effectiveness are commonly cited as barriers to vaccination. The published data linkage work demonstrated that COVID vaccines introduced in 2021 were >80% effective in preventing hospitalisation. This VE work has been expanded to include seasonal influenza vaccines, and in 2023 these estimates were submitted to the World Health Organization for use in formulation of the 2024 southern hemisphere vaccines.

This collaboration between UNDA and WA Health has resulted in a strengthened vaccination monitoring system, contributing to public confidence in vaccines.

GAZEY ANGELA

HDR, Fremantle

Bombarded by specials: research in Western Australian supermarkets

Angela Gazey, Cara Donnelly, Lisa Wood

Obesity is a major challenge for public health and the need to act on the environmental and broader commercial determinants of obesity has been widely recognised. Product and price promotions are ubiquitous in supermarkets and are disproportionately used to promote unhealthy food and drink products and have been linked with increased purchase and consumption of these products. This has implications for health equity, with lower income consumers more sensitive to price promotions. Our research aimed to investigate consumer intentions, motivations, and purchasing behaviour related to price promotions and product positioning of unhealthy food and drinks in major supermarkets.

This research utilised a novel accompanied shop method as a way of gathering insitu insights about price promotion exposure in supermarkets and how this influences consumers' purchasing decisions. Research participants (n=21) were accompanied while they did a regular supermarket shop, and asked to describe factors influencing their purchasing choices using a 'think aloud' approach. Key themes that emerged from the qualitative data analysis related to unplanned purchasing in response to 'specials'; the pervasiveness of price promotions and unhealthy product displays throughout supermarkets, and changes to household shopping habits driven by the impact of cost-of-living pressures.

This research provides WA evidence of how the current promotion environment in major supermarkets in Western Australia influences consumers' intended and actual purchases and adds timely weight to public health concerns about supermarkets as an obesogenic environment. The research findings have been already been used in an evidence brief developed by Cancer Council WA, with further advocacy planned. The disproportionate distribution of product and price promotions on unhealthy food and drink products and clear influence of these promotions on consumers' purchasing decisions supports the need for changes to the regulatory environment.

RUSSELL KYLIE

School of Medicine, Fremantle

The Andrew Russell Veteran Living program: A mixed method evaluation study

Kylie Russell[1] & Tracey Coventry[1]

[1]School of Medicine, University of Notre Dame Australia, Fremantle, Western Australia, Australia

Background: The experience of homelessness for Australian defence force veterans is a complex problem that centres on their inability to reconnect with the community on their return. Although considered underreported, veterans are more likely than the general population to be chronically homeless. To meet this need, the Andrew Russell Veterans Living (ARVL) WA Emergency Accommodation program has been established in honour of Sergeant Russell who served in Afghanistan, and who was the first Australian military death in action since the Vietnam War. The launch of the ARVL WA initiative marked 20 years since Sergeant Russell's passing. This initiative ensures that ex-service personnel can access appropriate and affordable housing solutions in two ways. Firstly, through an emergency accommodation program designed to create interventions for those that are experiencing homelessness or at risk of homelessness and secondly, in the provision of an affordable housing portfolio and relationships with community housing providers to provide long term affordable housing solutions. The WA program seeks to meet both these needs through a partnership with experienced care provider RAAFA with its charitable purpose and proven history in veteran accommodation.

Purpose: This study will evaluate the ARVL WA program in its first 18 months of operation using a mixed method evaluation design.

Methods: Data collection procedures used include participant demographics and outcomes, veterans' wellbeing surveys and exit interviews, and include service support staff surveys to capture different aspects of the program delivery.

Results: This longitudinal study will evaluate the short-term and long-term program outcomes. Descriptive statistics of survey data summation will provide the patterns of participants responses, with the interview qualitative data identifying emergent ideas and themes.

Conclusion: Interim and final evaluation reports will be produced and provided to grant providers and partners to ARVL, including the state and federal government and Department of Veteran Affairs.

HYNES LAURA

HDR, Fremantle

Pandemic Paradox: Unmasking The Impact Of COVID-19 On Australia's Nursing And Midwifery Workforce Job Satisfaction And Retention

Background: The COVID-19 pandemic has seen an outpouring of attention focusing on the global nursing and midwifery shortage and its damaging impact on healthcare systems worldwide. However, there is limited research, both globally and in Australia, on its impact on nurses' and midwives' job satisfaction and their associated intentions to stay or leave their job and/or profession. The lack of extensive research in this area highlights the importance of this Doctoral thesis.

Aim: The study aimed to investigate the lived experiences of Australian Registered Nurses and Registered Midwives during the COVID-19 pandemic, focusing on how it influenced their intention to stay or leave their jobs or professions.

Methods: In this convergent parallel mixed-method study, 306 Registered Nurses, 42 Dual Practicing Registered Nurses and Midwives, and 16 Registered Midwives across Australia completed the Nursing Workplace Satisfaction Questionnaire. This tool measured intrinsic, extrinsic, and relational job satisfaction. Additionally, 11 semi-structured online interviews were conducted with six Registered Nurses and five Registered Midwives from various states and territories using an Interpretive Phenomenological approach. The study was guided by the Postpositivist Theoretical Framework.

Results: Participants experienced significant isolation from the community, family, and friends, feeling like ""lepers in the eyes of the public."" They reported bullying and being labelled ""troublemakers"" for questioning unsafe policies. Nurses and midwives felt undervalued due to the rationing of personal protective equipment favouring physicians. Those working in both public and private sectors reported lower extrinsic and relational job satisfaction, a variation confirmed as statistically significant. Midwives had higher relational but lower extrinsic job satisfaction compared to nurses. Dual practitioners reported higher job satisfaction in all categories. Midwifery participants likened pandemic protocol changes to a loss of women's rights. Participants relied on personal resilience to cope with organisational failures, leading to feelings of helplessness and anxiety. Job satisfaction levels were similar across states, with a 0.01% difference. Participants reported severe mental health issues, including burnout, anxiety, depression, PTSD, suicidal ideation, and sleep disturbances.

Conclusion and Implications: Isolation, workplace bullying, and societal perceptions negatively impacted nurses' and midwives' intrinsic job satisfaction, with individual resilience being crucial. Extrinsic job satisfaction was affected by hierarchical bullying, forcing unsafe practices. Relational job satisfaction varied, with midwives more affected by strict pandemic guidelines. Pre-pandemic preparedness and awareness about potential redeployment may reduce redeployment shock. The study highlights the need for organisational adaptability and proactive risk management, focusing on organisational responsibility over individual resilience.

HOYNE ZACHARIAH

HDR, Fremantle

Simulator Fidelity and Decision-Making in Sport

Zachariah G. Hoyne[1], Dr. Khaya Morris-Binelli[1], Assoc. Prof. Benjamin Piggott[1], Assoc. Prof. Sean Müller[2], Assoc. Prof. Paola Chivers[3,4], & Evan Dekker[5]

[1]School of Health Sciences, The University of Notre Dame Australia

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[redacted]

*Commercial in confidence.

SKOSS RACHEL

Institute for Health Research, Fremantle

Improving health literacy of the disability sector - the translation journey

People with intellectual disability who live in group homes or in the community often have complex health needs, are high health service users, and are more likely to have poorer health outcomes. They often need support to manage their day-to-day health, and to access health services. Disability organisations play a major role in supporting the health of their clients.

Our research explored:

- The health services used by people living in group homes, together with the supports they required to access their health care.
- The health literacy of support workers, and their confidence to support different aspects of their client's health.
- The gaps in health care experienced by people with intellectual disabilities.

