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# Foreword



**A/Prof Alex Cockram**  
Chief Executive



**Prof Edward Janus**  
Director of Research

Western Health expanded its research efforts in 2016 in line with the Research Roadmap 2015–2020 and the overall strategic direction of our health service.

Achievements were highlighted throughout the year to underscore the role of research in delivering best care to our patients, culminating in Research Week in October. This featured the launch of the 2015 Research Report, oral presentation of the best 10 posters produced throughout the year, competitive interviews for the short-listed grant applicants, and the introduction of three new sessions – Women’s and Children’s, Subacute and Aged Care and the Robert Helme Neuroscience Session. The seed grant winners – who were awarded a total of \$70,000 – and the session prize winners were announced at an exciting and well-attended closing ceremony.

Recruitment of our large and diverse patient population into clinical trials, including investigator-initiated trials, has been enhanced to provide greater access to new treatments. For example, in 2016 the IMPROVE-GAP trial commenced, aiming to recruit 800 inpatients with community-acquired pneumonia into a study of a new optimised model of care. The study is on track to achieve this ambitious target. This reflects Western Health’s emphasis on clinical research and its translation into every day practice.

Western Health continued to build research capacities through productive collaborations with our university partners, including participation in research projects at the MD, Masters and PhD levels. The Clinical Research Investigators Group holds regular events to connect younger researchers with each other and more experienced professionals.

Through the Western Health Chronic Disease Alliance we have extended our engagement with general practices and the community. The Alliance focuses on better detection of early chronic kidney disease and diabetes, and the shared risk factors leading to these conditions, as well as to cardiovascular disease and stroke.

Our research partnerships engage multiple other organisations, including the newly opened Victorian Comprehensive Cancer Centre and the Murdoch Childrens Research Institute, with whom we will study the health of Victorian newborns into their future.

Construction of the new Joan Kirner Women’s and Children’s Hospital is underway and on track for completion in late 2018. Once complete, the facility will enable more women and families in Melbourne’s west to give birth and access children’s services closer to home.

This report indicates the publications, presentations and projects we are undertaking and features profiles of a number of our researchers. We trust you will enjoy reading about them.

# Research 2016

11

Book chapters

2

Books

292

Seminars and presentations

41

Proceedings

340

Journal articles

201

New projects approved

42.7m

dollars in research grants awarded or held

510

Total projects approved and ongoing in 2016

Prof Tissa Wijeratne

# Research Directorate

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## Western Health Research Advisory Committee Membership

**Dr John Gallichio**  
Executive Director for Medical Services

**Prof Edward Janus**  
Director of Research

**Bill Karanatsios**  
Manager, Office for Research (Secretary)

**Prof Bodil Rasmussen**  
Chair of Nursing, Deakin University

**Prof Gustavo Duque**  
Chair of Medicine and Director of AIMSS

**Dr Elizabeth Hessian**  
Deputy Director Anaesthesia

**Prof Maximillian De Courten**  
Victoria University

**Deborah Clark**  
Director of Quality

**Dr Michael Bullen**  
Registrar

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## Office for Research Staff and Volunteers

**Prof Edward Janus**  
Director of Research

**Bill Karanatsios**  
Manager, Office for Research

**Kerrie Russell**  
Ethics Administration Assistant

**Virginia Ma**  
Research Governance Officer

**Dr Koen Simons**  
Clinical Biostatistician

**Nathan Yee**  
Office for Research Intern (RMIT)

**Linda Diep**  
Office for Research Volunteer

**Judy Meyers**  
Office for Research Volunteer

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## Western Health Low Risk Ethics Panel Membership

### Chairperson

**Prof Edward Janus** *FRACP MD PhD*  
*FRCPA FCCP FCSANZ* Head of Unit – General Internal Medicine

### Community Member

**Dr Keri Chater** *PhD M.Nurs BSocSc RN*

### Review Members

**Dr Anita Morris** *PhD MSW BSW*  
Manager of Social Work

**Dr Anna Steer** *MBBS BMedSc*  
Critical Care Resident

**A/Prof Anne Marie Southcott**  
*MBBS FRACP* Director, Respiratory & Sleep Disorders Medicine

**Prof Bodil Rasmussen** *RN, DipNEd, MedSt, PhD, FCNA* Chair in Nursing

**A/Prof Cate Nagle** *PhD MPH*  
*B.AppSc* Associate Professor, School of Nursing & Midwifery, Deakin University

**Dr Cristian Udovicich** *MBBS BMedSci DipSurgAnat* General Surgical Registrar, Western Health from March 2016

**Davina Taylor** *MPET GDipCritCare/InstCare B.AppSc* Clinical Nurse Consultant – Pain Management

**Dr Forbes McGain** *MBBS PGDipEcho FANZCA FJFICM RANZCOG* Intensive Care Physician and Anaesthetist

**Kathryn Cranwell** *DipProjMgmt MHSoc (OT) BOT* Grade 4 Occupational Therapist from September 2015

**A/Prof Lata Jayaram** *MBChB PhD FRACP* Respiratory Physician

**Dr Martin Nguyen** *MBBS BMedSci (Hons) FANZCA* Anaesthetic Consultant

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## Quality Assurance Reviewers

**Anita Panayiotou** *BBNSci, PGrad Dip Psych, DPsych (Clin Neuro)* Clinical Neuropsychologist until November 2016

**Prof Anne-Maree Kelly** *MBBS MD MCLinEd FACEM FCCP* Professor of Emergency Medicine

**Bill Karanatsios** *BSc (Hon), GradDip ProjMgmt* Manager, Office for Research

**A/Prof Christopher Yates**  
*PhD FRACP MBBS* Director of Endocrinology and Diabetes Research

**Dr Cuong Duong** *MBBS PhD FRACS* Upper GI Surgeon



**Dr Elizabeth Hessian MBBS**  
FANZCA Consultant Anaesthetist

**A/Prof Jenny Schwarz MBBS**  
FRACP GDip Ed, GDip Pall Med  
Director, Geriatric Medicine  
Clinical A/Prof of Geriatric

**Dr Keri Chater PhD M.Nurs BSocSc RN**

**Lei Ching Yeoh B.Pharm**  
Clinical Trials Manager

**Dr Lucinda Gabriel MBBS BA BSc**  
DipCrimL Anaesthetist Registrar

**Dr Rosalynn Pszczola MBChB,**  
BMedSci(Hons), FRACP, MBioeth  
Consultant Neonatologist

**Dr Sathyajith Velandy Koottayi**  
MBBS MD FJFICM Intensivist

**Sharon Klim BN, PDACN Research**  
Nurse JEC Emergency Medicine

**Prof Steven Chan MBBS PhD**  
FRACS FRCS Professor of Surgery,  
NorthWest Academic Centre,  
University of Melbourne

**Dr Tam Nguyen PhD MBA**  
GDipSono BSc BE (Biomed) FRSPH  
FAIM MAICD Manager, Office for  
Research, Honorary Senior Fellow,  
University of Melbourne

**Prof Tissa Wijeratne MBBS (Hons)**  
FRACP FAHA FAAN Consultant  
Neurologist, Clinical Associate  
Professor, University of Melbourne

#### **Clinical Biostatistician**

**Dr Koen Simons PhD**

**Bill Karanatsios BSc (Hon), GradDip**  
ProjMgmt Manager, Office for  
Research

#### **Secretary**

**Virginia Ma BBiomedSc (PharmSc)**  
DipMgt CertIVHlthAdmin Research  
Governance Officer

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## **Western Health Research Coordinators Group**

**Bill Karanatsios**  
Manager, Office for Research (Chair)

**Kerrie Russell**  
Ethics Administrator, Office for  
Research (Secretary)

**Virginia Ma**  
Research Governance Officer, Office  
for Research (Secretary)

**Nathan Yee**  
Office for Research Intern

#### **Coordinators**

**Elizabeth Skinner**  
Allied Health

**Emily England**  
Cancer Trials Australia

**Kelly Ann Gray**  
Cancer Trials Australia

**Marsha Francke**  
Cardiology

**Kerrie Russell**  
Emergency Medicine/Office for  
Research

**Sharon Klim**  
Emergency Medicine

**Marian Croft**  
Gastroenterology

**Anne Tippett**  
Intensive Care, Anaesthesia and Pain  
Management

**Fiona Marshall**  
Intensive Care, Anaesthesia and Pain  
Management

**Miriam Towns**  
Intensive Care, Anaesthesia and Pain  
Management

**Noelle Gubatanga**  
Intensive Care, Anaesthesia and Pain  
Management

**Samantha Bates**  
Intensive Care, Anaesthesia and Pain  
Management

**Lee-Anne Lynch**  
Maternal and Fetal Medicine

**Heike Raunow**  
Medical Oncology and Haematology

**Kleopatra Hondros**  
Medicine and Endocrinology

**Jason Bennier**  
Nephrology

**Natalie Lumsden**  
Nephrology

**Essie Low**  
Neurology

**Sherisse Celestino**  
Neurology

**Sue Casanelia**  
Respiratory and Sleep Disorders  
Medicine

**Valarie Yee**  
Respiratory and Sleep Disorders  
Medicine

**Phuong Tran**  
Rheumatology

**Amanda Hickling**  
Urology



**An enterprising team from Western Health has successfully bid for a highly competitive \$632,000 grant from Cancer Council Victoria and the Victorian Cancer Agency.**

*Dr Sumitra Ananda, Prof Michael Green and Heike Raunow.*

## Cancer Council Grant

### Prof Michael Green, Heike Raunow and Dr Sumitra Ananda

The number and type of clinical trials available to Western Health's oncology patients will increase thanks to a prestigious Cancer Council Victoria grant.

Currently only 3.8% of Western Health's cancer patients are admitted into a clinical trial – well below the universal benchmark of 10%. A lack of health funding generally across Melbourne's western suburbs, as well as the language barriers inherent in a very multicultural community, are among the many reasons why the admission rates to clinical cancer trials are low.

However, an enterprising team from Western Health is working hard to change that, having successfully bid for a highly competitive \$632,000 grant from Cancer Council Victoria and the Victorian Cancer Agency.

The team – comprising Prof Michael Green, Prof Jon Emery, A/Prof Peter Gibbs, Dr Sumitra Ananda, Dr Dishan Herath, Heike Raunow, Dr William Renwick, Dr Duncan Carradice, Miss Meron Pitcher, Dr Phillip Tran and A/Prof Lara Lipton – is now working on maximising the number and types of trials available to Western Health patients. The three-year project will have a particular focus on patients from culturally and linguistically diverse backgrounds.

Prof Green, Western Health's Director of Cancer Services, said the funding would provide more equitable access to clinical trials for Western Health patients with cancer, as well as increasing the overall numbers of patients on clinical trials.

"It's important to appreciate that clinical trials drive quality in patient care because they set the standards for future treatments," he said.

Ms Raunow, Western Health's Manager of Cancer Research, said more than 200 Western Health oncology patients currently participate in a clinical trial every year.

She said the research team would be taking a multi-pronged approach to increasing these rates. Strategies will include identifying potential research collaborators from other institutes, as well as assessing how IT systems could be better used to identify trial candidates from patient records.

Cancer Council Victoria Chief Executive Todd Harper said it was important for as many cancer patients as possible to have access to a clinical trial.

"Trials are a valid treatment option and are a component of a gold standard health care system," he said. "In fact, standard treatments that extend and improve the lives of countless patients today are the result of clinical trials of the past."

Western Health is one of the biggest providers of cancer services in Victoria. The western suburbs have the highest rate of cancer incidence of any area in metropolitan Melbourne.



Director of Cancer Services Michael Green, breast cancer patient Kim Nguyen, Cancer Council Victoria Chief Executive Todd Harper and Western Health's Chief Executive A/Prof Alex Cockram at the launch of the funding announcement.



# Office for Research

In 2016 the Office for Research further embedded the Research Roadmap 2015–2020 by ensuring that the organisation’s research efforts were aligned with Western Health’s operational strategy and broader community expectations.

With each year that passes, we see greater research outputs in terms of quality and impact. 2016 was an exceptional year for our researchers in this regard. The targeted research education workshops and the various research templates developed and implemented by the Office for Research ensure our researchers are adequately equipped to efficiently meet ever-increasing regulatory demands.

The efforts of the Office in increasing research capacity and capability are reflected in the improved quality of the research submissions, the high calibre of the Western Health Research Grant proposals and the richness of the Research Week program. Research Week was very well attended and presentations from across all sessions were of a very high standard, reflecting the high calibre of research being undertaken by our staff, in their own right or through collaborations. This year, an additional three sessions – Subacute and Aged Care, Robert Helme Neuroscience and Women’s and Children’s – were added onto the Research Week program, adding further breadth to an already comprehensive line-up.

In order to commemorate our research achievements, we installed an Honours Board in the atrium of the WCHRE building naming all recipients of Research Week awards across all categories since their inception. It is hoped the Honours

Board will motivate staff to get involved in research projects, with the aspiration of seeing their name included in the future. In a first for Research Week, session prize winners were also given engraved glass mementos as part of their awards.

As the breadth and depth of research undertaken by our staff increases, so do their expectations of the Office for Research. We are determined to ensure that our research and education program is comprehensive and equips our researchers with the requisite capabilities to undertake their research with confidence. 2016 saw an additional 35 staff across the organisation undertake Good Clinical Practice (GCP) training for the first time. Staff receive GCP training as part of their involvement in commercially sponsored clinical trials.

This year we expanded our education and training program to respond to, and meet the needs of our researchers. A number of well-attended workshops on systematic reviews, qualitative research, Stata and meta-analysis using Stata were conducted. Where requested, the Office for Research conducted bespoke training sessions across a range of research methodologies for a number of departments. In October we appointed Dr Koen Simons as our in-house biostatistician, filling in the vacancy left by the departure of Dr Emily Karahalios earlier in the year. The absence of an in-house biostatistician for a period of time clearly demonstrated how valuable this capability is in serving the needs of our research endeavours.

The establishment of the Western Health Chronic Disease Alliance (WHCDA) has been an area of priority for the Office of Research. Under the leadership of A/Prof Craig Nelson, the WHCDA aims to act as a vehicle for research collaboration on behalf of Western Health and identified external partners who will be critical in initiating and conducting research addressing the ever-increasing burden of chronic disease that afflicts the patients we serve and the broader community. It is envisaged that the WHCDA will be formally launched in 2017 with a website of its own and a number of research initiatives under its umbrella.

We look forward to building on the foundations and successes of the past, increasing Western Health’s participation in and initiation of research to impact the health outcomes of the community we serve.

In 2017, we will keep engaging with our internal and external stakeholders, continue to provide tailored education and training, facilitate networking opportunities for our researchers, and have a seat at the table at committee meetings of the MACH, BioMed Vic, the VCCC and our academic partners. This will allow us to remain active in shaping our research environment and ensure our sphere of influence continues to be far reaching. Our priorities in 2017 will be the recruitment of an Ethics and Governance Submission Officer to work with our clinical trials teams, provide support to the new A/Prof of Surgery, and to work more closely with the Western Health Foundation in establishing Clinical Research Fellowships.

**Bill Karanatsios**  
Research Program Director



# Western Health Research Grants

Western Health acknowledges the need to appropriately support early career researchers who are not always able to successfully compete for the highly competitive NHMRC and ARC grants. In order to make such researchers more competitive in the future, the Office for Research, through the Western Health Grants initiative, funds a number of projects during Research Week. The aim is to provide researchers with financial support to conduct pilot or feasibility studies that are now a prerequisite for consideration for NHMRC and other external grants.

The Office for Research again committed \$70,000 worth of grant funding, awarded through a competitive peer-reviewed process, to help early career researchers bring to life their innovative research ideas. As has been the case for every year, the calibre of research submissions this year has been very high. The following five projects were awarded funding:

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## Project 1

**Michael Seman:** Outcomes in Culturally and Linguistically Diverse Patients Hospitalised with Heart Failure (\$20,000)

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## Project 2

**Lucy Troup and Kelly Fleury** Investigating the Effect of Electrical Muscle Simulation, High and Low Dose Exercise on Strength and Function in an Elderly, Non-Weight Bearing Patient Population – A Pilot RCT (\$20,000)

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## Project 3

**Kimberley Haines:** Co-designing the Future of Critical Care Recovery: Peer Support Model to Improve Patient and Family Outcomes (\$12,000)

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## Project 4

**Briony Cutts:** Maternal Thrombin Generation in Obesity and Pregnancy (\$10,000)

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## Project 5

**Alesha Sayner:** Does a Pre-Operative Functional Floor Exercise Program Provide Improved Post-Surgical Urinary Incontinence Outcomes When Compared with a Strength Training Program in Men Undergoing Radical Prostatectomy? A Pilot Study (\$8000)

**The Office for Research again committed \$70,000 worth of grant funding, awarded through a competitive peer-reviewed process, to help early career researchers bring to life their innovative research ideas.**

# Research Week: Awards and Prizes

Research Week at Western Health has become a highly anticipated and well attended annual event, showcasing research undertaken by staff across a broad range of specialties. Each year's Research Week progressively builds on the one before, giving everyone the opportunity to witness the evolutionary progression of research at Western Health.

This year's opening keynote address was given by Prof Margaret Sheil AO, Provost at the University of Melbourne. Prof Sheil spoke on the importance of organisations fostering research excellence by creating supportive environments and helping staff advance their careers.

The 2016 Research Week program exhibited a great breadth and depth of research topics, with each session featuring a high calibre of keynote speakers.

Research Week culminated with the awards for best research undertaken and presented by Western Health staff.

This year's awards and prize winners are listed below:

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## Subacute and Aged Care Research Presentation

### Jennifer Zerafa

Preliminary Data on the Evaluation of a Massage Therapy Service for Palliative Care Patients at Western Health

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## Best Nursing and Midwifery Research Presentation

### Risk Screening Tool Team

An Integrated Approach to Assessment and Care Planning

---

## Best Allied Health Research Presentation

### Dr Kimberley Haines

What About the Caregivers?  
Psychosocial Outcomes in Informal Caregivers of the Critically Ill – Preliminary Results

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## Neville Yeomans Prize for Best Internal Medicine Research Presentation

### Adam Steward

Teaching an Old Dog New Tricks: Conventional Film/Screen Principles of Exposure Selection in the Digital Age

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## Inaugural Robert Helme Prize for Best Neuroscience Research Presentation

### Essie Low

Inspection Time as a Valuable Screening Tool to Measure the Recovery of Temporal Attention Post-Stroke

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## Inaugural Women's and Children's Prize for Best Research Presentation

### Dr Sofia Walker

Understanding the Failure to Identify Severe Growth Restriction

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## Best Cardiology Research Presentation Prize

### Dr Michael Seman

The Impact of limited English Proficiency on Hospital Readmission Rate in Patients Hospitalised with Acute Heart Failure

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## Best Oncology/ Haematology Research Abstract Prize

### Cindy Olguszko

Benefits of a Specialist Prostate Cancer Nurse at Western Health

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### Best Research Poster Prize

**Alan Moss**

Results and Risk Factors in 1000 Cases from the Australian Colonic EMR (ACE) study

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### Kendall Francis Prize for Best Surgical Research Presentation Prize

**Michael Bullen**

Use of Intra-Operative Fluoroscopy While Seated Increases Radiation Exposure to Radiosensitive Organs

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### Robert Smith Prize for Best Critical Care Research Presentation Prize

**Jana Lau and Elizabeth Wyatt**

Surveying Junior Medical Staff in a Metropolitan Hospital: Engagement, Wellbeing and Support

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### Best Research Poster Prize

**Candice Poupard**

A Co-Located Subacute Amputee Service Reduces Length of Stay at Footscray Hospital

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### 2016 Mavis Mitchell Award Winner – Best Nursing and Midwifery Research and Service Improvement Prize

**Lana Van Raay**

Minimising the Need for Patients Overnight Admission for Pre-Hydration Prior to Angiography

### Research Week prizes are supported by

- o Covidien – Major Sponsor
- o First State Super
- o TLC Aged Care
- o BioMedical Research Victoria
- o Strada
- o Sanofi
- o Theva
- o Dorevitch Pathology
- o Rotary Club of Footscray
- o Western Health Foundation
- o BankVic

**The 2016 Research Week program exhibited a great breadth and depth of research topics, with each session featuring high calibre keynote speakers.**



# Allied Health and Community Services

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## Our Research Output

**75**

Projects

**25**

Publications

**41**

Presentations

*Allied Health Assistant (Physiotherapy)  
Avetta Malcolm with patient Stephen.*



## Head of Department, Allied Health

Julia Blackshaw

## Head of Department, Community Services

Lebe Malkoun

## Research Staff

89 researchers and 8 students

### Our Grants and Awards

#### Society of Critical Care Medicine (USA) THRIVE Grants

K Haines, B MacLeod-Smith, C Holdsworth, E Skinner, S Bates, C French and L Maher. icuRESOLVE – Intensive Care Unit Recovery Solutions Co-Led through Survivor Engagement. Society of Critical Care Medicine, \$71,500 (2016–2019).

#### Canadian Institutes of Health Research: Project Scheme

D Brooks, M Beauchamp, R Goldstein, A Marques, G Dechman, R Moineddin, P Camp, A Lee, A Holland, J Alison, E Skinner, D Spencer et al. Randomized Controlled Trial of Balance Training for Falls Reduction in Individuals with COPD. Canadian Institutes of Health Research, \$902,111 (2016–2019).

#### NHMRC Project Grant

C Hodgson, B Gabbe, S Webb, J Presneill, P Young, T Iwashyna, M Bailey, A Higgins, C Tipping, E Skinner, H Buhr, M Saxena, M Harrold and R Bellomo. Treatment of invasively ventilated adults with Early Activity and Mobilisation (TEAM). National Health and Medical Research Council, \$1,467,137 (2016–2021).

#### HCF Research Grant

E Janus, H Karunajeewa, E Skinner, M Lloyd, IMPROVE-GAP Investigators. The IMPROVE-GAP Project HCF, \$300,000 (2016).

#### Western Health Research Grant

L Troup, K Fleury, K Haines, R Kinsella and G Duque. PAIVE – Preventing Atrophy in Immobile Vulnerable Elderly. Western Health Research Grant, \$20,000 (2016).

#### Western Health Research Grant

K Haines, B MacLeod-Smith, C Holdsworth, E Skinner, S Bates, C French and L Maher. icuRESOLVE – Intensive Care Unit Recovery Solutions Co-Led through Survivor Engagement. Western Health Research Grant, \$12,000 (2016).

#### Western Health Research Grant

A Sayner, S Davies, K Haines, E Karahalios, I Nahon and C Ogluszko. Does a Pre-Operative Functional Pelvic Floor Exercise Program Provide Improved Post-Surgical Urinary Incontinence Outcomes When Compared with a Strength Training Program in Men Undergoing Radical Prostatectomy? A Pilot Study. Western Health Research Grant, \$8000 (2016).

#### Austin Medical Research Foundation

K Haines, J Moran, D Jones and R LoPresti. End of Life Care and Perceptions of the Interprofessional Team. Austin Medical Research Foundation, \$10,000 (2016).

#### Western Health Foundation Allied Health Grant

E Witherow and N Byrne. Hand Therapy – Therapist Led Clinic Expansion. Western Health Research Grant, \$5000 (2016).

#### Western Health Foundation Allied Health Grant

J Shekleton and C Nadebaum. CAHS to Implement Use of the Bayley Scales of Infant and Toddler Development to Assist with Assessment and Reduce Waitlist. Western Health Foundation, \$5000 (2016).

#### Best Allied Health Presentation, Western Health Research Week

K Haines. What About the Caregivers? Psychosocial Outcomes of Informal Caregivers of the Critically Ill. Western Health Research Grant, \$1500 (2016).

#### Best Poster Western Health Research Week

C Poupard. A Review of an Amputee Rehabilitation Service to Describe Patient Outcomes and Evaluate its Effectiveness in Reducing Acute Length of Stay at Western Hospital, Footscray. Western Health Research Grant, \$1500 (2016).

#### ANZCA Open e-Poster Prize

I Boden, L Browning, E Skinner, J Reeve, D El-Ansary, I Robertson and L Denehy. Lung Infection Post Surgery (Major Abdominal) with Preoperative Physiotherapy (LIPSMACK:POP). ANZCA (2016).

## Allied Health and Community Services

# Nutrition

Malnutrition is the most clinically significant issue in hospitalised patients today and is the focus of the Nutrition Department's research activity. The aim is to ensure best care, right care and safe care remain at the forefront of the service provided to Western Health patients. Projects include evaluation of both implementation and compliance with the Western Health fasting procedure, participation in the Victorian Cancer Services malnutrition prevalence study, and evaluation of the Volunteer Meal Assistance program as a strategy to improve access to meals and meal satisfaction.

In 2016, the dietitian to the Upper Gastrointestinal Surgery Unit commenced working in the weekly outpatient UGIG Clinic. This was in response to the development of a nutrition care pathway developed to manage the high prevalence of malnutrition detected by a previous Victorian Cancer Services study in patients with an upper gastrointestinal malignancy at Western Health. The implementation of the Western Health fasting procedure in the high-risk units of Orthopaedics, Orthogeriatrics and Plastics has reduced preoperative fasting times in these units. This work was based on an initial audit of patient fasting times in the Orthopaedic and Orthogeriatric units at Footscray Hospital.



*Patient Lukas Rosenbaum.*

There were two publications throughout the year in peer-reviewed journals, as well as presentations at national conferences, including: 'Multimodal Support Across the Continuum of Care; Case Review on Nutritional Management of Intestinal Failure and Gastroparesis' (Poster), presented by Aurora Ottaway at the Australasian Society of Parenteral and Enteral Nutrition National Conference, and 'Reducing Preoperative Fasting in Orthopaedics and Orthogeriatric Unit Patients' (Oral) by Caroline Calkin at the Dietitian Association of Australia.

Future plans include collaborative work with other health services looking at evaluation and management of malnutrition in hospitalised patients, together with ongoing collaboration on projects with Deakin University and the Department of Health.

# The implementation of the Western Health fasting procedure in the high-risk units of Orthopaedics, Orthogeriatrics and Plastics has reduced preoperative fasting times in these units.

## Our Research

### Reducing Preoperative Fasting on Orthopaedics and Orthogeriatric Unit Patients

**Researcher:** Caroline Calkin

**Collaborators:** Dr Claire McKie, Dr Forbes McGain and Vanessa Carter

The aim of this project was to determine if there had been a statistically significant reduction in the median duration of fasting prior to theatre in orthopaedic and orthogeriatric unit patients, following the implementation of the Western Health fasting procedure. This project will also assist in determining if there has been an improvement in fasting practices in high risk units, where patients can be fasted multiple times, since the initiation of the Western Health fasting procedure in 2014. We observed a median reduction in preoperative fasting from 10 to 7 hours ( $p < 0.001$ ) post-implementation of the Western Health fasting procedure.

### Implementation of the Western Health Fasting Procedure in the Plastics Unit

**Researcher:** Sharon Er

**Collaborators:** Wai-Ting Choi, Dr Forbes McGain and Caroline Calkin

This project monitored the implementation of the Western Health fasting procedure in the plastics unit, with the aim of increasing compliance for all patients requiring anaesthesia. A baseline audit was completed prior to implementation of the fasting procedure. A repeat audit was

conducted post-implementation to determine if the average duration of preoperative fasting had reduced in the plastic unit. The study found a median reduction in preoperative fasting from 9 to 6 hours post-implementation of the Western Health fasting procedure.

### Malnutrition in Victorian Cancer Services

**Researchers:** Kathryn Pierce and Hollie Bevans

**Collaborators:** Belinda Steer (Project Lead, PMCC on Project 1) and Jane Stewart (Project Lead, Alfred Health on Project 2)

This initiative comprised of two distinct projects:

1. Establish Sustainable Methodology for Repeat Cancer Malnutrition Point Prevalence Survey (PPS).

Over 1500 patients receiving cancer treatments at 12 Victorian hospitals, with 135 attending from Western Health, were screened for malnutrition.

2. Improve Methods for Malnutrition Identification in Culturally and Linguistically Diverse (CALD) Patients

This project identified that practices relating to malnutrition screening are suboptimal in CALD patients. Dietitian respondents perceived that malnutrition screening is completed routinely in only one third (31%) of CALD patients. For those patients who are screened, all respondents report using an interpreter for less than 25% of the time. Meanwhile, the majority (85%) of respondents reported using a family member most (>75%) of the time.

### Evaluating Volunteer Meal Assistance Program

**Researcher:** Aranka Nenov

**Collaborators:** Kathryn Pierce, Allison Lauder, Vanessa Carter and Hollie Bevans

The goal of this study was to determine whether the Volunteer Meal Assistance Program (VMAP) has improved the level of assistance provided and energy and protein intake of the midday meal. It was found that this program, together with others such as the Red Dome and Lunch in the Dining Room initiative, can help manage malnutrition at Western Health.

### Nursing Care of Jejunostomy Feeding Tubes

**Researcher:** Irene Defteros

**Collaborators:** Linda Pocock, Regina Munieri, Rhiannon Whaites and Vanessa Carter

This study will review current nursing knowledge, attitudes and confidence relating to jejunostomy feeding tube management on the surgical ward. Jejunostomy feeding tubes are complex to manage, and increasing numbers are being seen on the ward. Issues have been raised regarding the care of these tubes as no training has been undertaken by nursing staff. The results will be used to guide future education strategies.



## Allied Health and Community Services

# Occupational Therapy



*Nurse Carol Perich in a dance activity with patients.*

The Occupational Therapy Department is committed to providing an excellent occupation-focused, evidence-based service to Western Health clients. In 2016 a total of 21 research projects were commenced or completed, overseen and supported by an active leadership committee.

Projects have aimed to promote improved care for patients by evaluating service delivery models and ensuring implementation of evidence-informed practice. An increased focus on consumer engagement has seen the implementation of a strategy to ensure quality and research activities are informed by consumer feedback.

The Occupational Therapy department values the opportunity to participate in knowledge exchange with the wider profession, as demonstrated by delivery of 12 verbal and three poster presentations at professional conferences. Three articles were also accepted for publication.

**In 2016 a total of 21 research projects were commenced or completed, overseen and supported by an active leadership committee.**



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## Our Research

### Use of Smart Technology Apps for Stroke Clients with Memory Impairment – A Pilot Study

**Researchers:** Marlies Wanasili, Anne Vu and Kate Cranwell

**Collaborator:** Dr Chris Barr (Flinders University)

This study aims to determine the feasibility of using smart apps as a rehabilitation tool for memory impairment post stroke. More specifically, it will determine whether remediation of memory impairment is possible utilising these apps. Additionally, it will explore whether improvements in memory function can transfer into daily occupations.

