



OUR VISION

Together, caring for the West
Our patients, staff, community
and environment

OUR PURPOSE

Leading the delivery of a
connected and consistent patient
experience and providing the
best care to save and improve
the lives of those in our community
most in need.

OUR VALUES

Compassion
Consistently acting with empathy
and integrity

Accountability
Taking responsibility for our
decisions and actions

Respect
Respect for the rights, beliefs
and choice of every individual

Excellence
Inspiring and motivating,
innovation and achievement

Safety
Prioritising safety as an essential
part of everyday practice

OUR STRATEGIC AIMS

Growing & improving the delivery
of safe, high quality care

Connecting the care provided
to our community

Communicating with our patients,
our partners and each other with
transparency and purpose

Being socially responsible and
using resources sustainably

Valuing and empowering our people

Acknowledgement of Traditional Owners:

Western Health respectfully acknowledges the traditional owners of the land on which its sites stand as the Boon Wurrung and the Wurundjeri people of the greater Kulin Nation.

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FOREWORD



A/Prof Alex Cockram
Chief Executive



Prof Edward Janus
Director of Research

It's been an exciting year of progress and achievement in research at Western Health. We have established and embedded the Western Health Research Roadmap 2015-2020. The roadmap identifies key strategic research priorities that will ensure our organisation becomes a leader in translational research and addresses the healthcare needs and expectations of our community in the West.

We established a research education and training program that delivered workshops across research methods and principles. The workshops were in high demand, with large numbers of staff attending. Attendees also came from external organisations.

Despite the mid-year disruption involved in 'moving house' - moving some of our services from Footscray Hospital to Sunshine Hospital - our researchers showed enormous resilience and dedication in growing our research efforts across Western Health. The year's main highlights included the approval of 194 new research projects, more than \$32 million worth of grants held and 395 journal articles published.

Many of our clinicians received national and international recognition for their research contributions in their respective disciplines. For example, Assoc/Prof Alan Moss became the first Australian to win the prestigious World Endoscopy Organisation Research Award for his research and publications proving the efficacy and safety of less invasive techniques to remove large, complex or advanced pre-cancerous polyps from the colon. Alan is the head of Head of Unit, Endoscopic Services and Head of Unit, Gastroenterology.

Other colleagues, such as Assoc/Prof Craig French, Director of Intensive Care, are also undertaking groundbreaking

research. Craig and his research team are investigating changes that occur in donated, stored blood and whether these changes are harmful to critically ill patients. The results of the study may affect blood transfusion policies worldwide. The work being done by Alan, Craig and many other colleagues at Western Health is essential to improving the health of our patients and the wider community.

Finally, great research doesn't happen in isolation from others. We are continuing to grow our relationships with existing research partners and developing new ones. We have enhanced our links with our major academic partners by revamping the Terms of Reference for the Education and Research Partnership Committee. The Committee promotes collaborations across our onsite academic partners (University of Melbourne, Victoria University and Deakin University).

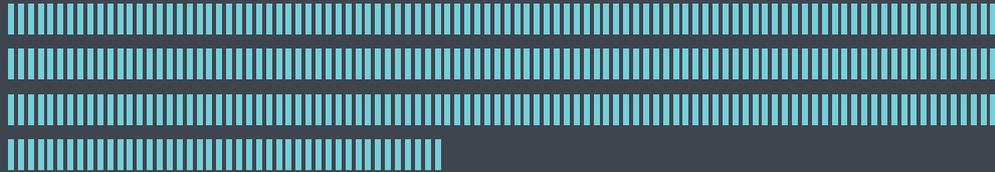
These important partnerships will continue to flourish, supported by our Executive Director of Medical Services, Dr John Gallichio, who heads up the Office for Research at Western Health; the appointment of Professor Bodil Rasmussen as the new Chair of Nursing (Deakin University) and Professor Gustavo Duque as the new Chair of Medicine (University of Melbourne). The appointment of Professor Gustavo Duque as Director of AIMSS will revitalise research activity in sarcopaenia, osteoporosis and frailty in 2016. This is especially significant given that patients with these conditions represent one of the fastest growing groups in the West and nationwide.

We hope you enjoy reading about some of our remarkable researchers profiled in this year's report.

RESEARCH 2015

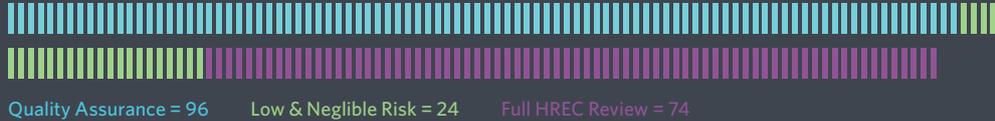
344

SEMINAR &
CONFERENCE
PRESENTATIONS



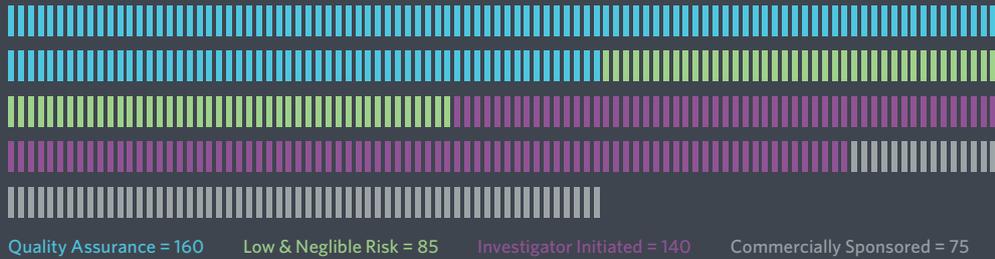
194

NEW PROJECTS
APPROVED IN 2015



460

TOTAL PROJECTS
APPROVED &
ONGOING IN 2015

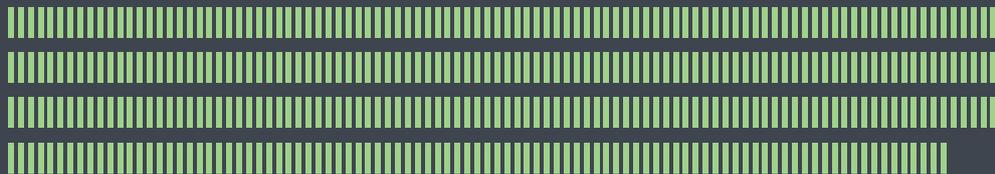


32.7

MILLION DOLLARS IN
RESEARCH GRANTS
AWARDED OR HELD

395

JOURNAL ARTICLES



28

BOOK CHAPTERS



44

PROCEEDINGS



RESEARCH DIRECTORATE

The Research Directorate of Western Health reports through to the Executive Director of Medical Services, Dr John Gallichio.

WESTERN HEALTH RESEARCH ADVISORY COMMITTEE MEMBERSHIP

Prof Edward Janus

Director of Research and Head,
General Internal Medicine Unit

Mr Bill Karanatsios

Manager, Office for Research
(Secretary)

Prof Steven Chan

Professor of Surgery

Prof Jon Emery

Herman Professor of Primary Care
Cancer Research

Prof Michael Green

Head of Unit, Cancer Services

A/Prof Harin Karunajeewa

Director, Clinical Research,
Division of Medicine

A/Prof Craig Nelson

Head of Unit, Department of Nephrology

A/Prof Denise Patterson

Executive Director, Nursing and
Midwifery

A/Prof Joanne Said

Maternal Fetal Medicine Subspecialist

Dr John Violet

Director, Sunshine Hospital
Radiation Therapy Centre

Dr Arlene Wake

Executive Director, Allied Health,
Community Integration and Partnership

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Clinical Biostatistician

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Office for Research Volunteer

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Virginia Ma Research Governance
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Anger Abiel Office for Research Intern

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Neurology

Phuong Tran

Rheumatology

Oren Tirosh

Orthopaedics

Sherisse Celestino

Neurology

Sue Casanelia

Respiratory and Sleep Disorders
Medicine

Valarie Yee

Respiratory and Sleep Disorders
Medicine

Amanda Hickling

Urology

OFFICE FOR RESEARCH

The Office for Research is committed to supporting research at Western Health and has as one of its major priorities, building research capability and capacity. The Office coordinates, manages and monitors the ethical and governance requirements of research conducted at or on behalf of Western Health.

Our vision is to support the implementation of the organisation-wide Western Health Strategic Plan 2015-2020, through translational and health services research. In 2015 Western Health developed and launched the Research Roadmap 2015-2020 which sets out how we plan to do that.

Our assessment of the many factors involved in prioritising our efforts for the next five years, suggests we need to continue the incremental gains, but also work towards the quantum leap as the opportunities are extensive and the need of the communities we serve is great.

Our Research Roadmap is underpinned by these six core areas of activity:

ACTION 1:

Increase awareness of the importance of research to underpin Best Care

ACTION 2:

Support high quality research that reflects Western Health's organisational strategy

ACTION 3:

Build research capability across Western Health

ACTION 4:

Expand research capacity and foster innovation

ACTION 5:

Enhance community and consumer engagement

ACTION 6:

Strengthen and sustain research partnerships

These activities have been distilled into four major priorities for the Office for Research

1. Promote research and create research opportunities
2. Establish beneficial partnerships and collaborations
3. Enhance research capacity and capability
4. Reduce research risk and enhance patient safety

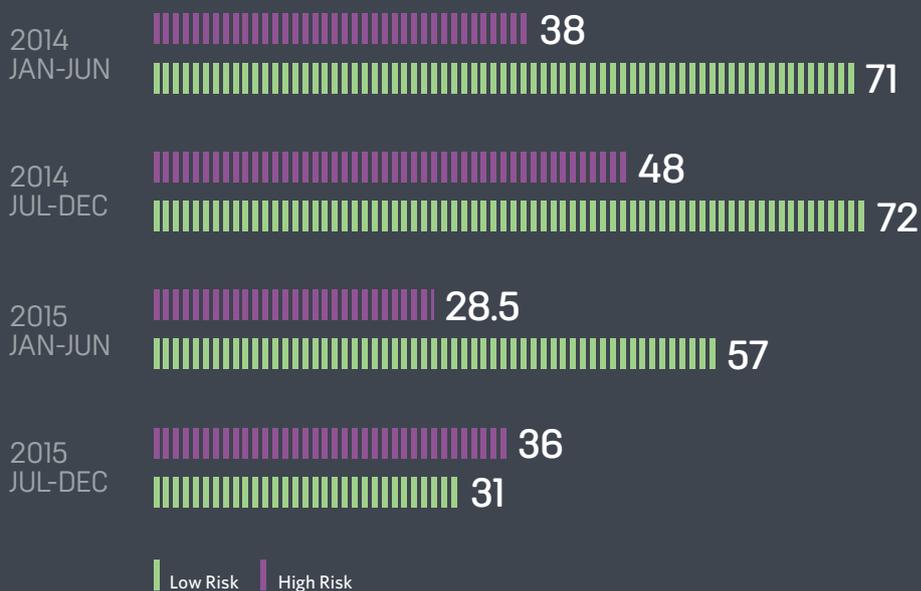
In 2015, the Office for Research commenced a series of targeted half day workshops across a number of research applications, with particular emphasis on biostatistics, meta-analysis, systematic review, and ethics and governance.

Our memberships in the Melbourne Academic Centre for Health network and the Victorian Comprehensive Cancer Centre, coupled with our strong collaborations with the Melbourne Clinical and Translational Science platform, have enhanced our partnership with the University of Melbourne and associated health services and research institutions. This has been further augmented by the appointment of Prof Gustavo Duque into the Chair of Medicine and as Director of the Australian Institute for Musculoskeletal Sciences, based at the Western Centre for Health Research and Education at Sunshine Hospital.

The joint Western Health and Deakin University appointment of Prof Bodil Rasmussen in the Chair of Nursing provides further support to nursing and midwifery staff wishing to undertake research. This appointment represents an exciting advance at Western Health as she is recognised as an expert in chronic disease research and an international leader in diabetes nursing research and education within professional leadership roles.

In 2015 the Office for Research reviewed and changed a number of its administrative processes to reduce time to ethics and governance approval, without compromising research integrity and patient safety. The administrative changes have considerably reduced time required for ethics and governance approval.

TOTAL DAYS TO ETHICS AND GOVERNANCE APPROVAL FROM INITIAL ETHICS OR GOVERNANCE SUBMISSION



This diagram illustrates the improvement in governance approval times for both high and low risk projects undertaken at Western Health over the 2014-2015 period.

In fulfilling the priorities identified in the Research Roadmap, in 2016 the Office for Research will encourage and develop further research education and training programs and identify and establish broader research collaborations and partnership with internal and external stakeholders.

The Office for Research is avidly committed to further protecting research integrity and patient safety. In 2016 the Office for Research intends to launch its research auditing

program, where research projects involving humans, their data or samples will be subject to an audit to ensure compliance against the principles of Good Clinical Practice (GCP), and any relevant legislative or regulatory requirements. Next year will also see a greater focus on the delivery of GCP training workshops for our researchers.

Research at Western Health is on a strong upward trajectory, as the research culture matures and sophistication increases. The Office

for Research is committed to sustaining research momentum and ensuring that growth is safe, manageable and sustainable and conducted in such a way that it will produce great opportunities and outcomes for our researchers, patients and the broader community.

Bill Karanatsios
Manager, Office for Research

RESEARCH WEEK AWARDS AND PRIZES

Staff from all healthcare disciplines at Western Health enthusiastically supported the activities of Research Week 2015.

Those undertaking research were able to come together to share their knowledge and discuss their research findings with peers across the organisation. The week also provided an opportunity for our researchers to show how their work is contributing to evidence-based best care for patients. It also demonstrated the personal and professional fulfilment that staff members gain from being involved in scientific pursuits.

Attendees heard from distinguished national and international guest speakers, who demonstrated the importance of research and how a research-rich workplace culture informs best practice and improves patient outcomes.

The impressive breadth and depth of the research topics presented by Western Health researchers revealed that our organisation is developing a vibrant, sophisticated research culture. Many staff who presented research papers and posters had won national awards in their respective disciplines.

The Hon. Bronwyn Pike, Western Health's chairwoman, officially launched Research Week at the Western Centre for Health Research and Education at Sunshine Hospital. Professor Mary Wlodek, Associate Dean Research, University of Melbourne, gave the keynote address.

Professor Wlodek's inspiring speech, *'Putting the pieces together: research, healthcare and patient outcomes'*, described her personal research journey and provided fascinating insights about what is required to build a distinguished research career.

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

NEVILLE YEOMANS PRIZE – BEST MEDICAL RESEARCH PRESENTATION:

Dr Kamya Kameshwar
– Basic Physician Trainee

False economies in home based antibiotic treatment of lower-limb cellulitis at a large metropolitan health service.

KENDALL FRANCIS PRIZE – BEST SURGICAL REGISTRAR PRESENTATION:

Dr Hayden Snow
– Surgical Registrar

Peritoneal irrigation vs suction alone during laparoscopic appendectomy for perforated appendicitis. Randomised equivalence trial.

BEST ONCOLOGY/ HAEMATOLOGY RESEARCH PRESENTATION PRIZE:

Dr Caitlin Murphy
– Medical Oncology Trials Fellow

Interactions between PIK3CA mutations, aspirin use and the tumour associated immune response in stage II colon cancer.