We delivered a health literacy guide to supporting the health of people with intellectual disability, targeted at caregivers. This is where the translation journey began.

This presentation will detail the behind-the-scenes lobbying, the round-table discussions, the expert reference groups, the presentations to industry and government groups, and the grassroots work with organisations to raise awareness of the importance of health literacy in the disability sector, and of searching for opportunities beyond research to influence policy. While this work is yet to pay off in terms of additional grant funding, it has had moderate success in influencing key policy in the Commonwealth government related to health and disability. Importantly, in many disability organisations that provide day-to-day supports to this vulnerable population, the research findings have influenced the development of organisational policy to improve health of people with disability, enhanced operational processes to support health within those organisations, and been used to upskill and empower the workforce.

ARNOLD-REED DIANE

School of Medicine, Fremantle

Opportunities for transformative research through general practice – a Western Australian cross institutional collaboration

Diane E. Arnold-Reed, Ramya Raman

Background: The Western Australian General Practice Based Research Network (WAGPBRN) is a collaboration between academics, general practitioners and researchers in general practice from the three WA Medical Schools (University of Notre Dame Australia (Fremantle), University of Western Australia and Curtin University), the Rural Clinical School of WA (RCSWA) and Royal Australian College of General Practice (RACGP, WA).

Collaborators came together in 2021. Discussions with established Australia-wide Practice Based Research Networks (PBRNs) followed and a core, inaugural Member Advisory Committee (MAC) formed. Wider membership recruitment began in 2022.

This presentation will introduce the WAGPBRN to the Faculty to encourage wider collaborations in health research.

Aims: The WAGPBRN aims to “build the capacity and capability of general practice based research in Western Australia” (Terms of Reference [TOR]). Members need to be “professionals and academics working in general practice, or the field of general practice-based research in Western Australia” (TOR). External research partnerships are encouraged where there is genuine general practice relevance and engagement.

Methods: The MAC meet regularly. Information is disseminated to the broader membership through newsletters, social media and WA-wide symposia (first in 2023). Wider advertising is through relevant institutional webpages. Processes are in place for external research engagement with the WAGPBRN.

Results: Currently, the WAGPBRN has 31 members with numbers increasing. Through circulation of information on research studies with close general practice involvement, members have had the opportunity be involved in research projects at state and national levels. Members have submitted successful research grants and presented at conferences.

Discussion and implications: PBRNs have existed for some time in other Australian states. For the first time, WA has formal PBRN representation with national visibility. The WAGPBRN increases research collaboration potential for and with general practice, an important area as the most common point of health care contact for patients.

BAUGHMAN ISLA

BMS Honours, Fremantle

Targeting Cholesterol Metabolism to Enhance Immunotherapy for Mesothelioma

The body's immune system is essential in protecting against diseases including cancer. Cancer immunotherapy, specifically immune checkpoint inhibitor (ICI) therapy has revolutionised cancer treatment, with long-term tumour regression observed for some patients. ICI functions to reinvigorate the anti-cancer immune response by blocking immune-suppressive checkpoints on effector immune cells to harness their function. However, most patients do not benefit from ICI. For mesothelioma, an aggressive cancer caused by asbestos inhalation, the majority patients show no response and of those who do respond, fewer than 10% survive beyond 5 years. While some factors are linked to non-response, the in-depth resistance mechanisms remain unclear, and novel strategies to exploit these mechanisms are urgently required to improve patient outcomes. Regulatory T cells (Tregs) function to suppress effector immune cells and are associated with poor cancer prognosis and ICI resistance. Recent pre-clinical work suggests ICI-resistant tumours have increased numbers of Tregs and upregulate genes associated with cholesterol metabolism. Retrospective analysis indicated the use of cholesterol-lowering drugs by mesothelioma patients is associated with improved ICI therapy outcomes. Since cholesterol is essential for Treg function, the present study investigated if blocking cholesterol metabolism could curb the immunosuppressive ability of Tregs, in turn improving ICI efficacy in pre-clinical mesothelioma. So far, we found that the combination of one cholesterol-lowering drug (evolocumab) and ICI significantly increased response and improved survival, compared to either agent alone. Further work to test other cholesterol-lowering drugs (statins) is currently underway. Analysis of tumour and lymph node tissue revealed that evolocumab alone had no significant impact on the number or function of Tregs nor the cholesterol content of Tregs, though analysis of tumour and immune cells after ICI and cholesterol-lowering drug combination is ongoing. This project aims to explore the potential of repurposing cholesterol-lowering drugs to improve treatment outcomes for challenging cancers such as mesothelioma.

SORTWELL ANDREW

School of Education, Sydney

The Force Awakens: plyometric active breaks enhance movement skills, muscular fitness and self-perception in young learners

Andrew Sortwell, Chris Joyce

Background: When a single teaching method addresses various aspects of learning, such as cognitive skills, physical fitness, and social-emotional development, students are more likely to remain interested and motivated. This study investigated the effects of incorporating plyometric-based structured game active breaks on fundamental movement skills (FMS), muscular fitness, self-perception, and teacher-rated behaviour in Grade 3 and 4 students.

Methods: Participants included 102 primary school children aged 8–10 years, from four classes, who were cluster-randomly assigned to either an intervention group (IG) (n = 54) or a control group (CG) (n = 48). The IG engaged in daily 7–10 minute structured plyometric-based game active breaks for six weeks, while the CG followed their usual school routine. FMS was evaluated using the Canadian Agility Movement Skills Assessment, and muscular fitness was assessed through the standing long jump (SLJ), countermovement jump (CMJ), and seated medicine ball chest throw. Student self-perception and teacher's rating of behaviour were measured using the Self-Perception Profile for Children and the Teacher's Rating Scale of Child's Actual Behaviour, respectively.

Results: Significant group-by-time interactions ($p < 0.01$) were observed, showing greater improvements in the IG compared to the CG in FMS (13.11% improvement, $\eta p^2 = 0.12$), SLJ (6.67% improvement, $\eta p^2 = 0.16$), seated medicine ball chest throw (4.69% improvement, $\eta p^2 = 0.08$), social self-perception (9.31% improvement, $\eta p^2 = 0.10$), scholastic self-perception (7.27% improvement, $\eta p^2 = 0.10$), and teacher-rated social competence (8.73% improvement, $\eta p^2 = 0.05$). No significant differences ($p > 0.05$) were found in other variables.

Conclusion: Integrating plyometric-based structured game active breaks into primary school routines significantly enhances FMS, muscular fitness, self-perception, and teacher-rated social competence in students. This intervention offers a promising approach to improving physical and psychosocial outcomes in young children.

NG CLAUDIA

School of Medicine, Sydney

Inclusive health professional education: a cross-sectional study

Introduction: Identifying and understanding current structural and attitudinal barriers to inclusive health education is a vital steppingstone to developing, advancing, and disseminating leading practices to facilitate the inclusion of people with disabilities in health professions. The aim of this project is to understand how health professional educators (HPEs) perceive and engage with learners with disabilities in health education.

Methods: An online survey has been developed and HPEs in Australia have been invited to participate. The survey includes an education focused tool which has been adapted to a health profession context, to measure HPEs perceptions about inclusion. The survey asks HPEs views on inclusive education, attitudes towards students with disabilities, and their knowledge and skills in teaching accommodations.

Results: Preliminary results from this Australia wide survey will be presented. The survey data analysis will identify barriers and gaps in inclusive health education in order to develop strategies to improve access and opportunities for students with disabilities, contribute to creating a more inclusive and diverse health professional workforce.