### The Experiences of an Occupational Therapy Leadership Group in Public Health Practice: A Preliminary Study

**Researchers:** Susan Giles and Kate Cranwell

**Collaborators:** Danielle Hitch (Deakin University, Melbourne Health), Kate Bolton, Kate Lhuede and Robyn Low (Melbourne Health)

The objective of this pilot project is to collect the perspectives of occupational therapists in Western Health regarding occupational therapy leadership. The benefit of this project will be to expand on the current evidence base regarding the importance of leadership considerations for occupational therapists in public health practice. This project will inform the Western Health occupational therapy workforce plan in 2016–2018.

### Evaluating the Effectiveness of a Strategy to Support Meaningful Participation of Occupational Therapy Consumers in Service Provision and Quality Improvement

**Researchers:** Kate Cranwell, Jessica Toohey and Tory Head

This study aims to evaluate the effectiveness of a strategy to support sustainable and meaningful participation of occupational therapy consumers in service provision and quality improvement. The increased participation of consumers will contribute to delivering an improved patient experience of the occupational therapy service, increased awareness and understanding of the importance of consumer engagement among clinicians, and provide evidence of Western Health's commitment to the Australian Commission on Safety and Quality in Health Care standard on partnering with consumers.

### Orthogeriatric/Subacute (OGS) Occupational Therapy Service Review

**Researchers:** Matthew Thorpe and Renee Gill

The aim of this project is to review the occupational therapy service provision to the OGS patient population who present to ward 3A/3B at Western Health's Footscray site. Benefits of this project include improved efficiency and effectiveness of occupational therapy service delivery to orthogeriatric patients at Footscray, supporting the provision of best care.

### An Exploratory Study into Models of Occupational Therapy in Orthopaedic Pre-Admission Clinic Service Delivery

**Researchers:** Kate Cranwell, Belinda Woods and Bradley Wilson

This research aims to determine the most effective model for occupational therapy service delivery within the pre-admission clinic setting at Western Health. Secondary aims include the comparison of phone versus face-to-face service delivery, and the exploration of occupational therapy clinicians' perceptions of the barriers and enablers to service delivery. This research will contribute to the delivery of best care to patients by ensuring the most effective and efficient model of occupational therapy service delivery in pre-admission clinic.

## Allied Health and Community Services

# Physiotherapy

Our research program is diverse, occurring across the healthcare spectrum, from acute to community care. The unifying focus of our research is to improve patient-centred outcomes and restore health-related quality of life. These projects include a focus on people with community-acquired pneumonia, chronic respiratory disease, stroke survivors, abdominal surgery patients, survivors of intensive care, elderly people with lower limb fracture, children with developmental hip dysplasia, prenatal women, and men following urological surgery.

Almost all of our research projects adopt an inter-professional approach. We have formed strong collaborative relationships with our Medical, Nursing and Allied Health colleagues at Western Health and local academic partners to support high-calibre research. We also invest in national and international collaborations. Our department is competitive in attracting national and international

funding. We received a \$300,000 grant from Australia's HCF Research Foundation to increase adherence to evidence-based practice for patients admitted with community-acquired pneumonia. We were also successful in securing a \$50,000 grant from the US-based Society of Critical Care Medicine's THRIVE initiative to develop a peer support program for survivors of critical care. Western Health is the first Asia-Pacific site to join this international collaboration.

Our research has been disseminated in high-impact journals, including *Critical Care Medicine*, *Annals of the American Thoracic Society*, *Trials*, *Physical Therapy* and *Journal of Physiotherapy*. A highlight of the year was the number of grants and awards our department received at Western Health Research Week, including Best Poster Presentation and Best Allied Health Podium Presentation. We had a 100% success rate in our grant applications, with three grants awarded to our department.

### Our Research

#### Optimal Timeframe to Implement Pulmonary Rehabilitation for People with Chronic Obstructive Pulmonary Disease (COPD)

**Researcher:** Dr Clarice Tang

**Collaborators:** A/Prof Anne Marie Southcott, Dr Lizzie Skinner, Kathryn Barker (Latrobe University) and A/Prof Felicity Blackstock (University of Western Sydney)

This pilot study aims to investigate the optimal timeframe to implement pulmonary rehabilitation for people with COPD so as to ensure increased participation and completion rates in pulmonary rehabilitation. This study was awarded a Western Health research grant (\$20000) in 2015 with work carried out in 2016. Identifying the optimal timeframe of implementing pulmonary rehabilitation for people with COPD enables clinicians to encourage patients to participate and complete pulmonary rehabilitation at the right time. This will in turn optimise the benefits of this highly effective evidence-based intervention.



Physiotherapist Erin Bicknell with patient Oliver.



**We had a 100% success rate in our grant applications, with three grants awarded to our department.**

### **PAIVE – Preventing Atrophy in Immobile Vulnerable Elderly**

**Researchers:** Lucy Troup and Kelly Fleury

**Collaborators:** Dr Kimberley Haines, Prof Gustavo Duque and Rita Kinsella

This project aims to establish whether a high-dose exercise program or use of Neuro Muscular Electrical Stimulation is more effective in maintaining quadriceps strength and function, compared to a low-dose exercise program (control) during the No Weight Bearing (NWB) period in the elderly, cognitively intact, inpatient population. There is no current evidence to guide recommendations of frequency and type of exercise required to achieve optimal outcomes for these patients.

Optimal care of this patient cohort is vital to minimise length of stay, which aligns with organisational priorities. The results of this study will ultimately inform and guide our physiotherapy practice at Western Health and beyond. The Physiotherapy Department is collaborating with the Australian Institute of Musculoskeletal Science (AIMSS) and a high-risk ethics application is being prepared for submission in March.

### **IMPROViG Outcomes in Community-Acquired Pneumonia (IMPROVE-GAP)**

**Researchers:** Prof Edward Janus, A/Prof Harin Karunajeewa, Melanie Lloyd, Dr Elizabeth Skinner, Prof Anne-Maree Kelly, Melina Shackell, Dr Clarice Tang, Stephanie Lowe, Dr Parul Bali and Dr Soe Ko Ko

**Collaborators:** Terry Haines (Monash University) and Amalia Karahalios (University of Melbourne)

This study aims to improve evidence-based clinical management of community-acquired pneumonia within the General Medicine units, combining best-practice medical, nutrition and physiotherapy interventions. Routine implementation of evidence-based interventions has the potential to accelerate time to recovery, and reduce hospital length-of-stay and readmissions. Recruitment of a target 1000 patients is currently underway.

### **icuRESOLVE – icu Recovery Solutions Co-Designed with Survivors**

**Researchers:** Dr Kimberley Haines, Belinda MacLeod-Smith, Clare Holdsworth, Kate Cranwell, Grey Searle, Prof Bodil Rasmussen, Dr Elizabeth Skinner, Samantha Bates, A/Prof Craig French and A/Prof Lynne Maher

**Collaborators:** The Society of Critical Care Medicine's THRIVE Peer Support Collaborative

The aim of this project is to co-design a peer support model with survivors of critical care and staff, then test the efficacy of this model in reducing negative psychological outcomes (anxiety, depression and PTSD) and improving positive psychological outcomes (social support and resilience) in patients and families. This world-first research will evaluate the use of co-design methods in critical care and identify whether a novel approach to improving recovery, via enhanced social support, reduces Post-Intensive Care Syndrome.

### **Does a Preoperative Functional Pelvic Floor Exercise Program Provide Improved Post-Operative Urinary Incontinence Outcomes when Compared with Standard Strength Training in Men Undergoing Radical Prostatectomy? A Pilot Study**

**Researchers:** Alesha Sayner, Sarah Davies, Dr Kimberley Haines, Dr Emily Karahalios, Dr Irmina Nahon and Cindy Ogluszko

This randomised controlled pilot study aims to compare two modes of preoperative pelvic floor muscle training (PFMT) in men undergoing radical prostatectomy (RP). It will investigate whether one group demonstrates superior continence outcomes post-operatively. It is also a feasibility study assessing whether a larger scale and multi-site study can be developed in the future.

Low numbers of studies exist in men's health physiotherapy. This study will contribute to ongoing investigation in this field and identify feasible elements for development of a larger study. Identifying management strategies that result in improved post-operative continence outcomes will assist in improving patient quality of life and drive appropriate management pathways for this population.

## Allied Health and Community Services

# Psychology

The major focus of the Psychology Department's research and project activity has been on improving patient outcomes across a number of areas.

The stroke project and associated research focusses on initiating best practice regarding the assessment of cognition and mood for all patients admitted to the rehabilitation ward at Sunshine Hospital. Previously this has not been a standard procedure.

For patients referred to the Chronic pain service, attention is being given to the value and efficacy of the variety of measures used to assess the patients' pain experience. This may lead to an increase in the effectiveness of pain treatment programs.

The assessments and recommendations of paediatric patients referred to the Neuropsychology Service is another focus for the Psychology Department. This project has the potential to improve the quality and value of assessment reports and recommendations, with a likely benefit to child patients and their parents. It promotes better understanding of the needs of the child, with a subsequent improvement in the developmental trajectory for the child.

Streamlining the processes for patients referred to the Adult Neuropsychology Service is another area of focus that will improve efficiency and timeliness of patients being assessed. Frequently, there are multiple sources of referrals for capacity assessments, with a consequent unnecessary use of time responding to and triaging all referral sources. A more efficient streamlined referral process will have positive flow-on effects for patients requiring time-consuming neuropsychological assessments.

The Psychology Department's future research will focus on the longer-term outcomes for stroke patients once mood and cognitive assessments become routine. This will attempt to evaluate the impact on reducing length of stay and improving quality of life, mood and day-to-day function.

The other future objective is developing a robust and meaningful set of processes and measures to evaluate the contribution of a psychological service to patient care and outcomes for both inpatients and outpatients.

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### Our Research

#### Mood and Anxiety Rehabilitation Following Stroke

**Researchers:** Dr Diana Perre and Jacki Carmody

**Collaborator:** Grey Searle

This project will introduce a mood and cognition screen on admission to the rehabilitation ward and determine if mood and anxiety improve with psychology intervention during admission. This will improve the accurate and efficient assessment of the mental health needs of stroke patients.



**The major focus of the Psychology Department's research and project activity has been on improving patient outcomes.**



### **Reviewing the Outcome Measures Used in the Pain Management Program at Western Health Sunshine CBR**

**Researcher:** Dr Kathleen Leach

**Collaborator:** Jazmin Cruz

This study will validate the 6MWT against the previously validated outcome measure questionnaires that measure function as well as beliefs and attitudes towards pain (eg. Brief Pain Inventory, Pain Self-Efficacy Questionnaire, SOPAR and Tampa). It will measure the perceived success of participation in a pain management program from both the participant's and therapist's point of view (eg. Using Global Rating of Change Scale). The responsiveness and sensitivity of the 6MWT in the chronic pain population will also be measured (eg. Compared with other functional scales such as the Human Activity Profile, Patient Specific Functional Scale and/or COPM). The change in the 6MWT will be compared with the other validated outcome measure questionnaires. Finally, the review will explore the use of previously not translated versions of PSEQ and Tampa.

### **Evaluating Paediatric Neuropsychology Reports at Western Health: Towards Best Practice in Written Communication of Findings to Parents**

**Researchers:** Dr Caroline Nadebaum and Dr Diana Perre

**Collaborator:** Ellen Gentle

This initiative will evaluate the current format and content of paediatric neuropsychological reports sent to families and professionals involved in the care of children seen by the CAHS Paediatric Neuropsychology Team. The overall goal is to work towards best practice in written communication with families attending this service and the professionals who work with them. This will assist in delivering an effective service for complex children prior to referral, where usual assessments have been ineffective.

### **Review of the Adult Neuropsychology and SNAP Service Realignment for the Management of Decision Making Capacity Referrals in the Acute Setting**

**Researcher:** Dr Tracey Henderson

**Collaborator:** Dr Diana Perre

This evaluation was completed to gain an understanding of what impact the service realignment had on the referral process for DMC assessments in the acute setting. It was found that the realignment improved efficiency in the use of the neuropsychology service and avoided inappropriate referrals from multiple sources for the same client.

### **Referral to the Neuropsychology Service in Care Coordination (ACAS, HARP and IRS)**

**Researcher:** Kelly Sinclair

**Collaborator:** Tracy Henderson

This project will update all relevant documents used to assist the assessment of decision-making capacity and provide education to ensure that all neuropsychology referrals are appropriate, timely and well informed. This will increase efficiency and appropriate utilisation of the neuropsychology service.

## Allied Health and Community Services

# Social Work

The Social Work Department focuses on the psychosocial needs of patients and their families. Our research agenda reflects the need to better understand the vulnerabilities patients experience which contribute to, or occur as a result of, poor health and wellbeing. Our research has spanned several clinical areas including Women's and Children's, Oncology, Emergency Medicine, Rehabilitation, Aged Care and General Medicine. As we have sought to better understand our patients' needs, we have also explored experiences of our junior workforce. Providing exposure to different clinical areas not only prepares them for their own careers in health social work, but also creates a flexible workforce that can quickly adapt to different work environments.

In 2016, our department has benefited from increased research capacity, evidenced by the high number of low and high-risk research projects currently underway – an increase on 2015 – and the increased confidence with which social workers engage in research design and processes.

The SWIFT project, funded by a Department of Health and Human Services Workforce Grant has enabled Social Work to continue its research on trauma-informed care in the Emergency Department. Western Health is leading this multi-site project with collaborators from Austin Health and Barwon Health. This large project has attracted interest from other health services and has resulted in an evolution in the credentialing requirements of clinical staff in trauma-informed care.

In 2016, we welcomed our first social work PhD student, Vera Steiner, and her important research on end-stage cancer patients and their role as parents of young children. Vera is enrolled at the University of Melbourne and has partnered with Western Health to gain valuable access to our patient cohort.

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### Our Research

#### Understanding the Experiences of Staff Involved in the Development of the Grade 1 Social Work Rotational Model

**Researchers:** Sharon Pinheiro, Helen Do, Jacqui Brown and Dr Anita Morris

This study followed the introduction of a Grade 1 Rotation model of induction into the Social Work Department at Western Health and sought feedback from staff and key stakeholders. This project brought together a group of Social Work staff who were "research naive" and enabled them to upskill in research design, methods and analysis, as well as learn the processes for gaining ethics approval. This research helped improve staff induction through exposure to broader parts of the health service. The research aimed to improve staff understanding and skill in working with patients with a broad range of health and psychosocial issues. It created variety in the workplace and equipped clinicians to better deal with change.

#### Family Meetings: Experiences of Patients, Families and Staff in the Hospital Setting

**Researchers:** Dr Anita Morris and Margaret Bugeja

**Collaborators:** Antony Periera (Honours Student, Victoria University) and Prof Marty Grace (Victoria University)

This project sought to understand how family meetings at Western Health are understood by staff, patients and families, and how they might be improved. The project has been written up as an Honours Thesis and was presented in early 2017 to the Family Meeting Working Group. It will advise on next steps regarding upskilling staff about family meetings and the new Western Health Family Meeting Guidelines. Family meetings are a common part of patient care at Western Health and improving these for patients and families is a priority as patients and carers have reported these meetings can sometimes feel overwhelming and disempowering. Western Health is committed to understanding how we can improve these meetings.

**Our research agenda reflects the need to better understand the vulnerabilities patients experience which contribute to, or occur as a result of, poor health and wellbeing.**

### **The Psychosocial Wellbeing of Parents with Infants in the Special Care Nursery**

**Researchers:** Dr Anita Morris and Karina Rosa

**Collaborators:** Kathryn Elliott (Honours Student, Victoria University), Prof Marty Grace (Victoria University) and Leila Rahimi (Victoria University)

This project aims to provide insights into the experiences of parents whose child is in the Special Care Nursery and will inform the supportive care provided by staff, particularly social workers. The ultimate aim is to provide appropriate support to staff so they can facilitate improved infant/parent bonding and attachment in this environment.

Infants can spend time in the Special Care Nursery following their birth and this is a stressful time for parents as they cope with the realities of a new baby who is unwell and/or has extra care needs. To better support these families, the research will help us to understand their experiences and determine what supports we can put in place to improve the situation for them.

The research was presented at the Health Social Work Directors Group Research Symposium in September 2016 as part of an Honours Thesis and was awarded 'Best Oral Presentation'.

### **The SWIFT Collaboration: Implementing a Social Work Model of Trauma-Informed Care in a Paediatric Setting**

**Researchers:** Dr Anita Morris and Nicole Lind

**Collaborators:** Debra Leahy (Austin Health), Nicole Tokatlian (Austin Health), Karen Todd (Barwon Health), Jacinta Bourke (Barwon Health) and Kristin Diemer (University of Melbourne)

This pilot social work model of care is being trialled in paediatric settings at three Victorian health services: Western Health (lead site), Barwon Health and Austin Health. Adverse childhood experiences can negatively impact on health and mental health. However, due to the hidden nature of trauma symptoms, health professionals may not recognise the trauma and the difficulties patients face in maintaining health and wellbeing. Understanding the trauma context of our patients and families will help us intervene earlier to prevent further trauma and tailor care that is sensitive to their psychosocial needs.

### **Patient-Centred Psychosocial Care for Parents with Incurable End-Stage Cancer: An Exploratory Mixed Methods Study – Phase 1**

**Researchers:** Dr Anita Morris and Dr Adrian Dabscheck

**Collaborators:** Vera Steiner (PhD Student, University of Melbourne), Prof Lynette Joubert (University of Melbourne) and Prof Aron Shlonsky (University of Melbourne)

The overall aim of the three-phased study is to explore and understand in depth the experiences of adult patients diagnosed with any type of incurable end-stage cancer who are parenting one or more children aged 0–18 years and receiving hospital-based treatment. Eighty patient files were audited in Phase 1 and an ethics submission for Phase 2 of the study is about to be completed. This stage will include interviews with patients and their partners. The primary focus is to explore what psychosocial supportive care services patients require to manage their psychosocial stressors and enhance their hospital-based psychosocial supportive care experience. This information will contribute to the development of a targeted evidence-based approach to best meet the psychosocial needs of this vulnerable patient population and to improve their patient experience.

## Allied Health and Community Services

# Speech Pathology and Audiology

In 2016, the Western Health Speech Pathology and Audiology Departments' main research focus was in the area of communication support and access for patients. The Speech Pathology and Audiology teams are experts in the field of communication and view this area of clinical skill as a priority for ensuring our patients and their families receive the best support and intervention to maximise communication during their journey within Western Health and beyond.

### Speech Pathology

The Speech Pathology Department commenced participation in a national randomised controlled trial, Action Success Knowledge (ASK), which is led by the University of Queensland. This trial is exploring the use of brief intervention to support mood and emotional wellbeing in people with post-stroke aphasia. In just nine months, 70 participants have been screened at Western Health and six participants have been recruited to the trial.

In 2016, the Speech Pathology Department, together with Nursing, were successful in obtaining a \$270,000 grant from Better Care

Victoria to expand the CALD Assist Allied Health iPad application used by nursing staff in the inpatient setting. A commercial grade, sustainable iPad application will be developed and evaluated in partnership with the CSIRO to facilitate timely and effective communication between patients from Non-English Speaking Backgrounds (NESB) and nursing staff, when an interpreter is not available.

Alongside these achievements four papers were presented at national conferences.

### Audiology

The Audiology Department has a focus on continual improvement and participation in formal research activities. However, due to limited capacity, this has not been possible in 2016.

Future research objectives include:

- o Upskilling clinicians in research methods, and
- o Partnering with other organisations to enable involvement in research projects

### Our Research

**Reducing the Impact of Aphasia in Stroke Patients and their Caregivers a Year Post-Onset via Brief Early Intervention: A Cluster Randomised Control Trial of the Action Success Knowledge (ASK) Program**

**Researchers:** Sally Howard and Merridy Moore

**Collaborators:** Prof Linda Worrall (University of Queensland) and Prof Tissa Wijeratne

This study aims to decrease the incidence of depressive symptoms for People With Aphasia (PWA) and their caregivers. The study aims to determine whether a tailored, early intervention program such as Action Success Knowledge (ASK) leads to better mood and improved quality of life versus secondary stroke prevention intervention at 12 months post-stroke. The incidence of depression is high after the onset of aphasia following stroke. Research shows that depressive symptoms that do not resolve after 12 months negatively impact the recovery and quality of life of these individuals. This study investigates whether early prevention and treatment of depression helps improve mood.

**The Speech Pathology Department, together with Nursing, were successful in obtaining a \$270,000 grant from Better Care Victoria to expand the CALD Assist Allied Health iPad application.**



**CALD Assist: Designing Technology to Support Timely Nursing Assessments of Culturally and Linguistically Diverse patients (CALD): User Needs Analysis**

**Researchers:** Sally Brinkmann and Courtney Pocock

**Collaborators:** Dr Arlene Wake, A/Prof Denise Patterson, Dr David Silvera-Tawil (CSIRO) and Dr Dana Bradford (CSIRO)

This project will produce a commercial grade, sustainable iPad application to facilitate timely and effective communication between patients from Non-English Speaking Backgrounds (NESB) and nursing staff at Western Health, when an interpreter is not available. It is an expansion of the current Allied Health CALD Assist application and will help patients from NESB backgrounds participate in their healthcare in the absence of interpreters.



*Speech pathologist Courtney Pocock with a patient.*

**Western Health Assessment of Dysarthria (WHAD); Does the Updated Assessment Tool Improve Clinician Ability to Differentially Diagnose Dysarthria and Identify Key Features to Target in Therapy?**

**Researcher:** Michelle Watling

**Collaborator:** Lauren Belleli

This project will help determine whether the updated WHAD had an impact upon clinicians' perceived ability to differentially diagnose the dysarthria subtypes, identify the key features of a patient's speech impacting on intelligibility, and guide dysarthria therapy. This will allow us to provide a comprehensive dysarthria assessment to our patients and plan interventions based on the impairments identified.

**Right-Hemisphere Cognitive-Communication Screen: Does the Newly Developed Screening Tool Meet the Needs of the Western Health Speech Pathology Department in the Screening of Cognitive-Communication Deficits?**

**Researchers:** Sarah Ward and Monique Stojkovski

This project will aim to develop and evaluate a right hemisphere communication screen. There is currently no known screen to suit our needs. This project will ensure we have a tool that efficiently and effectively screens stroke patients for right hemisphere communication and cognition changes and assist in the development of appropriate intervention plans.

**Parent Play Resource**

**Researcher:** Alice de Groot

**Collaborators:** Rachel Smith, Ruth Taylor and Lebe Malkoun

The goal of this quality activity is to develop a culturally and linguistically appropriate, parent-friendly play resource that enables families to play with their children at a developmentally appropriate level.

A portrait of Prof Gustavo Duque, the Western Health Chair of Medicine and AIMSS Director, is shown in the background, overlaid with a blue gradient. He is wearing a dark suit, a light-colored shirt, and a patterned tie.

# Australian Institute For Musculoskeletal Science (AIMSS)

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## Our Research Output

**26**

Projects

**46**

Publications

**32**

Presentations

**1**

Book

**6**

Chapters

*Western Health Chair of Medicine and AIMSS Director Prof Gustavo Duque.*

## Institute Director

**Prof Gustavo Duque**

After a significant period of low activity, the Australian Institute for Musculoskeletal Science (AIMSS) was re-structured and re-activated in 2016. With strong support from its three stakeholders (University of Melbourne, Victoria University and Western Health), AIMSS developed several major strategies to attract new membership, optimise the use of the facilities at WCHRE, increase our supporting personnel and provide our members with very attractive opportunities to improve the quantity and quality of their research.

Twelve research programs were created, ranging from basic sciences to population health (translational research), based on the Institute's founding principle of "from bench to community and back". Program Directors, recruited from several major academic departments and clinical units at Western Health, are now in charge of promoting and facilitating research in their respective areas.

To increase our members' productivity, AIMSS has implemented a new strategy known as GRASP (Grants, Students and Publications). With this strategy in mind, our 45 members have applied to multiple sources of funding, received direct funding from AIMSS in the form of internal seed grants, and optimised the use of their research funds by getting easier access to our local infrastructure, as well as resources available at our partner institutes nationally and internationally.

AIMSS has also implemented an active recruitment strategy. We re-opened our positions for UROP students (BioMedVic) and recruited a high number of Honours students. An unprecedented number of PhD and Master students joined our Institute in 2016, a number that is expected to increase in 2017. Finally, in terms of publications,

## Research Staff

**20 researchers and 18 students**

standardisation of institutional acknowledgement for AIMSS has demonstrated a high level of productivity and collaboration amongst our members.

In 2017, AIMSS will focus on the GRASP initiative. In addition, international collaborations and links with other research institutes and organisations will be strengthened. We also expect to attract more students via our university partners. Funding programs such as seed grants, travel grants and scholarships will also be increased.

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## Our Research

### **Circulating Osteoprogenitors (COP) Study**

**Researchers:** Prof Gustavo Duque, Ahmed Al Saedi, Rita Kinsella and Stephen Phu

**Collaborator:** Prof Robert Pignolo (Mayo Clinic)

This project aims to identify a new biomarker for frailty and disability in older persons. The cross-sectional study has been completed and a longitudinal study is expected to commence in September 2017.

### **Development of New Therapies to Muscle Dystrophy**

**Researchers:** Dr Emma Rybalka and Prof Alan Hayes

This study is a preclinical validation of new potential compounds for treating muscle dystrophy.

### **The Occupation, Inflammation and Musculoskeletal Decline Pooled Cohort Collaboration**

**Researchers:** Dr Sharon Brennan-Olsen and Dr David Scott

**Collaborator:** Prof Kerrie Sanders (Australian Catholic University)

This project will provide novel and internationally relevant insights into the causal pathways underpinning the social gradient of musculoskeletal decline using a life-course approach. It has utility for targeting intervention in the clinic and/or workplace.

### **Inhibitors of Bone Metastasis in Breast Cancer**

**Researchers:** A/Prof John Price and Joseph Polidano

This project evaluates the effect of different compounds on the number and invasiveness of breast cancer metastasis in bone. The project includes in vitro and in vivo pharmacological studies.

### **Effect of Parathyroidectomy on Frailty – The FRailPATHY Study**

**Researchers:** Rita Kinsella, A/Prof Shane Hamblin, Dr Vivian Grill, Prof Gustavo Duque and Bill Fleming

**Collaborator:** Dr Pushpa Suiyiarachchi (University of Melbourne)

This study looks at the effect of parathyroidectomy on the clinical features of frailty in patients 65 and older. The working hypothesis is that high levels of PTH affect muscle function and predispose patients to frailty and disability.

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## Our Grants and Awards

All research grants are held by our respective AIMSS Institute stakeholders and members.





# Anaesthesia and Pain Management

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## Our Research Output

**19**

Projects

**14**

Publications

**5**

Presentations

*Anaesthetist Dr Nicole Sheridan.*



## Head of Department

Dr Rick Horton

## Research Staff

5 researchers

The Department of Anaesthesia and Pain Medicine broadened its research scope in 2016 to include paediatric. Developing our research capabilities in this area aligns well with current Western Health priorities, with the planning and preparation for the Joan Kirner Hospital for Women and Children well underway. Another area of focus is the Maxigesic® PK-PD Study, where Western Health has been able to make a strong contribution to the recruitment of participants for this multi-centre evaluation of a new combination analgesic agent for use in this clinical setting. This work will assist paediatric ENT service at Sunshine Hospital, which sees many children with either obstructed breathing or recurrent tonsillitis who require adenotonsillectomy.

Other research priorities in 2016 included ongoing work looking at the role of simulation in evaluating non-technical skills in junior doctors, with a successful study day in August for the SyNAPTIC Study. This research aims to look at the feasibility of incorporating alternative selection methods alongside traditional interviews in order to ascertain junior doctor suitability for anaesthesia training. Our department also continued its substantial contributions to multi-centre international investigator-initiated studies, answering important questions about how we manage patients in the perioperative period. An example is the RELIEF study, a clinical trial looking at fluid management during and following major surgery.

### Our Research

**Maxigesic® PK/PD Study. A Randomised, Single-Blind, Parallel Group Comparison of the Pharmacokinetic Profiles, Dose Response, Analgesic Effectiveness and Safety of a High and Low Dose of a Paracetamol and Ibuprofen Fixed-Dose Combination in Children Undergoing Tonsillectomy with or without Adenoidectomy**

**Researchers:** Dr David Bramley and Dr Simon Chong

The trial aims to assess the effectiveness and safety of two different dose regimens of a fixed dose paracetamol and ibuprofen combination, Maxigesic® oral suspension, in children between 2–12 years undergoing tonsillectomy (with or without adenoidectomy). Overall recruitment is projected for 200 participants. Western Health started recruitment on 1 August 2016 and to date have enrolled 13 participants. We know that following tonsillectomy there is a very high rate of children re-presenting to healthcare providers, often due to problems with pain. This study will improve our understanding of the effectiveness and safety of a new combination analgesic preparation in the setting of paediatric tonsillectomy. An effective fixed dose combination analgesic containing 500 mg paracetamol and 150 mg ibuprofen in a tablet formulation (Maxigesic®) given as one to two tablets at six-hourly intervals, has been developed for use in adults. In children, the use of paracetamol and ibuprofen in combination is already well

established, but this has been traditionally achieved by dosing separately using individual syrup preparations. This practice is undesirable due to the potential for dose confusion. The development of a fixed dose combination for children based upon the already developed adult fixed dose combination would be clinically useful.

**SimulationN And Personality Testing in Anaesthesia Trainee Choice (SyNAPTIC)**

**Researchers:** Dr Elizabeth Hessian, Dr Adriano Cocciante, Dr Martin Nguyen, Dr Candida Marane, Dr John Ozcan, Dr Anita Panayiotou, Dr Emily Karahalios, Dr Lahiru Amaratunge and Dr Navroop Johal

**Collaborators:** Dr John Morris, Dr Andrew MacComick, Dr Janette Wright (Royal Melbourne Hospital) and Dr Damian Castenelli (Monash University)

This study examined the feasibility of incorporating a multi-station selection process, including assessment of simulation performance, into the selection of junior doctors for the Anaesthesia Training Program. It is crucial that the junior doctors most suited to anaesthesia training are selected into the program. Although traditional selection techniques offer valuable insights into applicant suitability, additional selection modalities may add useful information. This study further extended work done in the STRICT study conducted in 2015, looking into methods of evaluating non-technical skills and suitability of candidates for anaesthesia training.