BEST ALLIED HEALTH RESEARCH PRESENTATION:

Dr Elizabeth Skinner
– Physiotherapy

Minimum standards of clinical practice for physiotherapists working in Australian and New Zealand critical care settings: a modified Delphi technique.

BEST NURSING RESEARCH PRESENTATION:

Sarah Cornish
– Clinical Nurse Specialist/
Clinical Nurse Educator

Use of protective lung strategies in the management of mechanically ventilated adult emergency department patients: a cross sectional survey.

BEST PUBLISHED RESEARCH PAPER:

Dr Forbes McGain
– Anaesthetist

The microbiological and sustainability effects of washing anaesthesia breathing circuits less frequently: *Anaesthesia* 2014, 69, 337-342.

At other sessions, national and international guest speakers from the medical, surgical, nursing and allied health domains, presented findings from their research and outlined the challenges and opportunities that lie ahead for health services and patients. A full program containing a list of speakers and the abstracts of their presentations can be downloaded from the Office for Research website.

Professor Jeremy Oats, delivered the Western Health public lecture, which was sponsored by the Footscray Rotary Club. The title of Professor Oat's lecture was 'Outcomes of pregnancy for mother and child: can Australia's experience help countries like Timor Leste?'

The week's activities were capped off with the presentation of the 2015 Research Week awards for the best research undertaken and presented by Western Health staff across numerous categories. Sponsors provided nine major prizes worth \$1500 each for winners of the awards.

A/Prof Alex Cockram, Western Health's Chief Executive Officer, and Adjunct A/Prof Chris Carter, Chief Executive Officer of Melbourne Primary Care Network, announced the award winners at the week's closing ceremony and presented the winners with their awards.

The impressive breadth and depth of the research topics presented by Western Health researchers revealed that our organisation is developing a vibrant, sophisticated research culture.

BEST RESEARCH POSTER:

Dr Edmond Kwan
- Oncology

Use and impact of bevacizumab in patients undergoing liver resection for metastatic colorectal cancer resection in routine clinical practice.

ROBERT SMITH PRIZE – BEST CRITICAL CARE PRESENTATION:

This award was shared between:

Dr Mari Kawamata
- Anaesthetic Registrar

MUM SIZE: Association between maternal BMI and outcomes for caesarean section: a multicentre prospective observational study.

Dr Candida Marane
- Anaesthetic and Simulation Fellow

STRICT: Simulation Testing for selection of cRITICAL Care Training-pilot feasibility study.

FOOTSCRAY ROTARY AGED CARE RESEARCH PRIZE:

Dr Amar Winayak
- Emergency Department registrar

How successful is emergency department reduction of displaced wrist fractures?

2015 MAVIS MITCHELL MEMORIAL SCHOLARSHIP:

Ms Carol Perich
- Manager, Clinical Practice and Sub acute

Creatively Ageing: Person Centre Care on the Dementia Assessment and Management Unit at Sunshine Hospital.

Research week prizes are supported by:

- BankVic
- Rotary Club of Footscray
- Covidien
- The Western Health Foundation
- Pfizer Oncology
- First State Super
- Dorevitch Pathology
- G&C mutual bank

WESTERN HEALTH RESEARCH GRANTS

Western Health is determined to encourage and acknowledge its researchers' contributions to improving patient care and outcomes. The Western Health research grant program provides a way to do this by recognising, valuing and fostering excellence in research. The grant program helps early career researchers conduct pilot and feasibility studies. These studies are important precursors in enabling researchers to qualify for larger grants, such as NHMRC and ARC grants.

This year Western Health committed \$70,000 worth of grant funding to support innovative research ideas and concepts to help establish crucial pilot data. There was strong competition among applicants for grant funding. Four projects, involving the following researchers and their colleagues, were awarded grant funding:

1. **Oliver Daly:** MINImAL feasibility study: patient preference for mode of anaesthesia (\$10,000)
2. **Chris Neil:** Peripheral tissue focussed intermittent exercise training in fragile patient with chronic heart failure (\$30,000)
3. **Clarice Tang:** Optimal time of implementation for pulmonary rehabilitation (\$20,000)
4. **Julia Firth:** Does targeted education regarding diabetes foot complications to GPs improve patient care? (\$10,000)

DEAKIN UNIVERSITY- WESTERN HEALTH NURSING AND MIDWIFERY RESEARCH GRANT 2016

This is the first year that Deakin University has sponsored the Deakin/Western Health Nursing and Midwifery Research Grant. A grant for \$10,000 was made available for the best project submission under this category.

The 2016 Deakin University WH Nursing and Midwifery Research Grant was awarded to: Ms Krystyna Bender: A haemodialysis exercise program: a pilot study exploring a new workforce model.

This year Western Health committed \$70,000 worth of grant funding to support innovative research ideas and concepts to help establish crucial pilot data.



Deakin University -Western Health Nursing and Midwifery Research Grant recipient Krystyna Bender.

ALLIED HEALTH & COMMUNITY SERVICES

Head of Department Allied Health:

Sue Giles

Head of Department Community Services:

Lebe Malkoun

Number of Researchers & Students:

Researchers: 14; Students: 16

OUR RESEARCH OUTPUT:

90

Projects

26

Publications

83

Presentations

2

Chapters

3

Proceedings

OUR GRANTS & AWARDS

Partnership Project

T Haines, M Morris, N Taylor, A Holland, L Carey, E Skinner, C Williams, A Bardoel, J Martin, E O'Brien.

A partnership for evidence-based resource allocation and enhanced research translation in allied health.

National Health and Medical Research Council (NHMRC) \$616,780 2016-2020

HCF Research Grant

E Janus, H Karunajeewa, E Skinner, ML Ong, E Karahalios, R Harrison. The IMPROVE-GAP Project HCF \$300,000 2015

Medicare Local

O Daly, D Storey, R Liberatore, C Abbey. We Help App- Providing site specific multilingual information for maternity patients at Sunshine Hospital in the form of an app: Medicare Local \$100,000 2015

DHHS Workforce Innovation Grants Program

N Watson. Expansion of Western Health Adult & Paediatric Orthopaedic Advanced Practice Clinics Department of Health and Human Services \$51,000 2015

DHHS Workforce Innovation Grants Program

N Watson, K Coffey, R Liberatore. Advanced Practice Physiotherapy in Urogynaecology clinic: Department of Health and Human Services \$30,000 2015

ICU Foundation Grant

E Skinner, C Hodgson, T Iwashyna, A Higgins. Next generation measures of physical function in ICU survivors: ICU Foundation \$35,000 2015

Western Health Research Grant

C Neil, JA Allen, C Giuliano, Skinner EH, Levinger I, Karahalios E. Peripheral Tissue Focused Intermittent Exercise Training in Fragile Patients with Chronic Heart Failure: Western Health \$30,000 2015

Western Health Research Grant

C Tang, AM Southcott, E Skinner, FC Blackstock, K Barker. Optimising time of implementation for pulmonary rehabilitation Western Health \$20,000 2015

Western Health Research Grant

Julia Firth, Bianca Bell, Dr P. Shane Hamblin, Julie Borninkhof. The impact of targeted education to primary care providers for diabetes related foot complications - a pilot study. Western Health \$10,000 2015

Deakin University Nursing and Midwifery Grant

K Bender, PN Bennett, W Wang, E Skinner, C Nelson. A haemodialysis exercise program: a pilot study exploring a new workforce model: Deakin University \$9,926 2015

Best Care Awards -

Best Maternity Project

O Daly, K Coffey, R Liberatore. Better Bladder Care Project: Improving bladder management in postnatal women at Sunshine Hospital with ready and timely access to automated bladder scanners: Western Health \$2,000 2015

Best Allied Health

Research Presentation

E Skinner, P Thomas, J Reeve, S Patman. Minimum standards of clinical practice for physiotherapists working in Australian and New Zealand critical care settings: a modified Delphi technique: Western Health Research Week \$1,500 2015



Jill Nosworthy Award for Excellence in Research

I Boden, L Browning, E Skinner, J Reeve, L Denehy. The Melbourne risk prediction tool accurately predicts patients unlikely to get a respiratory complication following major open upper abdominal surgery. Australian Physiotherapy Association \$500 2015

National Allied Health Conference: Best Oral Presentation

E Skinner, P Thomas, J Reeve, S Patman. Minimum standards of clinical practice for physiotherapists working in Australian and New Zealand critical care settings: a modified Delphi technique. 2015

National Allied Health Conference: Best Verbal Poster Presentation

A Ottaway, A Nenov, K Markovski, E Skinner. Does eating environment have an effect on the energy and protein intake of the elderly? 2015

Bank Vic Allied Health Grant

Merridy Moore. Education in supported communication for hospital staff: Use of consumer stories to enhance staff education. Bank Vic \$6,000 2015



Dr Kimberley Haines, a Senior ICU Physiotherapist at Western Health, who is leading the ICU THRIVE Peer Support collaborative project in Australia.

Given the significance of its impact on patient outcomes and costs, malnutrition, and strategies to combat it, remains an ongoing research focus for the Nutrition Department. During 2015, the department commenced or continued a number of studies with a malnutrition focus. There have been at least four ongoing research projects in 2015.

One of our lead projects is a project called the 'Assessment of knowledge and opinions of relevant nursing and medical staff regarding fasting practice in orthopaedic and orthogeriatric unit patients'. It builds on the findings of a 2014 project 'Fasting Audit in Orthopaedic and Orthogeriatric unit patients' which revealed that fasting practices can be improved in these units.

Director of the Nutrition Department at Western Health, Kathryn Pierce.



Several ongoing and future research projects will involve collaboration with Deakin University and the Department of Health.

A major study completed in 2015 was 'Interdisciplinary Management for Malnutrition in Hospital'. The study aimed to improve the management of malnourished patients or those at risk of malnutrition, by rolling out four nutrition programs, initially across Williamstown Hospital. This work has had a positive impact on patients accessing these programs at Williamstown Hospital.

Another significant study completed in 2015 was 'The Effectiveness of newly implemented hot breakfast items on plate wastage and satisfaction at Western Health'. The study found that the provision of a cooked breakfast enhanced the protein and energy intake of elderly patients, and may be another strategy in reducing the risk of malnutrition.

The poster 'Does eating environment have an effect on the energy and protein intake of the elderly?', presented by Aurora Ottaway, was awarded the best electronic verbal poster at the 2015 National Allied Health Conference.

Several ongoing and future research projects will involve collaboration with Deakin University and the Department of Health. The findings from these projects are being incorporated into innovation and improvement in Nutrition service provision across Western Health.

During 2015, the department commenced or continued a number of studies with a malnutrition focus.

OUR RESEARCH

Assessment of knowledge and opinions of relevant nursing and medical staff regarding fasting practice in orthopaedic and orthogeriatric unit patients

Researcher(s): Caroline Calkin & Vanessa Carter

This project aims to assess knowledge of the content of Western Health's fasting procedure and barriers to implementation of the procedure. Most doctors and nurses are aware that Western Health has a fasting procedure and could identify that frequent and/or prolonged fasting is a problem for orthopaedic/orthogeriatric unit patients.

This project will help identify if further education is required for nursing and medical staff regarding the content of the procedure and other work that may need to be completed to facilitate implementation of the procedure.

Interdisciplinary management for malnutrition in hospital

Researcher(s): Kathryn Pierce, Allison Lauder, Hollie Bevans & Aranka Nenov

In order to improve the management of malnourished patients or those at risk of malnutrition, four nutrition programs have been simultaneously rolled out, initially across Williamstown Hospital.

A selected sample of patients on one of the sub-acute wards after the program rollout, confirmed that 70% of patients needed help with meals and of these, 94% received the required assistance.

One third of adult patients in developed countries are malnourished on admission to hospital. This is consistent with the prevalence of such patients admitted to hospital at Western Health.

The Effectiveness of newly implemented hot breakfast items on plate wastage and satisfaction at Western Health

Researcher(s): Aranka Nenov & Karon Markovski

Collaborator(s): Emily Abbott, Jess Danaher, Isabel Bailey & Adele Spiteri. Deakin University

The project aimed to develop a breakfast benchmark for Victorian public hospitals and to examine the effectiveness of newly implemented hot breakfast menu items on patient plate wastage and patient satisfaction in two sub-acute wards at Western Health Williamstown.

The study concluded that the provision of a hot breakfast enhanced the protein and energy intake of elderly patients. Increasing patients' energy and protein intakes can be another beneficial strategy in reducing the risk of malnutrition.

Is weight gain a barrier to transplant listing for patients receiving peritoneal dialysis?

Researcher(s): Sarah Terrill

Collaborator(s): Denise Fracchia, WH

This file review aimed to investigate rates of weight gain or loss in current patients who are on peritoneal dialysis and active on the renal transplantation list. Obesity is a contraindication for, and so may prevent, timely renal transplantation. Approximately 50% of our peritoneal dialysis patients are gaining weight while on the transplant list.

The weight gain is likely to represent better overall nutrition, but it requires monitoring and to be addressed accordingly. The cost and disease burden of people on renal replacement therapy is increasing; therefore renal transplantation is a preferred option for suitable patients. Renal transplantation is also positively associated with an increased quality of life.

OCCUPATIONAL THERAPY

The Occupational Therapy Department is committed to providing an excellent occupation-focused, evidence-based service to patients. An active quality committee contributes to this aim, providing leadership, encouragement and support to staff undertaking research activities.

Projects have focused on implementation of evidence-informed practice, use of outcome measures to evaluate the effectiveness of service provision and development of an appropriately skilled and resilient workforce. The department increased its involvement in multidisciplinary projects.

The department values the opportunity to participate in knowledge exchange with the wider profession as demonstrated by its delivery of 15 verbal and 11 poster presentations at state and national conferences. Two articles were accepted for publication.

OUR RESEARCH

An exploratory study on facilitation of reflective practice skills for Grade 1 Occupational Therapy clinicians at Western Health

Researcher(s): Lauren Guy & Kathryn Cranwell

This study explores supervisor knowledge and views of reflective practice. It aims to understand what strategies and techniques supervisors use to facilitate reflective practice together with their perceived level of confidence and skill. Initial findings suggest a gap in knowledge and skill of supervisors and strategies have been identified to address this gap.

Clinical supervisors play a key role in facilitating reflective practice processes in their supervisees. Through reflective practice, supervisors can help supervisees make sense of their clinical experiences by establishing connections between their existing and their new knowledge. This can help develop their clinical reasoning and decision making, which can support the provision of higher quality care to patients.

If a gap is identified in the provision of supervision processes and the use of reflective practice, intervention can be targeted to address the gap, thus improving practice and patient care.

Embedding the Canadian Occupational Performance Measure (COPM) into practice

Researcher(s): Matthew Thorpe & Sharon Neale

The primary aim of this project was to embed the Canadian Occupational Performance Measure (COPM) into Occupational Therapy practice on the Inpatient Rehabilitation ward at Sunshine Hospital.

Increased use of the COPM in routine practice, the establishment of clear processes and integration of the COPM onto the Occupational Therapy (OT) Initial Assessment document has led to increased use of the COPM by OT clinicians. The Canadian Occupational Performance Measure (COPM) is a relevant, validated, reliable tool used to evaluate the outcomes of Occupational Therapy interventions. Embedding the use of the COPM in routine practice increases capacity to demonstrate the value of Occupational Therapy in an inpatient rehabilitation setting.

The Occupational Therapy Department is committed to providing an excellent occupation-focused, evidence-based service to patients.