Discussion: Preliminary findings from the early rounds of recruitment will be presented to grow the discourse on inclusive HPE practice. Creating a culture and climate toward disability inclusion in health professional education will by extension, improve accessibility to health care, grow the representation of people with disability in the health professions and promote inclusivity in the wider community.

SULISTO MERLINA

HDR, Sydney

Cancer Induced Bone Pain – Classification and Management of Refractory Pain

Purpose: Cancer-induced bone pain (CIBP) affects a patient's functional capacity and quality of life, but there is limited evidence to guide opioid choice. We described the prevalence of the Edmonton Classification System for Cancer Pain (ECSCP) features in patients with bone metastases and assessed the possible efficacy of methadone rotation (MR) compared to other opioid rotations (OOR) in the cohort with refractory pain.

Methods: Adults with bone metastases were assessed against ECS-CP features and those with worst pain intensity ≥4/10 and/or opioid toxicity graded ≥2 on the Common Terminology Criteria for Adverse Events (CTCAE) were randomised 1:1 to methadone or another opioid rotation. Standardised assessment tools were used at pre-defined study time points up to fourteen days.

Results: From 147 eligible participants, 92.5% completed the assessment. The mean participant age was 73.2 years. One or more ECS-CP features were present in 96.4% and CIBP in 75.7% of patients. Breakthrough pain affected 74% of participants and was associated with neuropathic pain ($p=0.014$), higher average and worst pain intensities ($p<0.001$) and higher opioid requirements ($p<0.005$). Of those with refractory CIBP, 38 (74.5%) consented, and 29 (76.3%, MR: 14, OOR: 15) completed the study. Both groups displayed a significant reduction in pain intensities and total pain interference scores. OMEDD reduced significantly in the MR group ($d= -0.8$, $p=0.05$). There were no within-group or between-group differences in satisfaction with analgesia at the end of the study.

Conclusion: Standardised assessment and classification of pain syndromes can assist in developing personalized pain interventions. This pilot study demonstrated that MR and OOR in patients with refractory CIBP are feasible, safe, and acceptable to patients. Appropriately powered multi-centre randomised controlled studies are needed to confirm the efficacy of MR and OOR in this cohort.

SHAFIQ SHABNAM

HDR, Sydney

Interlinked incidences of breast and thyroid cancers in women – an update

Shabnam Mohamad Shafiq, Amlan Chowdhury

Breast and thyroid cancers, predominant in women, often occur sequentially. This pattern suggests a potential shared origin. Our study investigates the epidemiological links and underlying mechanisms between these malignancies. We analysed existing data to explore connections between breast and thyroid cancers, focusing on treatment effects, genetic links, hormonal interactions, and lifestyle factors. Women with thyroid cancer have an increased risk of subsequent breast cancer, and vice versa. Key factors include treatment modalities, genetic predispositions, hormone levels, and environmental influences. Understanding these links is vital for improved diagnosis and management strategies in these endocrine cancers. It highlights the need for further studies focusing on gender differences, regional variations, and common molecular pathways. Our findings emphasise the importance of awareness among surgeons and healthcare professionals regarding this dual risk. Tailored management and regular follow-up are recommended to enhance patient care. Further research in this area is crucial for advancing our understanding and treatment of these cancers.

CHOWDHURY AMLAN

HDR, Sydney

Multiple Water Clear Cell Parathyroid Adenomata: A Rare Case Report and Systematic Review of the Literature

Amlan Chowdhury, Shabnam Mohamad Shafiq

We present a case of a woman who underwent two parathyroidectomies, 13 years apart, revealing multiple Water Clear Cell Parathyroid Adenomata. This case underscores the potential for recurrence and provides unique insights into long-term disease progression.

Our analysis reviewed literature from PubMed and Google Scholar, examining clinical presentation, biochemical parameters, radiological findings, and postoperative outcomes of parathyroidectomy for Water Clear Cell Hyperplasia (WCCH) and Water Clear Cell Adenoma (WCCA). Spanning 25 articles over 39 years, it offers a comprehensive view of WCCH and WCCA cases.

Results show larger tumour masses in younger patients and a link between lower preoperative serum calcium levels and increased tumour size. The woman's fluctuating biochemical markers over the years emphasize the dynamic nature of WCCA.

Conclusion: This meta-analysis, enhanced by a longitudinal case study, provides crucial insights for diagnosing and managing WCCA and WCCH. It highlights the importance of recognizing recurrence and multiplicity in these rare conditions. This knowledge is vital for surgeons and endocrinologists, improving clinical treatment and emphasizing the need for long-term patient monitoring.

Day 1 Close

Day 2 Program of Events

September 4 2024

9:15 am (AWST) **11:15 am (AEST)**	**Symposium Welcome & Formalities** **Prof Gerard Hoyne** via Fremantle campus
9:20 am (AWST) **11:20 am (AEST)**	**Acknowledgement of Country** **Shakayla Walley** via Fremantle campus **Acknowledgement of Country** *'Aboriginal and Torres Strait Islander people, as the first peoples of this nation, are the holders of ancestral knowledge, law and wisdom. We acknowledge First Nations people from across Australia, particularly the Yawuru people of Broome, the Whadjuk people of the Noongar nation in Fremantle and the Gadigal people of the Eora nation in Sydney where our University has campuses. We pay respects to Elders past and present across these nations, with whom we live and work closely, and extend that respect to all First Nations people who we collaborate with nationally'.*
9:20 am (AWST) **11:20 am (AEST)**	**University Prayer** **Tom Gannon** via Broome campus
9:25 am (AWST) **11:25 am (AEST)**	**Consumer and Community Involvement (CCI)** **Introduction** **Caroline Jones** via Fremantle campus

9:30 am (AWST) **11: 30 am (AEST)**	**KEYNOTE DR ROBYN DONEY** Beyond the Red Dirt: Bridging Research and Practice in Remote Health via Broome campus

Dr Robyn Doney

PhD, DrPH, BSc (OT), BBA, GCert OHS

Robyn Doney is an Occupational Therapist and researcher in the Kimberley region of Western Australia. She has lived in Derby, Halls Creek, and Fitzroy Crossing but has called Broome home for the last seven years.

Originally from Perth, she moved to the Kimberley 15 years ago to work as an OT for the WA Country Health Service, covering a diverse caseload across an extensive geographical area. She was the OT for the Lililwan Project, Australia's first population-based prevalence study of Fetal Alcohol Spectrum Disorder. She subsequently completed her Doctorate in Public Health while raising her family in Fitzroy Crossing, where she worked with Nindilingarri Cultural Health Services, before moving to Broome. She currently works part-time supporting children with disabilities as a Senior OT for Patches, and Majarlin Kimberley Centre for Remote Health as an Academic Research Fellow.

SESSION CHAIRS

Broome: Danica Butler

Fremantle: Dr Raoul Oehmen

Sydney: Dr Craig Smith

RESEARCH TALKS 3: ADVANCING HEALTHCARE SYSTEMS

Oral presentations are ten (10) minutes with four (4) minutes for questions.

10:00 am (AWST) **12:00 pm (AEST)**	**Dr Kate Levett** The value of national survey data – unpacking implementation in maternity care (Sydney)
	Ms Antonia Gazal What are the costs associated with nausea and vomiting of pregnancy and hyperemesis gravidarum? A Systematic Review (Sydney)
	Professor Caroline Bulsara Innovation evaluation of Western Australia's first Emergency Department Musculoskeletal Diversion Pathway (Fremantle)
	Associate Professor Richard Riley Notifications of doctors to the Medical Board of Australia: who and why? (Fremantle)
11:00 am (AWST) **1:00 pm (AEST)**	*Break (30 min)*

Note. Oral presentation abstracts for this session appear below in presentation order.