# Anaesthesia and Pain Management

## continued

### **A Pilot Study to Investigate Post-Operative Oxygen Consumption (POpOC) after Colorectal Surgery Requiring Bowel Resection**

Researchers: Dr Hugh Taylor, Dr Charlie Willmott, Dr David Bramley and Dr Bob Smith

The POpOC study evaluated patient oxygen consumption after major colorectal surgery. Although this study was designed primarily as a pilot feasibility study, it produced an interesting and quite unexpected finding – the absence of a marked increase in O<sub>2</sub> consumption post-operatively. This was a very different finding to that of similar research in the 1980s, which showed a 44% increase in oxygen (O<sub>2</sub>) consumption following colorectal surgery. The findings of our study may reflect improvements in perioperative care and surgical techniques in the modern era. Western Health has a busy colorectal surgical unit, and this study will help us better understand the metabolic impact of major surgery, a factor that contributes to the capability for patients to recover from surgery.

### **Restrictive versus Liberal Fluid Therapy in Major Abdominal Surgery (RELIEF)**

**Researchers:** Dr David Bramley and Dr Forbes McGain

RELIEF is a multi-centre, international study of 3000 patients aiming to answer the question of whether a liberal or restrictive fluid regimen is more advantageous to survival and recovery from surgery. Recruitment was completed in September 2016. Western Health was one of the top 10 recruiting sites, with 120 patients participating. As part of usual anaesthetic care, patients undergoing major abdominal surgery receive intravenous fluids. For decades, debate has raged in the literature as to whether “wet” or “dry” is better for these patients. Potential complications of extremes of fluid administration include acute renal impairment, acute pulmonary oedema, and tissue oedema leading to wound and anastomotic dehiscence.

**Acknowledgement:** Australian and New Zealand College of Anaesthetists Clinical Trials Network (CTN), Australian and New Zealand Intensive Care Society Clinical Trials Group (ANZICS CTG), Monash University.

### **Environmental and Financial Footprint of Anaesthetic Equipment**

**Researchers:** Dr Forbes McGain, Prof David Story, Dr Tony Lim and Scott McAlister

The aim of this study was to determine the financial and environmental costs associated with using reusable or single use anaesthetic equipment. A number of anaesthetic scenarios were examined, considering the use of equipment such as reusable and disposable anaesthetic breathing circuits, face masks, Proseal LMAs, and laryngoscope blades. As is the case regarding surgical equipment, there are few published studies comparing the financial and environmental impact of using reusable versus single use anaesthesia equipment. This study showed that using reusable anaesthetic equipment resulted in considerable cost savings, but increased the carbon footprint of our six-operating theatre hospital.

**The Department of Anaesthesia and Pain Medicine broadened its research scope in 2016 to include paediatrics.**



# Cancer in Primary Care

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## Our Research Output

**15**

Projects

**15**

Publications

**21**

Presentations

# Cancer in Primary Care

The Cancer in Primary Care Research Group covers the role of primary care across the cancer continuum. This includes studies on cancer screening, cancer diagnosis and survivorship care. We are interested in the application of risk stratification and risk assessment tools to support more tailored and specific care across the cancer continuum. For example, our work in colorectal cancer screening, as well as the implementation of fast-track pathways for suspected cancer using risk assessment tools in general practice. Our work also examines potential causes of poorer cancer outcomes in specific populations, including rural and Culturally and Linguistically Diverse (CALD) communities.

In 2016, we published the results of the ProCare trial, testing a model of shared care for men with prostate cancer, and are developing similar models for other common cancers, such as the SCORE Trial for colorectal cancer shared care, led by A/Prof Michael Jefford.

We are a highly collaborative group and have formed strong collaborations with several local, national and international research groups who share our interests in primary care oncology. This is supported through the Primary Care Collaborative Cancer Clinical Trials Group, also known as PC4, of which Prof Jon Emery is the Director. Prof Emery was part of the international team which received the inaugural Cancer Research UK Catalyst Award in 2016. This £5 million five-year grant supports international collaborative research on early cancer diagnosis in primary care. This grant is part of a long-standing program of collaborative research with the University of Cambridge primary care cancer research group, led by Dr Fiona Walter.

## Our Research

### **The CRISP Trial: an RCT of a Risk Assessment and Decision Support Tool for Stratified Colorectal Cancer Screening in Primary Care**

**Researchers:** Jon Emery, Jenny Walker, Sibel Saya, Jasmeen Oberoi, Kristi Miller and Marie Pirotta.

**Collaborators:** Mark Jenkins, Finlay Macrae, Ingrid Winship, Lyndal Trevena, Fiona Walter and Alex Boussioutas

As part of our NHMRC Centre for Research Excellence on optimising colorectal cancer screening, we have received funding for a trial of a novel electronic colorectal cancer risk assessment tool in general practice. This four-year trial will test the effect of a nurse-led consultation using the tool on risk-appropriate colorectal cancer screening.

As part of this program we are conducting studies on communicating risk and the harms and benefits of various preventive strategies for colorectal and breast cancer (the CRISP-Q and BRISK-Q studies). We are also testing tools to collect information about risk factors for melanoma using iPads in general practice waiting rooms (the Melatools-Q study).

### **Implementation and Evaluation of the Rapid Access GI Endoscopy (RAGE) Pathway**

**Researcher:** Jon Emery

**Collaborators:** A/Prof Alan Moss, Cancer Council Victoria, South West Melbourne and Macedon Ranges and North Western Melbourne Medicare Locals, and North Western Melbourne Primary Health Network

This evaluation examined the impact of implementing the RAGE pathway to improve access to gastrointestinal (GI) endoscopy for those with suspected cancer. We were able to show improvements in the quality of GP referrals and selection of patients referred for endoscopy, as well as shorter waiting times for patients referred via the RAGE pathway. This project received the Premier's Public Healthcare Award for Excellence in Cancer Care. It has also informed a new project relating to the implementation of the cancer Optimal Care Pathways, the I-PACED project.

### **Implementing Pathways for Cancer Early Diagnosis (The I-PACED Project)**

**Researcher:** Jon Emery

**Collaborators:** Anna Boltong, Amber Kelaart, Natalie Appleby, Cancer Council Victoria, North Western Melbourne Primary Health Network and Western Victoria Primary Health Network

Building on the findings from the RAGE implementation project, we have been funded to support the implementation of the Optimal Care Pathways for lung and colorectal cancer. This uses a similar academic detailing model, offering educational visits delivered by Cancer Council Victoria nurse educators, to over 500 general practices in the North Western Melbourne Primary Health Network. We aim to support the use of symptom risk assessment tools and implement preferred referral pathways for patients with suspected cancer. In addition, the project will support practices in delivering cancer prevention and screening and promote stronger links with the Cancer Council Victoria information and support services.



## Head of Department

Prof Jane Gunn

## Research Staff

12 researchers and 8 students

### Audits of Cancer Diagnostic Pathways

**Researcher:** Jon Emery

**Collaborators:** Dr Sally Greenfield, Dr Karen Winter, Ilana Hornung and Ian Faragher

Two clinical audits were completed in 2016:

1. An audit of all patients attending Western Health Emergency Departments who are diagnosed with a new cancer within the subsequent two months, and
2. An audit of diagnostic pathways of all patients with colorectal cancer treated at Western Health between 2013–2014

This work is informing the development of cancer diagnostic pathways at Western Health.

### Cancer Diagnosis in Vietnamese Communities

**Researchers:** Jon Emery, Sharon Licqurish, Mary Huynh

**Collaborator:** Cancer Council Victoria

We continue our work exploring cancer symptom awareness and patient experiences preceding a cancer diagnosis in Vietnamese communities. Specifically, our work includes:

1. A mixed-methods study of diagnostic pathways in Vietnamese patients at Western Health diagnosed with breast, lung or bowel cancer

2. Population surveys of cancer awareness and the barriers to help-seeking in people with symptoms of cancer, and
3. Development of Vietnamese culturally specific cancer awareness campaign materials to promote earlier presentation to healthcare

### Linking VCCC and General Practice Data to Explore the Management of Cancer in Primary Care Researcher: Jon Emery

**Collaborators:** Meredith Leyton, Dougie Boyle, Jim Bishop and Maureen Turner

During 2016 we continued to make progress linking general practice data with data from the VCCC hospitals. As an initial proof-of-principle, we are linking data from the Victorian Cancer Registry, Western Health, Melbourne Health and general practice NPS Medicine Insight data. This will allow us to examine patterns and causes of diagnostic delay in cancer and the involvement of primary care during and after cancer treatment. This work forms part of a larger initiative to develop a VCCC Cancer Health Data Platform to support health services research across the partnership.

## Our Grants and Awards

### NHMRC Project Grant

J Emery, F Macrae, L Trevena et al. The CRISP Trial: an RCT of Risk Assessment and Decision Support to Implement Risk-Stratified Colorectal Cancer Screening in Primary Care. National Health and Medical Research Council, \$936,640.80 (2016).

### Cancer Research UK Catalyst Grant

F Walter, W Hamilton, R Neal, Y Lyratzopoulos, J Emery, H Singh and M Thompson. CanTest – Detecting Cancer in Primary Care: A Paradigm Shift for Cancer Diagnosis. Cancer Research UK, £5,000,000 (2016).

### Victorian Cancer Agency

J Emery, M Jenkins, F Macrae et al. The CRISP Trial: A Phase 2 RCT of a Colorectal Cancer Risk Assessment Tool in Primary Care. Victorian Cancer Agency, \$300,000 (2016).

### Department of Health and Human Services Victoria

J Emery and A Boltong. Implementation of the Optimal Care Pathways. Department of Human Services, \$155,000 (2016).

### Premier's Public Healthcare Award for Excellence in Cancer Care

Western Health and University of Melbourne. Department of Premier and Cabinet (2016).



# Cardiology

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## Our Research Output

**13**

Projects

**7**

Presentations

The Cardiology Unit continues to develop its research program in association with key areas of clinical service. This year saw an unprecedented number of abstract presentations at the Cardiac Society of Australia and New Zealand, as well as the inauguration of two prizes for advanced trainee research, including the Robert Newman Prize for best abstract. In terms of investigator-led studies, observational clinical service research in heart failure remains a priority, and two pilot randomised controlled trials commenced. In addition to the link with the University of Melbourne Department of Medicine – Western Precinct, collaborative ties with Victoria University, Monash University and the Baker Institute were strengthened. The Unit looks forward to increased growth and research output in the year to come.

*Cardiology Registrar Dr Michael Seman.*

## Head of Department

A/Prof Nicholas Cox

## Research Staff

4 researchers and 4 students

### Our Research

#### **A Cardiogeriatric Model of Care: Prospective Assessment of a New Method of Care for Elderly Patients Admitted with Heart Failure**

**Researchers:** A/Prof Nicholas Cox and A/Prof Christopher Neil

**Collaborators:** Prof Edward Janus, Dr Claire Long and Dr Sara Vogrin

This study evaluates the impact of a novel model of care, targeting elderly patients with heart failure, examining outcomes at follow-up. This will help us identify problems in our treatment in contrast to other patients within our predominantly adult service system.

#### **Optimising Clinical and Functional Outcomes in Older Adults with CHF Using the Peripheral Remodelling Through Intermittent Muscular Exercise (PRIME) Approach**

**Researchers:** A/Prof Christopher Neil and Catherine Giuliano

**Collaborator:** Prof Jason Allen (Victoria University)

This study will evaluate the feasibility of a more tolerable method of low intensity resistance training for elderly heart failure patients. This study aims to address a gap in the provision of supervised exercise training to frailer patients and may inform future studies.

#### **Effects of Dietary Inorganic Nitrate Supplementation on Exercise Performance in Heart Failure**

**Researcher:** A/Prof Christopher Neil

**Collaborator:** Prof Jason Allen (Victoria University)

This study will evaluate the effects of nitrate-rich beetroot juice in patients with heart failure, exploring reported beneficial effects on exercise capacity and vascular function. This study may lead to a simple dietary means of extending functional capacity in patients with heart failure.

#### **Determinants of Death Associated with Out of Hospital Cardiac Arrest in a Single Tertiary Hospital**

**Researchers:** A/Prof Nicholas Cox, Dr Dion Stub and Dr Justin Cole

This study examines real world predictors of outcome in a large cohort of patients surviving initial cardiac arrest. This work will help us better understand our patients and practice.

#### **Screening for Asymptomatic Coronary Heart Disease in Siblings of Young Myocardial Infarction Patients**

**Researchers:** Dr Nadim Shah, A/Prof Kean Soon and A/Prof Chiew Wong

**Collaborator:** Prof Anne-Maree Kelly

This cross-sectional study looked at siblings of patients with premature coronary events, treated at Western Health, demonstrating the presence of asymptomatic coronary plaque. This study adds to the literature and may inform future studies in the field of CT coronary arteriography.

### Our Grants and Awards

#### **Western Health Research Week Grant**

M Seman. Culturally and Linguistically Diverse Patients Hospitalised with Heart Failure. Outcomes and Cost Analysis. Western Health Research Grant, \$20,000 (2016).

**Vanguard Heart Foundation Grant**  
D Stub. The Role of Coronary Angiography in Cardiac Arrest. Vanguard Heart Foundation, \$75,000 (2016).

**Vanguard Heart Foundation Grant**  
M Wong. The PaceKiD Study: Pacemaker Implantation in Kidney Disease. Vanguard Heart Foundation, \$75,000 (2016).

**Vanguard Heart Foundation Grant**  
C Neil. BEET HF Dietary Inorganic Nitrate in CHF. Vanguard Heart Foundation, \$75,000 (2016).

**Vanguard Heart Foundation Grant**  
C Neil and R Maddison. Improving Self-Management of Heart Failure. Vanguard Heart Foundation, \$75,000 (2016).

#### **Alfred Trust**

W Chan (PI). Doxycycline Use to Protect the Heart and Reduce the Net Injury in STEMI Patients. Alfred Trust, \$95,000 (2016).





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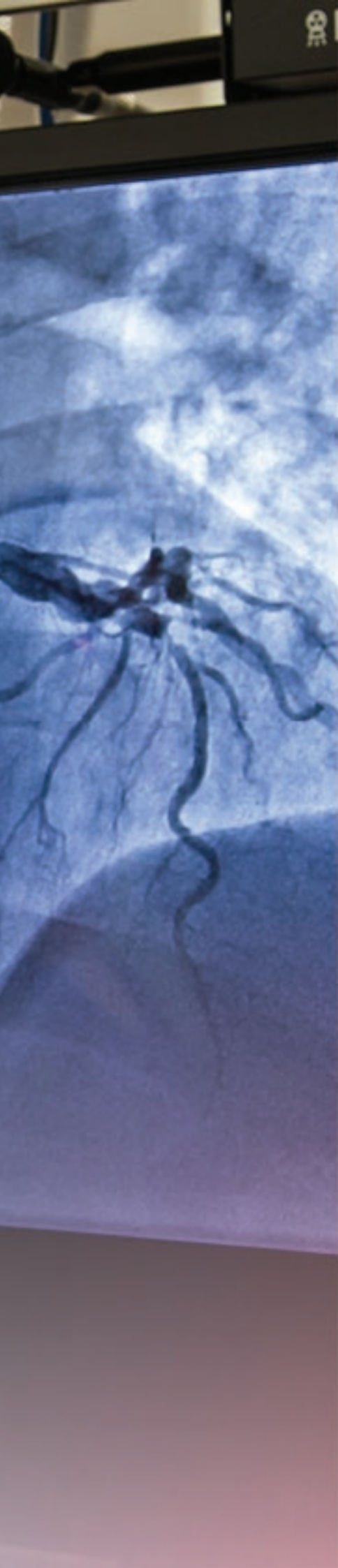
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**Dr Seman is hoping the combined research will ultimately help drive policy change and improve the quality of healthcare provision for minority groups in the community.**





## Dr Michael Seman

### Cardiology Registrar

The western suburbs are home to some of the highest rates of heart failure in Melbourne – and new research has pinpointed the most at-risk group.

Patients with limited English have a 22% chance of representing to hospital with acute heart failure within 180 days of their first episode, as opposed to 15% who are proficient in the language, a Western Health study has found.

The findings emerged from research at Footscray and Sunshine Hospitals in 2016 by Cardiology Registrar Dr Michael Seman, who said the causes needed exploration for the gap to be closed.

Dr Seman said mapping by the Heart Foundation identified the Western Metropolitan Melbourne region as having one of the highest risks for heart failure across the greater Melbourne area. There were more than 1200 admissions at Western Health in 2016, a dramatic increase from 800 in 2013.

Dr Seman studied the most vulnerable cohort of Culturally and Linguistically Diverse (CALD) patients for the study last year, tracking the rate of rehospitalisation and emergency department visitation after discharge, compared to fluent-speaking patients.

He said he first noticed a difference in readmission rates among CALD patients in the Cardio-Geriatric model of care research project, carried out by the cardiology department in 2015.

“The complexity of healthcare is increasing, particularly in the management of chronic diseases such as heart failure – and this is further complicated by communication barriers, cultural differences and poorer health literacy,” he said.

“With this group in particular, the problem has a lot to do with communication between the health care providers and the patient, and the patient’s ability to understand and then self-manage when they return home.”

He said further research was needed and he is now preparing to embark on a state-wide study with more than 30,000 patients, examining the impact of cultural and linguistic diversity on health outcomes of those hospitalised with heart failure.

Dr Seman is hoping the combined research will ultimately help drive policy change and improve the quality of healthcare provision for minority groups in the community.



# Drug Health Services

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## Our Research Output

**3**

Projects

**1**

Publication

**3**

Presentations

*Ruben Ruolle, Acting Director Drug Health Services, Western Health.*

## Head of Department

Robyn Jackson

## Head of Unit, Addiction Medicine

A/Prof Mike McDonough

## Research Staff

1 researcher and 2 students

Drug Health Services incorporates Addiction Medicine and Toxicology Services, which provide medical specialist services to dedicated inpatient beds within Footscray Hospital and also outreach to the Western Community Detoxification Unit co-located at the same campus. The unit also operates outpatient clinics and provides addiction medicine services to the Rural Addiction Medicine Pharmacotherapy Service, which covers over half the population of Victoria. The Service also provides undergraduate and postgraduate medical education, with accreditation for registrar advanced training with RACP, RANZCP and ACEM. We also undertake both research and quality assurance activities.

### Our Research

#### Continuing, Cutting Down or Ceasing Opioids in Chronic Non-Cancer Pain Patients

**Researchers:** A/Prof Mike McDonough and Ross Newman

This low risk research project investigated why some patients decide to cut down or even stop taking opioid analgesics while others continue for long periods, despite mounting evidence of potentially serious opioid-related side effects. The project commenced in 2015, collecting a patient cohort of over 50. In the 2016, as part of continuation of the study, the same cohort was re-interviewed between 6 and 12 months to follow up. Many patients reported prescriber advice as significant in their decision making, suggesting doctor-patient relationships may be important determinants of long-term opioid prescribing. In 2017, a further extension to this project is planned to look more specifically at doctor-patient relationship with regard to opioid prescribing. A paper is drafted for publication.

#### Clinical Audit of IME Reports on an Insurance Cohort Involving Opioids and Chronic Non-Cancer Pain

**Researchers:** A/Prof Mike McDonough and Lewis Murray

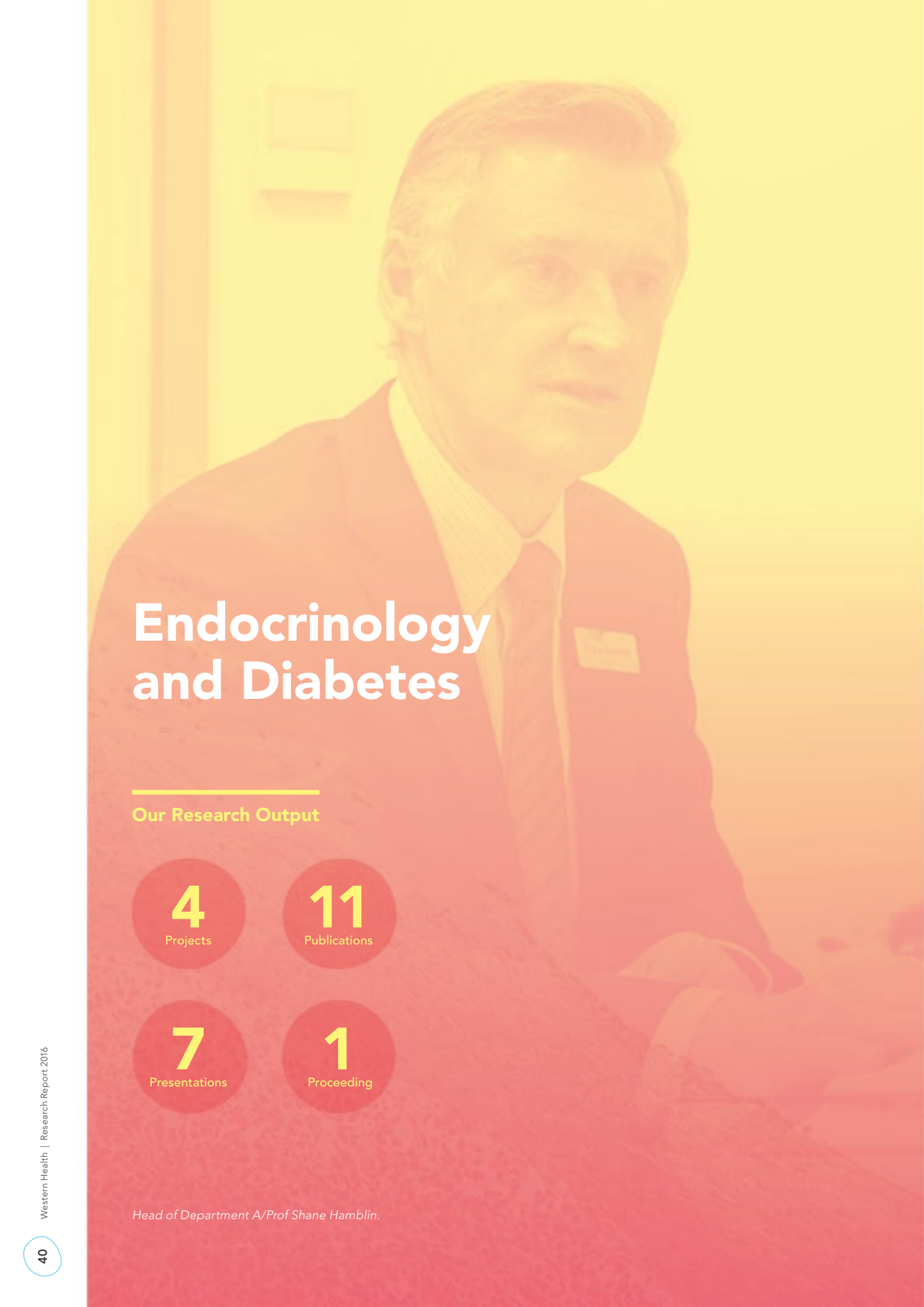
This quality assurance project audited a sample of 100 chronologically selected Independent Medical Examiner reports on accident compensation to the Victorian TAC and WorkCover Accident Insurers, where chronic pain patients were prescribed long term opioid analgesics. The audit found that

most such patients were taking high opioid doses, had prolonged disability and high levels of mental distress. Compared to other published work that describes populations of chronic non-cancer pain patients, this population was significantly different. Likely iatrogenic opioid dependence was a common finding in this population. The audit's findings were prepared as a monograph and provided to the TAC and WorkCover, which gave consent for a paper to be drafted and submitted for publication.

#### Clinical Audit of Cases of Cannabis Hyperemesis/CHS seen at Western Health

**Researcher:** A/Prof Mike McDonough

In this study, a total of twelve cases were identified – four female and eight males – aged between 20–50 years, all cannabis dependent. The results found 10 smoked “bongs”, the average duration of smoking cannabis was approximately eight years, and all had significant psychosocial problems, most of which were related to cannabis withdrawal. Successful treatment followed IV fluids, electrolyte replacement and parenteral Chlorpromazine, Olanzapine or Droperidol. In conclusion, only four of 12 cases were identified having CHS onset following peak use levels, which were mostly related to the phase of cannabis withdrawal.



# Endocrinology and Diabetes

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## Our Research Output

4

Projects

11

Publications

7

Presentations

1

Proceeding

*Head of Department A/Prof Shane Hamblin.*



## Head of Department

A/Prof Shane Hamblin

## Research Staff

5 researchers

The western region of Melbourne has one of the highest rates of diabetes mellitus in the country. One third of all inpatients of Western Health have diabetes, predominantly Type 2. Gestational diabetes is also very common, affecting nearly 20% of all pregnant women treated here. Western Health also cares for many people with Type 1 diabetes and unfortunately every year nearly 100 episodes of life-threatening diabetic ketoacidosis are managed in these patients. Our research activities therefore focus predominantly on diabetes.

Our future research projects (in partnership with North Western Primary Health Network) include:

- o A safe discharge project back to GPs for patients of the Western Health Diabetes Clinic
- o Assessment of the metabolic and bone health effects of Androgen Deprivation therapy in males with prostate cancer, and
- o Investigating the glycaemic impact of glucocorticoid treatment in medical inpatients

### Our Research

#### Psychosocial Factors in Patients Presenting with Diabetic Ketoacidosis

**Researchers:** A/Prof Shane Hamblin, Dr Sylvia Xu, Dr Azni Abdul-Wahab and Cheryl Steele

**Collaborator:** Grey Searle

This project examines the prevalence of depression and diabetes distress, and the social factors such as unemployment prevalence, in patients admitted with life-threatening diabetic ketoacidosis (DKA). By understanding the drivers behind our high rates of DKA we hope to be able to reduce overall presentations of this life-threatening condition.

#### The Effect of Betamethasone on Blood Glucose in Pregnant Women With and Without Gestational Diabetes

**Researchers:** Dr Christopher Yates, Dr Amy Harding, Dr Anna Watts, Dr Ellissa McNamara and Cheryl Steele

Betamethasone is commonly given to pregnant women towards the end of pregnancy to help fetal lung maturation before delivery. However, this drug also elevates maternal blood glucose, which may have deleterious effects on the fetus. This study uses continuous glucose monitoring technology to examine the extent of beta-methasone induced maternal hyperglycaemia and the effect of insulin dosing strategies used in clinical practice. The study aims to develop better insulin dosing strategies to optimise blood glucose control in pregnant women, thereby minimising adverse effects on the baby.

**Western Health also cares for many people with Type 1 diabetes and unfortunately every year nearly 100 episodes of life-threatening diabetic ketoacidosis are managed in these patients.**

A large, semi-transparent portrait of a man in a suit and tie, smiling, serves as the background for the page. The image is tinted with a blue-to-purple gradient.

# Gastroenterology and Endoscopy

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## Our Research Output

**21**

Projects

**13**

Publications

**14**

Presentations

**10**

Proceedings

*Head of Department A/Prof Alan Moss.*

## Head of Department

A/Prof Alan Moss

## Research Staff

4 researchers and 1 student

Seven endoscopy research projects were undertaken during 2016, all of which will have a significant impact on our clinical practice. Active multi-centre research projects include: the multi-centre Australian Colonic Endoscopic Mucosal Resection (ACE) study, the evaluation of bowel preparation in order to optimise views obtained during capsule endoscopy, and the safety and efficacy of hot avulsion compared to argon plasma coagulation in the management of non-lifting polyps and the safety and efficacy of endoscopic polypectomy in the setting of anti-platelet agents such as Clopidogrel (The EPOC Study). A/Prof Alan Moss was co-chair of the European Society of Gastrointestinal Endoscopy (ESGE) polypectomy and EMR guideline committee and was instrumental in the authorship and publication of the ESGE colonic polypectomy and EMR guidelines. In the realm of Endoscopic Retrograde Cholangio Pancreatography (ERCP), a retrospective study of our ERCP practice over four years confirmed that our modern approach to ERCP – including optimising therapeutic indications for ERCP by appropriate non-invasive diagnostic imaging, wire-guided cannulation, rectal indomethacin, peri-procedural intravenous fluids and pancreatic stenting in high-risk cases – resulted in very high success rates and very low rates of adverse events compared to benchmarks.

Six research projects were undertaken in hepatology and Inflammatory Bowel Disease (IBD). Studies were conducted to evaluate the impact of Direct-Acting Antiviral Agents (DAA) on hepatitis, the comparability of non-invasive liver elastography techniques, changes in Fibroscan results following treatment with DAA, and scoring systems that predict outcomes of treatment with Trans-Arterial Chemoembolization (TACE) for hepatocellular carcinoma.

The Department of Gastroenterology actively participated in multiple international pharmaceutical industry-sponsored clinical trials in the fields of IBD and viral hepatitis. These studies have enabled our patients to access modern therapeutic agents that otherwise would not yet be available in Australia.

## Our Research

### Australian Colonic EMR (ACE) Study

**Researchers:** A/Prof Alan Moss and Dr Simon Zanati

All patients referred for Endoscopic Mucosal Resection (EMR) of large or complex colonic polyps were audited for outcomes (with no exclusions), and de-identified data submitted to the Australian Colonic EMR study group database for evaluation of long term outcomes. This project has been ongoing since 2008. Traditionally, large or complex colonic polyps were managed surgically rather than endoscopically. Endoscopic management is associated with reduced morbidity, reduced mortality, reduced cost and shorter admissions. However, outcomes need to be rigorously evaluated. This serves as a quality assurance project, but also allows for study of long term outcomes.

**Seven endoscopy research projects were undertaken during 2016, all of which will have a significant impact on our clinical practice.**

# Gastroenterology and Endoscopy

## continued

### **A Modern Approach to ERCP: A Practice Audit**

**Researchers:** Dr Kumanan Nalankilli, Dr Suthershan Kannuthurai and A/Prof Alan Moss

This study conducted an Endoscopic Retrograde Cholangiopancreatography (ERCP) practice audit. Results were compared with an Australian national survey in order to assess quality of outcomes and review the evidence base underlying modern ERCP practice. Endoscopic retrograde ERCP is technically challenging and complications such as Post-ERCP Pancreatitis (PEP) remain a concern. This study assessed the safety and efficacy of ERCP practice at Western Health. As a result of this study, we found that modern ERCP techniques result in a high rate of successful biliary cannulation (97%) and a very low rate of adverse events such as post-ERCP pancreatitis (0.8%).