Evaluating Occupational Therapists' views and perceptions of professional self-care

Researcher(s): Courtney Apostol, Kathryn Cranwell & Anna Gillies

The overall aim of this exploratory study was to understand Occupational Therapy clinical staff's perceptions of professional self-care when working with patients living with a terminal condition. We sought to examine clinical staff's experience of working with patients living with a terminal condition and their understanding and awareness of available resources to assist with professional 'self-care'.

This information has been used to inform the development of appropriate strategies to best support Occupational Therapy clinical staff working with these patients and to ensure we are meeting best practice.

Therapist self-care within the medical and nursing professions has been well documented as an ongoing issue for those working with patients living with terminal conditions. Ineffective self-care can 'compromise clinicians' personal well-being which if not dealt with effectively may lead to burnout, moral distress, compassion fatigue, and poor clinical decisions which may adversely affect patient care.

Use of a skills audit tool to determine Occupational Therapy clinician perceived skill level and confidence in frequent areas of practice

Researcher(s): Kathryn Cranwell & Matthew Thorpe

This study identified Occupational Therapy clinicians' level of perceived skill and confidence across a range of frequently performed skill areas. The information was used to inform the Occupational Therapy professional development program and supporting resources such as competencies and training packages.

Information obtained from this project has led to the identification of the highest areas of education/training need across the Occupational Therapy service so that targeted professional development and education and training opportunities can be developed. This in turn ensures clinicians have the knowledge, skills and capabilities to provide a high quality, evidence-based Occupational Therapy service.

Occupational Therapy, Therapy Led Clinic

Researcher(s): Elizabeth Witherow, Nicole Byrne & Kathryn Cranwell

This project involves the implementation of a new standard model of care for all adult patients following metacarpal/phalangeal fracture open reduction internal fixation (ORIF), tendon repair, volar plate repair presenting to Occupational Therapy at Sunshine or Footscray Hospital. Following evaluation of the current model of standard care a new model of standard care will be evaluated to compare patient outcomes, access to care and satisfaction.

It is anticipated that the introduction of the new standard model of care will result in reduced wait time for patients, reduced complications leading to better patient outcomes and increased satisfaction given the single contact point for patients in regard to their injury throughout their episode of care.

Projects have focused on implementation of evidence-informed practice, use of outcome measures to evaluate the effectiveness of service provision and development of an appropriately skilled and resilient workforce.



DR CLARICE TANG

Senior Clinician Physiotherapist

Dr Clarice Tang has begun a research trial to discover the best time to start rehabilitation programs for patients with chronic respiratory diseases.

The programs have been shown to be a highly effective way for patients to manage their respiratory diseases after being discharged from hospital.

Yet, national trends reveal only about half of patients with these diseases actually start a pulmonary rehabilitation program after being referred by a doctor and only one in five patients complete a program.

Dr Tang said “the figures are especially worrying because patients with these chronic respiratory diseases, such as obstructive pulmonary disease, have one of the highest rates of readmission to hospital among all patient groups.”

“If we can get these patients into rehab and manage their condition better, we hope we can reduce the number of readmissions among this patient group,” Dr Tang said.

“We suspect that one of the reasons for the low adherence to rehabilitation programs is the fact that the programs are implemented a long time after a patient leaves hospital.”

“So patients might not see the value of doing the program when they are feeling better after being discharged.”

Dr Tang’s research trial aims to test whether patients are more likely to join and complete a rehabilitation program if it is implemented immediately after or shortly after patients are discharged from hospital.

Patients are being recruited for the trial at Sunshine and Footscray hospitals. It will involve an eight-week exercise and health education rehabilitation program at each hospital’s physiotherapy outpatients department.

Patients will complete two, one hour supervised exercise sessions each week and one, one-hour education session each week. In the exercise session they will work with a physiotherapist doing a

prescribed series of exercises - walking on a treadmill, cycling on a stationary bike and using gym equipment to strengthen their muscles.

The education session will involve a multi-disciplinary team comprised of a nurse, an occupational therapist and a physiotherapist to provide patients with helpful information about medications, diet and other ways to help manage their disease. “We try to attach a specialist to every education session so that the patient is getting expert advice in regard to their disease,” Dr Tang said.

Chronic respiratory diseases such as obstructive pulmonary disease are most common among people aged over 60. Many of these patients have co-morbidities such as heart failure, heart disease and musculoskeletal problems.

They tend to be smokers or former smokers or people such as miners, boilermakers and other workers who had been exposed to pollutants in their workplaces.

Physiotherapy had another outstanding year of research achievement in 2015, with 59 projects either in progress or completed, 30 conference or seminar presentations and 14 new grants and awards (total funding over \$1.1 million), including an NHMRC Partnership Project Grant. Physiotherapy also published 22 peer-reviewed manuscripts, as a direct result of our continued emphasis on dissemination of research findings.

Our projects aim to improve care across the clinical activities of our department, including improving care for people with multi-morbidity (multiple chronic diseases), people with stroke, prenatal women, adolescents with knee pain, people with wrist fractures, people with cancer, chronic heart failure or chronic respiratory disease, and people admitted to the Intensive Care Unit. Our NHMRC funded weekend allied health project also aimed to evaluate the effect of weekend services health-service wide, and will influence care for all patients admitted to medical and surgical wards at Western Health.

Our research was disseminated in high-ranking international and national journals such as *Lancet*, *Trials*, *Critical Care Medicine*, *Respiration* and *Australian Health Review*. Our research remains strongly allied with our clinical service provision, focusing on chronic disease, primary contact and primary care advanced scope roles, rehabilitation and cardiovascular training (across diverse populations) and non-clinical roles such as education delivery and clinical decision-making.

The Physiotherapy Department continues to aspire to become a national leader in clinical research aligned with the strategic priorities for Western Health and our broader community, with a particular focus on the translation of evidence into clinical practice.

OUR RESEARCH

Application of a novel research design to aid disinvestment from existing health technologies with uncertain effectiveness, cost-effectiveness and/or safety

Researcher(s): Terry Haines, Elizabeth Skinner, Tim Chiu, Fiona McDermott, Lisa O'Brien, Donna Markham, Deb Mitchell, Kelly-Ann Bowles, Marcelle Ghaly, Samantha Plumb, Leonie Shaw, Angus Campbell, John Healy, Bronwyn Steele, Cassandra Raios, Bridgette Hepworth, Chris Crompton, Matthew Mifsud, Sarah Ann Ellis, Vanessa Wilson, Kate Douglas, Jemma McDowell, Alison Bowen, Elyse Bates, Emily Plahuta, Isobel Washington, Jessica Hill, Katharine Bennett, Laura Halbert, Liesel Jansen, Catherine Ryder, Belinda Key, Claire Boote, Clare Holdsworth & Christine Polmear

Collaborator(s): Monash University, Monash Health, Melbourne Health & Department of Health

This project will examine the effectiveness, cost-effectiveness and safety of the current model of weekend allied health service delivery on acute medical and surgical units compared with having no weekend allied health service on these wards. This project will also examine the effectiveness, cost-effectiveness and safety of a new, stakeholder-driven model of weekend allied health service compared with having no weekend allied health service on these same wards.

The study protocol was published in *Trials* in 2015. The results of the project are undergoing analysis and final

results will be submitted for publication in 2016. This research will inform decisions around the allocation of allied health services on the weekends both nationally and internationally.

A randomised controlled trial investigating the effect of duration of immobilisation on function following open reduction and internal fixation for distal radius fractures in adults

Researcher(s): Narelle Watson, Jenny Keating, Phong Tran, Darren Fraser, Collin McIlveen, Rebecca Pile, Paul Silk, Caitlin Abbey, Bhavna Trivedy & Hayley Allen

Collaborator(s): Monash University

The main aim of this investigation is to compare the immobilisation periods of one, three and six weeks for acute distal radius fractures following locked volar plate fixation for the outcome measures of function (PRWE, DASH), range of movement, grip strength and pain Visual Analogue Scale (VAS) when measured over a six month period from the date of surgery.

Although distal radius fractures commonly occur, factors that affect treatment outcomes have not been well defined. There is a gap in our current knowledge regarding how long a wrist should be immobilised in a cast following surgical repair. Information from this investigation will be used to determine whether one immobilisation period is better than another in regards to function and pain. This information will enable us to improve the management of wrist fractures following surgical repair in the future.

PHYSIOTHERAPY

(CONTINUED)

The effect of moderate-intensity cardiovascular fitness training compared to standard care in people with a diagnosis of stroke: a pilot randomised controlled trial

Researcher(s): Hanna Reynolds, Sarah Steinfort, Jane Tillyard, Andy Stewart, Tissa Wijeratne, Erik Hanson, Elizabeth Skinner & Alan Hayes

Collaborator(s): Victoria University, The University of Melbourne & Australian Institute of Musculoskeletal Science, (AIMSS)

Previous work in this area has developed and introduced a guideline for cardiovascular training in people with a diagnosis of stroke. The aim of this project is to build on former work and conduct a pilot randomised controlled trial of cardiovascular training in this population.

The National Stroke Foundation's Clinical Guidelines for Stroke Management 2010 state that stroke rehabilitation should include interventions aimed at improving cardiovascular fitness for secondary prevention and to optimise rehabilitation outcomes.

Cardiovascular training may have benefits on quality of life and functional performance in patients with stroke. This pilot work will form the foundation of future project grant applications and is the first example of our collaborative research with AIMSS.

Western Health physiotherapist and avid researcher, Narelle Watson.

The effect of knee and hip strengthening exercises, stretches and education versus only knee strengthening exercises on pain levels and knee function in adolescents with insidious onset anterior knee pain or patellofemoral pain syndrome (PFPS): a randomized controlled trial

Researcher(s): Sam Wills, Blair Doughton & Elizabeth Skinner

This randomised controlled trial is being conducted in adolescents with anterior knee pain or PFPS. Two strategies are being trialled over a three month program. At the moment, we don't know the best method of treatment for people who have anterior knee pain.

The primary aim of the trial is to determine if a combination of knee and hip strengthening exercises, stretches and education reduces pain and increases function of the affected knee as opposed to just isometric knee strengthening exercises in this patient group.

This study will aim to answer the question about which method is better, so that the best treatment can be provided to our patients attending orthopaedic outpatient clinics at Western Health.

Minimum standards of practice for physiotherapists working in intensive care: a Delphi study

Researcher(s): Elizabeth Skinner, Peter Thomas, Julie Reeve & Shane Patman

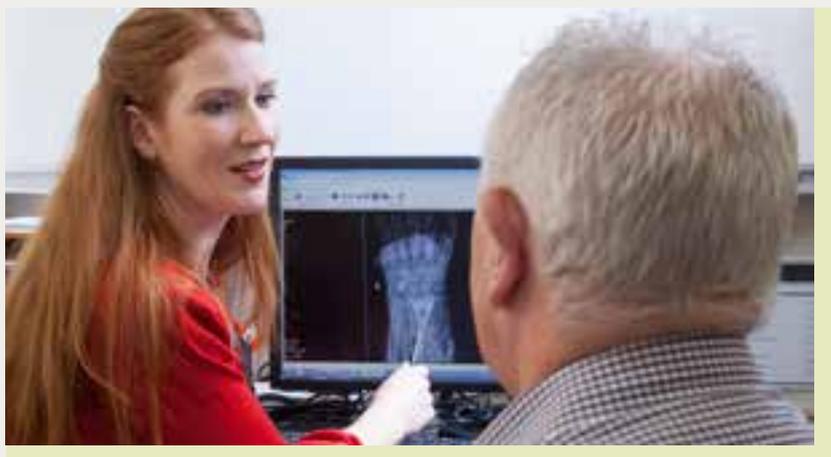
Collaborator(s): Royal Brisbane Women's and Children's Hospital, Auckland University of Technology (AUT) & The University of Notre Dame Australia.

The aim of this project was to develop a consensus statement on the minimum standards for physiotherapy practice in critical care in Australia and New Zealand.

We produced a document of skills, knowledge and tasks that physiotherapists working in critical care settings should know, as a minimum, to practice safely and effectively within the critical care setting.

Patients admitted to critical care settings are routinely assessed and treated by physiotherapists, but previously there have not been guidelines around the knowledge or skills that these staff should have, resulting in inconsistent and variable practice.

We are aligning our training to match the minimum standards and this will improve the physiotherapy care that our patients receive in the ICU setting.



The Podiatry Department and Diabetes Foot Service have expanded their research capacity during 2015. Several projects were undertaken in the year, including a strong collaboration with the Endocrinology department and Vascular unit. Externally, the Diabetes Foot Service collaborated with Victoria University and The Melbourne Primary Care Network. It was also awarded a Western Health research grant.

There was increased involvement of Podiatry staff in approved quality projects. The quality projects undertaken in 2015 were focused on improving patient access and service provision to Podiatry services at Western Health.

OUR RESEARCH

The impact of targeted education to primary care providers for diabetes related foot complications – a pilot study

Researcher(s): Julia Firth

Collaborator(s): Bianca Bell, General Practice Integration Manager, Western Health

P. Shane Hamblin, Head of Diabetes and Endocrinology Western Health

Julie Borninkhof, Executive Director, Primary Care Improvement, Melbourne Primary Care Network

This project will investigate the impact of three different modes of training delivery for general practice staff, to determine which modes of education have the greatest impact on increasing knowledge of Diabetes foot related complications and which method results in the greatest behaviour change among practitioners.

The project will improve the appropriateness and timeliness of

referrals from pilot participants to the Western Health Diabetes Foot Service (DFS) to ensure that patients are treated as early as possible to improve patient outcomes.

Audit of foot problems in the Diabetic inpatient population at Western Health

Researcher(s): Anna Novak, Julia Firth & Rachel Bramham

The primary objective of this quality audit is to explore the extent of foot conditions and complications present among diabetic foot patients admitted to Western Health's acute inpatient wards to ensure timely assessment.

The project will look at process of referral for diabetes related foot complications in patients admitted to Western Health to enable timely and appropriate access to podiatry service. Identifying patients with a foot complication is the first step in preventing ongoing foot ulcerations, amputations and readmissions from foot infections.

Project – Service redesign and consumer satisfaction: Improving access for foot and ankle patients on an orthopaedic waiting list. Evaluating an integrated advanced practice podiatry and physiotherapy led initiative

Researcher(s): Charlotte Cooke, Julia Firth, Narelle Watson & Melina Shackell

This study aims to determine the efficacy of integrating an Advanced Practice Orthopaedic Podiatry Led clinic to the current Orthopaedic Outpatient's service. The Advance Practice Podiatrist will screen / assess and manage the appropriate foot and ankle referrals received by the Orthopaedic Outpatient department; to determine whether they require advanced practice management or

surgical opinion. The service aims to focus on patients' experiences throughout the continuum of care.

Many foot and lower limb problems can be prevented if identified early. Identifying patients with a foot and ankle pathology on the current orthopaedic waiting list who can be managed with a non-surgical/conservative management plan will provide the patient with the opportunity to have improved access to high quality evidence-based care in a timelier manner.

The effect of offloading devices on quality of life, muscle strength and overall cardiovascular condition in patients treated with diabetes related foot ulceration

Researcher(s): Julia Firth

Collaborator(s): Alan Hayes, Assistant Dean, WCHRE, Pat McLaughlin, Senior Lecturer, School of Biomedical and Health Sciences and ISEAL, Victoria University

Elizabeth Skinner, Physiotherapy Research Co-ordinator, Western Health, The University of Melbourne, Monash University

While it is well established that offloading devices help to heal diabetic foot ulcers, clinical experience suggests that offloading devices reduce activity levels of patients and may contribute to general deconditioning. The patient's ulcer heals over time but the treatment may contribute to other health problems.