LEVETT KATE

School of Medicine, Sydney

The value of national survey data – unpacking implementation in maternity care

Kate M. Levett[1], Deborah Fox[2], Rebecca Coddington[2], Panashe Bamhare[2], Kerry Sutcliffe[1], Vanessa L. Scarf[2]

[1]The University of Notre Dame Australia

[2] University of Technology Sydney

Introduction: In Australia, maternity care shows wide variability across states and territories, and evaluating implementation of best practice in local contexts can obscure outcomes. We have conducted two national surveys of women and of antenatal education providers using social media, consumer groups and online platforms to reach respondents across the country. This has provided rich data for guideline development and translation into practice to improve the care and lives of women in maternity care.

Background: In maternity care, two of the most ubiquitous and routine services are Childbirth and Parenting Education (CBPE) classes, and routine fetal monitoring in labour. Both have been under-investigated for efficacy and experience. We conducted two separate studies, the PACS study, which sought to examine the impact of COVID on the delivery of CBPE. And the WOMB study which looked at women's experiences and level of participation in decision making according to type of monitoring used. These studies consider implementation issues, such as the barriers and facilitators for these interventions, the resource requirements and impact on staff and women.

Methods: Online cross-sectional surveys were distributed through maternity networks, organisations, and consumer groups across Australia.

Results: For the PACS study, an overall decrease in the number of classes were provided. Facilitation of online delivery was not prioritised by management during the pandemic, and respondents cited a lack of access to equipment, infrastructure, and support. In the WOMB study, only 20% of respondents reported receiving enough information from care providers and childbirth education. Type of monitoring significantly differed in terms of women's comfort, access to pain management, and mode of birth. Women reported that continuous monitoring had a negative impact on their labour, and report facing barriers to choosing a preferred monitoring type.

Conclusion: Health systems should ensure there is adequate communication, infrastructure, equipment and support to ensure excellent healthcare for pregnant women. It is essential that greater prioritisation and investment into education, staffing and less invasive equipment is provided to improve the experiences for women and implementation of best practice into care.

GAZAL ANTONIA

Student (MD), Sydney

What are the costs associated with nausea and vomiting of pregnancy and hyperemesis gravidarum? A Systematic Review

Background: Nausea and vomiting in pregnancy (NVP) and its more severe form, hyperemesis gravidarum (HG) are common and debilitating causes of maternal morbidity. Despite the prevalence and expense of NVP and HG, evidence on the economic burden is limited. Understanding costs to women and models of care, to improve care is essential.

Aim: By identifying costs associated with NVP and HG, this systematic review aimed to estimate the economic burden of nausea and vomiting of pregnancy (NVP) and hyperemesis gravidarum (HG).

Methods: A literature search was conducted in January 2023 using five electronic databases (PubMed, MEDLINE, CINAHL, EconLit, Business Source Ultimate). Articles were appraised using the Critical Appraisal Skills Program (CASP) tool for Economic Analyses. Original studies reporting the cost of illness, economic burden, or health care expenditures related to NVP and/or HG were included. A narrative synthesis was performed. Costs were adjusted for inflation and currency differences, presented in 2023 US dollars ($USD).

Results: From the 652 studies identified, a total of seven studies were included. The studies were methodologically and clinically heterogenous, but all identified a significant economic burden of NVP & HG, including substantial annual and direct per patient costs, as well as indirect costs to the patient. Costs increased with increased level of severity, and cost effectiveness of interventions indicated outpatient or day stay as the most cost-effective models of care. Lack of common outcome measures for cost analysis or consistent approach to reporting hindered synthesis of results.

Conclusions: Our findings indicate the significant economic burden associated with NVP and HG. Original studies differed in methodology and outcomes measured; however substantial cost savings were demonstrated through targeted models of care, which can significantly improve the lives of women. As the economic burden of HG and NVP has not been extensively researched, further studies are required, with agreed methodological approaches, to inform policy and practice.

BULSARA CAROLINE

Research Institute - Health, School of Nursing & Midwifery, Fremantle

Innovation evaluation of Western Australia's first Emergency Department Musculoskeletal Diversion Pathway

Professor Caroline Bulsara[1,2], Jane Gaspar[1,2], Cobie Starcevich[3], Mathew Melville[4], Ethan Coleman[5], Dr Hermione Gray[6], Dr Daniel Gabb[6], Eithne Finucane[6], Tanya Parkin[6], Danielle Beauchamp[6], Landy Ng[7], Luke Bongiascia[3], Associate Professor Vinicius Cavalheri[8,9], Piers Truter[3,5,10]

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[10]School of Health Sciences, University of Notre Dame, Australia

Background: Established in 2022, the Emergency Department Musculoskeletal Diversion Pathway (EDMDP) at Rockingham General Hospital (RkGH) is the first such initiative in Western Australia. It provides patients with musculoskeletal conditions the option to leave the ED and be diverted to an outpatient clinic led by advanced-scope physiotherapists. Initial reviews proved the pathway's efficacy and it is now permanently funded. This study, exploring the experiences of patients and hospital of the clinic, has been funded through a FHRI Fellowship.

Aim/Objectives: This study qualitatively explored perceptions and experiences of i) patients with musculoskeletal conditions who are diverted from the ED to receive care from physiotherapists in the outpatient setting, and ii) hospital staff who interact with the EDMDP in the daily functioning of this novel ED Diversion pathway.

Methods: Participant recruitment was facilitated by the multi-disciplinary research team that included RkGH clinical and administrative staff. A Notre Dame (ND) researcher (JG) undertook semi-structured interviews with patients and hospital staff. Interviews were recorded and verbatim transcriptions were completed. Interview data was analysed by ND research team members (CB, JG, PT).

Discussion: This study was delivered through a partnership between ND, South Metropolitan Health Service (SMHS) Kaartidijin, and RkGH. A working group navigated ethical and academic requirements for the evaluation. Participant recruitment required members of the multi-disciplinary research team, namely clinical and administrative staff from RkGH, to engage with coworkers and encourage their involvement in the study. All interviews were carefully redacted to maintain anonymity prior to analysis.

Participants agreed the introduction of the EDMDP reduced patient wait-time and improved their experience. Diversion of appropriate patients enhanced the capacity of ED but also

limited ED clinical staff experience with treating less complex musculoskeletal conditions. Sharing of knowledge between EDMDP staff and other clinical teams was beneficial. Changes could be made to better manage patients and increase the capacity of the pathway. Final results are expected contribute to a better understanding of the value an EDMDP brings to patient experience, an emergency department, and the health system overall.

RILEY RICHARD

School of Medicine, Fremantle

Notifications of doctors to the Medical Board of Australia: who and why?

Richard H. Riley, Max K. Bulsara, Linda M. Berlach, Timothy G. Leahy, Chris Skinner, Lorna M. Davin, & Susie Stewart

Objectives: To study the reasons for doctors being reported to the Medical Board of Australia (MBA) and to determine which factors are associated with increased likelihood of these notifications. Complaints were categorised to evaluate the proportion of complaints that related to medical practice and knowledge, or to other reasons, or a combination of reasons.

Design & setting: Data from the MBA database that includes notifications of registered doctors from all states during the period 2020–2021. Each doctor was assigned a unique number that allowed study of multiple complaints over successive years.