### **A Multi-Site Study Reviewing Sessile Serrated Adenoma (SSA) and Conventional Adenoma Detection Rates**

**Researchers:** Dr LiWei Suen, Dr R Prentice, Dr Kumanan Nalankilli and A/Prof Alan Moss

This study aimed to assess the SSA Detection Rate (SSADR) at Western Health across all colonoscopists and all sites and to identify risk factors for high and low detection rates. Sessile Serrated Adenoma are a newly described entity of flat colorectal polyps that are difficult to detect. They are now recognised to contribute to up to one-third of colorectal cancers. An evaluation of

baseline detection rates will inform the planned introduction of targeted educational programs to enhance detection.

### **Treatment of Non-Cirrhotic Hepatitis C Patients in Primary Care Has Only a Modest Impact on Current Hepatitis Clinic Usage**

**Researchers:** Dr Kumanan Nalankilli, Than Huynh, Emma McLaughlin, Marian Croft, Rachel Liddle, E Kathpal, Ian Kronborg, A/Prof Alan Moss and Dr Niranjana Arachchi

This project aimed to characterise the current patient cohort that attends the viral hepatitis clinic at Footscray Hospital. New Direct-Acting Antiviral Agents (DAA) agents for hepatitis C patients are predominantly still accessed via tertiary centres. We found that in the present era of DAA, 37% of all hepatitis C patients in our public hepatitis clinic could be managed in a primary care setting. This corresponds to only 15% of the overall number of patients who are seen at the clinic, due to large numbers of Hepatitis B patients. The data is useful for identifying the proportion of patients who can be treated and discharged back to the community, thus improving the patient load of the hepatitis clinic over the medium term. It also allows for appropriate planning and allocation of resources.

### **Reported Immunisation Rates of Patients with Inflammatory Bowel Disease**

**Researchers:** Dr Yin Hiew Kia, Rebekah Van Leest, Dr Dalijean Sandhu, Dr Shamilah Lachal and Dr Thai Quach

This project evaluated the reported immunisation rates of Inflammatory Bowel Disease (IBD) patients attending the Footscray Hospital IBD clinic. Patients were interviewed about their immunisation status and their medical records were retrospectively examined. Consensus guidelines from the European Crohn's and Colitis Organization (ECCO) and the Australian Inflammatory Bowel Disease Association have recommended routine screening and immunisation of these infections in patients with IBD. This study found that the reported vaccination rates for our cohort of IBD patients is low. There is a need to educate our patients and engage our primary care providers to improve immunisation rates among this vulnerable group of patients. This study has paved the way for a prospective study evaluating specific strategies to improve vaccination rates in IBD patients in the community.

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## Our Awards

### **Western Health Research Week: Best Published Paper Award**

A Moss. Long-Term Adenoma Recurrence Following Wide-Field Endoscopic Mucosal Resection (WF-EMR) for Advanced Colonic Mucosal Neoplasia is Infrequent: Results and Risk Factors in 1000 cases from the Australian Colonic EMR (ACE) study. Western Health (2016).

### **Victorian Public Health Care Award for Excellence in Cancer Care**

A Moss. Rapid Access to Gastrointestinal Endoscopy (RAGE). Government of Victoria (2016).





# General Internal Medicine

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## Our Research Output

3

Projects

9

Publications

8

Presentations

2

Chapters

*Prof Edward Janus, Head of General Internal  
Medicine and A/Prof Harin Karunjeewa*

# General Internal Medicine

We admit over 6000 mostly elderly multi-morbid patients annually. We need to ensure patients reach wards promptly after ED arrival, optimise treatments, minimise unnecessary hospital stays, transition patients to the community efficiently and prevent unnecessary readmissions. We are also aiming to improve the way our system prioritises outcomes related to symptom relief, independent function and quality of life for this group. We believe that applying research methods to evaluating our service performance is vital to addressing this aim.

Where clear evidence for particular treatments exists, we implement them. However, trials are done on highly selected patient populations that are not representative of those we actually treat. Real patients and staff don't behave like those in trials. Therapeutic benefits shown in randomised controlled trials are commonly reduced in real patients. Our research addresses gaps in both treatment and treatment delivery. This is real-world translation, implementation, health service delivery and health-economic research.

We have completed research on length of stay and clinical costs in diabetes and lower limb cellulitis, with high-level publications (including first author publications by our registrars in *JAMA* and the *Journal of Antimicrobial Therapy*) and RACP registrar prizes. We also secured a \$300,000 HCF Research Foundation grant to evaluate a new model of care for managing community-acquired pneumonia – the IMPROVE-GAP trial.

Another major project (RAPT) focused on identifying and following up patients with high readmission risk. We also monitored a multipronged approach for markedly shortening the transition time from arrival in ED to the wards.

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## Our Research

### **Preventing Diabetes in Pregnancy from Progressing to Type 2 Diabetes: Macro-Level System Change in South Australia and Victoria (MAGDA)**

**Researcher:** Prof Edward Janus

**Collaborators:** JA Dunbar, JD Best, R Carter, J Oats, M Ackland and P Ebeling

The first part of the project is an ongoing study using GHRANITE-encrypted linkage technology to analyse multiple Gestational Diabetes Mellitus (GDM) related data sets from hospitals, government and pathology laboratories. This allows a large amount of information to be gathered for an individual while protecting their identity. The individual's condition can then be tracked over time to test if the appropriate interventions are happening. Research on a gestational diabetes register aims to ensure long term follow up and an intervention (MAGDA) to decrease progression of GDM mothers to Type 2 diabetes.

The second component of the project involved the recruitment of 578 subjects for a study comparing lifestyle intervention with usual care. The intervention was

completed in mid-2015, with a large contribution from Western Health. The intervention trial results were published in 2016, showing 10% of pregnancies at Western Health are complicated by gestational diabetes. As well as optimal treatment during pregnancy, follow up is critical to prevent later development of Type 2 diabetes and its complications in these mothers. This process, and effective interventions to prevent later diabetes, have been lacking and this very large project addressed these issues.

### **EPI-FIND – Epigenetic Factors in Diabetes**

**Researcher:** Prof Edward Janus

**Collaborators:** L Ackland (Deakin University), J Dunbar (Deakin University) and JD Best (previously University of Melbourne)

A MAGDA spin-off project identified epigenetic (environmental) effects on gene expression in the development of diabetes during pregnancy. Subjects are drawn from Western Health gestational diabetes and non-gestational diabetes clinics. The pilot study, published in 2016, showed differences between a number of groups. It appears that environmental factors interact with genes to produce adverse effects on both mothers and their babies. For example, malnutrition during pregnancy has long-term health implications for the babies who may develop heart disease and diabetes in adult life. Understanding how this happens will inform strategies to prevent intergenerational transmission of these common diseases.

## Head of Department

Prof Edward Janus

## Research Staff

2 researchers and 9 students

### **False Economies in Home-Based Antibiotic Treatment: A Health-Economic Case Study of Management of Lower-Limb Cellulitis at a Large Metropolitan Health Service**

**Researchers:** K Kameshwar, A Karahalios, E Janus and H Karunajeewa

This is our seminal health systems / health-economic research project. Through this work we have proved we can interrogate the administrative data sources at Western Health to produce high quality published research that has direct relevance to service delivery planning. We hope it will be a platform that will help us leverage dedicated funding and position Western Health as a leader in health services and health-economic research.

Cellulitis is an extremely common and costly condition to manage at Western Health (330 inpatient admissions per year, costing \$1.7 million). Improving efficiency of management will ensure resources are freed up for more effective use. The study results were published in 2015 and we responded to relevant letters to the editor in 2016.

### **IMPROVE-GAP: IMPROVING Evidence-Based Treatment Gaps and Outcomes in Community-Acquired Pneumonia: Standardising Evidence-Based Interventions to Shorten Length of Stay, Reduce Readmissions, Reduce Hospital Costs and Improve Patient-Reported Outcomes**

**Researchers:** E Janus, H Karunajeewa, E Skinner, ML Ong, M Shackell, M Boyd, A Karahalios, AM Kelly and R Harrison

**Collaborator:** T Haines (Monash University)

This is a controlled evaluation, utilising a novel “stepped-wedge” clinical research design, to evaluate a new model of care for managing community-acquired pneumonia (the IMPROVE-GAP trial). IMPROVE-GAP aims to address the gap between evidence (including routine use of steroids and early mobilisation antibiotic stopping rules) and practice. The study began in October 2016 and aims to recruit 800–1000 patients. As of December 2016, 300 patients have been recruited.

Community-acquired pneumonia is the most common and costly condition we treat at Western Health. Improvements in efficiency will pay a large dividend for patient outcomes and resource utilisation. We hope this study will build a platform for further research of acute respiratory infections, facilitate expanded internal and external collaboration, enhance funding applications and see Western Health positioned as a scientific leader in this field.

Other sub-studies have commenced, including patient-reported outcome measures (PROMS).

### **International Statistical Classification of Diseases and Related Health Problems: Coding Underestimates the Incidence and Prevalence of Acute Kidney Injury and Chronic Kidney Disease in General Medical Patients**

**Researchers:** Dr Soe Ko, A/Prof Vicki Levidiotis, A/Prof Craig Nelson, Prof Edward Janus and Dr Kushma Nand

**Collaborator:** Sudharsan Venkatesan

We set out to compare diagnosis of Acute Kidney Injury (AKI) and/or Chronic Kidney Disease (CKD) using International Statistical Classification of Diseases and Related Health Problems (ICD 10), coding with Kidney Disease: Improving Global Outcomes (KDIGO) criteria, to identify the proportion of patients with AKI and/or CKD as per KDIGO criteria, and to evaluate their impact on clinical outcomes.

When the gold-standard KDIGO criteria are used, close to 70% of admissions to General Internal Medicine have kidney injury which may be acute, chronic or both. A review of records shows a substantial number of admissions are missed and not coded, with significant clinical implications for the patient and financial implications for the health service.

## Our Grants

### **Bill and Melinda Gates Grant**

H Karunajeewa (PI), I Mueller and JK Baird. Finding the Best Treatment for Vivax Malaria in the Solomon Islands. Bill and Melinda Gates Foundation, \$1,300,000 (2016–2018).

### **HCF Project Grant**

E Janus, H Karunajeewa, E Skinner, ML Ong, A Karahalios, R Harrison and T Haines. Hospitalisation for Pneumonia in the Elderly: Standardising Evidence-Based Interventions to Shorten Length of Stay, Reduce Readmissions, Reduce Hospital Costs and Improve Patient-Reported Outcomes. HCF, \$300,000 (2016–2017).

## Melanie Lloyd

### Physiotherapist

They make up the biggest group of patients in the busiest wards at most hospitals, but never before have pneumonia patients been the subject of such in-depth scientific scrutiny.

The co-morbidities faced by many patients with Community-Acquired Pneumonia (CAP) – particularly the elderly – mean that they typically, as a cohort, receive less attention from researchers.

However that is changing at Western Health, where a team of specialist clinicians are conducting a large-scale trial designed to improve the management and outcomes of CAP patients.

The 'IMPROVing Evidence-based Treatment Gaps and Outcomes in Community-Acquired Pneumonia' (IMPROVE-GAP) study aims to optimise the care of CAP patients, combining the best evidence-based interventions from the medical, physiotherapy and nutrition specialties.

Physiotherapist Melanie Lloyd is one of eight principal investigators in the study, which is being led by A/Prof Harin Karunajeewa and Prof Edward Janus, Western Health's Director of Research and head of the General Internal Medicine Unit. The other principal investigators are Dr Elizabeth Skinner, Dr Emily Karahalios, Prof Terry Haines, Melina Shackell and Prof Anne-Maree Kelly.

The year-long trial, which has recruited 800 patients from the General Internal Medical units at Footscray and Sunshine hospitals, is one of the biggest ever conducted at Western Health. The results could have far-reaching implications not only for Western Health, but hospitalised pneumonia patients everywhere.

It is hoped that the multi-disciplinary approach will ultimately help generalist clinicians – who are often bombarded with a plethora of guidelines for multiple illnesses – work as a team to provide consistent evidence-based treatment to an important cohort.

"They are the biggest group of patients, with a very common diagnosis, but the complexity of their medical conditions means they are often excluded from research," says Ms Lloyd, who worked as a physiotherapist in Queensland and in the UK before joining Western Health.

Each year, CAP causes an estimated 61,000 hospital admissions in Australia, costing more than \$300 million. At Western Health alone, there are more than 1000 CAP admissions annually.





**The year-long trial, which has recruited 800 patients from the General Internal Medical units at Footscray and Sunshine hospitals, is one of the biggest ever conducted at Western Health.**



# Infectious Diseases

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## Our Research Output

**5**

Projects

**3**

Publications

**3**

Presentations

**1**

Proceeding

## Head of Department

A/Prof Garry Lane

The Infectious Diseases Unit provides clinical services across all Western Health campuses at all times, including contributions to the Infection Prevention Program and Antimicrobial Stewardship Program. Until 2015/16, research was predominantly focused on quality assurance (QA) and entirely related to auditing these clinical services. In 2015/16, the Infectious Disease Unit has for the first time commenced collaborative research as part of a multinational trial (CAMERA2 Study), as well as participation in the Diabetic Foot Study Interest Group (DEFIANZ). These are the first of several collaborative projects under the umbrella of the Australasian Society for Infectious Diseases (ASID) Clinical Research Group. This complements the ongoing QA projects currently held in the Unit and local research undertaken by registrars. The topics chosen for collaborative research, local QA projects and registrar projects are all selected for their direct relevance to patients seeking care through the health service, with improved patient care outcomes the primary objective.

### Our Research

#### **CAMERA2 – Combination Antibiotic Therapy for Methicillin Resistant Staphylococcus Aureus infection – An Investigator-Initiated, Multi-Centre, Parallel Group, Open Labelled Randomized Controlled Trial**

**Researchers:** Dr Stephen Guy and Dr Adrian Tramontana

**Collaborators:** S Tong and J Davis (Menzies School of Health Research)

This study evaluates whether addition of a B-lactam antibiotic improves outcomes in the treatment of MRSA bacteremia. MRSA bacteremia has poorer outcomes compared with “sensitive” Staphylococcal bacteremia.

#### **Delays in Presentation and Diagnosis of Pulmonary Tuberculosis: A Retrospective Study of a Tertiary Health Service in Western Melbourne, 2011–2014**

**Researchers:** Dr E Williams, A/Prof G Lane and Dr S Guy

**Collaborator:** A Cheng (Alfred Health, Monash University)

This project seeks to evaluate reasons why delays between symptom onset and therapy commencing exist for patients with pulmonary Tuberculosis. Early diagnosis and prompt commencement of treatment are important for effective tuberculosis control. Delayed diagnosis may worsen the severity of disease and increase the risk of death.

#### **qSOFA Performance in an Australian Health Service (qSOFAinOz)**

**Researchers:** Dr Christian McGrath and Dr Adrian Tramontana

This study aims to compare the usefulness of qSOFA scores for timely identification of sepsis with that of traditional SIRS criteria. Sepsis is a common presentation at Western Health and has significant morbidity and mortality. Good outcomes depend on timely identification of sepsis and administration of antibiotics.

#### **The Utility of GeneXpert MTB/RIF Assay in the Western Region of Melbourne: The First Three Years**

**Researchers:** Dr Shio Yen Tio, Dr Jenny (Siaw Jin) Wong and Dr Stephen Guy

This study evaluates the sensitivity and specificity of GeneXpert MTB/RIF assay versus smear microscopy with MTB culture, using positive histology as our reference. There has always been a high burden of tuberculosis among populations who seek treatment at Western Health. This study aims to assess the utility of this test in guiding early commencement of TB treatment and appropriate second line TB treatment in patients with positive GeneXpert and rpoB mutation respectively.





# Intensive Care

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## Our Research Output

**17**

Projects

**16**

Publications

**13**

Presentations

*Dr Forbes McGain*



## Head of Department

**A/Prof Craig French**

The Department of Intensive Care conducts clinical research at both Sunshine and Footscray Hospitals. Our research addresses questions of importance to both clinicians and patients, and focuses on studies evaluating patient-centred outcomes: how a patient feels, looks and survives. We are a member of the Australian and New Zealand Intensive Care Society Clinical Trials Group (ANZICS CTG), one of Australia's leading clinical trial networks.

A/Prof Craig French, the Director of Intensive Care, is the current chair.

Many of our current projects are NHMRC funded and ANZICS CTG endorsed. Our research consistently informs our practice by providing high-level evidence that reduces inter-clinician and inter-hospital variation. High profile examples include: the NICE sugar study, which definitively demonstrated that tight glycaemic control, a labour intensive and expensive intervention, leads to patient harm; the CHEST study which demonstrated that an expensive artificial colloid solution increased the number of patients requiring renal replacement therapy; and, the ARISE study which concluded that some invasive and expensive treatments for severe infection did not improve patient outcomes.

## Research Staff

**5 researchers and 1 student**

Two large studies will commence in 2017 at Western Health. The first is PLUS, an evaluation of a balanced electrolyte solution compared with 0.9% Saline. These are two of the most commonly prescribed intravenous solutions used worldwide and this will be the largest study ever to address the relatively simple but unanswered question: is one better than the other? The second project to launch will be SUDDICU, a uniquely designed study using a cluster randomised crossover. This represents a new clinical trial methodology that may redefine how large pragmatic clinical trials are conducted.

In 2016, A/Prof French received the Peter Schiff Award from the Australian and New Zealand Society for Blood Transfusion. This award recognised A/Prof French's research into the nature and roles of blood products and his promotion of their appropriate clinical use leading to better healthcare in Australia.

# Intensive Care

## continued

### Our Research

#### **A Randomised Blinded Placebo Controlled Trial of Hydrocortisone in Critically Ill Patients with Septic Shock (the ADRENAL Study)**

**Researchers:** A/Prof Craig French, Dr John Mulder, Dr Sathyajith Velandy Koottayi, Dr Forbes McGain and Dr Zia Ansari

**Collaborators:** The George Institute for Global Health, ANZICS Clinical Trials Group

Septic shock is a leading cause of mortality in the critically ill. The use of steroids in the treatment of sepsis has been much debated for over 40 years. Previous research has suggested that the use of low dose steroids may have short term benefits in improving the circulation. However, there is no agreement amongst doctors around the world about whether treatment with or without low dose steroids improves the overall mortality. The purpose of this study is to find out whether adult patients admitted to the Intensive Care Unit with septic shock who are given hydrocortisone, compared to placebo, will have an improved rate of survival at 90 days. This study aims to enrol 3800 patients from over 50 international sites. Footscray Hospital have recruited 77 patients, and Sunshine Hospital have 12 patients. This study only has <200 patients to finish recruitment globally.

#### **STandaRd Issue TRAnsfusion versuS Fresher Red Blood Cell Use in intensiVe carE (TRANSFUSE) – A Randomised Controlled Trial**

**Researchers:** A/Prof Craig French, Dr John Mulder, Dr Sathyajith Velandy Koottayi, Dr Forbes McGain and Dr Zia Ansari

**Collaborators:** The ANZIC research centre, ANZICS Clinical Trials Group and Australian Red Cross Blood Service

Once blood is donated it can be stored for up to 42 days, however we do know that changes occur in the blood when it is stored. This is called a storage lesion. It is not known whether these changes are harmful to patients. It is standard practice to always first issue the oldest blood stored in blood bank to minimise the amount that is wasted by reaching its use-by date. This study will determine the effect of transfusing the freshest blood in the inventory compared to transfusing the oldest blood in inventory (current standard of care). We will determine if these two inventory management approaches affect mortality in critically ill patients. Footscray Hospital have recruited 124 patients and Sunshine Hospital have 16 patients recruited so far. Blood transfusion is a very common and potentially life-saving treatment. Hundreds of thousands of Australians and an estimated 16 million persons worldwide receive a blood transfusion each year and about one sixth of these occur in

the ICU. In Australia, almost 800,000 units of blood are required each year to provide Australians with the blood they need. This study will provide critically important information that will help blood banks implement the findings. The results of our study will impact transfusion policy worldwide and could ultimately save many thousands of lives each year.

#### **A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Study to Assess the Safety and Efficacy of ART-123 in Subjects with Severe Sepsis and Coagulopathy**

**Researchers:** A/Prof Craig French, Dr John Mulder, Dr Sathyajith Velandy Koottayi and Dr Forbes McGain

The purpose of this study is to evaluate the safety and efficacy of a human recombinant thrombomodulin (ART-123) compared with placebo in participants with Severe Sepsis and Coagulopathy. Approximately 800 participants will be enrolled into the study from 240 sites globally.

Sepsis is a life-threatening condition that affects millions of patients worldwide and continues to have high mortality rates. Sepsis can lead to severe organ failure and result in coagulopathy. Information and data gathered in this study may benefit the community, scientists and doctors to learn more about ART-123 as a treatment for Severe Sepsis and Coagulopathy.



**Our research addresses questions of importance to both clinicians and patients, and focuses on studies evaluating patient-centred outcomes: how a patient feels, looks and survives.**

**Standard Versus Accelerated Initiation of Renal Replacement Therapy in Acute Kidney Injury (STARRT-AKI): A Multi-Centre, Randomised, Controlled Trial**

**Researchers:** A/Prof Craig French, Dr John Mulder, Dr Sathyajith Velandy Koottayi, Dr Forbes McGain and Dr Gerrard Fennessy

**Collaborators:** Canadian Critical Care Trials Group, Applied Health Research Centre, St Michael's Hospital (Canada), George Institute for Global Health (Australia), ANZICS Clinical Trials Group and Australasian Kidney Trials Network

This study aims to determine whether immediate initiation of renal replacement therapy (RRT), compared to delayed approach to RRT initiation, improves survival and renal recovery (RRT independence) at 90 days in critically ill patients with severe AKI. Recruitment started at Western Health in March 2016 and is ongoing. Acute kidney injury (AKI) occurs in up to 20% of patients treated in ICU. When severe, it requires RRT and is associated with high healthcare costs and a high mortality. Beyond the acute high mortality, survivors of AKI carry long-term greater risks of mortality, requirement for institutional care and the development of chronic and end stage kidney disease. There are currently no proven treatments to reduce the burden of morbidity or mortality with AKI.

**The Augmented Versus Routine Approach to Giving Energy Trial: A Randomised Control Trial (TARGET)**

**Researchers:** A/Prof Craig French, Dr John Mulder, Dr Forbes McGain, Dr Gerard Fennessy, Miriam Towns, Samantha Bates, Caroline Calkin and Heather Jordan

**Collaborators:** ANZIC research centre, ANZICS Clinical Trials Group, Medical Research Institute of New Zealand and the Centre of Research Excellence Translating Nutritional Science into Good Global Health

Each year around 130,000 Australians are admitted to ICU at a daily cost of approximately \$4000 per patient. Their care consumes close to \$3 billion per year. These critically ill patients are the sickest in the hospital. Nutrition therapy is an essential standard of care for all ICU patients who are mechanically ventilated and remain in ICU for more than a few days. Enteral nutrition (via a nasogastric tube) is usually initiated within 24 hours of ICU admission). Previous trials support the concept that optimising nutrition in the critically ill will improve outcome, however, the evidence is limited, inconclusive and generally of low quality. The primary aim of the study is to determine if augmentation of calorie delivery, using energy dense enteral nutrition in mechanically ventilated patients, improves 90-day survival when compared to routine care. This is a 4000 patient, multi-centre, double-blinded, randomised, controlled, parallel-group, phase 3 clinical trial. Recruitment commenced at Footscray Hospital ICU on 16 June 2016.

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**Our Grants and Awards**

**Peter Schiff Award**

C French (joint winner). The award recognises significant contributions to transfusion medicine through efforts leading to better healthcare in Australia or New Zealand. Australian and New Zealand Society of Blood Transfusion, \$5000 (2016).

**ACTA Trial of the Year Awards 2016**

C French (Finalist). The EPO-TBI Trial – A randomised Placebo Controlled Trial of Erythropoietin in ICU Patients with Traumatic Brain Injury. Australian Clinical Trial Alliance (2016).



## Joseph Epstein Centre for Emergency Medicine Research (JECEMR)

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### Our Research Output

5

Projects

15

Publications

5

Presentations

*Prof Anne-Maree Kelly*

The Joseph Epstein Centre for Emergency Medicine Research (JECEMR) conducts clinical research to address issues faced by patients in our emergency departments. We are always striving to understand the impact of their illness or injury and ways we can provide better care. Emergency care does not occur in isolation – we work with clinicians from across disciplines – and the issues in Melbourne’s West are often common to those faced elsewhere in the world. Thus, JECEMR has an active program of collaboration, this year engaging with clinicians from the Department of Cardiology and countries including New Zealand, Australia, Singapore, Hong Kong, Malaysia, France and the United Kingdom.

This year’s key project has been the Asia, Australia and New Zealand Dyspnoea in Emergency Medicine (AANZDEM) study. This project, currently in its analysis phase, collected data from 3044 patients across more than 40 sites in five countries to better understand the causes, assessment, treatment and outcome for patients presenting to emergency departments with shortness of breath.

JECEMR continues to foster early career researchers. This year two research students, Imogen Ackerly and Brittany Scott-Rimington, completed projects on more efficient diagnosis of pulmonary embolism in older adults and contamination of stethoscopes. New projects this year concentrate on agreement between plasma and blood gas electrolytes and the rate and risk factors for catheter-associated urinary tract infections.



## Head of Department

Prof Anne-Maree Kelly

## Research Staff

3 researchers and 2 students

### Our Research

#### Age-Specific D-Dimer Cut Off Scores in the Assessment of Pulmonary Thromboembolism – A Comparative Investigation of Accuracy and Impact – The ADAPT study

**Researchers:** Prof Anne-Maree Kelly, Sharon Klim, Imogen Ackerly and Dr James McFarlane

This study investigated whether any of three described age-specific D-dimer cut-offs could be used to safely rule out PE in low-risk patients aged over 50 years presenting to an Australian Emergency Department. It also asked which of the described cut-offs had the best clinical performance. Our findings show an age-specific D-dimer cut-off would improve specificity and NPV, reducing the number of unnecessary CTPAs.

#### How Clean is Your Stethoscope?

**Researchers:** Prof Anne-Maree Kelly, Sharon Klim and Brittany Scott-Rimington

The aim of this observational, point prevalence study was to measure compliance with stethoscope cleaning procedures in the Emergency Department (ED). The project sought to determine what proportion of stethoscopes used in ED are contaminated and with what microbial agents, and measure the impact of an educational program for doctors and nurses on stethoscope cleaning compliance rates (using a before and after comparison of observational study). Results showed implementation of a multimodal educational package resulted in a modest change of staff behaviour towards the cleaning of stethoscopes.

#### The AANZDEM Study

**Researchers:** Prof Anne-Maree Kelly and Sharon Klim

**Collaborators:** The AANZDEM study group (50 members from Australia, New Zealand, Singapore, Hong Kong, Malaysia and France) and Prof Charles Lawoko (Victoria University)

This international study explores the causes of shortness of breath among adults presenting to emergency departments. This will help us evaluate the best quality of care.

#### Agreement Between Blood Gas Electrolytes, Haemoglobin and Lactate Values and Serum Values in ED Patients

**Researchers:** Prof Anne-Maree Kelly, Sharon Klim, Dr Michael Gibbons and Arthur Mantzaris

There is usually >1-hour delay to laboratory results for electrolytes and haemoglobin, so for critically ill ED patients, point-of-care blood gas analyses are often used to guide initial care. In order for this to be clinically justified, clinicians need to understand agreement (and non-agreement) between the point of care and laboratory analysis methods. It is recognised that the different analytical methods may generate a difference in results however it is important to determine the magnitude and spread of this difference. This project reviewed established bias and 95% limits of agreement between electrolyte values (sodium, potassium and bicarbonate), lactate and haemoglobin in whole blood specimens analysed by the ED resuscitation room blood gas analyser and specimens analysed using standard techniques in the central hospital laboratory. The aim

is to determine what proportion of analysis using the blood gas analyser falls outside defined clinically acceptable limits of agreement.

#### Incidence of Catheter-Associated Urinary Tract Infection in ED Patients Catheterised for Acute Urinary Retention (AUR)

**Researchers:** Prof Anne-Maree Kelly, Sharon Klim and Dr Benjamin Butcher

The study looked at adult male patients presenting to the ED with acute urinary retention and the incidence of catheter associated urinary tract infection (CA-UTI) during the period of catheterisation. The project also considered the time of insertion (in days) to trial of void (TOV) impact on the rate of CA-UTI. This project could potentially be used to establish an incidence of CA-UTI in an ED population of patients with acute urinary retention treated as outpatients, reduce complications for patients catheterised for AUR, and inform development of an evidence-based guideline on time to TOV.

# Melbourne Neuropsychiatry Centre

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## Our Research Output

**8**

Projects

**20**

Publications

**37**

Presentations

**1**

Chapter

**4**

Proceedings

*The Western Centre for Health Research  
and Education at Sunshine Hospital.*

## Head of Department

Prof Christos Pantelis

## Research Staff

18 researchers and 9 students

The Melbourne Neuropsychiatry Centre (MNC) is a multi-site clinical research centre, based in the Alan Gilbert Building at the University of Melbourne, Parkville, the Neuropsychiatry Unit at the Royal Melbourne Hospital and the Western Centre for Health Research & Education (WCHRE) at Sunshine Hospital. The Centre focuses on understanding the neurobiology of mental disorders from childhood to adulthood, using novel research techniques and the latest technologies. The Centre consists of over 60 people, and receives funding support from major grants through the NHMRC and ARC, as well as other national and international funding agencies.

Two of the ongoing research streams within the MNC have significant and longstanding links with Western Health. The Psychosis and Developmental Neuropsychiatry stream seeks to understand the neurobiology of disorders emerging in childhood and adolescence, including autism and psychotic disorders. A major component of this work has continued to be undertaken at the WCHRE throughout 2016, including recruitment of participants with psychotic illnesses, psychopharmacological studies in schizophrenia, and studies in children with developmental disorders. The Depression and Anxiety Neuroscience stream aims to develop integrated models based on affective neuroscience for treatment-oriented research and discovery in mood and anxiety disorders. The group established a base at the WCHRE and Sunshine headspace in 2012. Its ongoing projects involve recruitment and treatment of young people with affective disorders and the use of Sunshine Hospital's MRI scanning services.