This study will determine the effect on patients with a diabetes-related foot ulcer wearing an offloading shoe, boot or cast as well as activity restriction on quality of life, muscle strength and overall cardiovascular fitness/condition for up to a six-month period.

PSYCHOLOGY

The Psychology Department at Western Health has continued to extend its research activities. There has been a greater focus on collaborating with other Clinical Services at Western Health and external teaching institutions including La Trobe University, University of Melbourne, University of Newcastle, Peter MacCallum Cancer Centre, Victoria University and Swinburne University.

The department has fostered a number of collaborations designed to improve the patient experience. Many of the research collaborations initiated in 2015 will continue well into 2016.

Additional research endeavours planned for 2016 include:

1. Continue stroke research with the Neurology Department and La Trobe University
2. Distress prevalence study in Gynae-Oncology patient cohort (collaboration with Mr Vivek Arora)

OUR RESEARCH

ACCRUE: AdvanCing Consultation Recall and UndErstanding - Solving the barriers and facilitators to intervention implementation

Researcher(s): Grey Searle

Collaborator(s): Adrian Dabscheck – Western Health, Lahiru Russell – Peter MacCallum Cancer Centre, Penelope Schofield – Swinburne University of Technology

Cancer diagnosis and treatment consultations can be confusing and distressing for patients and their families. The overall aim of this research is to improve the understanding and recall of cancer patients and their families during and after diagnosis and treatment consultations.

Key staff have been interviewed to identify barriers to, and facilitators of, better patient understanding and recall of consultations during and after diagnosis and treatment.

Reviewing the Outcome Measures Used in the Pain Management Program at Western Health Sunshine Community Based Rehabilitation (CBR): Prospective Observational Study

Researcher(s): Kathleen Leach

Collaborator(s): Jazmin Cruz

This study will review the utility of outcome measures used in pain management programs in order to simplify these measures to reduce burden on patients. Ethics approval was obtained in April 2014 and to date more than 40 patients have been recruited into the study.

Neuropsychological profiling of amputee rehabilitation patients at Western Hospital

Researcher(s): Diana Perre & Tracy Henderson

Collaborator(s): Ngoc Le

The aim of this project is to promote the early detection of, and intervention into, cognitive deficits and /or strengths and weaknesses of patients undergoing rehabilitation following a major limb amputation. Early identification of cognitive strengths and weaknesses is understood to lead to more patient-focused and timely rehabilitation intervention by the multi-disciplinary team resulting in reduced length of stay, and better patient outcomes.

Understanding Cognitive Dysfunction Following Transient Ischemic Attack (TIA)

Researcher(s): Diana Perre

Collaborator(s): Tissa Wijeratne, Western Health; Sherisse Celestino, Western Health; Andrew Pipingas, Swinburne University of Technology; Matthew Pase, Swinburne University of Technology

The aim of this research project is to investigate the cognitive function of patients after TIA relative to aged-matched controls. Secondly, this study aims to explore the mechanisms associated with cognitive dysfunction after TIA.

Findings from this study will help clarify whether TIA leads to accelerated cognitive decline and provide a detailed cognitive profile. By identifying factors associated with cognitive decline in this cohort, this study also hopes to identify biomarkers that could potentially be targeted by therapeutic interventions aimed at improving cognition in TIA patients.

“Core Wellness” to improve balance and gait in individuals with Multiple Sclerosis

Researcher(s): Kelly Buttigieg

Collaborator(s): Lisa Hoare, Physiotherapy, Lara Steele, Physiotherapy & Priya Rangarajan, Physiotherapy

The aim of this project is to optimise patients’ postural control in relation to their core stability and carry over to functional activities. The project also aims to increase patients’ understanding of the impact of postural control and emotional factors on their physical function and well-being in the context of multiple sclerosis. This research is important because there are limited studies incorporating a physical and psychological component in the context of multiple sclerosis, especially in relation to core stability.

The department has fostered a number of collaborations designed to improve the patient experience.

SOCIAL WORK

Social Work provides psychosocial assessment, counselling and support to facilitate adjustment to illness and enable patient rights and choice. Social workers link patients and their carers and families to appropriate community services to ensure safe discharge and continuity of care.

The Social Work Department has progressively increased its research capacity with the support of an internal Quality and Research Committee. In 2015, the department initiated over 15 quality and research projects. The highlight of the year was a research and quality showcase for staff to share their work and receive valuable feedback on the ideas, methodology, stages and opportunities of each project. The aim in 2016 is to support increasing research capacity through tailored professional development.

Some of our staff achieved career milestones during the year. Dr Anita Morris, Manager of Social Work, completed her PhD in social work and primary care at the University of Melbourne. Her doctorate examined children's safety and resiliency in the context of family violence. Dr Morris also had a book chapter published and presented locally and internationally on her research. Cathy Dow, Senior Clinician and Team Leader of Medical Specialties, completed her Master of Social Work at Monash University.

OUR RESEARCH

Intervention and Outcomes: What are social workers documenting at Western Health?

Researcher(s): Anne Ingram

Collaborator(s): Cathy Dow & Teresa Grant

This study examined what social workers are documenting in order to improve the quality of social work documentation relating to patient intervention and outcomes.

The project was completed and presented at the Health Social Work Directors Symposium and as a poster at the National Allied Health Conference. This work will inform a project that will be undertaken by research students in 2016, which will involve redesigning and enhancing the social work assessment and intervention template.

What is the role of social work in ICU? Educating and learning from ICU stakeholders at Western Health

Researcher(s): Sharon John

Collaborator(s): Alison Hemmingway & Alice Farid

This project aims to establish a lead role for social work in ICU by educating and engaging ICU staff about the role of social workers in ICU. Education sessions have been conducted and data is currently being analysed. Findings from the study will help to provide a social work service to patients commensurate with that provided in other health services.

Pre EMPTS Social Work Model of Care for Paediatric and Maternity Trauma within Sunshine Hospital

Researcher(s): Nicole Lind

This project focuses on trauma experienced in childhood by both children and their parents in order to determine the most appropriate intervention and referral pathways for these patients.

It will help identify at risk and vulnerable paediatric and maternity patients presenting with trauma to

the emergency department and ICU at Sunshine Hospital. This project also aims to support early intervention to prevent poor health and mental health outcomes that are caused by exposure to trauma in childhood.

Evaluation of social work department knowledge, skills and confidence in quality and research

Researcher(s): Cathy Dow

Collaborator(s): Laurelle Stalker, Susan Bolt, Alison Brinksma, Renjia Fu, Mike Udorly, Fabrizio Lo Cascio & Hayley Webb

This study aims to increase the research capacity of the social work department. It will do this by initially examining the gaps in research knowledge and confidence of staff to better tailor professional development and research support. It will lead to a localised evidence-base of social work assessment and intervention.

Residential Care Social Worker pilot

Researcher(s): Hayley Webb

Collaborator(s): Shaji Pope & Teresa Grant

This project aims to test a model of care involving a dedicated residential care social worker who works with the patient and their family once their residential care pathway has been declared. The findings of this project will help ensure that the best model of care is provided to facilitate timely discharge to residential care for better patient flow and choice.



DR ANITA MORRIS

Manager, Social Work and Pastoral Care

Health services are developing new ways to treat family violence and Dr Anita Morris's research is at the forefront of those endeavours.

She recently completed her PhD in social work and primary care, investigating children's safety and resilience in the context of family violence.

Children traumatised by family violence have poorer physical and mental health outcomes than other children. Dr Morris's previous experiences working in the health, education and community sectors motivated her to investigate how family violence affects children.

"I discovered that it didn't matter where I worked across these three sectors, family violence was an issue for children and young people," Dr Morris said.

One in four Australian children experience family violence. The incidence is worse in Aboriginal families, where one out of every two indigenous children experience family violence.

Family violence is taking an immense toll on victims, families, the health system and society. Dr Morris said researchers have estimated Australia

could save more than \$9 billion each year by addressing the health burden of childhood trauma, which includes family violence.

She is involved in numerous research projects aimed at preventing family violence, improving its detection and devising better early intervention measures.

One of the projects, called the SWIFT collaboration, is a partnership between the Department of Health and Human Services, Western Health, Barwon Health and Austin Health, aimed at developing a trauma-informed model of care. It involves advanced practice social work clinicians being placed in emergency departments, children's wards and children's outpatient departments to undertake trauma and resilience screening of patients.

Another project with the Royal Women's Hospital and Bendigo Health involves rolling out a toolkit designed to help hospital staff identify signs of family violence among patients and refer them to appropriate services.

Dr Morris said health services were ideally placed to identify family violence early and respond to it. "By training staff to look for signs of family violence it will make it easier for victims to disclose abuse," she said.

"Staff will be able to respond to the needs of victims more effectively and they'll have a better understanding of support systems and referral pathways for victims."

She has also received funding from the University of Melbourne to help plan and develop an online safety planning and communication resource for children and carers dealing with family violence.

Dr Morris said it was important to listen to children and understand their experiences.

"Because responses to family violence are traditionally centred around responses to women as victims, children have been somewhat forgotten in this space," she said. "The recent Royal Commission into Family Violence creates an opportunity for us to take a closer look at health responses to children, given their potential for poorer health outcomes."

SPEECH PATHOLOGY

Research within the Speech Pathology (SP) Department continued to build on the strong achievements of 2014. There has been an ongoing focus on improving patient outcomes by evaluating existing clinical practices, exploring new service delivery initiatives and ensuring provision of right and coordinated patient care in relation to communication and swallowing impairments.

The department has developed, implemented and evaluated the Culturally And Linguistically Diverse (CALD) Assist iPad app (formally the Cultural Key Phrases Tool), an app designed to assist communication between allied health clinicians and patients from a Non English Speaking Background (NESB) during allied health (AH) assessments. The app includes key phrases used during allied health assessments, translated and audio-recorded into 10 common languages serviced by Western Health.

The investigation into patient and carer satisfaction following participation in the Parkinson's Disease communication group demonstrated the efficacy of using group models to treat communication impairments and maintain/improve quality of life. Other projects also looked at revising and streamlining assessment/screening tools used in the acute setting, aiming to assist clinicians to confidently diagnose a range of communication impairments in a timely and efficient manner. At a time of increasing demand on the health care system, the aim remains to achieve optimal outcomes in a timelier manner.

In 2016, the department will be focusing its energy on finalising initiatives aimed at maximising the quality of care provided to patients across all clinical streams. These include: evaluating the impact of streamlined communication assessment/screening practices, the evaluation of the benefit of iPads in the rehabilitation of communication and cognitive deficits; and the implementation and evaluation of a 'Supported Communication Training' program for staff. The department will begin collecting data as part of a National Randomised Control Trial (RCT) exploring the impact of an early intervention program on the emotional wellbeing of people with post stroke aphasia.

OUR RESEARCH

Mobile Cultural Key Phrases Tool (CALD Assist)

Researcher(s): Courtney Pocock & Sally Brinkmann

Collaborator(s): Jill Freyne (CSIRO), Dana Bradford (CSIRO) & Karen Harrap (CSIRO)

This project involved the development, implementation and evaluation of the CALD Assist iPad app (formally Cultural Key Phrases Tool), an app designed to assist communication between AH clinicians and non-English speaking patients during AH assessments. At the time of project commencement, the CALD assist app was the only multimodal app designed specifically for allied health clinicians to assist in communication with patients from NESB during initial assessments.

Education in supported communication for hospital staff: Use of consumer stories to enhance staff education

Researcher(s): Merridy Moore & Sally Brinkmann

This study involves the development of a digitally recorded resource that contains stories from patients with communication disorder describing their experiences while in hospital. The resource will enhance supported communication training of hospital staff. This pilot study is intended to contribute to improving the safety and effectiveness of care for patients who have a communication impairment.

Vietnamese speaking patient Le, interpreter Mai Dinh and app co-creator Courtney Pocock in Sunshine's rehabilitation ward.



Investigation of patient and carer self-rated satisfaction in attending the Parkinson's Disease communication group.

Researcher(s): Caitlyn Roberts, Dimitra Chrisikakos & Sally Howard

Research has shown that:

- Speech therapy for Parkinson's Disease (PD) leads to improvements in patients' speech and quality of life
- Improvements in therapy are sustained over time
- The delivery of speech therapy for PD via a group therapy model is supported
- There is potential for improvements post participation in a speech therapy group for people with PD in the areas of initiation of conversation, number of spontaneous speech acts, volume and self-perception regarding intelligibility
- Group therapy is known to be beneficial in encouraging generalisation by providing opportunities to practice conversational speech
- There is limited data regarding the satisfaction of participants in a group therapy model

This study evaluates patient and carer satisfaction in attending the Community Based Rehabilitation speech pathology (SP) led communication group for patients

with Parkinson's Disease. This study helps to determine whether the group therapy model provides best care to patients with PD referred to SP by meeting patient perceived need, enabling increased participation in the service, and providing co-ordinated, effective and best practice care.

Right Hemisphere Cognitive-Communication Screen: Does the newly developed screening tool meet the needs of Western Health Speech Pathology Department in the screening of cognitive-communication deficits?

Researcher(s): Monique Stojkovski, Sarah Ward, Dimitra Chrisikakos & Caitlyn Roberts

The Right Hemisphere Cognitive-Communication Screen (RHCCS) was developed in 2014 by the Western Health Speech Department. It was developed to overcome an identified gap in available comprehensive tools in the Speech Pathology (SP) Department to screen cognitive-communication skills in patients admitted to the acute wards at Western Health with right hemisphere strokes.

Screens available in the SP Department did not meet the needs of clinicians to screen for both cognition and communication using a specified screening tool within this patient population.

The primary aim of this project is to evaluate whether the RHCCS meets

the needs of the Western Health SP Department in screening for cognitive-communication deficits in patients admitted with a diagnosis of right hemisphere stroke. It is anticipated that the RHCCS will streamline screening of cognitive-communication deficits and help clinicians provide right care for patients through improved efficiency of assessment practice and timely detection of cognitive-communication impairments.

iPads in Speech Pathology: Is increased engagement and satisfaction a myth or reality?

Researcher(s): Sally Howard, Laura Bezzina & Lauren Belleli

Recent technological advances have seen the rise of 'smart technology' (e.g. iPhone, iPads etc.) and an increasing number of apps which are designed to deliver a broad range of educational and therapeutic programs.

This pilot study will examine the impact of using iPads to deliver communication and cognition therapy to adult stroke patients at Western Health. More specifically, this study aims to evaluate whether iPad-based treatment increases patient engagement and satisfaction with therapy, which may in turn improve patient related communication outcomes. The ultimate aim is to provide patients with the best evidence-based treatment possible to optimise outcomes.



Prof Gustavo Duque consults with Western Health Fracture Care Prevention Coordinator, Solange Bernardo, while technician Susan Harvey prepares to conduct a patient scan.

PROF GUSTAVO DUQUE

Chair of Medicine and Director of the Australian Institute of Musculoskeletal Science (AIMSS)

When Gustavo Duque was training as a geriatrician in Canada he became intrigued about the condition of frailty in patients aged over 65.