Main outcome measures: The category of complaint(s), demographic data, and location of practice (state, territory) and country of medical qualification and field(s) of practice.

Results: There were 39,012 notifications to the MBA during years 2010-2021. The most frequent sources of notifications were from patients (39%), healthcare entity (20%), patient relative (12%), another practitioner (8%). Most doctors (86.7%) received no notifications, 8.3% had 1, 2.6% had 2, 1.1% had 3, and 1.3% had 3 or more notifications. Most frequent notification categories were clinical care (54%), behaviour (30%), communication (13%), medication (11%), documentation (6%), and health impairment (4%). Doctors were more likely to be reported if they were male (OR=1.7), aged 45-54 (OR=4.5) or 55-64 (OR=4.2), practiced in Tasmania (OR=1.2), qualified outside Australia (OR=2.1). The proportion of doctors being reported each year is increasing by 6%.

Conclusions: This is the first analysis of notifications to the MBA since its formation. Although clinical care was the reason for half of all complaints, non-medical reasons such as behaviour and health impairment featured. Being male, a senior doctor, and obtaining a medical qualification outside of Australia placed one in a higher risk category.

These results build understanding, for our medical educators and employers, in highlighting significant issues which require addressing to further promote patient care.

9:30 am (AWST) **11: 30 am (AEST)**	**KEYNOTE PROFESSOR MERRILEE NEEDHAM** Inclusion Body Myositis - where to next? via Fremantle campus

Professor Merrilee Needham

MBBS, PhD, FRACP

Professor Merrilee Needham combines the challenging roles of leader of the Myositis Research Group and consultant neurologist at the Perron Institute, Director of Research, South Metropolitan Health Service, and Consultant Neurologist and Foundation Professor of Neurology at Fiona Stanley Hospital, Murdoch University and Notre Dame University.

Integral to Professor Needham's myositis research has been the development of both a myositis biobank and the Australasian Myositis Registry. Assisted by Myositis Association Australia, Professor Needham has been instrumental in establishing a growing biobank of blood, muscle, DNA and other samples from myositis patients and healthy controls. The registry continues to grow and is moving towards national roll-out. This resource alongside the biobank underpin Professor Needham's research.

3 MINUTE THESIS SESSION 2

Oral presentations are three minutes using a maximum of 4 slides.

12:00 pm (AWST)	**Olivia Gleeson** Caregiver-reported quality of life and self-reported quality of life in an Australian

2:00 pm (AEST)	Parkinson's Disease cohort (Fremantle)
12:04 pm (AWST) 2:04 pm (AEST)	**Mila Vasilic** Conductive hearing loss in older adults: an Australian perspective (Fremantle)
12:08 pm (AWST) 2:08 pm (AEST)	**Emma Robinson** The Effect of a Novel Poly-Arginine Peptide on α-Synuclein Pathology Implicated in Parkinson's Disease (Fremantle)
12:12 pm (AWST) 2:12 pm (AEST)	**Nikki Bakhtazad** Clinician Perspectives on Robot-Assisted Lower Limb Rehabilitation in Western Australia. (Fremantle)
12:16 pm (AWST) 2:16 pm (AEST)	**Jane Gaspar** General practitioners' use of technology and patient-centred care with bowel cancer screening participants (Fremantle)
12:20 pm (AWST) 2:20 pm (AEST)	**Hannah Vawser presented by Dr Khaya Morris Binelli** Perceptual-cognitive-motor skill in virtual reality (Fremantle)
12:24 pm (AWST) 2:24 pm (AEST)	**Gemma Orange presented by Professor Benedict Wand** Functional capacity following total knee arthroplasty for osteoarthritis: a systematic review with meta-analysis (Fremantle)
12:28 pm (AWST) 2:28 pm (AEST)	**Andrew McAuliffe** Investigating the impact of acute surgery timing on short-term post-burn outcomes in adult burn patients (Fremantle)
12:32 pm (AWST) 2:32 pm (AEST)	**Blake Cochran** Neutrophil extracellular trap associated lipids: A new target in inflammation (Sydney)
12:36 pm (AWST) 2:36 pm (AEST)	**Lizzie Richardson** Identifying potential biomarkers of Acute Kidney Injury based on epigenetic changes pre- and post-cardiac surgery (Sydney)
12:40 pm (AWST) 2:40 pm (AEST)	**Jayden Wearne** A 5-year retrospective audit of autonomic function testing at a major Australian tertiary teaching hospital: Patient characteristics and efficacy of testing in the investigation of dysautonomias (Sydney)
12:44 pm (AWST) 2:44 pm (AEST)	**Dr Natasha Michael** Personal values and its impact on decision making in advanced illness (Sydney)
12:48 pm (AWST) 2:48 pm (AEST)	**Dr Melandri Vlok** Looking to ancient malaria to understand our future uncertainty with malarial outbreaks and human driven climate change. (Sydney)
12:52 pm (AWST) 2:52 pm (AEST)	**Thomas Graham** Transcutaneous Spinal Cord Stimulation Shows Paired Pulse Depression and Facilitation in People with and Without Spinal Cord Injury (Sydney)
12:56 pm (AWST) 2:56 pm (AEST)	**Brandon Ziegenfuss** The clinical course and outcomes following arthroscopic frozen shoulder 360-degree release (Sydney)

Note. Oral presentation abstracts for this session appear below in presentation order.

GLEESON OLIVIA

Dean's Student Research Award, Fremantle

Caregiver-reported quality of life and self-reported quality of life in an Australian Parkinson's Disease cohort

Parkinson's Disease (PD) is a neurodegenerative condition that results in debilitating symptoms, an increased reliance on caregivers, and a decreased health-related quality of life (HRQL). HRQL is a holistic measure encompassing physical, emotional, social, and psychological well-being, thus making it ideal for diseases with complex and progressive disease presentations, such as PD. However, the heterogeneity of and recognition of symptoms associated with PD make it increasingly difficult for people with Parkinson's (PwP) to report their HRQL, with caregiver-reported quality of life scales becoming increasingly important in capturing this data. Due to the vast array of motor and non-motor symptoms, the chronicity and complexity of accurate PD assessments of HRQL are vital to determining an individualised management plan. Despite this, there is a paucity of investigations into the validity of caregiver-reported HRQL for PwP in the Australian population.

This study's primary objective was to evaluate the association of caregiver and patient-reported HRQL. HRQL was established from a national Australian cohort using the Parkinson's Disease Questionnaire (PDQ-39) for PwP and the Cambridge Behavioural Inventory – Revised (CBI-R) for caregivers. Furthermore, the effect of demographic and disease-related factors on patient and caregiver-reported HRQL was investigated. The results of this study aimed to determine the various factors that determine HRQL in Australian PwP from the patient and carer's perspective.