## Our Research

### Identifying Neuroimaging Biomarkers of Psychosis Onset and Relapse

**Researchers:** C Pantelis, V Cropley, A Zalesky, B Baune, J Olver, P Amminger, A Scott, C Phassouliotis, R Banati, G O'Keefe, A Fornito, C Shannon Weickert, I Everall, S Kumar, N Thomas, D Velakoulis, M Jimenez-Alvarez, B Nelson, U Ackermann, J Sachinidis, G Chan, T Rolfe, L Allen, C Bousman, M Hopwood, A Polari, I Hickie and P McGorry

**PhD students:** M Di Biase and L Laskaris

This study uses sophisticated brain imaging to investigate brain inflammation. We are using positron emission tomography (PET) to label the brain's inflammatory cells, the microglia. We seek to understand if the progressive brain changes we first identified over a decade ago (with a seminal paper published in 2003 – Pantelis et al, *Lancet*) are explained in part by neuroinflammation. To date, we have scanned over 70 participants, including patients at all stages of psychosis and schizophrenia as well as healthy controls. If brain inflammation is involved in some of our patients with schizophrenia and other psychoses, we will be able to identify new ways to treat this disorder. The aim is to examine if our medications might reduce such inflammation and prevent or ameliorate the brain changes we have seen.

### The CRC Psychosis Study – Part of CRC for Mental Health; Study Examining Patients with Treatment-Resistant Schizophrenia

**Researchers:** C Pantelis, I Everall, C Bousman, A Zalesky, S Sundram, C Rahm, S Lieblich and C Phassouliotis (Coordinator)

**Collaborators:** C Martinez, S Cornejo, S Mancuso, S Atherton, S Dimitrakopoulos and A Pereira

**PhD Students:** C Wannan, E Ganella, S Mostaid, S Saini, C Liu, D Kang, Y Tian and L Laskaris

**Research Assistants:** A Burnside and S Gale

Patients with the most severe forms of schizophrenia are often referred to as having treatment-resistance. Many will be treated with clozapine, our most effective medication for this disorder and the drug of choice for TRS. However, this medication has a number of side-effects and only about 50% of TRS patients will respond to this drug. We are assessing a number of brain imaging, cognitive and blood biomarkers with the goal of identifying those who will respond to treatment. Early identification of those patients who will respond would be of great help to clinicians making treatment decisions and could help our patients at earlier stages of the illness before they are deemed treatment-refractory.

# Melbourne Neuropsychiatry Centre continued

## Neural Predictors of Treatment Response in Youth Depression

**Researchers:** B Harrison, C Davey, C Pantelis, P McGorry, R Kerestes, C Bousman, K Stephanou and S Whittle

**Research Assistant:** L Incerti

In order to reduce the substantial burden of depression on individuals and society there is a need to optimise the early provision of existing treatments. This issue is especially relevant to the treatment of young people with depression, where there is a lack of consensus on what constitutes the most effective first-line treatment: particularly whether psychotherapy should be offered alone or in combination with medication. This study uses functional magnetic resonance imaging (fMRI) to characterise novel brain-based biomarkers of treatment response in young people with depression participating in a 12-week randomised clinical trial (RCT) of psychotherapy plus medication versus psychotherapy plus placebo. This project represents the largest cross-sectional study of brain function in young people with depression. It is the largest longitudinal study of treatment effects on the brain in this patient group and the first neuroimaging study in depression to assess predictors of psychotherapy and medication in the context of a placebo-controlled RCT. A total of 152 young people with depression and 105 healthy controls have been scanned at the MRI centre at Sunshine Hospital for this study since 2013.

## Neural Correlates of Childhood Schizotypal Disorder Relative to Autism Spectrum Disorder and 'Typically Developing' Children

**Researchers:** C Pantelis, I Harding, R Testa, B Tonge, A Zalesky and S Skafidas

**Collaborators:** A Abu-Akel, B Harrison, H Jones, I Everall, M Seal, N Ross, S Whittle, S Wood and N Stefanis

**Students:** H Jones (PhD) and F van Beurden

Schizotypal disorder in children is characterised by bizarre and fantastical ideation with children spending much of their waking hours immersed in imaginary worlds. This contrasts with autistic children who become preoccupied with items in the external world. In a world-first study, we are examining differences in brain networks in children with schizotypal disorder and autism spectrum disorders in comparison with typically developing children. Understanding the neurobiological basis of these disorders will inform intervention approaches to ameliorate disorder and improve functional outcomes.

## Investigation of Cardiac Abnormalities in Schizophrenia Patients Treated with Clozapine

**Researchers:** C Pantelis, N Thomas, M Jayaram, C Neil and C Bousman

This is a project to identify the onset of myocarditis in patients who are treated with clozapine for treatment-resistant schizophrenia, with a focus on how to carefully re-challenge with clozapine, as the options for treating this condition beyond clozapine are limited. Following on from discussions with the cardiology team and close liaison with the MDT, two patients received successful re challenge with clozapine, using a very carefully controlled and monitored titrating regime. These patients showed significant functional improvements and the results are in the process of being submitted for publication.

Further work explores the causes of myocarditis with clozapine treatment, including identification of genetic markers. Clozapine remains the last and most effective line of treatment for those patients who have not responded well to other treatments. Unfortunately, clozapine is associated with serious side effects for a proportion of patients. Such patients may show a good symptom response, however, may suffer from cardiac or other side effects. This project has shown that by developing a carefully calibrated protocol, it is possible to successfully reintroduce clozapine, resulting in significant improvement in their condition.



The Centre focuses on understanding the neurobiology of mental disorders from childhood to adulthood, using novel research techniques and the latest technologies.

## Our Grants and Awards

### NHMRC-EU Grant

C Pantelis, S Skafidas, D Velakoulis and I Everall. PRONIA – Personalised Prognostic Tools for Early Psychosis Management. National Health and Medical Research Council, \$386,686 (2014–2017).

### NHMRC-EU Grant

P McGorry and C Pantelis. PSYSCAN – Translating Neuroimaging Findings from Research into Clinical Practice. National Health and Medical Research Council, \$366,081 (2014–2017).

### CRC for Mental Health

C Pantelis, I Everall, B Dean, C Bousman and S Sundram. Identification of Biomarkers of Treatment-Resistant Schizophrenia and Other Psychotic Disorders: Can We Predict Clozapine Response? CRC for Mental Health, \$750,523 (2011–2018).

### NHMRC Project Grant

V Cropley, C Pantelis, B Baune, J Olver and P Amminger. Investigating Neuroinflammation and its Relationship with Progressive Brain Structural Loss in Schizophrenia. National Health and Medical Research Council, \$447,525 (2014–2017).

### NHMRC Project Grant

P Amminger, C Pantelis, T Whitford, S Whittle, A Fornito and D Hermens. Erythrocyte Membrane Fatty Acid Concentrations and Myelin Integrity in Young People at Ultra-High Risk of Psychosis. National Health and Medical Research Council, \$390,879 (2014–2017).

### NHMRC Project Grant

B Harrison, C Davey, M Yucel, S Whittle, A Fornito, J Pujol, C Pantelis and P McGorry. Neural Predictors of Treatment Response in Youth Depression. National Health and Medical Research Council, \$498,820 (2014–2017).

### NHMRC Project Grant

A Fornito, C Bousman, A Zalesky, B Harrison, V Cropley and D Velakoulis. Dopamine, Fronto-Subcortical Circuits and Risk for Schizophrenia. National Health and Medical Research Council, \$828,633 (2013–2017).

### NHMRC Project Grant

A Fornito, V Cropley, P Thomas, B Harrison, C Pantelis and S Francey. A Combined PET-fMRI Study of Frontostriatal Dysfunction in First-Episode Psychosis. National Health and Medical Research Council, \$606,562 (2014–2018).

### NHMRC Project Grant

C Davey, P McGorry, A Chanen, S Hetrick and K Yuen. Youth Depression Alleviation: A Randomised Controlled Trial of Cognitive Behavioural Therapy with Fluoxetine or Placebo. National Health and Medical Research Council, \$1,200,000 (2012–2017).

### NHMRC Project Grant

A Zalesky, C Pantelis, D Velakoulis, C Bousman and I Everall. Resilient Brain Networks in Patients with Schizophrenia and their Unaffected Siblings. National Health and Medical Research Council, \$474,226 (2016–2019).

### NHMRC Project Grant

A Chanen, P McGorry, B Nelson, S Cotton, H Jackson, K Thompson, C Bartholomeusz, M Jovev, A Ratheesh, C Davey and C Pantelis. Randomised Controlled Trial of Aripiprazole for Treatment of Auditory Verbal Hallucinations in Borderline Personality Disorder. National Health and Medical Research Council, \$2,748,148 (2016–2019).

### NHMRC Senior Principal Research Fellowship

C Pantelis. Neurobiological 'Risk' and 'Resilience' Biomarkers of Severe Mental Illness. National Health and Medical Research Council, \$926,980 (2016–2020).

### NHMRC Career Development Fellowship

B Harrison. Depression and Anxiety Neuroscience. National Health and Medical Research Council, \$470,144 (2017–2020).

### NHMRC Career Development Fellowship

C Bousman. Pharmacogenetics of Antidepressant Response and Remission: Toward Genotype-Guided Prescribing in Major Depressive Disorder. National Health and Medical Research Council, \$470,144 (2017–2020).

### NARSAD Young Investigator Grant

V Cropley, A Fornito and C Pantelis. Investigating the Dopaminergic Basis of Dysregulated Fronto-striatal Circuitry in Psychosis: A PET [18F]FDOPA and Resting-State Functional Imaging Study. Brain & Behavior Research Foundation, \$60,000 (2014–2017).



# Nephrology

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## Our Research Output

15

Projects

11

Publications

2

Presentations

*A/Prof Craig Nelson, Head of  
Western Health's Nephrology Unit.*

In 2016, the Department of Nephrology at Western Health continued to participate in multi-centre international trials exploring new therapies for diabetic nephropathy. It acquired six new trials investigating therapies for anaemia complicating kidney disease, ANCA vasculitis and Focal Segmental Glomerulosclerosis (FSGS), and a novel anti-inflammatory against fatty liver disease.

Researchers in the department have continued to participate in national trials co-ordinated by the Australasian Kidney Trials Network.

The Primary Care project, eMAP CKD:VIC, is a collaborative effort between Western Health, Kidney Health Australia, Networking Health Victoria, Macedon Ranges and North Western Melbourne Medicare Local and the Department of Health and Human Services. It is funded through the Department's Victoria Renal Health and Aboriginal Health Clinical Networks and was finalised and results have been published.

The Chronic Disease IMPACT project, funded by a legacy grant from Macedon Ranges and North Western Melbourne Medicare Local was commenced and is now well underway.

## Head of Department

A/Prof Craig Nelson

## Research Staff

3 researchers and 2 students

### Our Research

#### Chronic Disease IMPACT

**Researcher:** A/Prof Craig Nelson

**Collaborators:** Prof David Story (University of Melbourne), Dr Jo-Anne Manski-Nankervis (University of Melbourne), Prof Maximilian De Courten (Victoria University), A/Prof Shane Hamblin, A/Prof Nick Cox, A/Prof Chris Neil, Prof Tissa Wijeratne, Prof Edward Janus, Bill Karanatsios, Debbie Broomfield, Dr Jo Silva and Bianca Bell

Chronic vascular diseases can be under-reported or only detected in later stages. This project is a collaboration between primary care and disease specialists, which aims to reduce the burden of chronic vascular diseases (T2DM, CVD, CKD) and risk factors, such as familial hypercholesterolaemia. The project will design and implement a disease management e-technology module to be installed into primary care practices. Eight primary care practices have been recruited, software has been designed, and user acceptance testing has commenced. The platform aims to facilitate earlier disease diagnosis and identify those patients at risk of developing a chronic vascular disease.

#### Improve Trial

**Researcher:** A/Prof Craig Nelson

**Collaborator:** Australasian Kidney Trials Network

This project aims to test if phosphate binders not containing calcium have an impact on vascular calcification before the commencement of dialysis therapy. Cardiovascular

disease is the number one cause of death in patients with kidney disease and this may be contributed to by vascular calcification.

#### CKD FIX Trial: A randomised Controlled Trial of Slowing of Kidney Disease Progression from the Inhibition of Xanthine Oxidase

**Researcher:** A/Prof Craig Nelson

**Collaborator:** Australasian Kidney Trials Network

The primary aim of the study is to test the hypothesis that uric acid lowering therapy, with the xanthine oxidase (XO) inhibitor, allopurinol, will significantly slow kidney failure progression in patients with moderate chronic kidney disease (CKD). CKD affects 1 in 10 people in Australia and is a major cause of cardiovascular death.

#### SCOUP-HOME DIALYSIS-VIC: Standardising Care, Outcomes, Uptake and Persistence in Home Dialysis in Victoria

**Researchers:** A/Prof Craig Nelson, Dr Sandra Crikis and Shaun Finlayson

**Collaborator:** Victorian Renal Clinical Network

The study will review the major differences in practices among treating home therapy units with a view to identify strengths and weaknesses across home dialysis units throughout Victoria. Despite the recognised advantages of home based dialysis therapies, most centres in Victoria are not reaching state KPI targets. A state-wide effort is needed to ensure standardisation of home based therapies in different centres.

#### PDOPPS: The Australian Peritoneal Dialysis Outcomes and Practice Patterns Study

**Researcher:** A/Prof Craig Nelson

**Collaborator:** Australasian Kidney Trials Network

This project aims to provide a better understanding of the impact of modifiable practices in the management of PD patients on the risk of all-cause peritoneal dialysis technique failure. Currently, in Australia, nearly 25% of people on dialysis are using peritoneal dialysis.

### Our Grants and Awards

#### Legacy Grant

C Nelson (PI). Chronic Disease IMPACT. North Western Melbourne Medicare Local, \$250,000 (2016–2018).

#### NHMRC Centre for Research Excellence

C Nelson (AI). Chronic Kidney Disease Centre for Research Excellence. National Health and Medical Research Council, \$2,500,000 (2014–2020).

#### Victorian Renal Clinical Network

C Nelson, S Crikis and S Finlayson. SCOUP-HOME DIALYSIS-VIC: Standardising Care, Outcomes, Uptake and Persistence in Home Dialysis in Victoria. Victorian Renal Clinical Network, \$143,038 (2016–2017).





**Improving the rate of diagnosis of kidney disease was the motivation for A/Prof Nelson setting up the eMAP CKD project two years ago.**



## A/Prof Craig Nelson

### Head of Western Health's Nephrology Unit

The facts behind what A/Prof Craig Nelson considers the "forgotten cousin of the chronic diseases" are sobering.

One in 10 Australians will develop kidney disease. And when they do, 95% of them won't be aware of it.

"What a lot of people don't know is that kidney disease is twice as common, and twice as deadly, as diabetes alone," says A/Prof Nelson, Head of Western Health's Nephrology Unit.

"I think that's because people don't understand kidney disease. It's under-recognised in primary care, and only 0.55% of the population know they've got it. We see about one in four people who arrived at (the need for) dialysis not knowing about their kidney disease."

Improving the rate of diagnosis of kidney disease was the motivation for A/Prof Nelson setting up the eMAP CKD project two years ago. The trial, which involved 170,000 patients across 22 Victorian primary care practices, dramatically increased the detection of chronic kidney disease.

The success of the project, achieved with modified software dubbed "artificial intelligence on primary care desktop", has led to two very significant developments.

The first is the launch of another large-scale primary care trial, the CD IMPACT (Chronic Disease early detection and Improved Management in PrimAry Care ProjecT), which aims to increase the diagnosis of a broad range of chronic diseases. These include heart disease, heart failure, familial hypercholesterolemia, stroke and Type 2 diabetes mellitus as well as Kidney Disease.

The second is the establishment of the Western Chronic Disease Alliance, a collaboration that aims to improve the early detection and management of chronic vascular diseases such as chronic kidney disease, diabetes and cardiovascular disease.

The alliance, chaired by A/Prof Nelson, is an evolving partnership between Western Health, the University of Melbourne's Health Economics Unit, Kidney Health Australia, Diabetes Victoria, Heart Foundation, Primary Healthcare Network and Victoria University's Department of Population Health.

A/Prof Nelson says the alliance aims to assess two major groups: high-risk patients being re-admitted to hospital who are already using the health service; and rising-risk patients in both the primary care and hospital settings.

A/Prof Nelson says it is important that researchers and clinicians across major areas of chronic disease, including kidney disease, cardiovascular disease, obesity and diabetes, join forces.

"We should all be singing with one voice, rather than individual silos, because by ignoring one of the specialties you're not doing justice to the patient," he says.

"It's becoming clearer that people don't have just one chronic disease. It's more common now to have multiple chronic diseases than a single disease alone."

A/Prof Nelson hopes the alliance model will, ultimately, be applicable to a much broader range of chronic disease, such as respiratory medicine, osteoporosis, mental health, and drug and alcohol issues.



# Neurology

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## Our Research Output

**26**  
Projects

**14**  
Presentations

*Head of Department Prof Tissa Wijeratne.*

## Head of Department

Prof Tissa Wijeratne

Stroke is the leading cause of adult disability. One in three of us are at risk of stroke or dementia according to the Framingham study. Western Health is one of the largest providers in stroke care for fellow Victorians. Our research work in acute stroke medicine has made significant inroads to providing better care for acute stroke patients.

In 2016, the Neurology Department had four PhD students continuing their work in brain health related issues. We had another research student completing her Masters degree. Our group published 20 papers in high quality journals during the year, with the START-EXTEND IA clinical trial being published in *NEJM* in early 2015 and cited by more than 1400 authors since then.

In 2017, we are keen to map the trajectories of stroke and other neurological disorders to promote better brain health through translational research on the back of five PhD students completing their projects at Western Health.

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## Our Research

### **POINT: Platelet-Oriented Inhibition in New TIA and Minor Ischemic Stroke Trial**

**Researchers:** Prof Tissa Wijeratne, Elizabeth Mackey, Jennifer Goff, Dr Ben Stevenson et al

**Collaborators:** Neuroscience Trials Australia at the Florey Institute of Neuroscience and Mental Health and University of California, San Francisco

## Research Staff

3 researchers and 15 students

This trial is aimed at determining the safety and effectiveness of a combination of low-dose aspirin and clopidogrel (compared to aspirin only), in reducing the risk of stroke, heart attacks, and other complications in TIA or minor ischemic stroke patients. This study will help us to optimise acute therapy in minor strokes and TIAs.

### **EXTEND-IA TNK: Extending the Time for Thrombolysis in Emergency Neurological Deficits – Intra Arterial Using Intravenous Tenecteplase**

**Researchers:** Prof Tissa Wijeratne, Dr Hans Tu, Elizabeth Mackey, Jennifer Goff, Dr Ben Stevenson et al

**Collaborators:** Neuroscience Trials Australia, the Florey Institute of Neuroscience and Mental Health and Royal Melbourne Hospital

This trial investigates whether ischemic stroke patients selected for endovascular therapy will show improved reperfusion at initial angiogram, following treatment with IV Tenecteplase versus IV Alteplase. This study will help us to find a better clot buster therapy for acute ischemic stroke.

### **Cognitive Processing Following Cerebrovascular Events**

**Researchers:** Prof Tissa Wijeratne, Prof Sheila Crewther, Dr Diana Perre, Deena Ebaid, Vinh Nguyen, Dr Ben Ong and Dr Essie Low

**Collaborator:** La Trobe University

This study aims to investigate the effects of a first TIA or stroke event on information processing, attention, and visual processing functions.

This study will contribute to the field of rehabilitation post-stroke by identifying and optimizing better rehabilitation regimes. This will subsequently contribute to increased quality of life for communities that suffer from impaired vascular integrity.

### **DIDO: Door-In-Door-Out Times in Stroke Patients Transferred for Emergency Clot Retrieval**

**Researchers:** Prof Tissa Wijeratne, Prof Helen Dewey, Dr Philip Choi, Dr Douglas Crompton, Dr Felix Ng, Dr Essie Low, Emily Andrew and Karen Smith

**Collaborators:** Eastern Health Neurology Department, Northern Health Neurology Department and Ambulance Victoria

This is a retrospective study aimed at analysing endovascular clot retrieval (ECR) transfer workflow, with an emphasis on door-in-door-out (DIDO) times. DIDO time is proposed as a new important clinical performance measure in modern stroke care, and may be used to evaluate the timeliness and quality of initial care at the initial Primary Stroke Centre. DIDO time is a key metric that may emerge as a quality benchmark to ascertain performance and improvement. This audit ultimately aims to identify and quantify delays in the transfer workflow which may be amendable to system optimisation and quality improvement efforts.





# Nursing and Midwifery

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## Our Research Output

**22**

Projects

**12**

Deakin University Publications

**9**

Victoria University Publications

**12**

Presentations

**9**

Deakin University Proceedings

**1**

Victoria University Proceeding

*Clinical Nurse Specialist Lana van Raay.*



## Executive Director, Nursing and Midwifery

A/Prof Denise Patterson

## Western Health Chair of Nursing – Deakin University

Prof Bodil Rasmussen

In 2016, the Centre for Nursing and Midwifery Research, a partnership between Western Health and Deakin University, had a high level of clinical research focusing on safety and risk management, patient and carer engagement and experiences, and healthcare workforce and service delivery. These major pillars underscore the Nursing and Midwifery 2016–2020 Research Blueprint. The Centre aims to build research capacity in nursing and midwifery, engaging in research-focused workshops as well as supervision of research students. The Centre has been very successful in attracting research students, with more than 12 currently under supervision. Major research undertakings were initiated to gain a better understanding of the psychosocial and cultural factors influencing breastfeeding in women with diabetes, involving three major health services in Melbourne. These studies were supported by a major grant from the Nurses Board of Victoria and the Australasian Diabetes in Pregnancy Society. Clinical research undertaken by Lana van Raay, exploring prehydration in angiography patients and possible improvements for clinical practice, was supported by the Mavis Mitchell Scholarship.

## Research Staff

7 researchers and 13 students

Important studies led by researchers at Victoria University continue to focus on women's experience during birth and the postnatal period. Evidence gained was used to ensure best and safe care of women at Western Health. Use of technology in provision of care is an increasingly important priority in nursing and midwifery research.

Projects testing web-based educational interventions aimed at improving knowledge of healthy diet and lifestyle were undertaken. Researchers from Victoria University focused in women with Gestational Diabetes Mellitus, while researchers from Deakin University focused on young people with Type 1 diabetes. Both have resulted in the planning of bigger studies with international collaborators, including Copenhagen University, Denmark.

Other international collaborations have been established and led by Prof Bodil Rasmussen, who commenced her appointment in May 2016. Prof Rasmussen works closely with Scandinavian researchers around chronic conditions and e-health. She is an executive member of the Scandinavian Translational Research in Chronic Conditions, which focuses on interventional research across chronic conditions with the aim of translating evidence into clinical practice to assist people to live well with chronic conditions.

# Nursing and Midwifery

## continued

### Our Research

#### **Physical, Social, Psychological and Cultural Factors Influencing Breastfeeding Intention, Initiation and Duration Among Women with Type 1 (T1DM) and Type 2 (T2DM) Diabetes Living in Victoria**

**Researchers:** Prof Bodil Rasmussen, A/Prof Catherine Nagle and Cheryl Steele

**Collaborators:** A/Prof Alison Nankervis (Royal Women's Hospital), Cath McNamara (Mercy Hospital) and Prof Helen Skouteris (Deakin University)

This study's main aim is to identify facilitators and barriers to the intention to breastfeed, and the initiation and continuation of any breastfeeding from birth for six months in Victorian women with T1DM and women with T2DM. The second aim is to identify physical, psychosocial and cultural risks and protective factors associated with women with T1DM and T2DM ceasing to breastfeed during the first six months following birth using Victorian population samples. This project will assist us to provide appropriate, safe and high-quality care for women transitioning into motherhood, as well as encouraging breastfeeding as long as possible, hopefully meeting the World Health Organisation's recommendation of six months after birth.

#### **Developing an Educational Intervention for High-Risk Women with Gestational Diabetes Mellitus (GDM)**

**Researcher:** Cheryl Steele

**Collaborator:** Prof Mary Carolan-Olah (Victoria University)

This project has developed a website to support women self-managing their GDM. It addresses issues of literacy and is available in English and Vietnamese. Feedback indicates that women find the website useful in terms of reinforcing health messages and promoting greater understanding and self-management of GDM.

#### **Women's Perception of Safety During Labour and Birth**

**Researcher:** Margaret McCormick

**Collaborators:** A/Prof Marie Gerdtz, Dr Wendy Pollock and Dr Kiran Kilian (University of Melbourne)

This study aims to develop and evaluate information materials for pregnant women in relation to their safety during labour and birth. This study will assist organisations in developing material that will improve women's perception of safety during labour and birth.

#### **Exploring Prehydration in Angiography Patients: A Pilot Study**

**Researchers:** Prof Bodil Rasmussen, Dr Julian Nguyen, Dr Marcus Mykytowycz, Lana van Raay and Jasmin Navarro

This study aims to improve hospital benchmarks by increasing availability of overnight beds to those who need them and shortening waiting lists for this procedure type. This study will help us to improve the patient experience without compromising patient safety.

#### **A Haemodialysis Exercise Program: A Pilot Study Exploring a New Workforce Model**

**Researchers:** Krystyna Bender, Dr Paul Bennett, Dr Wai Wang, A/Prof Craig Nelson, Dr Lizzy Skinner, Jason Bennier, Melina Shackell and Prof Bodil Rasmussen

This study aims to investigate whether this model improves the physical function of people on dialysis and is acceptable to dialysis patients and nurse clinicians. This project will assist us to provide appropriate, safe and high-quality care that improves physical function of people on dialysis.

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## Our Grants and Awards

### Deakin University

#### **Ella Lowe – Major Grant**

B Rasmussen. Physical, Social, Psychological and Cultural Factors Influencing Breastfeeding Intention, Initiation and Duration Among Women with Type 1 and Type 2 Diabetes Living in Victoria. The Nurses Board of Victoria Legacy Limited, \$60,000 (2016)

#### **ADIPS-NOVO NORDISK Grant**

B Rasmussen. Physical, Social, Psychological and Cultural Factors Influencing Breastfeeding Intention, Initiation and Duration Among Women with Type 1 and Type 2 Diabetes Living in Victoria. Australasian Diabetes in Pregnancy (ADIPS), \$6,600 (2016)

#### **Diabetes Australia Research Program – 2016 Grant Round**

G Wadley, B Rasmussen, S Mason and S Hamblin. Improving Glycaemic Control in Type 2 Diabetes with Ascorbic Acid. Diabetes Australia Research Trust, \$59,921 (2016)

#### **QPS Bridging Grant**

B Rasmussen, J Currey, B Haig, V Zoffmann and T Dunning. An Innovative Online Self-Management Intervention for Victorian Young Adults with Type 1 Diabetes: Guided Self-Determination Program. The Centre for Quality and Patient Safety Research, \$12,500 (2016).

#### **QPS Bridging Grant**

B Rasmussen, H Skouteris, S Brumby, H Rawson and R Brown. Investigate the Prevalence, Health Literacy and Well-Being of Patients in Australia with Diabetes and/or Cardiovascular Disease and the Comorbidity of Anxiety and/or Depression. The Centre for Quality and Patient Safety Research, \$18,000 (2016).

### Victoria University

#### **Lord Mayor's Charitable Foundation Grant**

M Carolan-Olah, C Nagle, N Stepto, C Steele and V Vasilevski. Growing a Healthy Baby: Getting the Balance Right in Pregnancy. Lord Mayor's Charitable Foundation Exploration, \$49,849 (2016).

**In 2016, the Centre for Nursing and Midwifery Research had a high level of clinical research focusing on safety and risk management, patient and carer engagement and experiences, and healthcare workforce and service delivery.**

## Lana van Raay

### Clinical Nurse Specialist

Ringling up patients to cancel overnight hospital stays due to a bed squeeze is not a task that Clinical Nurse Specialist Lana van Raay relishes.

But rather than accept it as an unfortunate consequence of the demands on the public health system, she went searching for answers.

The Footscray Hospital nurse won Western Health's Mavis Mitchell Memorial Scholarship in 2016 for a proposal to eliminate overnight admissions for patients who need intravenous hydration prior to having angiography (radiography of blood or lymph vessels).

Vascular patients with poor kidney function require 10 hours of hydration to protect them from the dye used in the scans, which can cause a condition injuring the kidneys called Contrast Induced Nephropathy (CIN).

At present, the high-risk group is admitted a day earlier and hooked up to the intravenous drip from midnight.

But Ms van Raay discovered that 10% of cases between March and July last year were cancelled due to a lack of overnight hospital beds, with one patient rebooked three times.

She discovered Dutch research citing the success of administering the drip on the same day as the procedure, benefitting both the hospital and patients.

She launched a similar six-month trial in July, funded by the \$5000 sponsorship grant established in memory of the Western Hospital's first Matron, Mavis J Mitchell.

"I was always the one having to make the call to patients to rebook, which is what made me start thinking about doing something different," said Ms van Raay, an Infection Control Link Nurse in the Radiology Department.

"Patients would get frustrated and really angry. Many of the vascular patients are elderly, and one woman had to organise respite for her husband so she could stay. But this trial involves running the hydration before, during and post-procedure, so they don't need to come in the day before."

One patient a week is being recruited over a six-month period into the trial, a collaboration between the Radiology and Vascular departments.

She said the cohort of patients are the same as those involved in the Dutch study – including co-morbidities like heart problems and diabetes, and aged from 45–90 – and is hoping it will be equally as successful.

"I hope we can see a change in procedures and improved quality of care for patients, who are not getting messed around and can go back to their families and their own beds that night," Ms van Raay said.

"The flow-on affect will be freeing up beds and resources."







The Footscray Hospital nurse won Western Health's Mavis Mitchell Memorial Scholarship in 2016 for a proposal to eliminate overnight admissions for patients who need intravenous hydration prior to having angiography.

# Oncology and Haematology

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## Our Research Output

**51**

Projects

**26**

Publications

**2**

Presentations

*Oncologist A/Prof Jeanne Tie.*

## Head of Department

Prof Michael Green

## Research Staff

32 researchers

2016 has been a year of consolidation and growth for Cancer Services at Sunshine Hospital. The service has embedded its collaboration with the Sunshine/ Peter Mac combined Radiotherapy Centre, coordinating three open-to-accrual trials and accruing 16 participants onto these trials.