“The concept of frailty was not well understood then,” said Professor Duque, who is now Western Health’s Professor and Chair of Medicine and Director of the Australian Institute of Musculoskeletal Science (AIMSS).

“We could identify people who were in better shape yet they were the same age, with the same co-morbidities, as people who were very weak and who were walking very slowly.”

“And we could identify that the frail patients had a higher risk of fracture, falling and mortality. That’s why I dedicated most of my research efforts to those people. I tried to understand what was going on with these patients, from the laboratory level to the community level.”

Professor Duque is now an internationally renowned expert on frailty. He is investigating how to treat osteosarcopenia, a new syndrome identified as a combination of weak,

brittle bones and age-related muscle loss. Patients aged over 65 who have this condition have much higher rates of frailty, disability, falls and fractures, than those who do not.

Professor Duque and his research team are running clinical trials testing new drugs that will target and strengthen muscle and bone at the same time. The team is also developing new imaging and biomarkers to help doctors identify the syndrome. Treatment for people with osteosarcopenia is almost non-existent, except for exercise and protein supplements.

“It’s important to find ways to treat this condition because it’s killing people, it’s exposing them to disability and it’s very expensive for our health system,” Professor Duque said. “A lot of these patients frequently end up in our emergency departments after a fall or fracture.

“We currently have drugs for osteoporosis which are very effective for preventing fractures. But we don’t have any drugs at this moment for treating osteosarcopenia.”

Professor Duque was appointed Director of AIMSS earlier this year. He is expanding the Institute’s research activities and recently oversaw the launch of Victoria’s first Fracture Care and Prevention Program for patients aged over 65. The program covers all Western Health hospitals.

It provides a one-stop shop approach to the identification, assessment and treatment of patients with osteoporosis. The program treats patients referred by GPs as well as patients currently in hospital at Western Health.

Professor Duque’s research team at AIMSS includes biomedical and clinical researchers, graduate students, research assistants, clinical trials coordinators, biostatisticians, and allied health professionals.

AIMSS is becoming one of the major centres of reference in musculoskeletal research in Australia and one of the very few centres specialising in osteosarcopenia research in the world.

AUSTRALIAN INSTITUTE OF MUSCULOSKELETAL SCIENCE (AIMSS)

Director of AIMSS:

Prof Gustavo Duque
(from Dec 2015)

Acting Director AIMSS
Prof Edward Janus (Jan- Nov 2015)

Number of Researchers & Students:

Researchers: 14; Students: 14

OUR RESEARCH OUTPUT:

16

Projects

12

Publications

8

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The Australian Institute of Musculoskeletal Science (AIMSS) is a collaborative institute for research housed within the Western Centre for Health, Research and Education at Sunshine Hospital.

Since the foundation of AIMSS in 2011, researchers from its key partner organisations, Western Health (WH), Victoria University (VU) and University of Melbourne (UoM), have successfully built strong collaborative research teams working together on a range of musculoskeletal projects, aimed at translating sound research evidence into direct health outcomes.

Increasingly, AIMSS research collaborations have extended beyond the partner institutions to include many other national and international researchers with the common endeavour of promoting innovative and high-impact research within musculoskeletal health and disease.

An exciting new chapter for AIMSS occurred in the latter part of 2015 with the arrival of the new Chair of Medicine and AIMSS Director, Professor Gustavo Duque. A highly collaborative researcher with many international linkages, Gustavo Duque is a geriatrician whose research focuses on the identification of the mechanisms involved in the pathophysiology of osteoporosis in older persons as well as the prevention of osteoporotic fractures in this population.

With extensive publications and a track record in attracting large grants including several from the NHMRC, Professor Duque's appointment promises to place AIMSS at the centre stage of musculoskeletal research in Australia and worldwide. Focusing on conditions related to chronic disease and ageing such as osteoporosis, sarcopenia, frailty, our vision is to "improve the health and wellbeing of the communities in which we live and engage in innovative and integrative musculoskeletal research and advocacy".

OUR RESEARCH

Dynapenic Obesity, musculoskeletal and cardio metabolic Health in Older Adults

Researcher(s): David Scott & Peter Ebeling

Collaborators: Kerrie Sanders (UoM) & Alan Hayes (VU)

This research project will investigate associations between metabolic risk factors in older adults.

It is important to determine the most appropriate preventions and interventions for older adults in our community with metabolic risk factors, including dynapenic obesity.

Impact of molecular stress upon osteoblast lineage cell function; Identification of HSF1 as a novel therapeutic target in pathological bone loss

Researcher(s): John Price

Collaborators: Jonathan Gooi (UoM), Peter Pivonka (UoM) & Natalie Sims (St Vincent's Institute)

The aim of this project is to provide evidence for the clinical development of HSF1 inhibitors in pathological bone loss. There is a propensity of osteolytic bone disease within many types of cancer and this project will generate pilot data that may lead to significant therapeutic advances.

AUSTRALIAN INSTITUTE OF MUSCULOSKELETAL SCIENCE (AIMSS)

(CONTINUED)

Pathogenesis of long bone fractures in Vitamin D deficient children

Researcher(s): Michael Bullen

Collaborators: Christine Rodda (UoM), Peter Pivonka (UoM), David Scott (UoM), Kerrie Sanders (UoM) & Alessandro Timmi (UoM)

Peripheral quantitative computed tomography (pQCT) has the potential to be used in the evaluation of healing fractures. It is a low radiation tool for estimating the mechanical properties of bone. Its application has not yet been evaluated in patients wearing a cast.

This project has been developed to advance the health of the paediatric population by contributing to a better understanding of the pathophysiology of long bone fractures in children with Vitamin D deficiency.

The associations between characteristics of sarcopenia, vitamin D and falls in community-dwelling older adults

Researcher(s): David Scott, Peter Ebeling & Kerrie Sanders

Collaborators: Terry Haines (Monash University), Pazit Levinger (VU) & Elizabeth Skinner (WH)

This study will investigate the association of sarcopenia, Vitamin D deficiency and falls in older adults. The presence of sarcopenia and Vitamin D deficiency may exacerbate the risk from falls and fracture in obese older adults. This study aims to determine the most appropriate interventions in older adults with sarcopenia.

The associations between gene expression, muscle mass, strength and function in people with critical illness: a pilot study

Researcher(s): Elizabeth Skinner & Nigel Stepto

Collaborator(s): Craig French (WH) & Nir Eynon (VU)

This study aims to compare:

- a) gene expression; skeletal muscle mass, strength, quality and physical performance; and
- b) the relative contribution of lower- and upper-limb skeletal muscle mass and intramuscular adipose tissue in people with critical illness in ICU.

The results will be used to design future projects that investigate the mechanisms associated with the development of clinically significant weakness and possible therapeutic pathways and prevention strategies to reduce exposure to agents associated with ICU-acquired weakness.

OUR GRANTS & AWARDS

International Collaborative Grant (VU and UTEP)

Associate Professor Alan Hayes, Victoria University in collaboration with David Scott, and Sandor Dorgo at UTEP Assessing and combating dynapenia in diverse ethnic groups of older adults \$40,000 2014-2015

AIMSS Seed Fund

Ms Rebecca Liberatore, Senior Clinician, Women's Health Physiotherapy, Western Health

The effect of a structured antenatal exercise class on antenatal depression/anxiety, birth weight, gestation, length of hospital stay and postnatal depression in women diagnosed with antenatal depression/anxiety: A pilot randomised trial. \$10,000 2014-2015

AIMSS Seed Fund

Dr John Price, College of Health and Biomedicine, Victoria University

Impact of molecular stress upon osteoblast lineage cell function; Identification of HSF1 as a novel therapeutic target in pathological bone loss \$10,000 2014-2015

AIMSS Seed Fund

Dr Mary Xinmei Zhang, Victoria University

Does Dietary Inorganic Nitrate (NO₃) Increase Skeletal Muscle Insulin Sensitivity? \$10,000 2014-2015

ANAESTHESIA AND PAIN MANAGEMENT

Head of Department:

Dr Rick Horton

Head of Anaesthesia Research:

Dr Elizabeth Hessian

Number of Researchers & Students:

Researchers: 16; Students: 50

OUR RESEARCH OUTPUT:

19

Projects

5

Publications

12

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The Department of Anaesthesia and Pain Medicine enjoyed a busy research and audit program in 2015. We continue to balance our endeavours across a range of projects from small quality assurance audits up to large multicentre international studies.

Our department continued to make a strong contribution to multicentre studies. Our decision whether or not to participate is prefaced around whether the study is asking a question that is relevant to our patients here at Western Health.

Single centre investigator initiated studies constitute an important arm of our research program. This gives us the opportunity to ask locally relevant questions that align with our department interests and expertise. It helps build our research reputation whilst generating results that are directly applicable to our own patients.

In the quality area, our department brings a research methodological approach to all quality assurance (QA) audit projects. The benefits of this approach include increasing the scientific rigour of our QA results and building the research expertise of department staff members conducting audits. The paediatric fasting audit is an example of a quality activity that has direct relevance to our WH paediatric patients and their families. Having a better understanding of fasting times currently experienced by the children using our service allows us to make informed decisions about how to improve our processes, and consequently, their experience of a hospital stay.

Future projects include expanding our research into the use of simulation beyond its important role in education into the arena of assessment for employment recruitment. Focusing on selecting the best candidates into anaesthesia training will ensure the on-going delivery of high quality care to our patients into the future.

OUR RESEARCH

STRICT Study - Simulation testing for selection of Critical Care Training

Researcher(s): Adriano Coccianti, Martin Nguyen, Candida Marane, Anita Panayiotou, Emily Karahalios (University of Melbourne), Janet Beer, Navroop Johal, John Morris (Royal Melbourne Hospital-RMH), Stacy Turner & Elizabeth Hessian

This study examined the feasibility of incorporating a multi-station selection process including assessment of simulation performance into the selection of Critical Care HMOs.

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 pilot study will inform a larger prospective cohort study looking at the value of different selection modalities, including assessment of non-technical skills in simulated clinical scenarios, for predicting subsequent workplace performance of anaesthesia trainees.

ANAESTHESIA AND PAIN MANAGEMENT

(CONTINUED)

Audit of preoperative paediatric fasting times at Western Health

Researcher(s): John Ozcan, Simon Chong, Anna Steer & David Bramley.

This audit looked at the paediatric fasting times for children awaiting emergency and elective surgery. Fasting times may have a significant impact on the surgical patient experience, and children in particular may struggle with long periods of fasting. These audit results will help inform a review of the preparation of paediatric surgical patients at Western Health

Endoscopy audit

Researcher(s): Elizabeth Hessian

Collaborator(s): Kate Leslie, Department of Anaesthesia and Pain Management RMH, Megan Allen, Department of Anaesthesia RMH and Peter MacCallum Cancer Centre

This large multicentre audit within 14 public hospitals aimed to evaluate the anaesthesia practices and rate of anaesthesia complications for patients undergoing gastrointestinal endoscopic procedures. Endoscopic procedures are amongst the most commonly performed procedures in Australia. Understanding the current care of these patients and potential risks of anaesthesia will help inform evaluations of resource allocation within the public health system.

RELIEF (REstrictive vs LIbEral Fluid therapy in major abdominal surgery)

Researcher(s): David Bramley

Collaborator(s): Paul Myles (Alfred Hospital), for the Australian and New Zealand Clinical Trials Network.

This international multi-centre study of 2800 patients aims to answer the question of the effectiveness of liberal versus restrictive fluid therapy in major surgery. The optimal fluid regimen for patients undergoing major surgery is unknown due to conflicting trial results from small studies.

It is hoped that morbidity and mortality for major surgery may be reduced by optimising fluid therapy intraoperatively. Western Health has contributed 92 patients to date to this important study.

METs Study

Researcher(s): David Bramley, John Grant, Hugh Taylor & Anne Marie Southcott

Collaborator(s): Kate Leslie (Royal Melbourne Hospital) for the Australian and New Zealand Clinical Trials Network

An international multi-centre prospective cohort study of cardiopulmonary exercise testing for improving preoperative risk stratification for major non-cardiac surgery. This study will help us better understand the predictive value of cardiopulmonary exercise testing when it is used as a preoperative risk stratification tool.



Anaesthesia investigators (left to right) Dr Candida Marane, Dr Adriano Cocciant, Dr Elizabeth Hessian, Dr Martin Nguyen and Dr John Ozcan have been involved in an innovative study which put potential anaesthesia trainees in a high-pressure simulated medical crisis.



OUR GRANTS & AWARDS

Emerging Researcher Award:

Dr Hugh Taylor. A pilot study to investigate Post-operative Oxygen Consumption (POpOC) after colorectal surgery requiring bowel resection. University of Melbourne and Australian and New Zealand College of Anaesthetists \$10,000 2015

Premier's Healthcare Award for Excellence in Cancer Care:

Dr Rani Chahal. Stop the Clot with STEP (Surgical Thrombo-Embolism Prevention): a risk-stratified decision making app for all patients, for all surgeries, for any health institution Department of Health Victoria 2015

Finalist Gilbert Brown Prize:

Dr Rani Chahal. Assessment of post-implementation compliance with a Surgical ThromboEmbolism Prevention Protocol: the STEP protocol Australian and New Zealand College of Anaesthetists 2015

Robert Smith Prize:

Critical Care Research Session WH Research Week. Dr Mari Kawamata MUM SIZE Western Health \$750 2015

Robert Smith Prize:

Critical Care Research Session WH Research Week. Dr Candida Marane STRICT Study - Simulation for selection of critical care training Western Health \$750 2015

CANCER IN PRIMARY CARE

Head of Department:

Prof Jane Gunn

Prof Jon Emery, Herman Professor of Primary Cancer Research, University of Melbourne

OUR RESEARCH OUTPUT:

6

Projects

22

Publications

10

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The Cancer in Primary Care Research Group conducts research covering the role of primary care across the cancer continuum (see Figure).

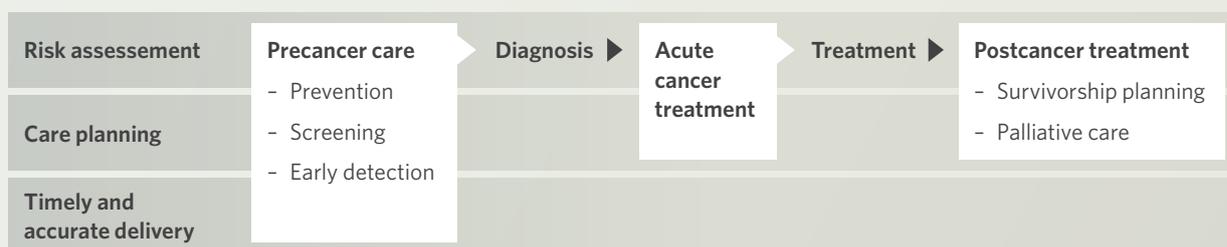


Figure. The role of primary care across the cancer continuum From Emery JD et al Nature Reviews Clinical Oncology 2013

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. This includes, for example, our work in colorectal cancer screening and 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 CALD communities.

We have recently completed an RCT testing a model of shared care for men with prostate cancer and are developing similar models for other common cancers. We are a highly collaborative group having 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 (PC4) of which Prof Jon Emery is the Director.