VASILIC MILA

Dean's Student Research Award, Fremantle

Conductive hearing loss in older adults: an Australian perspective

Mila Vasilic[1], Li Shan Chiu[1, 2, 3], Inge Stegeman[4, 5], Adriana L Smit[4, 5], De Wet Swanepoel[3, 6], Marcus D Atlas[3, 7, 8], Michael Hunter[9, 10], Robert H Eikelboom[3, 7, 8]

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[7]Curtin Medical School, Curtin University, Australia
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[9]Busselton Population Medical Research Institute, Western Australia, Australia
[10]School of Population and Global Health, The University of Western Australia, Perth, Australia

Hearing loss can be classified as sensorineural, conductive, or mixed (both sensorineural and conductive), and currently affects an estimated 20% of the global population (total >1.57 billion people). It is the primary cause of years of healthy life lost due to disability (YLD) for people aged over 70 years old. However, the relative contribution of conductive hearing loss (CHL) to overall hearing loss in Australian adults remains unknown. Most population studies into CHL have been carried out in younger populations, while population-level studies of CHL prevalence in adults are limited. Therefore, we aim to determine the prevalence of CHL in an older Australian cohort and examine potential associations with gender and age. Non-institutionalised adults residing in Busselton, Western Australia were recruited as part of the Busselton Healthy Ageing Study (BHAS; UWA HREC RA/4/1/220). Audiometry data from Phase 1 of the BHAS (n = 5100) was used to assess hearing and middle ear status, including air and bone conduction thresholds and tympanometry data. The de-identified participants were surveyed for demographic data (age groups between 45 – 70+ years of age, gender), history of previous and current smoking, a general health questionnaire, medical history, and hearing-related histories such as pregnancy, head trauma, and propensity for chronic ear infections. From current literature, we estimate CHL prevalence to be in the range of 8 – 10% in the older Australian population, but this is most likely an underestimate due to under-investigation and under-reporting of true CHL rates (classified as mixed HL). This study has the potential to inform healthcare spending by allocating appropriate funds to investigate and treat CHL as part of a lone or mixed hearing loss entity.

ROBINSON EMMA

BMS Honours, Fremantle

The Effect of a Novel Poly-Arginine Peptide on α-Synuclein Pathology Implicated in Parkinson's Disease

Emma C. Robinson[1,2], Anastazja M. Gorecki[1,3], Ryan S. Anderton[1], Bruno P. Meloni [2]

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[3]Curtin Health Innovation Research Institute, Nedlands,

Parkinson's disease (PD) is the second most prevalent neurodegenerative disorder, affecting over 8.5 million people worldwide. Available therapies are palliative, failing to address the underlying pathology. The aggregation of α-Synuclein (α-syn) into pathological oligomers and fibrils, known as Lewy bodies, is central to the pathogenesis and progression of PD. Pathologic α-syn induces further aggregation, propagating throughout neurons and causing cytotoxicity and neurodegeneration. Cationic arginine-rich peptides (CARPs) are gaining attention due to their diverse neuroprotective effects such as reducing excitotoxic calcium influx and increasing mitochondrial stability. Recent findings reveal that CARPs have protein anti-aggregatory properties, establishing them as a promising therapeutic avenue for PD. This study aims to characterise both intracellular α-syn aggregation and intercellular α-syn propagation (uptake) *in vitro*, and investigate the therapeutic potential of the CARP, R18D (18-mer of D-arginine), to prevent these processes in rodent primary cortical neuron cultures. To mimic PD pathology, α-syn aggregate overexpression will be induced in the neuronal cell-culture model through two approaches: administration of α-syn seed and MG-132, a proteasome inhibitor. To investigate changes in α-syn aggregation, neuronal cultures will receive R18D treatment at various concentrations and will be monitored 48 hours later. Any changes induced by R18D will be quantified using a homogenous time-resolved fluorescence measurement kit. To investigate the effect of R18D on α-syn uptake into neurons, α-syn seeds will be pre-labelled with Alexa Fluor 488 fluorescent tags, treated with R18D, and introduced to neuronal cultures where uptake can be directly visualised using confocal microscopy. R18D represents a novel therapeutic approach to reduce the aggregation and uptake of α-syn pathology. With the transformative potential to obstruct the fundamental cause of neurodegeneration, R18D may hold the key to halting or slowing the aggressive progression of PD.

BAKHTAZAD NIKKI

HDR, Fremantle

Clinician Perspectives on Robot-Assisted Lower Limb Rehabilitation in Western Australia

People experiencing a neurological injury often undertake rehabilitation to improve their functional abilities. Robot-assisted neurorehabilitation is an emerging form of therapy which involves clinician and participant use of robotic devices to facilitate shared rehabilitation goals[1]. Current evidence supports the clinical uptake of these technologies[2] and several of these devices are available in Western Australia (WA). However, clinician perspectives are yet to be explored. We conducted a mixed-methods study of a diverse range of clinicians working in neurorehabilitation statewide to investigate the barriers and facilitators to the implementation of robotics. We recruited 56 clinicians to complete a structured survey. Eleven participants agreed to an additional semi-structured interview. The survey and interviews broadly investigated clinicians' experiences with and attitudes towards robotics. The majority of clinicians were interested in upskilling (n=49, 87.5%) and incorporating robotics into clinical practice (n=44,78.6%). However, lack of access to devices and funding emerged as limiting factors. Similarly, the benefits of an increased volume of therapy achievable with robotics and the subsequent improvement in patient outcomes were highlighted consistently. Interviewees suggested potential methods of service delivery and found that with limitations in funding, a central clinical service specialising in robotics and accessible via a referral system was most desirable. Our data will inform the implementation and optimal service delivery of robotic rehabilitation in WA. This is expected to improve clinical outcomes and quality of life for individuals engaging in neurorehabilitation and better support clinicians using this technology statewide.

[1]Sadeghnejad S, Abadi VSE, Jafari B. Rehabilitation robotics: History, applications, and recent advances. In: Medical and Healthcare Robotics. Elsevier; 2023 [cited 2023 Oct 31]. p. 63–85. Available from: https://linkinghub.elsevier.com/retrieve/pii/B9780443184604000081"">https://linkinghub.elsevier.com/retrieve/pii/B9780443184604000081

[2]Calabrò RS, Sorrentino G, Cassio A, et al. Robotic-assisted gait rehabilitation following stroke: a systematic review of current guidelines and practical clinical recommendations. Eur J Phys Rehabil Med. 2021:57(3): 460 - 471. doi: 10.23736/S1973-9087.21.06887-8

GASPAR JANE

HDR, Fremantle

General practitioners' use of technology and patient-centred care with bowel cancer screening participants

Jane Gaspar[1,2], Professor Caroline Bulsara[1,2], Associate Professor Diane Arnold-Reed[3], Adjunct Associate Professor Karen Taylor[2], Emerita Professor Anne Williams[4]

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[3]School of Medicine, University of Notre Dame, Australia
[4]School of Nursing, Murdoch University, Western Australia

Background: Diagnosing bowel cancer in its early stages improves the chance of survival and is the aim of screening programs worldwide. The Australian Government launched the National Bowel Cancer Screening Program (NBCSP) in 2006. The program relies upon general practitioners (GPs) to progress participants through the program. There is little understanding of steps undertaken by GPs once notified of a participant returning a positive test result, which was the focus of this project.

Aim/Objectives: This project considered steps taken by Western Australian GPs following notification of a positive immunochemical faecal occult blood test (iFOBT) result, their management of positive screen patients, and their suggested ways to improve program effectiveness.

Methods: The project utilised an explanatory, sequential mixed method design via a modified Delphi technique. The first Delphi round involved key informant interviews with 16 GPs. Key findings from these interviews guided the second Delphi round, which was an online questionnaire completed by 14 GPs.

Findings: General practitioners understood the expectation for them to follow-up a positive iFOBT result, refer the participant for colonoscopy, and submit the screening data to the National Cancer Screening Register. Use of technology throughout these steps varied. Some GPs relied upon electronic communications using systems such as Provider Digital Access (PRODA) and Healthcare Provider (HCP) Portal. Others considered these applications too time consuming or unreliable to use. Moreover, several GPs adopted a patient-tailored approach and relied upon their interpersonal relationships to determine the most effective means of managing participants and their data.