Our partnerships with the Australian Gastrointestinal Trials Group, Australia and New Zealand Breast Cancer Trials Group, International Breast Cancer Study Group, Australia and New Zealand Germ Cell Trials Group, Gynaecologic Cancer Intergroup, Australian and New Zealand Urogenital and Prostate Cancer Trials Group and the Australasian Leukaemia & Lymphoma Study Group, as well as the Victorian Comprehensive Cancer Centre, Walter and Eliza Hall Institute and Cancer Trial Australia have continued successfully. Of note is Dr Tie's presentation of the ctDNA Trial Stage 2 at the American Society of Clinical Oncology 2016 Annual Meeting. The results of this trial have the potential to change how we assess the need for adjuvant

chemotherapy in Stage 2 colorectal cancers in the future. Of the 13 sites participating in this trial, Western Health provided the largest group of patients (111 of 252 participants).

Overall, 2016 saw the accrual of 102 trial participants across the major tumour streams of Breast, Lung, Urology, Upper GI, Colorectal and Gynaecological cancers, as well as Haematology and Radiotherapy. On average, the unit had 38 open-to-accrual trials at any one time – 15 of these opened during 2016. The trials covered the spectrum of phase 1b to phase 3 trials, working with commercial as well trial study groups, with research institutes as trial sponsors.

The research team grew in 2016, employing staff in two new roles – a Haematology Data Manager, who will focus on Haematology data collection and establishing a new research biobank in collaboration with VCCC, and a Research Link Nurse, who will focus on streamlining clinical trial care delivery between the research unit and the ambulatory care unit.

**On average, the unit had 38 open-to-accrual trials at any one time – 15 of these opened during 2016.**



# Oncology and Haematology

## continued

### Our Research

#### **Circulating Tumour DNA Analysis Informing Adjuvant Chemotherapy in Stage 2 Colon Cancer (DYNAMIC)**

**Researcher:** A/Prof Peter Gibbs

**Collaborators:** Dr Jeanne Tie (Walter and Eliza Hall Institute), Dr Ben Tran, VCCC and Jeremy Shapiro (Monash Health)

This project examines if the use of circulating tumour cells (CtDNA) can determine the need for chemotherapy post-surgery for colon cancers. It provides access to the possibility of a reduced need for chemotherapy post-surgery for colon cancer.

#### **A Phase 3, Open-Label, Multi-Centre, Randomised Study Evaluating the Efficacy and Safety of MPDL3280A (Anti-PD-L1 Antibody) in Combination with Carboplatin+Paclitaxel or MPDL320A in Combination with Carboplatin+NAB-Paclitaxel versus Carboplatin+NAB-Paclitaxel in Chemotherapy-Naïve Patients with Stage 4 Squamous Non-Small Cell Lung Cancer (GO29437)**

**Researcher:** S Kosmider

**Collaborators:** D Hearth, C Oakman, C Do, M Moore (Alfred Health) and G Richardson (Cabrini Institute)

This study investigates if the addition of Atezolizumab (immune targeting therapy) to standard chemotherapy in the treatment of squamous non-small cell lung cancer will improve patient outcomes. Lung cancer is difficult to treat and over 50% of patients do not survive year one of

treatment. Access to this drug may lengthen survival and improve quality of life for our patients.

#### **A Phase 3 Study Comparing Daratumumab, Lenalidomide, and Dexamethasone (DRd) vs Lenalidomide and Dexamethasone (Rd) in Subjects with Previously Untreated Multiple Myeloma who are Ineligible for High Dose Therapy MMY3008 (MAIA)**

**Researcher:** B Renwick

**Collaborators:** D Carradice, A Lim and E Hatzis

This study investigates if the addition of Daratumumab (a new monoclonal antibody) to the standard treatment for patients with newly diagnosed myeloma will be beneficial for this treatment group. The trial gives our myeloma participants access to a novel monoclonal antibody (target immunotherapy) in addition to the standard of care for patients that cannot tolerate high dose chemotherapy or are not suitable for bone marrow transplant. This study has the potential to extend time to progression of their disease.

#### **A Randomised Phase 2/3 Trial of Preoperative Chemoradiotherapy Versus Preoperative Chemotherapy for Resectable Gastric Cancer TOPGEAR**

**Researcher:** Dr Philip Tran

**Collaborators:** A/Prof Lara Lipton, Dr Sumitra Ananda, Dr Liang Low, Dr Rodney Jacobs, Dr Daisy Mak, Australasian Gastro Intestinal Group, NHMR Clinical Trials Centre, Shine Radiotherapy Centre, TROG Cancer Research and Peter MacCallum Cancer Centre

This study will examine if the addition of radiotherapy treatment to chemotherapy and surgery can increase survival for patients with operable gastric cancer. Many patients with gastric cancer who receive chemotherapy and surgery do not survive five years. This trial might help patients to lengthen the chances of longer term survival.

#### **A study of Palbociclib in Combination with Letrozole as Treatment of Post-Menopausal Women with Hormone Receptor-Positive, HER2-Negative Advanced Breast Cancer for Whom Letrozole Therapy is Deemed Appropriate\_A5481037**

**Researcher:** C Oakman

**Collaborators:** S Greenberg, L, S Loi and Dr M White

This trial enables access to the new drug Palbociclib for post-menopausal Her2+ breast cancer patients ahead of the drug becoming commercially available. Palbociclib lengthens the time to cancer recurrence in women with post-menopausal breast cancer by approximately 10 months, on average. This trial allows women access to this drug before it becomes available on the PBS.



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## Our Grants and Awards

### Cancer Australia Project Grant

P Gibbs. Development of a Clinico-Molecular Colon Cancer Nomogram for Personalisation of Adjuvant Chemotherapy in the Australian Population. Cancer Australia, \$594,254 (2016).

### NHMRC Project Grant

P Gibbs Circulating tumour DNA (ctDNA) to guide adjuvant chemotherapy in patients with rectal cancer. National Health and Medical Research Council, \$1,320,000 (2016).

### NHMRC Project Grant

P Gibbs. Extension of the ASPREE Study. National Health and Medical Research Council, \$1,700,000, (2016).

### Avner Foundation Project Grant

P Gibbs. Organoid Cultures for Pancreatic Cancer. Avner Pancreatic Cancer Foundation, \$900,000 (2016).

### Marcus Foundation Project Grant

P Gibbs. Adjuvant Studies in Colorectal, Pancreatic and Ovarian Cancer. The Marcus Foundation, \$5,550,000 (2016).

### Sirtex Australia Project Grant

P Gibbs. The RESIN Registry. Use and Outcomes of SIRT in Routine Clinical Care in Australia. Sirtex Australia, \$250,000 (2016).

### Amgen Australia Project Grant

P Gibbs. Analysis of the Impact of Primary Tumour Site on Colorectal Cancer Outcome. Amgen Australia, \$60,000 (2016).

### Merck Australia Project Grant

P Gibbs. Analysis of the Impact of Primary Tumour Site on Colorectal Cancer Outcome. Merck Australia, \$50,000 (2016).

### Servier Project Grant

P Gibbs. Analysis of the Routine Treatment of Metastatic Colorectal Cancer in Australia. Servier Australia, \$80,000 (2016).

### Symxex Project Grant

P Gibbs. Validation of a Marker of Recurrence in Stage 2 and 3 Colon Cancer. Symxex Japan, \$100,000 (2016).

### Roche Australia Project Grant

P Gibbs. Neoadjuvant Therapy for HER2+ Early Breast Cancer. An Australian Registry. Roche Australia, \$100,000 (2016).

### WCMICS 2015/16 Funding Program

M Pitcher. Integrating Primary Care Practitioners in Multidisciplinary Cancer Care. Western & Central Melbourne Integrated Cancer Service, \$113,483 (2016–2017).

### WCMICS 2015/16 Funding Program

A Dabscheck. Determining the Feasibility of a Multi-Disciplinary Psycho-Oncology Team at Western Health Using a Partnership Model. Western & Central Melbourne Integrated Cancer Service, \$70,682 (2016).

### WCMICS 2015/16 Funding Program

S Kosmider. Management of Male Sexual Dysfunction Following Treatment for Colorectal and Prostate Cancer Survivors at Western Health. Western & Central Melbourne Integrated Cancer Service, \$93,044 (2016).

### General Practice Placement in Cancer Survivorship Program

M Pitcher. Peter MacCallum Cancer Centre, \$2,500 (2016).

### Victorian Cancer Survivorship Program Phase 2 Grants Scheme

I Hornung. Implementing and Evaluating a Shared Care Model of Survivorship for Prostate Cancer Patients in the West – A Western Health and North Western Melbourne Primary Health Network Collaboration. Department of Health and Human Services, \$300,000 (2016–2018).

### WCMICS 2013/14 Funding Program

L Lipton. Prospective analysis of 30-day Mortality Following Palliative Chemotherapy for Cancer at Western Health. Western & Central Melbourne Integrated Cancer Services, \$96,941 (2014).

### WCMICS 2014/15 Funding Program

S Greenberg. Improving the Pathway to Cancer Diagnosis and Specialist Review by Analysing Patient Presentation to the Emergency Department. Western & Central Melbourne Integrated Cancer Services, \$89,380 (2015).

### WCMICS 2014/15 Funding Program

C Oakman. Oral Chemotherapy Clinic – Improving Education and Care for Cancer Patients. Western & Central Melbourne Integrated Cancer Services, \$119,648 (2015).

### WCMICS 2014/15 Funding Program

M Pitcher. Partnering with Local Community Health Organisation to Provide Rehabilitation to Cancer Patients. Western & Central Melbourne Integrated Cancer Services, \$120,869, (2015).

### Grants in Aid of VCCC Scientific Meetings

J Emery. Primary Care Across the Cancer Continuum. Victorian Comprehensive Cancer Centre, \$5000 (2015).



**A/Prof Tie, who has earned global attention for her work on the so-called “liquid biopsy”, says almost 1000 patients have contributed to her research by donating blood during their treatment.**

## A/Prof Jeanne Tie

### Oncologist

Helping revolutionise the treatment of bowel cancer for future generations is top priority for A/Prof Jeanne Tie.

But the leading oncologist remains acutely aware of the people who help making breakthroughs possible – the current generation of cancer patients.

A/Prof Tie, who has earned global attention for her work on the so-called “liquid biopsy”, says almost 1000 patients have contributed to her research by donating blood during their treatment.

“I would like to say a big thank you to those patients, for without their altruism, none of these researches would be possible,” says A/Prof Tie.

“Thank you for your time and your blood samples. We’re hoping this work will change how we manage bowel cancer, ultimately you could be helping many people around the world.”

A/Prof Tie and fellow Western Health oncologist A/Prof Peter Gibbs have won international accolades for their work on circulating tumour DNA analysis, which is the detection of miniscule fragments of tumour DNA in the blood of patients. While initial trials focused on whether liquid biopsy can be used to predict cancer recurrence, current and future trials are looking at whether this blood test is a more effective way than the routine practice in deciding the best post-surgery chemotherapy strategy for patients with Stage 2 and other stages of bowel cancer.

A/Prof Tie and A/Prof Gibbs, also from the Melbourne’s Walter and Eliza Hall Institute of Medical Research, developed the test in collaboration with the John Hopkins

University in the US. Additionally, over 20 Australian hospitals have contributed patients to the liquid biopsy research.

The success of this test – published in the American Society of Clinical Oncology’s prestigious *Clinical Cancer Advances 2017* report, which highlights the biggest breakthroughs and trends of the year in global cancer research – has many benefits.

By predicting the risk of relapse of cancer patients in real-time – well before current methods of detection – the “liquid biopsy” will spare patients needless chemotherapy and better target those at risk of recurrence.

A/Prof Tie says while most patients diagnosed with Stage 3 bowel cancer are given chemotherapy, only about 10–15% will benefit. The remainder are either resistant to the chemotherapy or they did not need it in the first place.

“Patients undergo treatment blindly and we cross our fingers hoping that they would benefit, because until now, there’s been no way of knowing which patients needed chemo or not,” she says.

Depending on the results of the current studies, it is hoped the test will be used in clinical practice within the next five to 10 years in early stage bowel cancer, and maybe sooner in advanced stage bowel cancer.

A/Prof Tie and A/Prof Gibbs were also presented with the American Association for the Advancement of Cancer Research’s annual award for team science in 2017. They were part of an international team led by Dr Luis Diaz from Johns Hopkins.





# Paediatric Emergency Medicine

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## Our Research Output

**3**

Projects

**7**

Publications

**4**

Presentations



## Head of Department

Dr David Krieser

## Research Staff

2 researchers and 4 students

Sunshine Hospital Paediatric Emergency Department (SH PED) managed over 25,000 children in 2016. This was the highest number of paediatric presentations in the history of the Department, and presented challenges, given infrastructure and personnel constraints. Despite this, research continued to be undertaken in the SH PED during this clinically busy year. SH PED remains affiliated with the Paediatric Research in Emergency Departments International Collaborative (PREDICT). Our research has included:

1. Bell's Palsy In Children (BellPIC) study. Recruitment has started across Australia and New Zealand into a PREDICT network randomised control trial comparing oral steroid to placebo in children with Bell's Palsy
2. Presentations at the International Conference for Emergency Medicine (ICEM)
  - Parental Understanding of Fever in Children (PUFIC)
  - PREDICT Research Priorities Delphi Study

Future research in the SH PED include:

- o An audit of cervical spine imaging in children and young adults comparing Plain X-Ray to CT
- o An audit of the availability of external medical imaging for patients presenting to ED, and
- o Contribution to PREDICT studies including: Status epilepticus management, Sedation registry and Seizure registry

## Our Research

### Bell's Palsy In Children (BellPIC)

**Researchers:** Dr Lisa Barrow and Dr David Krieser

**Collaborator:** A/Prof Franz Babl (Murdoch Childrens Research Institute, Royal Children's Hospital)

Bell's palsy management has been extrapolated from adult studies and the role of steroids has not been subjected to a placebo controlled, randomised study. The BellPIC study aims to compare outcomes for children with Bell's palsy who are given prednisolone against those provided with a placebo. Systemic steroids are powerful medications with a broad range of side effects. Bell's palsy has a good prognosis in most children, even in those not given steroid therapy. It is essential to know if our treatment is required.

### High Flow Humidified Nasal Cannulae Oxygen: An audit

**Researchers:** Dr Priya Shenton, Dr Bindu Bali, Suzana Lazarovska and Dr David Krieser

**Collaborators:** Dr Priya Shenton (Monash Children's Hospital) and Suzana Lazarovska (University of Notre Dame Australia)

Infants admitted with bronchiolitis require supportive care, involving the delivery of supplemental oxygen and/or fluids. High-flow, humidified nasal cannulae oxygen (HFHNCO<sub>2</sub>) allows delivery of flow rates sufficient to increase Positive End Expiratory Pressure (PEEP) to improve respiratory function. Identification of complications and transport needs of these infants will inform service delivery. There is a need for ICU to assist in the management of the sicker infants, but HFHNCO<sub>2</sub> may mean that all but those requiring ICU can remain at their local hospital.

**Sunshine Hospital Paediatric Emergency Department (SH PED) managed over 25,000 children in 2016. This was the highest number of paediatric presentations in the history of the Department.**

# Pharmacy

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## Our Research Output

2

Projects

3

Presentations

## Head of Department

**Kent MacMillan**

The Pharmacy Department is committed to providing excellent patient care and promoting quality use of medicines at Western Health.

In 2016, the Pharmacy Department assisted in the roll out of the Medicine Management Plan (MMP) and the new version of the National Inpatient Medication Chart across the Western Health Network.

We have also conducted several quality assurance research projects in 2016. Our Renal Pharmacy team are investigating whether the introduction of MMP and reconciliation in the outpatient dialysis setting can improve patient care. We collaborated with other health networks in the development and validation of screening tools for patients at risk of medicine-related problems at presentation to, and after discharge from, the Emergency Department. The MedGap Project was a quality assurance project which assessed the roll out of an interim residential care medication administration chart. It was presented as a poster in 2016 at both the NPS Medicine Wise Conference and Western Health's Research Week.

The Medicines Information and Adverse Drug Reaction Pharmacist co-supervised two Latrobe University research projects at Western Health. They are 'A Patient's Perspective of Adverse Drug Reaction Management in a Hospital Setting' and 'Hospital Discharge Opioid Guidelines and Policies – a Victorian Survey.'

Three abstracts were submitted by Pharmacy staff at the 2016 SHPA Conference. The quality assurance project titled 'Monitoring of Sterile Cleanroom – What's Involved?' was selected as a poster presentation.

## Research Staff

**8 researchers and 3 students**

### Our Research

#### **Towards Improving Medicine Safety: Development and Validation of Screening Tools for Patients at Risk of Medicine-Related Problems at Presentation and After Discharge from the Emergency Department**

**Researcher:** A Weeks

**Collaborators:** J Edwards and S Taylor (Austin Health)

The study aims to develop a screening tool (phase 1) and validate this tool (phase 2) to identify patients at high risk of experiencing a medication-related problem, such that they may be prioritised by the emergency medicine pharmacist. This will reduce the likelihood of medication-related problems occurring.

#### **Improving Care: Introduction of Medication Management Planning and Reconciliation in the Outpatient Dialysis Setting**

**Researchers:** Amela Korajkic, Deanna Lee, Justine Neagle, Bessie Wong, James Wong and Wei Hurn Soh

This study evaluates the impact of introducing pharmacist-led medication reconciliation using an official form on timeliness of medication reconciliation, medication interventions, as well as patient and staff satisfaction. This will help us identify methods of improving medication management of high-risk hospital outpatients.

#### **A Patient's Perspective of Adverse Drug Reactions Management in a Hospital Setting**

**Researcher:** Matthew Scott

**Collaborators:** A/Prof Michael McDonough, Grace Wong and Richard Summers (La Trobe University)

This study assesses the effectiveness of the ADR reporting system and management process at Western Health. This will help us identify problems in our current ADR reporting system and management process.

#### **Hospital Discharge Opioid Guidelines and Policies – A Victorian Survey**

**Researcher:** Shane Downie

**Collaborators:** A/Prof Michael McDonough, Grace Wong and Joy Spark (La Trobe University)

This study aimed to discover what strategies, if any, Victorian hospitals are using to decrease risk associated with opioids prescribed on discharge. It also aimed to explore the perceived barriers to implementing these strategies. This will help guide us in future plans to develop and implement a hospital-wide policy on opioids on discharge and perhaps also for state-wide use.

Footscray Hospital



# Respiratory and Sleep Disorders

## Our Research Output

10

Projects

1

Publications

6

Presentations

6

Proceedings

The Department of Respiratory and Sleep Disorders Medicine is a busy clinical service dealing with the diagnosis and management of patients with a broad range of respiratory conditions and sleep disorders. We also provide the State service for review of immigrants issued with Tuberculosis Health Undertakings by the Commonwealth Government.

Our research areas examine the services that we provide and seek to evaluate their effectiveness and efficiency, with the aim of improving patient care and diagnostic methods. We also undertake clinical trials sponsored by pharmaceutical companies, with the aim of helping to develop new therapies for the treatment of respiratory diseases.

Our current projects include patients with asthma, COPD and pleural space infection, and areas related to diagnostic tests of pulmonary function and sleepiness.



## Head of Department

A/Prof Anne Marie Southcott

## Research Staff

3 researchers

### Our Research

#### When is the Optimal Timing to Implement Pulmonary Rehabilitation for People with COPD

**Researcher:** Dr Clarice Tang

**Collaborators:** AM Southcott, E Skinner, FC Blackstock and K Barker

The aim of this study is to evaluate the start time of pulmonary rehabilitation following admission for COPD exacerbation to see if this improves uptake and completion of pulmonary rehabilitation. Pulmonary rehabilitation is standard for inpatients with COPD and improves many outcomes, including mortality. Currently the rates of uptake and completion are low. Earlier start dates may improve this.

#### A Multidisciplinary, Nurse-Led Model of Asthma Care at Western Health to Meet Our Patients' Needs

**Researcher:** Dr Lata Jayaram

**Collaborators:** Dr Andrew Gillman, Sue Casanelia, Valerie Yee, Victor Reginato, Anita Morris, Lynnette Reid-Price and Dr Anne Marie Southcott

Asthma management is often poorly adhered to after discharge, resulting in exacerbation, readmission, and occasionally death. This project is a prospective randomised controlled trial of standard care for patients admitted with asthma, versus an intensive intervention arm which offers additional follow up, education, and support post-discharge. The trial will evaluate whether additional hospital support post-discharge can improve measures of asthma control,

healthcare utilisation, and quality of life. A new model of care may offer better outcomes for Western Health patients.

#### Reliability of DLCO Measurements at 2, 4 and 6-Minute Time Intervals in Restrictive and Obstructive Respiratory Conditions

**Researcher:** Lynnette Reid-Price

**Collaborators:** Georgette Mchaileh, Ceilito Samson, Dr Emily Karahalios, Dr Lata Jayaram and Dr Anne Marie Southcott

This project follows on from our pilot work in healthy normal subjects, where we found no significant difference in DLCO measurements at different time intervals. Currently the requirement to wait four minutes between each measurement when assessing gas transfer in the lung function laboratory lengthens the duration of the test. The aim is to see whether testing intervals impact the test result in participants with diagnosed restrictive or obstructive respiratory conditions. Recruitment is ongoing. If shorter testing intervals are equivalent this may shorten the duration of testing for patients with improved comfort and increased efficiency of the diagnostic service. The completion of this project may provide evidence for revision of existing testing guidelines published by the ATS/ERS.

#### Prevalence of Illicit Inhalant Use Among Patients Undergoing Respiratory Function Testing at Western Health

**Researchers:** Dr Mark Lavercombe, Dr Mark Dimitri and Georgette McHaileh

We are collecting anonymous data around inhaled drug use in a convenience sample of patients referred for lung function tests at Footscray and Sunshine Hospitals. The purpose is to identify the prevalence of inhaled drug use within our population. By better understanding the nature of drug use in our patient population we can provide better care.

#### Western Health COPD Readmission Project: Identifying Factors Associated with All-Cause Readmissions after a COPD-Related Hospitalisation

**Researchers:** Norman Weber, Dr Mark Lavercombe and Dr Melissa Yang

This study is an analysis of all patients with COPD admission and subsequent readmission to identify factors associated with readmission. If we can identify specific risk factors for readmission after COPD admission in our patient cohort, intervention might allow for a reduction in the readmission rate.

#### Does reversibility in FEF 25-75 correlate with reversibility in FEV1?

**Researchers:** Dr Irena Laska, Seymone Doyle and A/Prof Lata Jayaram

This project evaluates the clinical usefulness of reversibility in FEF 25–75% on spirometry to detect small to medium airways dysfunction in patients with asthma. Findings from this study may help identify more patients with airways disease who are not currently being identified on standard lung function reporting.



# Rheumatology

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## Our Research Output

**14**

Projects

**5**

Presentations

**2**

Proceedings

**1**

Chapter

## Head of Department

A/Prof Keith Lim

The Department's main research activities centre around the twin areas of mechanical osteoarthritis (OA) and inflammatory arthritis.

On mechanical osteoarthritis, the Rheumatology team continue to spearhead the collaborative long-term OA cohort study (HREC 120/07). Recruitment has passed the original target of 800. Data analysis continues and the team is in the process of updating the database. The main projects to spin off from this cohort study are:

- o Quantifying the role of knee effusions
- o The role of XRay changes and response to therapy
- o The use of the unloader brace in medial compartment OA
- o Optimising the time for total knee replacement (TKR) in advanced disease, and
- o Weight loss through dietary advice, effect on outcome

The Rheumatology team has demonstrated leadership in the region by taking over the funding and hosting of the Asian Osteoarthritis Network website (osteoarthritisnetwork.com). Through this website and collaboration with regional centres, we hope to encourage research and educational activities.

On inflammatory arthritis, the main projects involve radiological techniques, in collaboration with Dr Louise Bentley of Radiology. These include:

## Research Staff

8 researchers and 1 student

- o The role of DECT in detection of gout and CPPD
- o Digital Tomeosynthesis (DTS) in ankylosing spondylitis, and
- o The effect of biologics on joint erosions in rheumatoid arthritis (RA)

In collaboration with Prof John Hamilton's group at University of Melbourne, Dr Cecil Hor is pursuing an MD thesis on the role of GM-CSF in RA.

The Western Rheumatology Group has a large database of rheumatic conditions, being run by our Post Graduate Fellow, Matthew Jiang. This database has about 4000 patients and current lines of enquiry include outcomes following biologics and its effect on infections like TB, Hep B and Hep C.

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## Our Research

### OA Hip and Knee

**Researchers:** A/Prof Keith Lim, Dr Albert Leung and Dr Chamila Dabare

**Collaborators:** Carolyn Page (St Vincent's Hospital) and Prof Peter Choong (St Vincent's Hospital)

This is a longitudinal prospective cohort, looking at the optimum management of OA and the natural history of OA under conservative care. If we can understand how to better treat OA, a very common disease, we will also be able to delay surgery in most cases. This will have significant impact on the health budget and quality of life.

### GM CSF and RA

**Researchers:** Dr Cecil Hor and A/Prof Keith Lim

**Collaborators:** Prof John Hamilton and Dr Andrew Cook (University of Melbourne)

This project explores the role played by GM CSF in the sera and synovial fluids of RA patients. This may open up new therapeutic pathways for the treatment of RA.

### Unloader Knee Bracing in Medial Knee OA

**Researchers:** A/Prof Keith Lim and Dr Albert Leung

**Collaborator:** Carolyn Page (St Vincent's Hospital)

This project aims to show the value of bracing in various deformities. This in turn may help delay the need for TKR and improve quality of life for patients afflicted with medical knee osteoarthritis.

### The role of DTS in Ankylosing Spondylitis

**Researchers:** Dr Kim Le Marshall and A/Prof Keith Lim

**Collaborator:** Dr Louise Bentley

By using DTS as a means of diagnosing sacroiliitis earlier, this study investigates whether it is possible to obviate the need for MRI scans.

### Bone Scintigraphy in Undifferentiated Arthritis

**Researchers:** Dr Matthew Jiang, Dr Kim Le Marshall and A/Prof Keith Lim

This study will aim to quantify the value of scintigraphy in diagnosis and management of undifferentiated arthritis. By rationalising its usage, costs can be saved.





# Subacute and Aged Care

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## Our Research Output

11

Projects

1

Publication

11

Presentations

In 2016, the Division of Aged Care and Subacute Services continued multiple collaborative research activities across diverse stakeholders with a focus on developing and improving best care for patients and carers.

A strength of the Division in 2016 has been improvements in the care of patients admitted to Western Health with Behavioural and Psychological Symptoms of Dementia (BPSD). Working in partnership with the National Ageing Research Institute (NARI) and the Dementia Behaviour Management Advisory Service (DBMAS), we are increasing the capacity of hospital staff to improve the care of patients with BPSD and/or delirium, as well as the safety of staff and other patients.

The Wellcare Program, a day program for individuals with life limiting conditions, has been successfully piloted and we evaluated a massage therapy program for palliative care inpatients and outpatients. This ensures that patients receive holistic care that is aligned with national centres of excellence and has led to a reduction in symptom severity for patients accessing the service. Continuation of the service has been made possible via a grant from North and West Metropolitan Region Palliative Care Consortium (NWMRPCC), ensuring more holistic care for future palliative care patients at Western Health.



## Clinical Services Director

Dr Kris Ghosh

## Divisional Services Director

Natasha Toohey

## Research Staff

1 student

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### Our Research

#### Evaluation of a Massage Therapy Service for Palliative Care patients at Western Health

**Researchers:** Jennifer Zerafa, Dr Maria Coperchini, Anita Panayiotou and Debra Kerr

The Wellcare Program is an ambulatory, interdisciplinary service providing holistic care for people with palliative conditions and is part of the integrated subacute unit at Sunshine Hospital. It aims to support clients and carers through their illness, managing symptoms and promoting wellbeing. Wellcare Program nursing staff identified the use of complementary therapies as an area that they would like to expand on. A six-month trial and formal evaluation of a massage therapy service was undertaken by specialist-trained oncology massage therapists at Sunshine Hospital. The evaluation explored the impact on palliative care patients' wellbeing, investigating attendance rates and uptake of the service and patient satisfaction with the service. Preliminary survey data showed 100% uptake of the service, with 100% of patients who accessed the service requested further sessions. A 61% decrease in overall symptom severity was reported. The results of this project demonstrated that a massage therapy service is feasible and effective in the palliative care patient cohort at Western Health, ensuring that this group of patients receive holistic care that is aligned with national centres of excellence.

#### Clinical Effectiveness of Aspirin as an Adjunct to Compression Therapy in Healing Chronic Venous Leg Ulcers: A Randomised Double-Blinded Placebo-Controlled Trial (ASPRIVLU study)

**Researcher:** Dr Elizabeth Dapiran

**Collaborators:** Dr Carolina Weller (Monash University), Dr Anna Barker (Monash University), A/Prof Terrence Haines (Monash University), Prof John McNeil (Monash University), Dr Stephanie Ward (Monash University), Prof Martin Underwood (University of Warwick) and A/Prof Ian Darby (Royal Melbourne Institute of Technology)

Venous leg ulcers are a common and costly problem to our community. This study will look into treatment for venous ulcers with the aim to improve rates of healing and reduce rates of recurrence. The study is part of a multi-centre placebo controlled trial looking at aspirin in the healing and recurrence of venous leg ulcers. There is also a concurrent observational cohort study looking at venous leg ulcers.

#### Does the Development of the Re-Admission Prevention Team at Western Health Reduce 30-Day Hospital Re-Admission Rates?

**Researcher:** Dr Ruth The

**Collaborators:** Prof Edward Janus, Dr Inge Von Olshausen and Cherie Hunter

The Readmissions Prevention Team (RAPT) was developed at Western Health to identify and intervene among patients at high risk of early readmission, using the developed revised LACE Index scoring tool. The study aimed to identify readmission rates for high vs low-risk patients, compare readmissions rates for general medicine discharges before and after implementing RAPT, evaluate the revised LACE as a useful screening tool, and to identify effective measures in reducing readmission risk. This study demonstrated the complexity of applying readmission risk screening tools in clinical practice, and highlighted the potential contribution of frailty status. It also showed patient uptake of current preventive strategies was low, with the ongoing need to address barriers to follow up. Moreover, there was low impact of current interventions with the need for careful evaluation of future strategies.