OUR RESEARCH

Implementation and evaluation of the Rapid Access Gastro-intestinal (GI) Endoscopy (RAGE) pathway

Researcher(s): Jon Emery

Collaborator(s): Alan Moss – WH Endoscopy services, GP Liaison Unit – Cancer Council Victoria, Medical Locals (SWMML and MRNWMML)

In collaboration with Dr Alan Moss, the Western Health endoscopy services and the GP Liaison Unit, Cancer Council Victoria and the two Medicare Locals (SWMML and MRNWMML) we have implemented a new pathway to support better GP referrals and improve access to GI endoscopy.

As part of the project we produced GP resource cards. The cards include the Hamilton cancer risk assessment tools, clinical implications of these and guidance on how to access the RAGE pathway. We also developed a RAGE referral proforma including electronic versions for Medical Director, Best Practice and ZedMed general practice software, created with support from the Medicare Locals.

Ms Robyn Tucker and Ms Carole Arbuckle, experienced nurses who work on the Cancer Council Victoria (CCV) Helpline, have been trained to deliver academic detailing visits to general practices as part of the implementation of the RAGE pathway.

A practice recruitment strategy was developed and implemented by the University of Melbourne Dept. of General Practice (DGP) using a systematic approach underpinned by a practice recruitment database created by the Victorian Practice Based Research Network (VicRen). This has enabled intensive efforts to maximise recruitment into the RAGE education program.

Audits of cancer diagnostic pathways

Researcher(s): Jon Emery

Collaborator(s): Sally Greenfield, Karen Winter, Ilana Hornung & Ian Faragher

Two new audits have started at Western Health to understand cancer diagnostic pathways. They are:

1. An audit of all patients attending Western Health Emergency Departments who are diagnosed with a new cancer within the subsequent two months.
2. An audit of diagnostic pathways of all patients with colorectal cancer treated at Western Health for 2013-14.

This will supplement the WCMICS funded project on presentations to Western Health Emergency Departments of patients with a known cancer diagnosis.

Cancer diagnosis in Vietnamese communities

Researcher(s): Jon Emery & Sharon Licqurish

This initiative continues the work on cancer symptom awareness and diagnostic pathways in people of

Vietnamese background. Ms Mary Huynh, a PhD student, has been engaged to work on this research program. Several of the projects involve close collaboration with the Cancer Council of Victoria to build on their existing program on cultural diversity and cancer prevention. The specific studies include:

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.
3. Development of Vietnamese culturally specific cancer awareness campaign materials to promote earlier presentation to healthcare.

Funding to support this research came from a Cancer Australia grant (2015-17), which also includes the development of Vietnamese symptom awareness materials which will eventually be implemented in communities served by Western Health.

Linking VCCC and general practice data to explore the management of cancer in primary care

Researcher(s): Jon Emery

Collaborator(s): Meredith Leyton, Dougie Boyle, Jim Bishop & Maureen Turner

In collaboration with Dr Meredith Leyton, Dr Dougie Boyle, Prof Jim Bishop and Ms Maureen Turner, we led a successful application to the BUPA Research Foundation. This grant will fund a project testing the feasibility and utility of linking general practice data with data from all VCCC hospitals. This will allow us potentially to examine areas including: patterns and causes of diagnostic delay in cancer and involvement of primary care during and after cancer treatment.

Western Health, VCCC conference, 'The Evolving Role of Primary Care in Cancer', March 4 2016

A VCCC grant-in-aid was successfully applied for to run the inaugural primary care cancer conference. The conference was held at the WCHRE in March 2016. The combined research and education program gave people the opportunity to hear from national and international guest speakers such as: Dr Fiona Walter (Cambridge University), Prof Sancha Aranda (CEO Cancer Council Australia), Prof Helen Zorbas (CEO Cancer Australia) and several other national and local speakers.

WCMICS funded systematic review of interventions to improve communication with cancer patients

Researcher(s): Sharon Licqurish & Loyal Pattuwage

This project will help to inform policy and practice across Western Health and other WCMICS hospitals.

OUR GRANTS & AWARDS

BUPA Foundation

J Emery, M Leyton, D Boyle, J Bishop. Linkage of hospital and primary care data to drive improvements in cancer care. \$217,978 2015-16

Cancer Australia

J Emery, S Licqurish. Improving cancer symptom awareness among the Vietnamese community. \$120,000 2015-17

Department of Health Victoria

Supporting earlier cancer diagnosis in general practice. \$532,000 2014-2016

NMHC Practitioner Fellowship

\$459,686 2015-2019



DR CHRIS NEIL

Consultant Cardiologist

Elderly people admitted to hospital with chronic heart failure are one of the fast-growing patient groups in Australian hospitals.

Their rising numbers are caused by several factors such as the increasing number of people who survive heart attacks but are left with chronic heart damage, the rising incidence of hypertension and the ageing of Australia's population.

This trend prompted Dr Chris Neil and his colleagues to develop a new model of care that would better suit the needs of these older patients. The model is based on original research into models of care for heart failure patients by Dr Neil's colleague, A/Prof Chiew Wong.

"It was recognised by our unit that the care that these people are going to need is going to be increasingly complex," Dr Neil said. "They will have multiple comorbidities, and on top of that they will have geriatric type care issues that are beyond the medical issues. We wanted to find a better way to deal with these

issues in a more streamlined, holistic manner."

The median age of heart failure patients admitted to hospital is 77. The new care model, known as cardio-geriatric care, involves a close collaboration between Western Health's geriatricians and cardiologists.

Every weekday a geriatrician consultant works with the cardiologists treating elderly patients with heart failure.

"It's an intensive, innovative model of care and it's enabling us to care for a broader range of patients' medical, social, rehabilitation and community assistance needs," Dr Neil said. "It's a much more efficient way to respond to patients' needs."

Dr Neil and his colleagues have analysed patient outcomes and hospital readmittance rates from the cardio-geriatric care model's first year of operation. Their analysis of the outcomes of patients 30 days after hospital discharge revealed that patients who received treatment under

the new care model had lower hospital readmission rates than those treated under the cardiology team's previous model of care.

The 30-day outcome findings were presented to the Cardiac Society of Australia and New Zealand's national conference in August. Dr Neil and his colleagues will publish a research paper on the 30-day and one year-patient outcome measurements.

This is an inter-disciplinary model of care that's unique to Western Health," Dr Neil said. "It introduces better access to rehabilitation and adds an additional aspect to the continuity of longitudinal patient care."

Dr Neil is also involved in several other research projects, including one aimed at improving the functional capacity and independence of heart failure patients living in the community. The study is investigating the use of light resistance training with weights to improve the physical rehabilitation of frail patients with heart problems.

CARDIOLOGY

Head of Department:

A/Prof Nicholas Cox

Number of Researchers & Students:

Researchers: 9; Students: 1

OUR RESEARCH OUTPUT:

10

Projects

28

Publications

2

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The past few years have seen major growth in the Cardiology Department's ability to provide comprehensive services to acutely unwell cardiac patients, including the elderly. This has been accompanied by growth of investigator led research, including an observational study of cardiogeriatric patient care, under A/Prof Nicholas Cox.

The original research of A/Prof Chiew Wong into models of care in heart failure (HF) has continued, with results presented internationally in 2015. A/Prof Christopher Neil was also successful in several grant applications for translational studies in HF in 2015, with a focus on the exercise physiology of heart failure, as well as novel strategies for managing the acute HF patient.

Building on a long history of research into Coronary Artery Disease at Western Health, Dr Nadim Shah and A/Prof Kean Soon, completed a study exploring the incidence of coronary atherosclerosis in asymptomatic individuals whose siblings had experienced premature myocardial infarction (MI), utilizing CT coronary angiography. A growing team of consultants, with three new appointments in 2015, bring an extended capacity to initiate and supervise clinical research.

Dr Dion Stub has received an NHMRC/NHF Early Career fellowship. His research highlights include the publication of the Air Versus Oxygen in Myocardial infarction study performed throughout Melbourne with Ambulance Victoria, with whom he continues to collaborate closely. Dr William Chan, also an NHMRC/NHF Early Career fellow, brings a research focus in coronary physiology, myocardial ischemia-reperfusion injury and novel stent technology, including the bioresorbable vascular scaffold for the treatment of coronary artery disease. In addition, Dr Michael Wong joined our cardiac electrophysiological team and brings research experience in sudden arrhythmic death in dialysis patients, as well as in atrial fibrillation.

The past few years have seen major growth in the Cardiology Department's ability to provide comprehensive services to acutely unwell cardiac patients, including the elderly.

CARDIOLOGY

(CONTINUED)

OUR RESEARCH

A cardiogeriatric model of care: prospective assessment of a new method of care for elderly patients admitted with heart failure

Researcher(s): Nicholas Cox, Christopher Neil & Claire Long

Collaborator(s): Edward Janus (WH) & Emily Karahalios, University of Melbourne

This study evaluates the impact of a novel model of care, targeting the elderly patient with heart failure, on 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

Researcher(s): Christopher Neil & Catherine Giuliano

Collaborator(s): Jason Allen, ISEAL, Victoria University & Emily Karahalios, University of Melbourne

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(s): Christopher Neil

Collaborator(s): Jason Allen, ISEAL, 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 HF.

Determinants of death associated with out of hospital cardiac arrest in a single tertiary hospital

Researcher(s): Nicholas Cox, Dion Stub, & 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, locally.

Screening for asymptomatic coronary heart disease in siblings of young myocardial infarction patients

Researcher(s): Nadim Shah, Kean Soon & Chiew Wong

Collaborator(s): Anne-Maree Kelly, Emergency Department, Western Health, University of Melbourne.

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 & AWARDS

Early Career fellowship:

Dr Dion Stub: National Health and Medical Research Council (NHMRC) / National Heart Foundation (NHF) \$350,000, 2014-2017

Early Career fellowship:

Dr William Chan: Effect of exanotide in ST-elevation acute myocardial infarction. National Health and Medical Research Council (NHMRC) / National Heart Foundation (NHF) \$350,000, 2013-2016

Central Research Grant Scheme:

Prof Jason Allen, A/Prof Christopher Neil. Effects of Dietary Nitrate Supplementation on Exercise Performance in Chronic Heart Failure Victoria University (VU) \$26,000, 2015-2016



Western Health Clinical Nurse Consultant, Liz Scholes with Cardiogeriatric Heart Failure Service patient, Robert.

DRUG HEALTH SERVICES

Head of Department:

Robyn Jackson

Number of Researchers & Students:

Researchers: 2; Students: 2

OUR RESEARCH OUTPUT:

3

Projects

4

Publications

7

Presentations

SUMMARY OF RESEARCH ACTIVITIES

Drug Health Services/Addiction Medicine and Toxicology provide a range of community and hospital-based treatment services for people with issues of drug dependence. Inpatient community programs include both Youth and Adult Community Residential Drug Withdrawal Units, and a 6-week Women's Residential Rehabilitation program.

Outpatient programs include Youth Outreach, Non-residential Withdrawal, Opiate Replacement Therapy across Addiction Medicine and Nurse Practitioner programs, Specialist Pharmacotherapy case management, Counselling, Care and Recovery Co-ordination, and a Counselling Psychology service. The service aims to provide a comprehensive range of multidisciplinary support services, irrespective of the nature of a person's drug-related issues, or their individual treatment goals. Addiction Medicine also provides consultation to the hospital network.

Research in 2015 was led by Addiction Medicine exploring an emergent patient cohort in the area of prescription opiate dependence in the chronic pain population. Staff of Drug Health Services also presented at conferences in 2015, on topics ranging from Field Education in Social Work, Nurse Practitioner Models, to more treatment specific issues such as the impacts of patient alcohol use on emergency departments, substance

abuse disorders in palliative care, smoking cessation and appropriate use of medications.

OUR RESEARCH

Pilot trial investigating the use of cannabidiol as an adjunctive treatment in patients with a chronic psychotic disorder

Researcher(s): Christos Pantelis, Mahesh Jayaram, Chad Bousman, Naveen Thomas, Mike McDonough, Nadia Solowij, Murat Yucel, Brad Roberg & Ms Antonia Merritt

Collaborator(s): University of Melbourne/Melbourne Neuropsychiatry Centre; University of Wollongong; Monash Clinical and Imaging Neuroscience

The aim of this pilot trial is to investigate the efficacy of cannabidiol as an adjunctive treatment for chronic psychotic disorders. This will be a double-blind placebo-controlled randomised trial. The trial will help to establish the feasibility of a larger scale trial, as well as having implications for expanding treatment options available to people with chronic psychotic disorders.

Continuing, cutting down or ceasing opioids in chronic non-cancer pain patients

Researcher(s): Mike McDonough & Ross Newman

This QA project involves an exploration of patient progress in addressing opiate use with 6 and 12 month follow up, in an emergent opioid dependent population. This research will assist in developing our knowledge of key treatment factors for this emergent treatment population.

Clinical Audit of IME reports on an insurance cohort involving opioids and chronic non-cancer pain

Researcher(s): Mike McDonough & Lewis Murray

This QA project reviews independent medical examiner (IME) assessments of chronic non-cancer pain patients prescribed opiates.

OUR GRANTS & AWARDS

Western Health Research Grant:

Professor Christos Pantelis; Dr Mahesh Jayaram; Dr Chad Bousman; Dr Naveen Thomas; Associate Professor Mike McDonough; Associate Professor Nadia Solowij; Professor Murat Yucel; Mr Brad Roberg; Ms Antonia Merritt

Pilot trial investigating the use of cannabidiol as an adjunctive treatment in patients with a chronic psychotic disorder: Western Health \$10,000 2014- 2015

ENDOCRINOLOGY AND DIABETES

*A/Prof Shane Hamblin with
a Western Health patient.*

Head of Department:

A/Prof P. Shane Hamblin

Number of Researchers & Students:

Researchers: 11; Students: 1

OUR RESEARCH OUTPUT:

5

Projects

18

Publications

15

Presentations

7

Chapters

SUMMARY OF RESEARCH ACTIVITIES

Diabetes prevalence (and in particular gestational diabetes) is very high in the west and in response our Unit provides multiple diabetes services to cater for this demand. The Endocrinology & Diabetes Unit consists of 24 endocrinologists, 2 paediatric endocrinologists, 3 advanced endocrinology trainees, 2 HMOs and 8 diabetes nurse educators. The Unit is closely linked to the Diabetes Foot Service which is staffed by Unit endocrinologists, podiatrists, orthotists, vascular surgeons and rehabilitation physicians. Inpatient endocrinology and diabetes care is provided to all hospitals in Western Health and there is also extensive ambulatory care provided for diabetes and endocrinological conditions.

Research areas in 2015 included studies of thyroid function changes during pregnancy, effect of educational interventions in gestational diabetes, the impact of glucocorticoids on glycaemia in Oncology patients and factors associated with the high rates of diabetic ketoacidosis in the western suburbs.

As a result of the study of educational interventions in gestational diabetes mellitus (GDM), practice has changed at Sunshine Hospital with iPads now available in the waiting room for pregnant women to access GDM information with the education app.

Planned studies include: The effect of betamethasone on glycaemic control in pregnant women, studies on the effect of Zoledronate infusion on the acute Charcot's foot and the usefulness of new technology apps in improving Type 2 diabetes control (in collaboration with Deakin University).

Dr Ie-Wen Sim is undertaking a PhD at the University of Melbourne, based at Sunshine Hospital. He is investigating teriparatide versus placebo in the management of osteonecrosis of the jaw associated with bisphosphonate use. Dr I-Lynn Lee is completing her PhD in gestational diabetes follow up (Menzies School of Health Research, Darwin).