Implications: Comprehensive evaluations of current electronic/software systems may uncover inadequacies and lead to improvements that ultimately drive consistency and equity of use across sites. Deeper consideration of the significance of the doctor-patient relationship in general practice may help facilitate more effective broad health systems based clinical processes.

MORRIS BINELLI KHAYA

School of Health Sciences, Fremantle

Perceptual-cognitive-motor skill in virtual reality

Hannah J. Vawser[1], Khaya Morris-Binelli[1], Benjamin Piggott[1], Sean Müller[2], Paola Chivers[1], & Evan Dekker[2]

[1]School of Health Sciences, The University of Notre Dame Australia

[2]Federation University Australia

[redacted]

*Commercial in confidence.

WAND BENEDICT

School of Physiotherapy, Fremantle

Functional capacity following total knee arthroplasty for osteoarthritis: a systematic review with meta-analysis

Gemma Orange & Professor Benedict Wand

Objectives: To investigate the extent of functional improvement following primary total knee arthroplasty for knee osteoarthritis and compare trajectories of self-reported and performance-based measures of physical function.

Methods: Longitudinal cohort studies involving individuals with knee osteoarthritis undergoing total knee arthroplasty were included. Estimates of self-reported and performance-based physical function were extracted before surgery and up to five-years post-surgery. Searches included MEDLINE, EMBASE, and CINAHL from January 2005 to February 2023. Risk of bias was assessed using a six-item checklist. Self-reported function scores were converted to a 0-100 scale (higher scores indicate worse function). Mixed models provided pooled estimates after excluding low-quality studies.

Results: Out of 230 studies, 72 (n=19,063) of high or acceptable quality were included in meta-analyses. Self-reported function significantly improved from pre-surgery (55.6/00, 95% CI 53.1 to 58.1) to 3-6 months post-surgery 21.1 (95% CI 17.9 to 24.3) ($p < 0.001$). A small regression in self-reported function occurred at 6-12 months (31.0, 95% CI 25.8 to 36.2) ($p <0.001$), with no further change at 12-24 months (30.9, 95% CI 23.2 to 38.6) ($p = 0.919$). Performance-based measures exhibited variable trajectories, with most estimates indicating no clinically meaningful improvement post total knee arthroplasty.

Conclusion: Total knee arthroplasty results in clinically meaningful improvements in self-reported function measured at 3-6 months post-operatively. There is some deterioration in function after this and at no other timepoint does the estimate meet our criteria for clinically important change. We found limited evidence of clinically meaningful improvements in performance-based measures of physical function at any time point.

MCAULIFFE ANDREW

HDR, Fremantle

Investigating the impact of acute surgery timing on short-term post-burn outcomes in adult burn patients

Burns are one of the most common forms of traumatic injuries globally, and are attributed to longer stays in hospital, particularly in the intensive care unit (ICU), compared to other injuries. Burn pathophysiology is complex, consisting of multiple phases of hypometabolic and hypermetabolic states that contribute to the challenge of burn treatment and management.

While there are a few studies in the published literature that provide evidence for the benefits of early excision and grafting of burn wounds, there is still no consensus for the optimal timing to burn surgery for adult patients, particularly in an Australian healthcare context.

Using data collected in the Western Australian Burn Clinical Data Registry since 2004, this retrospective cohort study aims to elucidate this gap in the literature. From a sample population consisting of patients that underwent surgery for their burn injuries, patients will be categorised into cohorts (<48 hours, 48 hours to 5 days, and >5 days) derived from the time between burn diagnosis and burn surgery. The associations between time to surgery and variables including length of hospital stay (LOS), duration of care, hospital-acquired complications (HACs) and in-hospital intervention will be statistically analysed for significance.

The results of this study aim to better inform surgical management of burns in an acute setting. By potentially providing evidence for improved outcomes, these results will clarify the optimal timing of burn surgery for better short-term post-operative outcomes, and translate to clinical practice adjustments and service improvements for burn patients.

COCHRAN BLAKE

Dean's Student Research Award, Sydney

Neutrophil extracellular trap associated lipids: A new target in inflammation

Background: Neutrophils are the most abundant white cells in blood and mediate innate immune functions via oxidative burst, phagocytosis and secretion of neutrophil extracellular traps (NETs). NETs, an extracellular network of decondensed chromatin and proteins, form aggregates with platelets and stimulate release of pro-inflammatory cytokines from endothelial cells, macrophages, and lymphocytes. Coronary NET burden is a predictor of myocardial infarct size and is associated with all-cause mortality. However, to date no study as examined if NETs contain lipids.

Objective: Identify NET associated lipids and determine their functional activity.

Methods: Neutrophils were isolated from healthy donors and activated with PMA. Lipids were extracted from NETs via Folch extraction and lipids identified using mass spectrometry. NETosis was quantified using SYTOX Green and macrophage activation by flow cytometry and ELISA.

Results: NETs contained a wide variety of lipids including triglycerides (32.02±10.83%, of total lipid content vs 4.23±2.21% in whole neutrophils. NET formation was inhibited by pretreatment with inhibitors of both DGAT1 and DGAT2, but not individually. Triglyceride depletion of NETs mediated pro-inflammatory changes in macrophages, with CD64 expression and LPS-mediated IL-1beta secretion significantly decreased in human monocyte derived macrophages (HMDMs) treated with triglyceride-depleted NETs.

Conclusion: The triglyceride content of NETs is an important modulator of inflammation which could be a target for therapeutic intervention.

RICHARDSON LIZZIE

Dean's Student Research Award, Sydney

Identifying potential biomarkers of Acute Kidney Injury based on epigenetic changes pre- and post-cardiac surgery

Acute kidney injury (AKI) is the sudden and often reversible reduction in kidney function that - despite being acute in nature - is linked with significant morbidity and can lead to chronic kidney disease and end-stage renal failure. The risk factor for AKI include diabetes, hypertension, and heart failure are all increasing in incidence along with the aging population. Current diagnostic criteria, based on serum creatinine levels and urine output, often detect AKI after renal damage has occurred. And beyond lifestyle factors (diabetes, hypertension, smoking) there are few tools available to clinicians for predicting the likelihood of developing AKI or assessing its severity once it occurs. Thus, there is an urgent need for predictive biomarkers to reduce the incidence and severity of AKI. We aim to fill this gap by investigating epigenetic changes that occur in the context of kidney injury and identify methylation changes that can be used as predictive or screening biomarkers for AKI.

WEARNE JAYDEN

Dean's Student Research Award, Sydney

A 5-year retrospective audit of autonomic function testing at a major Australian tertiary teaching hospital: Patient characteristics and efficacy of testing in the investigation of dysautonomias

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[2]Autonomic laboratory, St. Vincent's Clinic, Darlinghurst, NSW, 2010

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Background: Dysautonomia is an umbrella term for any dysfunction of the ANS. Diseases that cause dysautonomias are not well described. Dysautonomias are poorly recognised and diagnosed in clinical practice.

Objectives: To describe associations between patient demographics, referral characteristics, and comorbidities with autonomic function; and assess the efficacy of autonomic function testing in identifying dysautonomias.

Methods: We performed a retrospective case series of patients referred for autonomic function testing from 2015-2022 at St. Vincent's Clinic, Sydney. Patient demographics, referral characteristics, and comorbidities were recorded and compared with heart rate and blood pressure changes during sit-to-stand and Valsalva manoeuvres (VM). An Odds Ratio (OR) was used to describe incidence of disease in those with dysautonomia, and statistical significance between autonomic function and cardiovascular dysautonomic syndromes was calculated using a paired t-test assuming unequal variance, with an alpha level of 0.05 set as the cut-off.