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### Our Grants and Awards

**National Stroke Foundation Grant**  
J Carmody. Stroke Connect Program, \$100,000 (2016).

# Surgery

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## Our Research Output

**26**

Projects

**14**

Publications

**7**

Presentations

## Head of Department

**Prof Helen O'Connell**

Western Health provides a prodigious surgical service with 32,091 procedures performed in 2016. 23,000 of these were elective, 8500 emergency. Surgical units have had a strong focus on oncological and functional outcomes.

Excellent formal presentations at Research Week, highlighted in this report from the Breast and Endocrine Unit, demonstrate that with little formal research infrastructure, surgical research is robust. Head of Colorectal Surgery, Ian Faragher presented data from the DHHS database, with Dr Foster comparing hospital datasets. This data shows that colorectal outcomes achieved by the team at Western Health are of a high standard relative to comparable large health networks.

Research to improve cancer outcomes and survivorship is increasingly at the forefront of the field as our treatments save more lives. In Urology, supported by the Continence Service, Urologists, Radiation Oncologists and Oncologists, the Prostate Cancer Nurse Specialist is driving several initiatives that dovetail with primary care improvements to reduce the burden associated with prior treatment.

The Orthopaedic Unit deserves recognition for the quality and number of surgical research projects brought to fruition. We look forward to welcoming A/Prof Justin Yeung, who has been appointed as a full-time academic surgeon. Our existing collaborations, the energy and skill of the Western Health surgeons, and the formal research leadership will drive our research and data-fuelled productivity.

## Research Staff

**19 researchers and 8 students**

Urology is about to embark on a shared care project, rolling out a model proven in previous primary care research in collaboration with Prof Jonathan Emery, the Herman Prof of Primary Care Cancer Research at the University of Melbourne.

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## Our Grants and Awards

### **Victorian Cancer Survivorship Program Project Grant**

C Ogluszko. Implementing and Evaluating a Shared-Care Model of Survivorship for Prostate Cancer Patients in the West – A Western Health and North Western Melbourne Primary Health Network Collaboration. Department of Health and Human Services, \$300,000 (2016–2019).

### **Research Week Best Abstract Poster Award for Oncology/ Haematology**

C Ogluszko. Evaluating the Patient Experience of the Prostate Cancer Specialist Nurse Role. Western Health Research Week, \$1,500 (2016).

## Surgery

# General and Endocrine Surgery

### Head of Department

#### Bill Fleming

The Western Health General and Endocrine Unit is committed to contributing to the pool of knowledge in endocrine surgery and other aspects of general surgery. We are primarily interested in research that improves our patients' clinical care. In 2016, we have commenced a new MD research project. Two of our projects have been published in peer-reviewed journals and one of our other projects is ongoing.

### Our Research

#### Diagnostic Accuracy of FNA in Thyroid Nodules

**Researchers:** Joanne Chionh

This is an ongoing MD research project examining the concordance of fine needle aspiration results of thyroid nodules compared with final pathology results following thyroidectomy at our institution. We will be able to ensure that the quality of our cytology preoperatively is adequate and compare it with the international standards.

#### Post-Operative Hypocalcaemia in Total Thyroidectomy Patients with Incidental Parathyroidectomy

**Researchers:** Dr Carolyn Chew and Bill Fleming

**Collaborators:** Dr Ran Li and Dr Michael Ng

This project examined the correlation of hypocalcemia when parathyroid glands were inadvertently removed during surgery. It was published in the *ANZ Journal of Surgery* in March 2017.

#### Size matters: Systematic Differences Between Ultrasound and Pathological Evaluation of Thyroid Nodules – A Method Comparison Study

**Researchers:** Dr Carolyn Chew and Dr Laura Chin-Lenn

**Collaborators:** Dr Tracey Lam and Prof Steven Chan

This project examines the correlation between ultrasound and pathology size of thyroid nodules. This has been accepted for publication in the *ANZ Journal of Surgery*.

#### How Does Thyroidectomy for Benign Thyroid Disease Impact Upon Quality of Life? A Prospective Study

**Researchers:** Dr Synn Lynn Chin and Dr Laura Chin-Lenn

**Collaborators:** Dr Tracey Lam, Dr Carolyn Chew and Prof Steven Chan

This is an ongoing prospective study examining the quality of life of patients following thyroidectomy for benign disease. A manuscript is being prepared for submission.

**The Western Health General and Endocrine Unit is committed to contributing to the pool of knowledge in endocrine surgery and other aspects of general surgery.**



# Surgery

# Orthopaedics

## Head of Department

Phong Tran

The Orthopaedic Department performs over 1500 elective and 1500 emergency operations per year. We commenced our PROMs project a number of years ago, which allows us to monitor our elective patients' outcomes preoperatively, whilst on the waiting list, and postoperatively. There is increasing interest in healthcare governance on the value and efficacy of operative interventions, and the ongoing PROMs database will allow us to deliver much needed information. The Department is conducting a number of randomised control trials and continues to be a major contributor at the Australian Orthopaedic Association's Annual Scientific Meeting.

## Our Research

### **Averaging Rotational Landmarks During Total Knee Arthroplasty Reduces Component Malrotation Caused by Femoral Asymmetry**

**Researchers:** Tat Woon Chao, Liam Geraghty, Pandelis Dimitriou and Simon Talbot

Femoral component malrotation is a common cause of patient dissatisfaction after total knee arthroplasty. The sulcus line (SL) is more accurate than Whiteside's line as it corrects for variation in the coronal orientation of the groove. The hypothesis is that averaging the SL and posterior condylar axis (PCA) will reduce femoral malrotation.

### **Comparison of Two Total Knee Replacement Designs – A Randomised Control Trial**

**Researchers:** Dharsh Musiienko and Phong Tran

There are numerous total knee replacement designs but few direct comparison outcome studies. This study will help us decide which total knee design philosophy brings the best results.

### **Outcome of Foot and Ankle Surgery**

**Researchers:** Karen Bournes, David Shepherd, Sasha Roshan Zamir and Phong Tran

Foot and ankle surgery techniques and outcomes are continually evolving. This study will help us assess the outcomes of various techniques.

### **Comparison of Wound Closure Techniques in Neck of Femur Fractures**

**Researchers:** Inas Badres and Phong Tran

Wound ooze is a significant problem post-surgery for neck of femur fractures. This study will assess the difference between three different type of wound closure methods.

### **Comparison of Surgical Approach for Total Hip Replacement – Randomised Control Trial**

**Researchers:** Adrian Talia and Phong Tran

There are three common surgical approaches to total hip joint replacement surgery. This study will allow us to assess which approach is more beneficial to patients.



# Surgery

# Urology

## Head of Department

**Prof Helen O’Connell**

The Urology Unit at Western Health is about to embark on a shared care project, rolling out a model proven in previous primary care research. This is a collaboration with Prof Jonathan Emery, the Herman Prof of Primary Care Cancer Research at the University of Melbourne. It is an exciting initiative. Prostate Cancer Nurse Specialist Cindy Ogluszko has superbly developed a clinical role to support cancer patients with carefully documented outcomes. Over the last 12 months our collaborative research will enable us to complete an anatomical study and further our smooth muscle neosphincter studies. These are long term works in progress. We have been developing some major data-driven projects in the integration of continence services and improving access to outpatients. Finally, Dr Foster’s data shows our oncological and morbidity outcomes in major cancer surgery are some of the best in Victoria.

## Our Research

### **Patient Satisfaction Survey – Prostate Cancer Specialist Nurse Role**

**Researcher:** Cindy Ogluszko

**Collaborator:** Ailsa Cowie

This project aims to identify areas that satisfy patient needs and identify areas for service improvement from the patient perspective. Regular surveys of patients who use the PCSN service at Western Health will provide information about the accessibility, quality and value of the service, help to identify gaps between patient expectation and experience, and inform actions to maintain and improve the service.

### **Navigate: Randomised Control Trial of an Online Treatment Aide for Men with Localised Prostate Cancer and their Partners**

**Researcher:** Kevin Chu

**Collaborators:** Cindy Ogluszko and Prof Helen E O’Connell

The primary aim of this study is to evaluate the impact of an online decision aid for men with low risk prostate cancer and their partners. This will help men and their families understand their diagnosis for low-risk localised prostate cancer and confidence in selecting active surveillance as their treatment modality.

### **Management of Sexual Dysfunction Following Treatment for Colorectal and Prostate Cancer**

**Researcher:** Dr Suzy Kosmider

**Collaborators:** Cindy Ogluszko, Darren Katz and Ian Faragher

This project will review current assessment and management of treatment-related sexual dysfunction in male colorectal and prostate cancer survivors at Western Health and develop and implement pathways to better serve their needs.

### **Macroscopic Anatomy of Anterior Vaginal Wall and Urethra**

**Researcher:** Prof Helen E. O'Connell

**Collaborators:** Prof Janet Keast (University of Melbourne), Dr Nathan Hoag (Austin Hospital), Prof Noel Woodford (Victorian Institute of Forensic Medicine) and Dr Patrick Preece

A series of 13 fixed and fresh donated cadavers were systematically dissected to determine the anatomy of the anterior vaginal wall. In particular, we sought to determine whether a visible structure consistent with the G spot concept could be identified. Controversy exists around female urethral and vaginal anatomy. Knowledge of structures underpinning sexual health have direct relevance to surgery in this area enabling us to best preserve important structures during our operations. Macroscopic anatomical evidence for a discrete G spot are lacking. A further histological study is being established to determine the histology of this functional zone.

### **Re-Innervation of Transplanted Dartos Smooth Muscle Neosphincters in Rams**

**Researcher:** Prof Helen E. O'Connell

**Collaborators:** A/Prof James Brock (University of Melbourne), Prof Glenn Edwards (Charles Sturt University) and Dr Christine Hirst (Neo-sphincter Technologies)

Free grafts of ram dartos have been successfully transplanted to a location below the bladder neck. Re-innervation has been only sparsely and inconsistently demonstrated in the smooth muscle neo-sphincters. Relative to human and rabbit smooth muscle, the ram dartos is a relatively thin smooth muscle source interspersed with fibrous tissue. A biological neo-sphincter derived from the patient's own tissue, transplanted to the urethra and stimulated may prove to be an ideal treatment in a group of patients with severe sphincter dysfunction resulting in poor quality of life due to incontinence.

### **An 8-year Audit of Radical Cystectomy Outcomes in a Single Victorian Centre**

**Researchers:** J Crozier, P Tan, H O'Connell, J Huang and C Bishop

This study found patient selection, operative parameters, perioperative and oncological outcomes at Western Health are consistent with existing Australian series. Key markers of surgical quality, such as percentage of patients having lymphadenectomy, lymph node counts, operative times, complication rates and mortality, demonstrate Western Health is a leading centre for cystectomy in Australia.

**Dr Foster's data shows our oncological and morbidity outcomes in major cancer surgery are some of the best in Victoria.**





**Since becoming Australia's first female urologist, Prof Helen O'Connell's many achievements have included revolutionising the way medical students study female pelvic anatomy, as well as conducting more than 30 clinical trials.**



## Prof Helen O'Connell

### Director of Surgery and Head of the Urology Unit

Pioneering research has been the hallmark of Prof Helen O'Connell's internationally renowned career.

Since becoming Australia's first female urologist, her many achievements have included revolutionising the way medical students study female pelvic anatomy, as well as conducting more than 30 clinical trials. That spirit of innovation is now driving Prof O'Connell's work at Western Health, where she was appointed Director of Surgery and Head of the Urology Unit in 2016.

A major collaborative study involving the Urology Unit Urologists, the Prostate Cancer Nurse Specialist, North Western Melbourne Primary Health Network and Cancer Services at Western Health is a trial of a model of shared care for patients with low-stage prostate cancer. The five-year Shared Care project is supported by Department of Health funding for our dedicated Prostate Cancer Nurse, who facilitates personalised care shared by regional General Practitioners and Western Health clinicians. Prof O'Connell says this model not only improves care for patients, but will deliver "high-quality data" for future research. "There is also potential for more advanced forms of prostate cancer to come under this banner," she says.

Another new initiative for prostate cancer patients includes the Navigate Decision Aid – an interactive, online resource designed to help guide men and their families through the stress of diagnosis and potential treatment options. The online tool is a collaborative study between Western Health, Peter MacCallum Cancer Centre and

Swinburne University. "One of the things with a cancer diagnosis is there is potentially so much anxiety for patients around what they don't know," Prof O'Connell says. "For them to be able to get good quality information is likely to translate into better quality of life while they're living with a diagnosis, which may never materialise into a problem. That's a really important thing."

The Urology Unit is also establishing a partnership with the Victorian Prostate Cancer Registry which carefully tracks the outcome of prostate cancer treatments.

Prof O'Connell is excited to be forging a collaboration with Monash University's School of Public Health and Preventive Medicine, which will allow Western Health Urologists access to data from the Aspirin Reducing Events in the Elderly (or ASPREE) study. The study, led by Prof John McNeil, has tracked 19,000 healthy adults over five years, with the primary goal of determining whether daily low-dose aspirin prevents or delays the onset of age-related illness. Prof O'Connell says the data is a "magnificent" resource across a broad range of specialties – thanks to the detailed health and clinical measurements collected from participants.

"We are in the throes of setting up some studies using this very powerful Melbourne-based database," Prof O'Connell says. "We're delighted that the group has given us access to this valuable information." There is a series of urological questions embedded within the data which will serve as excellent control data for other studies.



# Women's and Children's

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## Our Research Output

**33**

Projects

**15**

Presentations

**3**

Proceedings

**5**

Publications

## Head of Department

A/Prof Glyn Teale

## Research Staff

9 researchers and 5 students

As we welcome the commencement of construction of the Joan Kirner Women's and Children's Hospital, we continue to expand our capacity to manage the diversity and complexity of our patient population. The continued development of our Maternal-Fetal Medicine, Gynaecological Oncology, Urogynaecology and Critical Care Services has increased our capacity to conduct research to better understand and develop evidence-based practice that will improve patient care. Research is very much a collaborative activity, with our obstetricians, gynaecologists and midwives continuing to build relationships with other disciplines, such as anaesthetics, general medicine, academics and institutions from partners at Deakin University, University of Melbourne and Murdoch Childrens Research Institute. The growth of these collaborations is reflected in the broad range of research projects the Division participates in and supports.

In 2016, our research focused on identifying women and babies at higher risk of adverse outcomes. A number of health service improvement projects were also undertaken to deliver standard of care for both obstetric and gynaecology patients.

The results of previous research projects addressing topics such as post-partum haemorrhage, maternity observations and response to deterioration, care of the obese pregnant woman, and postnatal bladder care have now been incorporated into guidelines and procedures, increasing service capability and improving patient outcomes.

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## Our Grants and Awards

### **NHMRC Project Grant (CIA)**

Understanding the Role of Endogenous and Pharmacologic Glycosaminoglycans in Preventing Pre-Eclampsia. National Health and Medical Research Council, \$500,146.63 (2013–2015, extended into 2016).

### **NHMRC Project Grant (CIB)**

Chondroitin Sulphate A and the Immune System during Placental Malaria. National Health and Medical Research Council, \$507,860 (2014–2017).

### **Lesley Eric Paddle Scholarship in Paediatric Orthopaedics**

M Bullen. The Applicability of pQCT in the Assessment of Fracture Healing in Children. University of Melbourne, \$7500 (2016).

### **Best Women's and Children's Research Presentation**

S Walker. Understanding the Failure to Identify Severe Growth Restriction. Western Health Research Week (2016).

# Obstetrics and Gynaecology

## Head of Department, Obstetrics

Dr Robin Burr

## Head of Department, Gynaecology

Dr Rupert Sherwood

### Our Research

#### Implementation of a Women's Health Advanced Practice Physiotherapy Clinic at Western Health

**Researchers:** Karina Coffey, Oliver Daly and Narelle Watson

The aims were to determine if a women's health physiotherapist-led clinic would result in improved access for patients referred to the Urogynaecology Clinic, enhanced service efficiency and coordination, and improved patient and staff satisfaction, without compromise to quality of care and patient outcomes.

This project addressed a number of issues:

- o The need for coordination of care between disciplines treating continence and pelvic floor issues at Western Health, including Physiotherapy, the Continence Clinic and Gynaecology, Urogynaecology and Urology, as well as the need to develop a common pathway for GPs to access these services

- o The prolonged time patients with incontinence and/or POP wait for assessment and primary management when referred by GPs
- o The low rates of women receiving standard-of-care first line treatments for pelvic floor issues and potential for these treatments to reduce need for medical intervention
- o Inefficient use of the service due to patients failing to attend, and
- o The need for validated patient reported outcomes and satisfaction to assess the quality of care, as well as staff satisfaction

After six months, 69% of patients seen in the clinic were discharged without requiring medical review. There was increased availability of new appointments in the Urogynaecology Clinic as well as an increased number of discharges. 90% of patients were very satisfied and all staff felt the service was appropriately structured to deliver safe, co-ordinated, person-centred care. Cost-effectiveness was demonstrated and the Clinic has now received ongoing funding.

**90% of patients were very satisfied and all staff felt the service was appropriately structured to deliver safe, co-ordinated, person-centred care.**



## Understanding the Failure to Identify Severe Growth Restriction

**Researchers:** Dr Sofia Walker, Dr Lauren De Luca and A/Prof Glyn Teale

The percentage of severely growth-restricted infants delivered at 40 weeks or beyond is an important indicator used to assess perinatal service performance. Such growth-restricted infants are at higher risk of adverse outcomes and as such should be delivered before the due date. The aim of this study is to determine the change in incidence of severely growth-restricted infants delivered at or after 40 weeks gestation over two years, and measure the current provision of antenatal care against Western Health standards as they pertain to assessment, surveillance or management of fetal growth restriction.

The study concluded there were lower rates of severe growth restriction delivered after 40 weeks, falling from 46% in 2012 to 22% in 2016. It appears that the delay in delivery is attributable to the difficulties of detecting growth restriction, rather than the management when it is identified. This improvement may be attributable to greater awareness and new referral pathways, with further improvement possible with greater adherence to current practice standards.

Dr Sofia Walker presented this at Research Week and was the recipient of the best Women's and Children's research presentation.



## Women's Perception of Safety During Labour and Birth: An Integrative Review

**Researcher:** Margaret McCormick

**Collaborators:** A/Prof Marie Gerdtz and Dr Wendy Pollack (University of Melbourne)

Safety during childbirth is a complex, multidimensional, yet ill-defined concept. Research suggests "not feeling safe" can contribute to the development of a range of poor outcomes for women and their babies, and increasingly expose healthcare providers to complaints and litigation. For this reason, providing a contemporary understanding of what "feeling safe" actually means for women, during labour and birth, is fundamental to improving organisational strategies aimed to achieving positive health outcomes for women and their babies.

This integrative review highlights a lack of shared understanding when defining safety during labour and birth. This has significant implications for both women and organisations. Broadening the organisation perspective of safety to include the women's view is essential. It will provide not only valuable insights, but possible solutions, to understanding and improving the safety of women during childbirth.

## Women's and Children's

# Maternal Fetal Medicine

### Head of Department

#### A/Prof Joanne Said

The Maternal Fetal Medicine (MFM) research group has been working to complete a number of laboratory-based research projects, as well as transitioning towards more clinically-focused research projects. A notable achievement in 2016 was the graduation of our PhD student, Tilini Gunatillake, who then continued as a Postdoctoral Researcher with the group for the remainder of 2016.

We have had an ongoing collaboration with Prof Mary Wlodek from the Department of Physiology at the University of Melbourne, investigating the role of various heparins in a mouse model, and our Masters student, Will Bevens, was awarded First Class Honours for his thesis in this area.

We have also completed recruitment and data collection for another multi-centred randomised trial. This project will investigate the role of daily enoxaparin injections for preventing the subsequent development of pre-eclampsia and fetal growth restriction in women who have previously experienced these complications. The findings from this important study were presented at the Society for Maternal Fetal Medicine Meeting in January 2017.

The FOX study (Fetal Oxygenation Study) was also completed in 2016. We have generated a vast amount of genomic data, which is currently undergoing bioinformatics analysis, with some exciting results presented at the Society for Reproductive Investigation in March 2017.

We continue to recruit for an ongoing multi-centred randomised trial, the MAGENTA study, which investigates the role of magnesium sulphate in the prevention of cerebral palsy in infants born between 30–34 weeks gestation.

In addition, we have generated some interesting pilot data regarding the role of antenatal corticosteroids in women with diabetes prior to elective caesarean section after 36 weeks. These data have formed the basis of an exciting international collaboration to undertake a formal randomised trial in this challenging area of perinatal medicine.

Finally, 2016 has seen us join two new large multi-centred collaborative trials – the My Baby's Movements trial and the LEAP1 trial. Our involvement in these trials is further recognition of the important patient population we have at Sunshine as well as our increasing capacity to contribute meaningfully to this type of research.

### Our Research

#### **Magnesium Sulphate at 30 to 34 weeks Gestational Age: Neuroprotection Trial (MAGENTA Study)**

**Researchers:** A/Prof Joanne Said and Dr Rossalyn Pszczola

**Collaborators:** Prof Caroline Crowther, Philippa Middleton, A/Prof Dominic Wilkinson and A/Prof Ross Haslam (University of Adelaide)

The aim of this study is to assess whether giving magnesium sulphate, compared to placebo, to women immediately prior to pre-term birth between 30–34 weeks reduces the risk of death or cerebral palsy in their children at age two corrected years. This will help us to identify ways of reducing the risk of developing cerebral palsy in infants who are at high risk. This trial has now achieved over 75% of its total recruitment target and recruitment at Sunshine Hospital continues to be steady. The two-year-old children have been returning for their neurodevelopmental and paediatric assessments and so far we have been able to achieve 100% follow up.

## A notable achievement in 2016 was the graduation of our PhD student, Tilini Gunatillake, who then continued as a Postdoctoral Researcher with the group for the remainder of 2016.

### **The Effect of Folic Acid Supplementation in Pregnancy on Preeclampsia (The FACT Study)**

**Researchers:** A/Prof Joanne Said and A/Prof Glyn Teale

**Collaborators:** Prof Mark Walker and Prof Shi Wu Wen (Ottawa Hospital Research Institute)

The overall aim of this study is to evaluate a new pre-eclampsia prevention strategy using a daily 4.0mg folic acid supplement in high-risk women. If this simple intervention is proven effective, it will help to reduce the risks and consequences of pre-eclampsia, making pregnancy safer for mothers and babies. In 2016, we completed recruitment and data collection for this trial and will complete the analysis of results in 2017. In the meantime, we are getting ready to launch the FACT4Child study – the long-term follow-up study of the children born to mothers enrolled in the FACT study.

### **Maternal Blood Test to Determine Acidaemic Status of Growth Restricted Foetuses in Utero (The FOX Study)**

**Researcher:** A/Prof Joanne Said

**Collaborators:** Dr Owen Stock, Prof Stephen Tong and Prof Susan Walker (Mercy Hospital for Women)

We have data suggesting hypoxia induced mRNA in maternal blood quantitatively correlates with the degree of fetal acidaemia in utero. Therefore, the aim of this study is to develop and validate a reference that can estimate the degree of fetal acidaemia for a given mRNA

readout in maternal blood. This study has the potential to improve the way we monitor babies who are not growing well in the womb. This simple blood test may help to improve our ability to detect small babies which are not getting sufficient oxygen and nutrition, so that we can deliver them before they die in the womb. We have generated vast arrays of genomic data which is undergoing bioinformatics analysis. The findings will be presented in 2017 at the Society for Reproductive Investigation meeting in Orlando.

### **Enoxaparin for the Prevention of Pre-Eclampsia and Intrauterine Growth Restriction (The EPPI Study)**

**Researcher:** A/Prof Joanne Said

**Collaborators:** Dr Katie Groom, Prof Lesley McCowan and Dr Claire McLintock (University of Auckland)

The aim of this study is to determine the difference in effect of prophylactic daily Low Molecular Weight Heparin (LMWH) injections with standard high risk antenatal care, compared to standard high risk antenatal care only, for the prevention of pre-eclampsia and Intrauterine Growth Restriction (IUGR) and to assess the size of the effect in this population. This study will help us to determine whether enoxaparin injections (low molecular weight heparin) are useful in preventing the development of pre-eclampsia or fetal growth restriction. In 2016, we completed recruitment and data collection and the final manuscript was prepared. The findings were presented at the international Society for Maternal Fetal Medicine (SMFM) in January 2017.

### **Novel Approaches to Understanding the Molecular Mechanisms of Placental Thrombosis in Human Fetal Growth Restrictions and Preeclampsia**

**Researcher:** A/Prof Joanne Said

**Collaborators:** Prof Paul Monagle, Dr Vera Ignjatovic (Murdoch Childrens Research Institute, Royal Children's Hospital) and Prof John Whitelockv (University of New South Wales)

Proteoglycans and their glycosaminoglycan side chains are abundantly expressed in the human placenta and play important roles in anticoagulation pathways, angiogenesis and inflammation. Our preliminary data has demonstrated significant differences in the expression of placental proteoglycans in pre-eclampsia and fetal growth restriction, suggesting that disordered proteoglycan function may play a role in these major placental mediated complications of pregnancy. This research aims to comprehensively investigate the functions of proteoglycans in human placenta and understand how these functions are altered in pregnancy disorders. A related collaborative project investigates the roles of pharmacologic glycosaminoglycans in an animal model representing altered proteoglycan expression. Together, the studies will improve our understanding and guide development of therapeutics to prevent and treat serious placental mediated disorders of pregnancy.

## Tilini Gunatillake

### PhD Student

Improving the lives of pregnant women and children is at the heart of Tilini Gunatillake's passion for research.

So when the 21-year-old was asked to help solve the mystery behind a potentially lethal pregnancy complication for her PhD, she jumped at the chance.

Researchers remain baffled about what causes pre-eclampsia, which is the most serious medical disorder of human pregnancy. It affects 5–10% of pregnant women and contributes to over 60,000 maternal deaths worldwide each year. Currently, there is no effective treatment or prevention for this disorder, which results in a continuous battle between survival of the fetus and the mother. It is usually a question of whether to deliver the baby prematurely to improve maternal health or to allow the fetus to reach its full growth potential and compromise the mother's health.

Dr Gunatillake joined a team, led by the head of Sunshine Hospital's Maternal Fetal Medicine Unit, A/Prof Joanne Said, in analysing a group of proteins that were decreased in the placenta among women with the condition.

She said her goals were to investigate the proteins' function in the placenta, determine how reductions in the proteins could potentially lead to pregnancy disorders, and establish therapeutic interventions to reduce the likelihood of developing pre-eclampsia.

The study, which ran from 2011–2016, began at the Royal Women's Hospital but later moved to Sunshine Hospital, with Ms Gunatillake promoted in the final year to Postdoctoral Research Fellow.

The research has been published in five journals and although it was found that having less of the proteins in the placenta was not a precursor to developing pre-eclampsia, the study was able to demonstrate a novel insight into one of the current treatments for pre-eclampsia.

"We didn't find any differences in cell function and still don't know what causes it, however, the results from my study were able to help us better understand and redirect the current body of research into developing better targeted therapeutic interventions to prevent pre-eclampsia," she said.

Ms Gunatillake's interest in the field was piqued during lectures on maternal and fetal health at the University of Melbourne, where she completed a Bachelor of Science.

"It really fascinated me, how so much of our long-term health outcomes are influenced by what happens in-utero," she said.

Her attraction to research has now sent her in a different direction – as an Ethics and Governance Submission Officer with Western Health – but one that she finds equally as satisfying.







**"It really fascinated me, how so many of our long-term health outcomes are influenced by what happens in-utero."**

# Women's and Children's Paediatrics

## Head of Department

### Dr Martin Wright

The Western Health Paediatric Department is one of the busiest secondary paediatric departments in the State and with paediatric presentations anticipated to increase in the near future, demand will only grow further. With the development of the new Women's and Children's hospital at the Sunshine Hospital campus, we will be well placed to meet the growing medical and allied health needs of the expanding paediatric population of the community in the West.

Through collaborations, both internally through the Orthopaedic Department, Emergency Medicine, Endocrinology and Diabetes, and the Australian Institute for Musculoskeletal Science, and externally through the Royal Children's Hospital, Parkville, the Western Health Paediatric Department has been involved in a number of research projects across a range of paediatric diseases. With the future plans for the new Joan Kirner Women's and Children's Hospital at Sunshine campus, it is anticipated that our involvement in research will only increase as we continue to pursue the delivery of evidence-based best practice in paediatrics.

## Our Research

### Assessment of Fracture Healing Using pQCT

**Researchers:** Dr Michael Bullen and A/Prof Christine Rodda

**Collaborators:** A/Prof Peter Pivonka (St Vincent's Hospital), Dr Romane Blanchard (St Vincent's Hospital) and Phong Tran

This study assessed the influence of casting materials on the interpretation of pQCT, assessed the effect of casting materials on moulding, and validated the use of pQCT in the assessment of fracture healing in children and teenagers using pQCT. Currently, fracture healing in children and teenagers is assessed by clinical examination and plain radiography, both of which are quite imprecise. It is hypothesised that pQCT potentially provides a more precise assessment of fracture healing.

### Admissions and Readmissions for Diabetic Ketoacidosis (DKA) in 15–25 Year Olds at Western Health in 2012

**Researchers:** Dr Annie Hung, A/Prof Christine Rodda and A/Prof Shane Hamblin

This project audited the admission and readmission rates for young people with Type 1 DM aged 15–25 years old in 2012. By comparing the data from year 2012 to the admission and readmission rates of the patients in the same population in the years following the introduction of the Young Adults Diabetes Service to Western Health, we hypothesise that by providing a developmentally appropriate, multidisciplinary clinic for young people with T1DM, they will have improved glycaemic control and less admissions to hospital with DKA.

### HAPPI Kids Study

**Researchers:** Dr Martin Wright and A/Prof Christine Rodda

**Collaborator:** Prof Paul Monagle (Royal Children's Hospital)

This is a Royal Children's Hospital / Murdoch Institute-led project, with Prof Paul Monagle as Principal Investigator. The aim of this project is to establish age-appropriate reference ranges for commonly ordered pathology tests. The outcome of this study is expected to provide up to date age-appropriate reference intervals for a large number of commonly ordered blood analytes for infants and children, using modern technologies.