In addition several Western Health Endocrinology & Diabetes Unit staff also have appointments elsewhere and are actively engaged in research at their other institutions (Dr Bala Krishnamurthy – immunology of Type 1 diabetes at St Vincent's Institute, Melbourne; Dr Priya Sumithran, obesity research at Austin Health).



OUR RESEARCH

Factors associated with Diabetic ketoacidosis (DKA) in patients admitted to Western Health

Researcher(s): P. Shane Hamblin & Sylvia Xu

This study examines the prevalence of depression, anxiety, “diabetes distress” illicit drug use and social factors in patients admitted with DKA. Preliminary analysis suggests that depression prevalence is significantly higher than in the general community and illicit drug use is common in this group of patients. The west of Melbourne has high rates of DKA, a potentially fatal condition. By understanding the factors associated with DKA, hopefully strategies to reduce the prevalence will be developed.

Thyroid function test changes in healthy women during normal pregnancy

Researcher(s): Mary-Anne Papalia

Thyroid function tests change significantly during normal pregnancy. Western Health’s pathology provider (Dorevitch) does not have valid reference ranges for pregnancy. Developing a valid thyroid function test reference range for pregnant women will assist clinicians to manage pregnant women more appropriately.

Effect of betamethasone on blood glucose control in pregnant women with gestational diabetes.

Researcher(s): Christopher Yates, Anna Watts & Barbora Paldus

Betamethasone is commonly given to pregnant women close to term. This drug causes a rise in blood glucose which must be managed with adjustments in insulin. The dose of the adjustment is ‘trial and error’. Using continuous glucose monitoring electrodes, more accurate measurements of glycaemia after betamethasone will allow a more rational approach to insulin dose adjustment.

Growing a healthy baby

Researcher(s): Cheryl Steele

Collaborator(s): Mary Carolan, Victoria University

This project will develop and evaluate a learning application to be used by mothers to aid in their understanding of a babies’ development with regard to a ‘Healthy diet’ and ‘Exercise’. Builds on the successful app developed for use by mothers with gestational diabetes during pregnancy. The focus this time will be on nutrition for the baby/child.

The impact of targeted education to primary care providers for diabetes related foot complications – a pilot study

Researcher(s): Julia Firth, Bianca Bell & P. Shane Hamblin

Collaborator(s): Julie Borninkhof, Executive Director, Primary Care Improvement, Melbourne Primary Care Network

This project will investigate the impact of three different modes of training delivery for general practice staff, to determine which modes of education have the greatest impact on increasing knowledge of Diabetes foot related complications and which method results in the greatest practitioner behaviour change.

This project will improve the appropriateness and timeliness of referrals from pilot participants to the Western Health DFS to ensure that patients are treated as early as possible to improve patient outcomes.

OUR GRANTS & AWARDS

WH Research Grant:

Julia Firth, Bianca Bell, P. Shane Hamblin & Julie Borninkhof.

The impact of targeted education to primary care providers for diabetes related foot complications – a pilot study Western Health \$10,000, 2016



A/PROF ALAN MOSS

*Head of Unit, Endoscopic Services
Head of Unit, Gastroenterology*

Alan Moss's international reputation as a leader in endoscopy research continues to grow.

In December 2015 he was awarded a World Endoscopy Organisation Research Award for his research and publications proving the efficacy and safety of less invasive techniques to remove large, complex or advanced pre-cancerous polyps from the colon. He is the first Australian to win the prestigious award.

Bowel cancer is responsible for the second highest number of deaths from cancer in Australia. Previously, surgery was required to prevent large polyps progressing into cancer.

But A/Prof Moss's research showed high rates of successful removal with the less invasive EMR (Endoscopic Mucosal Resection) technique that is performed via colonoscopy. His research has influenced the medical profession's approach to these polyps internationally.

"Traditionally patients with large, complex or advanced colorectal polyps needed to have surgery which is more

invasive and is associated with higher costs, morbidity and potentially, mortality," he said.

"We've been able to demonstrate that an endoscopic approach via colonoscopy is safe, effective and has good long-term outcomes for the patient."

There has been an on-going debate in the medical profession about the best method to remove these large or complex polyps, with some doctors concerned about the rate of polyp recurrence after EMR.

The latest findings regarding recurrence rates from A/Prof Moss and his fellow researchers were published recently in GUT, a prestigious international gastroenterology journal.

The research paper published the results of the first 1000 cases in the Australian Colonic EMR (ACE) study. A/Prof Moss was the paper's lead author.

Findings from the research showed that recurrence occurred in 16 per cent of patients following a successful EMR. However, nearly all of the cases of

polyp recurrence were very small and easily treated via colonoscopy. Ninety three per cent of patients with polyp recurrence were treated successfully via colonoscopy, thus avoiding surgery.

With strict colonoscopy surveillance of patients at four months and 16 months following the original EMR, 98 per cent of these patients were polyp-free.

A/Prof Moss said there would always be a role for surgery in cases of cancerous polyps. "However, we've shown that EMR should be considered a first line of treatment in many cases. If the polyp is not yet cancerous but it is large and advanced, we can usually manage it endoscopically and that's a tremendous benefit to our patients."

He said working at Western Health gave him great opportunities to further the science of medicine. "We're making a difference to large numbers of people and, at the same time, we're training the next generation of endoscopists and gastroenterologists. We're participating in leading multi-centre research that's changing the face of endoscopic practice and being recognised internationally for our work."

ENDOSCOPY AND GASTROENTEROLOGY

Head of Department:

A/Prof Alan Moss

Number of Researchers:

Researchers: 3

OUR RESEARCH OUTPUT:

16

Projects

11

Publications

5

Presentations

9

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

In Endoscopic Services, we undertook eight clinical research projects in 2014-15, all of which have relevance to our daily clinical work. The studies focus on ways to improve our endoscopic clinical outcomes and on quality assurance and audit measures. The main focus of our research is studying novel endoscopic techniques, and monitoring existing endoscopic techniques that are minimally invasive ways to treat GI pathology and thereby minimise the need for more invasive surgical interventions that have greater associated morbidity and mortality.

As a result of the outcomes of our studies, we refined our pathway to endoscopic mucosal resection, via our endoscopy clinic. We educated our referring physicians to avoid any attempt at partial removal of the lesion prior to referral for endoscopic mucosal resection (EMR) because we learnt that previous intervention causes sub-lesion fibrosis that significantly impairs our ability to successfully resect the lesion.

We have more work to do in the realm of detection of a newly described entity of flat polyps known as sessile serrated adenoma (SSA) polyps. We will focus on educating our endoscopists to enhance detection of these lesions, and then further study our detection rates and outcomes. We aim to further study our success in achieving other quality indicators such as adenoma detection

rates and study the implementation of our new nurse endoscopy program.

We made national and international contributions by writing a section of the Australian Guidelines for the management of Barrett's oesophagus. Our Director of Endoscopic Services, Associate Professor Alan Moss, was appointed as co-chair of the European Endoscopy Society Polypectomy and EMR Guidelines committee. The committee is working to formulate the first European Guidelines in this area. A/Prof Moss also received the 2015 World Endoscopy Organisation Research Award, as well as leading reviewer rewards for the two top endoscopy journals internationally (Gastrointestinal Endoscopy and Endoscopy).

In Gastroenterology, we undertook 17 clinical research projects that covered hepatitis B, hepatitis C, Ulcerative Colitis, Crohn's Disease and Clostridium difficile associated diarrhoea. Participating in these clinical trials enables our service to provide better patient treatment options and thus better patient outcomes for both liver and luminal gastroenterology disease.

The conducting of clinical trials enhances staff education for medical and nursing team members. This also enables our patients to have access to recently developed medications, which is especially important in rapidly evolving areas such as therapy for hepatitis C. We plan to continue to be involved in a range of both investigator initiated and pharmaceutical industry

sponsored trials so the unit can continue to improve staff education, patient treatment options, and patient outcomes.

OUR RESEARCH

Australian Colonic EMR audit / quality assurance study

Researcher(s): Alan Moss & Simon Zanati

Collaborator(s): Seven centres around Australia, including the lead centre Westmead Hospital in Sydney, comprising the Australian Colonic EMR study group.

All patients referred for endoscopic mucosal resection (EMR) of large or complex colonic polyps are 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 could not be managed endoscopically. These patients were managed surgically. Endoscopic management is associated with reduced morbidity, reduced mortality, reduced cost and shorter admissions. However, outcomes need to be rigorously evaluated, and this serves as a quality assurance project, but also allows for study of long term outcomes.

ENDOSCOPY AND GASTROENTEROLOGY

(CONTINUED)

Factors influencing sessile serrated adenoma (SSA) detection rates at a multi-centre metropolitan Australian health service

Researcher(s): Alan Moss & Jeremy Dwyer

Sessile serrated adenomas (SSAs) are a relatively newly described entity of very flat colonic polyps that are difficult to detect, and their margins are frequently difficult to discern from the surrounding mucosa. They can also progress to malignancy at a faster rate than conventional polyps.

Detection rates are highly variable between centres and between endoscopists within a centre. SSA detection rate is likely to become a quality assurance measure / KPI in the future. Our initial study showed that SSA detection rates at Western Health are variable between endoscopists, but overall detection rates are lower than desirable. This serves as a baseline for further education of our endoscopists. In the next phase of the study, we hope to further educate our endoscopists regarding SSA detection. We then hope to repeat the study of SSA detection rates to see if detection rates improve.

Colonoscopy reduces mortality from colorectal cancer. However some recent large studies have suggested that the protective effect of colonoscopy is confined to prevention of left sided colon cancers, and that overall rates of right sided colon cancer have not improved. Failure to detect SSAs in the right colon is thought to be a key reason for the lack of protection against right sided colon cancer. Hence the importance of detection of SSAs is increasingly being understood, and will become a focus of further study.

Hot Avulsion versus Argon Plasma Coagulation for the Management of the Non-Lifting Polyp: A Randomised Controlled Trial

Researcher(s): Alan Moss

Collaborator(s): Spiro Raftopolous - Sir Charles Gairdner Hospital Perth.

Removal of large or complex polyps by Endoscopic Muscosal Resection (EMR) technique requires elevation of the lesion via submucosal injection to create a safe resection plane. When the polyp does not elevate, traditionally this meant a referral for surgery or alternatively endoscopic management by argon plasma coagulation (APC) that we have proven to be ineffective in the ACE study outcomes.

Hot avulsion (HA) is a novel alternative endoscopic therapy and in this study we randomise patients to HA or APC for residual polyp that cannot be excised with snare. This novel therapy may succeed in removing the residual polyp, and thereby prevent patients from requiring hemicolectomy surgery to treat a non-malignant, but non-lifting residual polyp.

A Phase 3, Open-label Study to Determine the Long-Term Safety and Efficacy of Vedolizumab (MLN0002) in Patients with Ulcerative Colitis and Crohn's Disease

Researcher(s): Ian Kronborg

This study aims to determine the safety profile and tolerability of long-term treatment with (MLN0002) Vedolizumab. The study has been collecting data regarding the occurrence of important clinical events as well as efficacy of (MLN0002) Vedolizumab. This has enabled our patients to have access to recently developed medications, which is especially important in rapidly evolving areas such as therapy for Ulcerative Colitis and Crohn's Disease.

OUR GRANTS & AWARDS

World Endoscopy Organisation (WEO) Research Award:

Associate Professor Alan Moss

The award is in recognition of a particularly important contribution to research in the field of digestive endoscopy

Gastrointestinal Endoscopy Reviewer Award:

Associate Professor Alan Moss Leading reviewer (internationally) for the journal Gastrointestinal Endoscopy

Endoscopy Reviewer Award:

Associate Professor Alan Moss Leading reviewer (internationally) for the journal Endoscopy

GENERAL INTERNAL MEDICINE

Head of Department:

Prof Edward Janus

Number of Researchers & Students:

Researchers: 2 Students: 4

OUR RESEARCH OUTPUT:

11

Projects

7

Publications

15

Presentations

SUMMARY OF RESEARCH ACTIVITIES

We admit more than 6000 mostly elderly multi-morbid patients annually. We need to ensure patients reach wards promptly after ED arrival, optimise treatment, minimise unnecessary hospital stay, transfer patients to the community efficiently and prevent unnecessary readmission.

Our research addresses gaps in both treatment and treatment delivery. It involves 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 publications and RACP registrar prizes.

We secured a \$300,000 HCF research foundation grant to evaluate a new model of care for managing community-acquired pneumonia (the "Improve-GAP" trial). This implementation research addresses evidence practice gaps in the most common condition we treat. Another major project (RAPT) focuses on identifying and following up patients

at high risk of readmission. We also monitored a multi-pronged approach to markedly shortening the time it takes for patients to be moved to a ward after they arrive in ED.

Professor Janus, who is also Western Health's Director of Research, is a chief investigator in NHMRC funded diabetes prevention after gestational diabetes (MAGDA). A pilot study was completed, which showed epigenetic changes in gestational diabetes. A larger study is planned with substantial Western Health patient numbers.

Infectious Diseases and General Medicine Physician A/Prof Harin Karunajeewa also holds a NHMRC Career Development Fellow at Walter and Eliza Hall Institute of Medical Research (WEHI) providing opportunities to integrate his research at the WEHI in tuberculosis, malaria, respiratory and enteric infectious diseases with his work at Western Health. This includes recently funded clinical tuberculosis research at Western Health.

GENERAL INTERNAL MEDICINE

(CONTINUED)

OUR RESEARCH

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

Researcher(s): Edward Janus

Collaborator(s): Dunbar JA, Best JD, Carter R, Oats J, Ackland M, Ebeling P

Using encrypted linkage technology, an analysis of multiple Gestational Diabetes related data sets from hospitals, government and pathology laboratories is continuing. In this way a large amount of information can be gathered for an individual while protecting their identity. The individual's condition can 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. Recruitment of all 578 subjects for the lifestyle intervention vs usual care and the intervention was completed mid-2015 with a large contribution from WH. The trial results analysis commenced in late 2015 and continues.

WH will use this same data linking technology for future research into chronic diseases.

Approximately 10% of pregnancies at Western Health are complicated by gestational diabetes. As well as optimal treatment during pregnancy follow up is crucial 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. This project addressed these issues.

EPI-FIND - Epigenetic Factors in Diabetes

Researcher(s): Edward Janus

Collaborator(s): L Ackland and J Dunbar (Deakin), P Ebeling (Previously University of Melbourne and Western Health) 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 were drawn from Western Health Gestational diabetes and non gestational diabetes clinics. The pilot study 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.

False economies in home-based antibiotic treatment: A health-economic case study of management of lower-limb cellulitis at a large metropolitan health service

Researcher(s): Kamy Kameshwar, Emily Karahalios, Edward Janus & Harin Karunajeewa

This is our seminal health systems/ health economic research project in which we proved that we can interrogate the administrative data sources at Western Health to produce high quality published research that has direct relevance to service delivery planning at WH.

We hope it will be a platform to help us leverage dedicated funding and position WH as a leader in health services/ health economic research. Cellulitis is an extremely common (330 inpatient admissions per year) and costly condition to manage (\$1.7 million) at WH. Improving efficiency of management will ensure resources are freed up for where they can be used more effectively.