Results: We identified 280 studies from 261 unique patients (mean age of 50.6, 72.4% female). There was a mean of 3.9 symptoms across 2.6 organ systems. Neurologists most referred for autonomic function testing. Our protocol identified 17 patients with nOH, 26 patients with POTS, and 11 patients IST, giving a low sensitivity for identifying dysautonomia in symptomatic patients. Hypermobility spectrum disorder and vascular compression syndromes had a high incidence of POTS (OR 1.68) and IST. Both mean Valsalva ratio and magnitude of heart rate change during the VM were able to significantly differentiate these three cohorts ($p < 0.001$).

Conclusions: There is a need for better education of community physicians in identifying and referring patients with dysatuonomia. We highlight a need for a more sensitive and specific protocol to better identify dysautonomias in symptomatic patients. Larger, prospective studies are required to confirm a causal relationship between hypermobility, compressive, and autoimmune disorders with dysautonomia.

MICHAEL NATASHA

School of Medicine, Sydney

Personal values and its impact on decision making in advanced illness

Background: For many, a cancer diagnosis signals death's inevitability and elicits existential concern. In the quest for life prolongation, patients seek futile life-sustaining treatments, fail to appreciate a declining trajectory and lack the opportunity to seek information or plan meaningfully for their future. Advance care planning (ACP) is a process that supports adults at any age or stage of health to plan for future care through an understanding and sharing of personal values, life goals and preferences. An increased emphasis is now placed on exploring personal values to ensure alignment with the choices made relating to treatment and end-of-life desirables. Interventions that incorporate a values-based paradigm remain underdeveloped.

Method: Using a multi-method research design, we developed a novel intervention using the video vignette technique and incorporated the dyadic approach to examine participants' perceptions, beliefs and attitudes. A randomised controlled trial formed the analytical core of this study, with a secondary qualitative component. Cancer patient-caregiver dyads were randomised to a values-based video vignette intervention or usual care. We hypothesised that those exposed to the video intervention would be more likely to complete an ACP.

Results: One hundred and thirteen cancer patient-caregiver dyads were recruited and randomised. Our findings described older participants as more likely to identify with values. Furthermore, we highlight that the mutuality of dyadic relationships in care planning may be conceptualised at three levels: communication, reciprocal influence and patient-caregiver congruence. In eliciting personal values, cancer patients concurrently postured stances of vulnerability and resilience, in keeping with conflicting emotions and experiences. Equanimity in the cancer patient was apparent with acceptance of frailty and finitude of life, sustained benevolence to others and the use of ritual at the end-of-life.

Conclusion: We highlight that ACP requires contextualisation of individual situations and values and should focus on achieving meaningful outcomes beyond completing documents.

VLOK MELANDRI

School of Health Sciences, Sydney

Looking to ancient malaria to understand our future uncertainty with malarial outbreaks and human driven climate change.

With the arrival of the beginnings of the climate crisis, tropical regions of the world are seeing an expansion of malaria into areas where the parasite was either previously eliminated or was previously not suitable for malarial-carrying mosquito vectors (Anopheles genus). For example, malaria is now found in higher altitudes in Papua New Guinea which due to warmer and more humid temperatures now meet the characteristic ecological niche requirements for Anopheles mosquitoes. Models of the spread of malaria in the coming decades are fraught with many assumptions and unknowns. However, many of these regions demonstrate evidence for long term malarial endemicity in ancient skeletal assemblages particularly during natural climate warming cycles in prehistory. This short talk will present the ambitious task of documenting the dynamics of malaria in ancient Southeast Asia and the Pacific alongside natural climate cycles to better understand both human biological and social response to climate-induced disease spread. It is hoped that this data can inform current models of malarial spread with the climate crisis and inform future outbreak prevention and management.

GRAHAM THOMAS

HDR, Sydney

Transcutaneous Spinal Cord Stimulation Shows Paired Pulse Depression and Facilitation in People with and Without Spinal Cord Injury

Objective: Transcutaneous spinal cord stimulation (TSS) is a novel, non-invasive technique that uses electrical currents to activate spinal networks to improve sensorimotor function in people with spinal cord injury (SCI). There is limited but exciting video evidence of people walking again with therapy. We investigated the impact that current amplitude has on motor output using paired pulses in people with and without SCI using TSS.

Methods: 25 participants (14 able-bodied and 11 participants with SCI) were recruited. Five double pulses, with an interstimulus interval of 50ms, were delivered at a rate of 0.2Hz to the L1 interspinous space. Current amplitude was increased from 0mA until any spinally evoked motor potential (sEMR) was detected in any muscle and further increased until sEMR were detected in all muscles or until participant tolerance. Peak-to-peak deflections were used to calculate a ratio of the second response (P2) to the first response (P1). T-tests compared responses at sEMR threshold and 50mA above sEMR threshold.

Results: There was no statistical difference between a P2/P1 ratio at threshold and 50mA above threshold between muscles or between groups. Individuals showed marked variability in response to paired pulses at increasing current amplitude.

Conclusion: Current amplitude does not correlate with responses to paired pulses using TSS in people with and without SCI. Individual variability in paired pulse responsiveness likely accounts for our findings.

New & Noteworthy: Our study demonstrates that paired pulses using TSS at increasing current amplitudes show response depression and facilitation in people with and without SCI. There is marked individuality in paired pulse responses. Contrary to conventional belief that paired pulses result in complete suppression of the second response, we show that paired pulse facilitation occurs in many individuals. This study is also the first study to investigate paired pulse responses in people with SCI.

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The clinical course and outcomes following arthroscopic frozen shoulder 360-degree release

Background: Frozen Shoulder (FS) is a debilitating inflammatory condition affecting the shoulder capsule that causes significant pain and stiffness. FS can profoundly impact activities of daily living and usually takes 1-4 years to resolve on its own accord. In severe cases where active range of motion (AROM) is extensively restricted, an arthroscopic 360-degree release may be performed. The aim of this study is to evaluate the clinical outcomes following the FS 360-degree arthroscopic release.

Methods:An observational prospective cohort study was conducted assessing patient-reported outcome measures (PROMs) in patients who underwent the 360-degree arthroscopic release between July 2013 and January 2019. Various questionnaires evaluated their shoulder preoperatively and at 2 weeks, 6 weeks, 3 months, 6 months, 12 months, and 24 months postoperatively. PROMs included the Oxford Shoulder Score (OSS), Western Ontario Shoulder Index (WOSI), Disabilities of the Arm, Shoulder and Hand (QuickDASH), Constant-Murley Score (CMS), American Shoulder and Elbow Surgeons Shoulder Score (ASES), as well as general measures of pain intensity (VAS) and wellbeing (EQ-5D-3L). AROM movements included forward flexion, abduction, external rotation, internal rotation, as well as external and internal rotation at 90 degrees of abduction.

Results: 50 consented patients underwent the arthroscopic FS 360-degree release. All PROMs, AROM movements, patient satisfaction and EQ-5D-3L scores improved significantly between preoperative and 24-month time points ($p<0.001$). Within participant analysis demonstrated that there was no significant difference between the pathological shoulder AROM and the contralateral shoulder AROM at 24 months postoperatively (all $p>0.05$). No complications were reported.

Conclusion: The arthroscopic 360-degree release is an effective treatment modality for severe FS. Statistically and clinically significant improvements in AROM and PROMs occurred shortly after the surgery and progressively improved from 2 weeks to 24 months postoperatively, with the operative shoulder achieving similar range of motion as the non-pathological contralateral shoulder at 24 months.

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