# University of Melbourne

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## Our Research Output

**16**

Projects

**46**

Publications

**16**

Presentations

**1**

Book



# Department of Medicine

## Chair of Medicine

Prof Gustavo Duque

## Research Staff

**16 researchers and 18 students**

The Department of Medicine – Western Health partnership was re-launched in May 2016, when we then confirmed our members (68 in total) and their specific research interests. Our Department has established a solid supporting structure for our researchers, which includes a biostatistician on site (0.2FTE), simplified access to the research facilities at WCHRE (clinical trials and lab spaces), easy linking with the University's resources (Post-Graduate Office, IT, Minerva, etc.), and assistance with recruitment of new students and Postdoctoral Fellows.

In terms of supporting personnel, our Department has made a number of appointments. Dr Sharon Brennan-Olsen, a globally recognised expert in population health research, has been appointed as Senior Research Fellow. Steven Phu has come on board as Exercise Physiologist and Research Assistant. Senior Scientist Dr Lakshman Singh is in charge of developing our basic sciences infrastructure. Dr Ebrahim Bani-Hassam has been appointed as Research Fellow in charge of providing imaging services to all researchers at the Department. Ahmed Al Saedi will act as research assistant for basic sciences projects and as Executive Assistant in charge of providing clerical support to our members.

With the aim of increasing the quality and quantity of our research activities, several novel programs have been implemented at the Department of Medicine – Western Health. Our Master of Medicine Program has been a major success and has attracted four Physicians from Western Health, whom otherwise would not have the time or the support to perform their research activities. Our ongoing Project 20/10, targeted to recruit 20 new PhD students and train 10 new graduate supervisors between June 2016–2017, has been a success, with 14 new graduate students and seven new graduate supervisors already commenced.

In terms of international presence, we implemented a Visiting Fellows and Visiting Scholars Program, which received 15 applications in 2016, with five international research fellows visiting Western Health in 2016.

For 2017, the Department of Medicine – Western Health will continue an intensive recruitment program which involves new academics, honorary appointees, graduate students and supporting personnel. Funding will also be a priority, with major facilitation and support for funding applications offered to our members. With more than 30 applications to our international visiting fellows program in 2017, we expect that this program will continue as a major success of our Department and a way of solidifying the international image of Western Health as an important research hub.

Finally, following the University of Melbourne initiative to identify major research strengths and develop those specific areas, Western Health has identified the following key areas of research for 2017: cardiometabolic, neurology, musculoskeletal, respiratory medicine and population health. Clinical trials and commercialisation initiatives in these areas will be encouraged. Applications to major funding agencies are being encouraged, and our limited resources will be spent on those very promising research areas.

In 2016, the Department of Medicine – Western Health hosted 16 out of 22 Scholarly selective students (MD-RP) undertaking their research project at Western Health.



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## Our Grants and Awards

### AIMSS Seed Grant

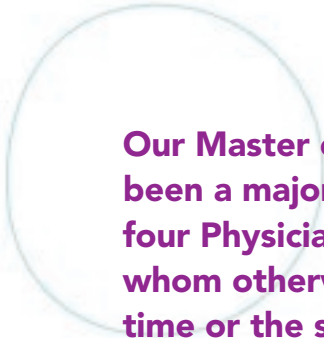
D Myers. Development of a 3D stem cell system to mimic the bone marrow microenvironment. Australian Institute for Musculoskeletal Science, \$15,000 (2016–2017).

### AIMSS Seed Grant

R Kinsella. Effect of vitamin D on balance in older falls. Australian Institute for Musculoskeletal Science, \$10,000 (2016–2017).

### AIMSS Seed Grant

E Rybalka. Pre-Clinical Safety Evaluation of Purine Nucleotide Therapy for the Treatment of Duchenne Muscular Dystrophy. Australian Institute for Musculoskeletal Science, \$10,000 (2016–2017).



**Our Master of Medicine Program has been a major success and has attracted four Physicians from Western Health, whom otherwise would not have the time or the support to perform their research activities.**

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## Our Research

### A Translational Network-Led Multi-Centre RCT to Examine the Efficacy of Oral N-Acetylcysteine in Bronchiectasis

**Researcher:** A/Prof Lata Jayaram

Following A/Prof Jayaram's previous research initiative, this project aims to establish a translational network in preparation to several RCTs, testing the efficacy of oral n-acetylcysteine in bronchiectasis.

### Development of a New Treatment for Osteoporosis

**Researchers:** Prof Gustavo Duque, Dr Lakshman Singh, A/Prof Damian Myers and Ahmed Al Saedi

**Collaborators:** Prof Gilles Guillemin (Macquarie University) and Dr Chris Vidal (University of Sydney)

This project focuses on preclinical validation of picolinic acid as a new treatment for osteoporosis. It will complete all the FDA-required steps for preclinical validation of new treatments for osteoporosis and aims to generate enough evidence to move into human studies.

### Rheumatoid Arthritis, Social Adversity and Low Health Literacy: An Intervention Study to Reduce Disease Severity and Treatment Non-Adherence

**Researcher:** Dr Sharon Brennan-Olsen

**Collaborators:** Prof Gustavo Duque, Prof Kerrie Sanders (Australian Catholic University) and Dr David Scott

This project will analyse multiple databases obtained from several major cohorts around the world, focusing on the relationship between social adversity and non-adherence to treatment in patients suffering from rheumatoid arthritis.

### Dose Range-Finding Study to Assess Multiple Doses and Evaluate Safety and Tolerability of Bimagrumab in Patients with Sarcopenia

**Researchers:** Rita Kinsella, Dr David Scott, Steven Phu and Dr Stephanie Ward

This is phase 2 RCT testing of the effect of Bimagrumab on sarcopenia. If effective, this will be a major advance for the treatment of sarcopenia in humans.

### Phenotype of Sarcopenic Obesity

**Researcher:** Dr David Scott

**Collaborator:** Prof Peter Ebeling

This project looks at the specific characteristics of patients suffering from sarcopenic obesity. Assessment includes imaging and biochemistry with the aim of identifying a phenotype to be used in future clinical trials.

# Western Clinical School

## Head of Department

### A/Prof Stephen Lew

2016 has seen a flurry of activity, with 11 projects completed in the early half of the year and a further 22 taken up by incoming students in the latter. As in previous years, there were strong contributions from the Orthopaedics Unit, Emergency, Drug and Alcohol and Surgery in the completed projects. The increase in

projects in the latter half of 2016 saw an increase in supervisor numbers, with AIMSS representing the lion's share of projects (11 of the 22). Of the 22 projects, 16 were taken up by Western Clinical School students, compared with six of the 11 in 2016.

In 2016 the name of the projects changed to MD Research Project (MDRP), to lessen confusion with the Vocational Selective, another part of the MD4 year.

Looking ahead, we hope to offer more projects in 2017 by increasing our pool of supervisors and partnering with other parts of the University to develop projects. With the growth of research at Western Health we can be optimistic that we will increase both the number and quality of projects on offer in the future.

## Western Clinical School Selected Scholarly Projects

Student name	Project title	Supervisor
Annika Berglund	Cervical Spine Imaging in Children and Young Adults Following Trauma. An Audit of Computed Tomography and Plain X-Rays	Dr David Krieser
Karen Bourns	Patient Reported Outcomes in Orthopaedic Surgery	Mr Phong Tran
Bing Jian Chang	Building Bone from Blood: How Does Vitamin D Supplementation Affect the Number of Circulating Osteoprogenitor Cells?	Prof Gustavo Duque
Amanda Chong-Halliday	The Effect of Vitamin D on Osteoblasts in the Presence of Palmitate	Prof Gustavo Duque
Lucy Desmond	PCR-Based Microbial Diagnostics for Community-Acquired Pneumonia in Modern Hospital Populations	Dr Harin Karunaweewa
Konrad Gunter	Uptake of Pertussis and Influenza Vaccination During Pregnancy	A/Prof Jo Said
David Heelan	Community Opioids Following Acute Surgical Care: A Multicentre Study	Dr Noam Winter
Charis Kho	Outcome Measures in OA of the Knee	A/Prof Keith Lim
Ade Kurniawan	Intrathecal Morphine (ITM) for Hepatobiliary Surgery. A Systematic Review with Meta-Analysis and Trial Sequential Analysis	Dr Georgina Imberger
Ronnie Lau	The Environmental Footprint of Septic Shock in the ICU	Dr Forbes McGain
Michael Marazita	What Effects do Age, Hormone Levels and Nutrition Have on COP Cells in Osteosarcopenic Obesity?	Prof Gustavo Duque
Timothy Mason	Emergency Department (ED) Presentations from Residential Aged Care Facilities (RACFs)	Dr Inese Tucker
Samuel Maxwell	Patient Reported Outcomes in Orthopaedic Surgery	Mr Phong Tran

Student name	Project title	Supervisor
Nusry Nazeem	Efficacy and Feasibility of a Pedometer Guided Physical Activity Intervention in Overweight Pregnant Women – A Pilot Study	Dr Elizabeth Hessian
Jing Qiao	Radiological Progression in RA and AS	A/Prof Keith Lim
Callan Rauchfuss	Diagnostic accuracy of Fine Needle Aspiration (FNA) in thyroid Nodules	Dr Joanne Chionh
Matthew Redmond	Changes in Circulating Osteoprogenitors (COP) Cells in Osteosarcopenic Obese Older Individuals	Prof Gustavo Duque
David Sahhar	Patient Reported Outcomes in Orthopaedic Surgery	Mr Phong Tran
Ian Teh	Radiological Progression in RA and AS	A/Prof Keith Lim
Andrew Wang	Efficacy and Feasibility of a Pedometer Guided Physical Activity Intervention in Overweight Pregnant Women – A Pilot Study	Dr Elizabeth Hessian
Norman Weber	In Admissions at Western Health, Where the Principle Diagnosis is COPD, What Factors are Associated with Unplanned Readmission?	Dr Mark Lavercombe
Zheyi (Zoe) Zhou	Outcome Measures in OA of the Knee	A/Prof Keith Lim
Imogen Ackerley	Age-Specific D-Dimer Cut-Off Scores in the Assessment of PTE – The ADAPT study	Prof Anne-Maree Kelly
Andy Ho	Does Patellar Resurfacing During Total Knee Arthroplasty Improve Patient Satisfaction in Patients with Abnormal Preoperative Coronal Alignment?	Mr Phong Tran
Sue Lynn Lim	Does EphB1 have a Functional Role in Colon Cancer Spread?	Prof Steven Chan
Lewis Murray	Independent Medical Examinations Regarding Chronic Non-Cancer Pain with Prolonged Opioid-use: A Quality Assurance Audit	A/Prof Mike McDonough
Ross Newman	Identification of Factors Affecting Individual Patients' Opioid Dosage Over Time and their Decisions to Change Dosage, in the Context of Chronic Non-Cancer Pain	A/Prof Mike McDonough
Nicholas Pergaminelis	Patient-Reported Outcomes of Arthroscopic Debridement of Isolated Ligamentum Teres Tears	Mr Phong Tran
Christa Purdie	A Descriptive Analysis of Patient Reported Outcome Measures (PROMs) as Completed by Patients with a Foot or Ankle Pathology that has been Managed by the Orthopaedic Department at Western Health	Mr Phong Tran
Jesse Renouf	Outcome of the Arthroscopic Treatment of an Isolated Labral Tear Using the i-HOT33	Mr Phong Tran
Brittany Scott-Rimington	Are Stethoscopes Vectors of Contamination in the Emergency Department?	Prof Anne-Maree Kelly
Sean Seow	Investigating the Effect of EphB2 in Colon Cancer Tumour Growth and Stromal Interactions Using In Vivo Models	Prof Steven Chan
Stephen Tsimos	Children Presenting to Sunshine Hospital's Emergency Department are More Likely to be Obese	Dr Martin Wright

# Victoria University

## Our Research Output

12

Projects

21

Publications

11

Presentations

1

Chapter

4

Proceedings



## Head of Department

Prof Alan Hayes

## Research Staff

23 researchers and 9 students

Victoria University research at Western Health includes Nursing (see separate entry) and AIMSS (see separate entry). Further research conducted at the WCHRE includes staff and students from the College of Health & Biomedicine and College of Sport & Exercise Science, who are affiliated with the Centre for Chronic Disease (CCD) and Institute for Sport, Exercise and Active Living (ISEAL). Research extends from basic sciences, investigating mechanisms for chemotherapy-induced gastrointestinal and skeletal muscle dysfunction, to pre-clinical testing of potential therapies for muscular dystrophy. All projects have a disease focus and our aim is to translate these findings to improved clinical outcomes. Staff are also actively engaged in collaborative projects in stroke rehabilitation (in collaboration with Physiotherapy) and treatment of heart failure patients (in collaboration with Cardiology).

### Our Research

#### The Design of Novel Therapeutics for Metastatic Cancers

**Researcher:** A/Prof JT Price

**Collaborators:** Prof G McArthur (Peter MacCallum Cancer Centre), A/Prof J Wilce (Monash University) and Dr J Quinn (Garvan Institute of Medical Research)

We have identified a number of important molecular targets that are fundamental to the process of cancer metastasis. This project seeks to design first-in-class inhibitors of these targets that can be used as stand-alone agents or in combination with conventional therapeutics for the treatment of metastatic cancers. Metastasis is the major cause of morbidity and death in cancer patients and currently no curative treatments are available for metastatic cancers. The development of treatments that specifically target metastatic cancer will lead to improved survival, clinical outcomes and enhanced quality of life for patients who have metastatic disease in the most common and aggressive cancers such as breast, prostate, melanoma, colorectal, renal and pancreatic.

#### Enteric Nervous System as a Target to Alleviate Gastrointestinal Side-Effects of Chemotherapy

**Researcher:** Dr Kulmira Nurgali

**Collaborators:** Prof R Abalo (Universidad Rey Juan Carlos), Prof JC Bornstein (University of Melbourne), Prof S Brookes (Flinders University), Prof John Orbell (Victoria University), Prof V Apostolopoulos (Victoria University) and Dr E Rybalka (Victoria University)

This project aims to understand the mechanisms underlying delayed and persistent gastrointestinal (GI) side-effects of chemotherapy and to test treatments that might alleviate these debilitating and life-threatening side-effects. The use of a novel neuroprotective strategy provides new avenues for the development of therapies to achieve this aim. Colorectal cancer is the second most commonly diagnosed cancer and cause of cancer death in Australia. Chemotherapy is given before or after surgery to most patients. Diarrhoea, constipation, oral mucositis, nausea and vomiting are common GI side-effects of anti-cancer chemotherapy experienced by 80-90% of patients. As a result of these side-effects, patients develop malnutrition and dehydration leading to rapid weight loss (cachexia). Early death rates of up to 4.8% associated with chemotherapy are due to GI toxicity. The incidence of chronic post-treatment diarrhoea amongst cancer survivors can persist for up to 10 years. Due to these side effects the dose of chemotherapy is often limited, reducing efficacy of the anti-cancer treatment. This project will develop novel therapies to improve the efficacy of anti-cancer treatment.

# Victoria University

## continued

### **Mesenchymal Stem Cells for the Treatment of Enteric Neuropathy Associated with Inflammatory Bowel Disease**

**Researcher:** Dr Kulmira Nurgali

**Collaborators:** Prof JC Bornstein (University of Melbourne), Prof Vasso Apostolopoulos (Victoria University), Dr Raj Eri (University of Tasmania), Prof Claude Bernard (Monash University), Prof Richard Boyd (Monash University), Dr Paul Bertrand (RMIT), Prof Enzo Palombo (Swinburne University) and Dr Samy Sakkal (Victoria University)

The proposed project is the first to investigate therapeutic potential of mesenchymal stem cell (MSC)-based treatments on human enteric neurons and in the animal model of spontaneous chronic colitis. Understanding the mechanisms of neuroprotective effects of MSCs will lead to target identification for therapeutic intervention and provide avenues for the development of MSC-based therapies that can be safely used for the treatment of Inflammatory Bowel Disease (IBD).

IBD comprises two main pathologies, Ulcerative Colitis (UC) and Crohn's Disease (CD), affecting more than 80,000 Australians. This number is expected to increase to over 100,000 by 2022. IBD costs our economy \$3.1B per year. Every year approximately 5,200 Australians are diagnosed with CD or UC. Current therapeutics for IBD are very toxic, have severe adverse effects and become ineffective over time. Thus, the search for novel therapies for the treatment of IBD is crucial.

### **The Effects of Dietary Inorganic Nitrate on Exercise Performance in Heart Failure**

**Researchers:** Prof Jason Allen and A/Prof Itamar Levinger

**Collaborator:** A/Prof Christopher Neil

This study aims to determine the effects of one week of inorganic nitrate supplementation on exercise performance in patients with heart failure. Results from this study will provide preliminary data about the feasibility and applicability of inorganic nitrate supplementation as a novel treatment for patients with heart failure. We ultimately hope that this line of research can provide new therapeutic targets and innovative treatments for patients with congestive heart failure.

### **Optimising Clinical and Functional Outcomes in Older Adults with Heart Failure using the Peripheral Remodelling Through Intermittent Muscular Exercise (PRIME) Approach: A Pilot Study**

**Researcher:** A/Prof Christopher Neil

**Collaborators:** Dr Emily Karahalios (University of Melbourne), Prof Jason Allen (Victoria University), A/Prof Itamar Levinger (Victoria University) and Dr Elizabeth Skinner

This study aims to determine the effects of PRIME exercise training, in comparison to ESSA recommended exercise training on aerobic capacity, muscle strength and quality of life in older patients with chronic heart failure (CHF). Older patients with CHF are often physically fragile and current enrolment into Western Health's cardiac rehabilitation programs is poor. Data from this study will inform whether PRIME is tolerable in the elderly patient with CHF. Ultimately, if successful we may change current practice and improve the delivery of exercise rehabilitation to the full spectrum of CHF patients, including the frail elderly, and optimise clinical and functional outcomes in this patient group and others.

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## Our Grants and Awards

### **NHMRC Project Grant**

J Quinn, MT Gillespie and JT Price. Does Causing Stress in a Bone Cause it to Become Weaker? The Role of Cell Stress Responses in Inflammation-Associated Bone Loss. National Health and Medical Research Council, \$653,558 (2014–2016).

### **Victoria University Clinical Exercise Science Program Grant**

E Rybalka, A Petersen, A Hayes, G McConell, K Nurgali, C Goodman, R Blazev, M Sullivan-Gunn, C Timpani and E Hanson. Protective Potential of BGP-15, Idebenone and Nitrate Against Chemotherapy-Induced Skeletal Muscle Atrophy and Dysfunction. Victoria University, \$19,900 (2015–2016).

### **The Irene Lucas Foundation Equipment Grant**

V Apostolopoulos and K Nurgali. Research Equipment Purchase Grant for Eppendorf Xplorer Electronic Multichannel Multistep Pipettes. The Irene Lucas Foundation, \$4966 (2016).

### **Victoria University Central Research Grant**

S Sakal, K Kulmira Nurgali and V Apostolopoulos. Mesenchymal Stem Cells for the Treatment of Enteric Neuropathy Associated with Inflammatory Bowel Disease. Victoria University Central Research Grant Scheme, \$29,328 (2016).

### **Western Health Research Grant**

C Neil, J Allen, I Levinger, E Skinner, E Karahalios, J Saliba and C Giuliano (Masters Candidate). Optimising Clinical and Functional Outcomes in Older Adults with Heart Failure Using the Peripheral Remodelling Through Intermittent Muscular Exercise (PRIME) Approach: A Pilot Study. Western Health Research Grant, \$30,000 (2016).

### **National Strength and Conditioning Association Foundation International Collaboration Grant**

S Dorgo, A Hayes and D Scott. Combating Dynapenia in Diverse Ethnic Groups of Older Adults. NSCA Foundation, \$55,537 (2016).

### **AIMSS Seeding Grant**

E Rybalka, A Hayes and C Timpani. Pre-Clinical Safety Evaluation of Purine Nucleotide Therapy for the Treatment of Duchenne Muscular. AIMSS Seed Funding Grant, \$10,000 (2016–2017).

### **National Heart Foundation Project Grant**

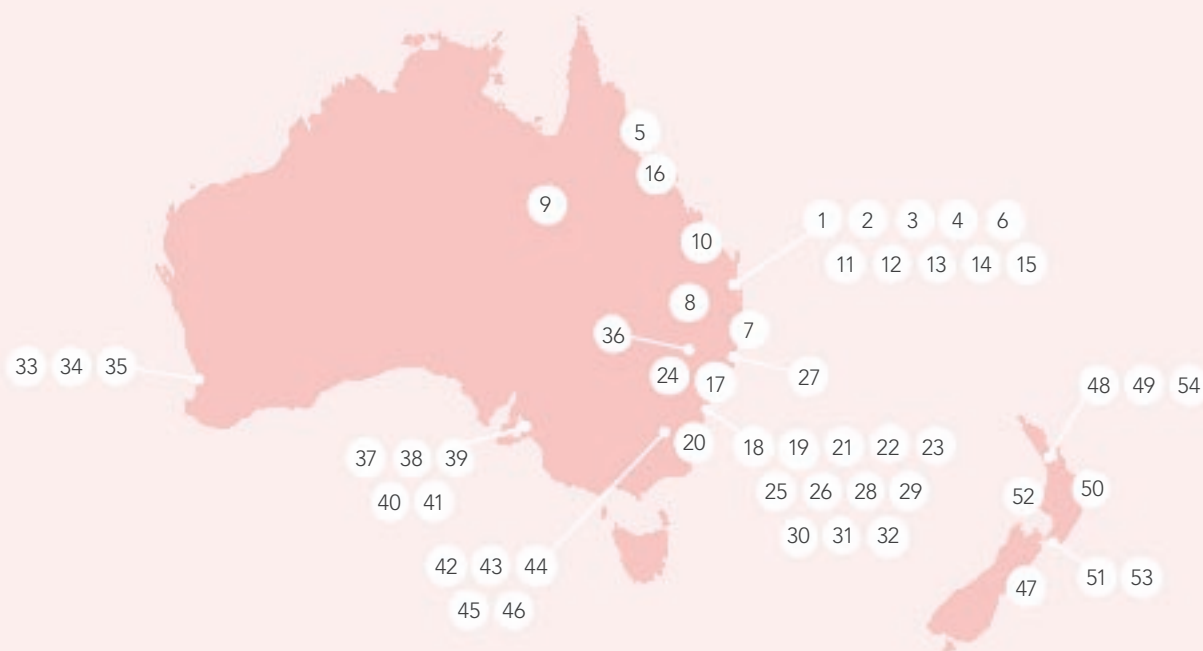
J Allen, I Levinger, C Neil and M Woessner (PhD Candidate). BEET CHF – Effects of Dietary Inorganic Nitrate Supplementation on Exercise Performance in Chronic Heart Failure. National Heart Foundation of Australia, \$74,666 (2017).

### **Bega Cheese Industry Grant**

A Hayes, E Rybalka and C Goodman. Whey Peptide WP-1 for the Treatment and Prevention of Sarcopenic Muscle Wasting. Bega Cheese, \$58,669 (2017).

**All projects have a disease focus and our aim is to translate these findings to improved clinical outcomes.**

# Our Partners



## Australia

1. Queensland Institute of Medical Research (QIMR)
2. Queensland University of Technology (QUT)
3. Royal Brisbane Hospital (RBH)
4. The University of Queensland
5. Cairns Hospital
6. Greenslopes Hospital
7. Gold Coast
8. Ipswich Hospital
9. Mt Isa Hospital
10. Nambour Hospital
11. Prince Charles
12. Princess Alexandra
13. Queen Elizabeth II Jubilee
14. Redcliffe Hospital
15. Redlands Hospital
16. Townsville Hospital
17. University of Newcastle
18. The George Institute for Global Health

19. The University of Sydney
20. Wollongong Hospital
21. Youth Health, Brain and Mind Research Institute
22. Blacktown / Mt Druiitt
23. Canterbury
24. Dubbo Base Hospital
25. Liverpool Hospital
26. Nepean Hospital
27. Port Macquarie
28. RPA Hospital
29. Royal North Shore
30. St George
31. St Vincent's Sydney
32. Sutherland
33. Princess Margaret Hospital for Children
34. Armadale Hospital
35. Sir Charles Gairdner
36. Peel Health
37. Flinders University
38. SA Health
39. University of South Australia

40. Modbury Hospital
41. Queen Elizabeth
42. Australian National University
43. Australian Research Council (ARC)
44. Australian Sports Medicine Association
45. Cooperative Research Centres (CRC)
46. National Health and Medical Research Council (NHMRC)

## New Zealand

47. Kidsfirst Kindergartens, New Zealand
48. Starship Children's Health, New Zealand
49. Auckland University of Technology (AUT)
50. Hawkes Bay
51. Hutt Valley
52. Palmerston North Hospital
53. Wellington Regional Hospital
54. Auckland Bioengineering Institute





## Global

- 55. Population Health Research Institute (PHRI) McMaster University, Ontario (Canada)
- 56. University of Manitoba, Winnipeg (Canada)
- 57. University of Saskatchewan
- 58. Mayo Clinic, MN (US)
- 59. University of California, San Francisco (US)
- 60. University of Missouri (Kansas City)
- 61. Harvard University, MA
- 62. National Institute of Mental Health (NIMH), Washington DC
- 63. The Brain and Behavior Research Foundation, New York USA
- 64. Yale University, CT (US)
- 65. Nottingham University Hospitals NHS Trust (UK)
- 66. Oxford University (UK)
- 67. The University of Sheffield (UK)
- 68. Universities of Exeter and Plymouth (UK)
- 69. Bristol University
- 70. World Health Organisation (Switzerland)
- 71. ETH Zurich
- 72. Instituto de Salud Carlos III. Ministry of Science and Innovation Fondo de Investigación Sanitaria, Spain
- 73. Lund University, Sweden
- 74. Aalborg University, Denmark
- 75. Vienna University of Technology
- 76. Asia Pacific Stroke Association, India
- 77. National Stroke Association of Sri Lanka
- 78. University of Colombo, Sri Lanka
- 79. USM-Universiti Sains Malaysia
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- 81. Changi General Hospital
- 82. Khoo Teck Puat Hospital
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- 86. Pamela Youde Nethersole Eastern Hospital, Hong Kong
- 87. Prince of Wales Hong Kong
- 88. The Chinese University of Hong Kong
- 89. Tuen Mun Hospital, Hong Kong

# Our Victorian Partners

## Collaborators

- o Alfred Health
- o Ambulance Victoria
- o ANZ Breast Cancer Trials Group
- o ANZ Intensive Care Society Clinical Trials Group
- o ANZ Intensive Care Research Centre (ANZICRC)
- o Asia Pacific Association of Young Neurologists and Trainees
- o Austin Health
- o Australasian College for Emergency Medicine (ACEM) Clinical Trials Group
- o Australasian Leukemia and Lymphoma Group
- o Australian Medical Association, Victorian Branch
- o Australian Sports Medicine Association
- o Australasian Kidney Trials Network
- o Australian Lung Trials Group
- o Baker IDI
- o Bendigo Health Care Group
- o Beyond Blue
- o BioGrid



- o Biomedical Research Victoria
- o Cancer Trials Australia (CTA)
- o Cochrane Renal Group
- o College of Intensive Care Medicine of Australia and New Zealand
- o CRC for Mental Health
- o Dorevitch Pathology
- o Deakin University
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- o Diabetes Australia (Victoria)
- o Diabetes Australia Research Foundation
- o Eastern Health
- o Florey Neurosciences Institutes
- o General Practice Victoria
- o Kidney Health Australia
- o LaTrobe University
- o Ludwig Institute of Cancer Research
- o MACH Partners
- o Melbourne Medicare Local
- o Melbourne Neuroscience Institute
- o Melbourne Brain Centre
- o MonashHeart, Southern Health
- o Monash Medical Centre (MMC)
- o Monash University
- o Murdoch Children Research Institute
- o National Stroke Research Institute
- o Networking Health Victoria
- o Neuroscience Trials Australia (NTA)
- o North-East Health Wangaratta
- o North West Melbourne PHN
- o Nurses Board of Victoria
- o ORYGEN
- o Osteoporosis Australia
- o Peter MacCallum Cancer Centre
- o Royal Australasian College of General Practitioners (RACGP)
- o Royal Australasian College of Physicians (RACP)
- o Royal Melbourne Hospital (RMH)
- o Royal Melbourne Institute of Technology (RMIT)
- o St Vincent Hospital (SVH)
- o Stroke Society of Australasia
- o The Cancer Council of Victoria (CCV)
- o The Heart Foundation
- o The Royal Women's Hospital (RWH)
- o The Royal Children's Hospital (RCH)
- o The University of Melbourne
- o The Victorian Forensic Paediatric Medical Service (VFPMS)
- o University Hospital Geelong
- o Victorian and Interstate Health Services
- o Victoria University
- o Victorian Cancer Agency (VCA)
- o Victorian Comprehensive Cancer Centre (VCCC)
- o Victorian Stroke Clinical Network
- o Walter and Eliza Hall Institute (WEHI)
- o Western Region Health Centre

## Sponsors

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- o ImClone
- o Intensive Care Foundation
- o Janssen-Cilag
- o Jansen and Millinium
- o Novartis Oncology Australia
- o Merck, Sharp and Dohme (MSD)
- o Pfizer Oncology
- o Pharmaxis
- o PPD Australia
- o Roche Pharmaceuticals
- o Rotary (Footscray Club Inc)
- o Sanofi-Aventis
- o Servier Australia
- o Shire Pharmaceuticals
- o SIRTEx Medical Ltd
- o Victorian Cancer Agency (VCA)
- o Windermere Foundation
- o Western and Central Melbourne Integrated Cancer Service (WCMICS)
- o Western Region Health Centre
- o Wyeth Australia Pty Ltd







### **Footscray Hospital**

Gordon Street  
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8345 6666

### **Sunshine Hospital**

Furlong Road  
St Albans VIC 3021  
PO Box 294  
St Albans VIC 3021  
8345 1333

### **Sunshine Hospital Radiation Therapy Centre**

176 Furlong Road  
St Albans VIC 3021  
8395 9999

### **Western Centre for Health Research and Education**

Sunshine Hospital  
Furlong Road  
St Albans VIC 3021  
8345 1333

### **Sunbury Day Hospital**

7 Macedon Road  
Sunbury VIC 3429  
9732 8600

### **Williamstown Hospital**

Railway Crescent  
Williamstown VIC 3016  
9393 0100

### **Drug Health Services**

3-7 Eleanor Street  
Footscray VIC 3011  
8345 6682

### **Hazeldean Transition Care**

211-215 Osborne Street  
Williamstown VIC 3016  
9397 3167

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