Using Dried Blood Spots for Pharmacokinetic studies of Tuberculosis Treatment

Researcher(s): Harin Karunajeewa & Robert James

Collaborator(s): Walter and Eliza Hall Institute and with the University of Western Australia

This project aims to evaluate a novel approach to measuring concentrations of tuberculosis (TB) drugs in the blood stream (by collecting blood from finger-prick onto filter paper cards). This could potentially be a way of improving dosing of TB drugs in our patients that could reduce side effects and improve clinical response. Because of the high proportion of migrants from TB endemic countries in our catchment area, WH has one of the highest TB case loads in Australia and due to changing migrant demographics, these rates are increasing.

Improve-GaP: Hospitalization for pneumonia in the elderly: Standardising evidence-based interventions to shorten length of stay, reduce readmissions, reduce hospital costs and improve patient-reported outcomes

Researcher(s): Edward Janus, Harin Karunajeewa, Elizabeth Skinner, May Lea Ong, Melina Shackell, Melanie Lloyd, Emily Karahalios, Anne Maree Kelly and Russell Harrison



Mum Oh Moo and her baby Alexander.

Approximately 10% of pregnancies at Western Health are complicated by gestational diabetes.

Collaborator(s): Terry Haines, Monash University

This will be a controlled evaluation, utilizing 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, early mobilization antibiotic stopping rules) and practice.

Community acquired pneumonia is the most common and costly condition we treat at WH. Improvements in efficiency will pay a large dividend for patient outcomes and resource utilization. We hope that this study will build a platform for further studies of acute respiratory infections, enable further internal and external collaboration, further successful funding applications and see WH positioned as a scientific leader in this field.

OUR GRANTS & AWARDS

NHMRC Partnership Grant:

Dunbar JA, Best JD, Janus ED, Carter R, Oats J, Reddy P, Carnie J and Phillips P. With AI Ebeling PR. Preventing Diabetes in Pregnancy from Progressing to Type 2 Diabetes: Macro-Level System Change in South Australia and Victoria National Health and Medical Research Council (NHMRC) \$1,292,000, 2010-2015

HCF Project Grant:

Janus E, Karunajeewa H, Skinner E, Ong ML, Karahalios E, Harrison R, Haines T. Hospitalization for pneumonia in the elderly: Standardizing evidence-based interventions to shorten length of stay, reduce readmissions, reduce hospital costs and improve patient-reported outcomes. HCF \$300,000, 2016-2017

Harry Windsor Foundation Grant:

Karunajeewa H. Using Dried Blood Spots for Pharmacokinetic studies of Tuberculosis Treatment Australian Respiratory Council \$50,000, 2015

John Burge Trust:

Karunajeewa H. Using Dried Blood Spots for Pharmacokinetic studies of Tuberculosis Treatment Victorian State Trustees \$59,000, 2015

RACP Congress 2015 Best poster award:

Gowri Somarajah. The burden of diabetes on hospital services: Impact on General Internal Medicine inpatients at Western Health RACP, 2015

RACP Victorian Trainee Research Award (winner):

Kameshwar K. False economies in home-based antibiotic treatment: A health-economic case study of management of lower-limb cellulitis at a large metropolitan health service. RACP, 2015

INFECTIOUS DISEASES

Head of Department:

Dr Garry Lane

Number of Researchers & Students:

Researchers: 6; Students: 1

OUR RESEARCH OUTPUT:

6

Projects

4

Publications

3

Chapters

SUMMARY OF RESEARCH ACTIVITIES

Research has been undertaken by junior staff within the unit (supervised by senior staff) as well as by senior staff in collaboration with other units and other institutions. Our research has focused on clinical areas of interest frequently encountered by the unit, as well as having a safety and quality aspect.

A significant research development for the Infectious Diseases unit in 2015 was the commencement of the CAMERA2 trial. The trial is an investigator initiated multi-centre randomised control trial formed through the Australasian Society of Infectious Diseases Clinical Research Network (ASID-CRN). Future research objectives will be aiming to increase involvement in similar multi-centre trials through the ASID-CRN.

OUR RESEARCH

CAMERA-2: Combination Antibiotic treatment for Methicillin Resistant Staphylococcus aureus

Researcher(s): Stephen Guy & Adrian Tramontana

Collaborator(s): Steven Tong & Joshua Davis.

This research involves a multi-centre RCT co-ordinated through Menzies School of Health Research and ASID-CRN. The trial aims to determine if it is beneficial to add the antibiotics

flucloxacillin or cephazolin to standard antibiotic treatment for MRSA “golden staph” bloodstream infection. We frequently treat patients with MRSA infections and there is approximately 30% failure with standard treatment.

Introduction of an interdisciplinary diabetic foot service and the impact on inpatient length of stay

Researcher(s): Stephen Guy

Collaborator(s): WH Podiatry, Endocrine and Vascular Surgical Units

The study will investigate the impact of an interdisciplinary diabetic foot service on the outcome for patients with diabetic foot infections. Diabetic foot infections are common and are associated with significant morbidity and mortality. Management is also relatively resource intensive.

The Utility of GeneXpert MTB/RIF Assay in the Western Region of Melbourne; the first 3 years

Researcher(s): Shio Yen Tio & Stephen Guy

Collaborator(s): Jenny (Siaw Jin) Wong Dorevitch Pathology, Victoria

This study evaluates the sensitivity and specificity of GeneXpert MTB/RIF assay versus smear microscopy with Mycobacterium Tuberculosis (MTB) culture, positive histology and clinical diagnosis 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.

Delays in suspicion and treatment of pulmonary tuberculosis: a retrospective study of a tertiary health service in Western Melbourne, 2011-2014

Researcher(s): Eloise Williams, Stephen Guy & Garry Lane

This study involves reviewing delays in diagnosis of tuberculosis. It will hopefully help identify reasons for delays in diagnosis so they can be avoided in the future enabling more prompt diagnosis, and treatment for TB, resulting in better patient outcomes and reduction in risk to public health.

National antimicrobial prescribing survey

Researcher(s): Stephen Guy

Collaborator(s): Pharmacy, National Antimicrobial Prescribing Service

This involves serial point prevalence audits of antimicrobial usage at both Footscray and Sunshine Hospitals. This facilitates evaluation of our antimicrobial stewardship at Western Health and identifies areas for improvement.

INTENSIVE CARE

Head of Department:

A/Prof Craig French

Number of Researchers & Students:

Researchers: 10; Students: 1

OUR RESEARCH OUTPUT:

16

Projects

23

Publications

4

Presentations

3

Chapters

SUMMARY OF RESEARCH ACTIVITIES

The past year has been marked by exceptional growth across the Department of Intensive Care. Western Health increased its critical care services beyond the existing Intensive Care Unit (ICU) at Footscray Hospital. As a result, an additional ICU was opened at Sunshine Hospital in February 2015.

Our department has always had a strong commitment to clinical research because of the improvement that it generates in patient outcomes. Our intensive care clinicians, with essential support and assistance from our dedicated research coordinators, have driven the department's research activities. The conducting of clinical trials entails administrative tasks that can be enormously difficult to manage while simultaneously continuing to recruit and support clinical trial patients.

However, the effort of formal research expansion was rewarded when the first patient at the newly opened Sunshine Hospital ICU was recruited to a clinical trial on the 6th of September, 2015. This marked a crucial turning point because it means that patients can now be offered the same opportunity of participating in clinical research activities across both critical care units at Western Health. In fact, there have been a number of occasions throughout 2015 when every single patient occupying a bed in the ICU was enrolled in a clinical research trial of some sort. This is a feat that not many ICUs could claim.

Our experienced researchers are also taking up prominent positions in the wider realm of critical care research. The Director of Intensive Care, A/Prof Craig French, is currently the Chair of the Australian and New Zealand Intensive Care Society (ANZICS) Clinical Trials Group (CTG). Our Research Manager, Samantha Bates has been elected to the management committee of the Intensive Care Research Coordinator Interest Group (IRCI) as the Victorian state representative. We also welcomed new ICU consultants, each bringing research interests that added to a very busy year of contributions to peer reviewed journals and publications. We are looking forward to continuing to build our research profile.

Our intensive care clinicians, with essential support and assistance from our dedicated research coordinators, have driven the department's research activities.

INTENSIVE CARE

(CONTINUED)

OUR RESEARCH

A randomised blinded placebo controlled trial of hydrocortisone in critically ill patients with septic shock (the ADRENAL study)

Researcher(s): Craig French, John Mulder, Sathyajith Velandy Koottayi, Forbes McGain, Zia Ansari & Dashiell Gantner

Collaborator(s): The George Institute for Global Health, ANZICS CTG

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 has recruited 66 patients, and Sunshine Hospital has 3 patients.

Septic shock remains a leading cause of mortality among critically ill patients. 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 among doctors around the world about whether treatment with or without low dose steroids improves overall mortality.

STandaRd Issue TrANsfusion versuS Fresher red blood cell Use in intensiVe carE (TRANSFUSE) - a randomised controlled trial

Researcher(s): Craig French, John Mulder, Sathyajith Velandy Koottayi, Forbes McGain, Zia Ansari & Dashiell Gantner

Collaborator(s): The ANZIC research centre, ANZICS CTG, 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 and 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 has recruited 124 patients and Sunshine Hospital has 16 patients recruited so far. This study will provide important information that will help blood banks implement the findings. The results of our study will affect transfusion policy worldwide and ultimately could save many thousands of lives each year.

Audit of cessation and reduction of smoking post ICU admission

Researcher(s): Christine Polmear, Haran Nathan, Samantha Bates, Elizabeth Skinner & Forbes McGain.

This single site prospective observational cohort study aims to find out if patients change their smoking behavior as a result of an ICU admission.

Smoking continues to create a significant burden of disease for patients and the health system. Currently, there is no data about whether smoking cessation counselling is effective in the intensive care unit (ICU) setting, or indeed if the experience of an admission to ICU is a factor in making people more likely to cease smoking.

Anecdotally, many patients say they will quit smoking due to the 'scare' of being admitted to ICU, however it is currently unknown if this is actually the case. One hundred patients were recruited to the study and six-month follow-up phone calls were completed in January 2016.

Preliminary results indicate that 81% of people who currently smoke feel they will quit or reduce smoking as a result of ICU. This indicates a population that is amenable to an intervention that can contain health care costs and significantly improve short and long-term health outcomes for patients. Further research, including interventional studies, is necessary in this area.



Head of the ICU Department at Western Health, A/Prof Craig French, in the new ICU at Sunshine Hospital.

A Pilot, Randomized, Blinded, Multicentre, Feasibility, Safety and Biochemical and Physiological Efficacy Study of Normal Saline vs. Plasmalyte in Intensive Therapy

Researcher(s): Craig French, John Mulder, Sathyajith Velandy Koottayi, Forbes McGain & Samantha Bates

Collaborator(s): Austin Hospital, University Hospital Geelong

The administration of intravenous fluid is a common intervention in acutely unwell patients. Although normal saline has been the dominant crystalloid fluid worldwide for more than a century, at present, intensive care specialists in Australia and New Zealand (ANZ) broadly regard all intravenous crystalloid solutions, including normal saline and balanced salt solution of plasmalyte as equivalent. They will administer one of these two fluids for resuscitation or rehydration according to personal preference or clinical judgment in the absence of evidence that one is superior to the other in terms of clinical outcomes.

This pilot study is being conducted at the following three Victorian hospitals: The Austin Hospital, University Hospital Geelong and Footscray Hospital, Western Health. Each site has recruited 20 patients and data analysis is underway.

The study is a small pilot trial to assess the feasibility of performing a much larger clinical trial on many more participants. It will make it possible to

assess the following crucial aspects of trial execution: feasibility of study design, degree of biochemical and physiological separation achieved with study interventions, safety of study approach, likely recruitment rate, likely effects, likely amounts of fluids used per patient, and statistical power calculations.

Propofol Administration in the Intensive Care Unit - An audit of actual doses delivered Vs Documented Infusion rates

Researcher(s): Kelvin Lam, Forbes McGain, Samantha Bates, Ivy Tan, Miriam Towns & Andrew McGavin

Propofol is an intravenous anaesthetic agent commonly used in the Intensive Care Unit (ICU) for the sedation of patients who are intubated and mechanically ventilated. At times, the bedside ICU nurse may need to give small boluses of propofol during periods of increased stimulation: suction of endotracheal tube, turning of patient for wash and bedside invasive procedures, to ensure adequate sedation and hence minimising any stress to the patient.

Depending on the duration for which a patient requires sedation, these intermittent propofol boluses may significantly add to the total propofol dose being administered. For those who are critically ill and require long periods of sedation with propofol, this may increase the likelihood of complications such as hyperlipidemia and propofol infusion syndrome.

To the best of our knowledge, we are not aware of any previous study that has compared the actual amount of propofol administered to an ICU patient vs the dose of propofol calculated from documented infusion rates (mg/hr) and additional boluses given.

The purpose of this study is to audit the amount of propofol that is actually administered to sedated patients in the ICU, and to determine the extent to which intermittent propofol bolusing may contribute to the total dose given. Findings from the study will be used to inform future amendments to clinical practice guidelines regarding bedside sedation and electronic bedside documentation in the ICU, to ensure optimal patient care and safety.

OUR GRANTS & AWARDS

NHMRC Project Grants

A/Prof Craig French. STandaRd Issue TrAnsfusion versus Fresher red blood cell Use in intensive care (TRANSFUSE) - a randomised controlled trial: \$2,761,870 2012-2016

Health Research Council of New Zealand:
\$775,723

NHMRC Funding Grant

A/Prof Craig French. Funding to establish the Centre for Research Excellence for Patient Blood Management in Critical Illness and Trauma at Monash University-(The Blood-CRE): 2,500,000 2012-2017

JOSEPH EPSTEIN CENTRE FOR EMERGENCY MEDICINE RESEARCH (JECEMR)

Head of Department:

Prof Anne-Maree Kelly

Number of Researchers & Students:

Researchers: 2; Students: 2

OUR RESEARCH OUTPUT:

3

Projects

11

Publications

5

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The Joseph Epstein Centre for Emergency Medicine Research (JECEMR) conducts clinical research inspired by the issues faced by patients in our emergency departments. We are always striving to understand the impact of their illness/ injury on them and ways that we could 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 collaborating with clinicians from the departments of Radiology, Cardiology and Intensive Care and across 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 study (AANZDEM for short). It has 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. The results will help us identify new models of care for these patients and areas requiring improvement. It has been an enormous effort by our small team and we acknowledge the support of the Queensland Emergency Medicine Research Fund for this project.

JECEMR continues to foster early career researchers. This year we have three registrar projects – focussed on care of patients with chronic obstructive pulmonary disease and wrist fractures. The projects aim to foster an understanding of the importance of research to high quality clinical care and to build research skills.

OUR RESEARCH

The AANZDEM study

Researcher(s): Anne-Maree Kelly & Sharon Klim

Collaborator(s): The AANZDEM study group (50 members from Australia, New Zealand, Singapore, Hong Kong, Malaysia and France; Professor Charles Lawoko, Victoria University)

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

Using venous blood gas analysis in the assessment of COPD exacerbations

Researcher(s): Anne-Maree Kelly

Collaborator(s): McKeever TM, Hearson G, Housley G, Reynolds C, Kinnear W, Harrison TW, Shaw DE; University of Nottingham, UK

This study explores the use of venous blood gas samples (as opposed to painful arterial ones) in assessment and treatment of chronic obstructive pulmonary disease. This study will help us evaluate an alternative, more patient-centred approach to assessment and treatment of these patients.

*A/prof Epstein retired in 2016
after 50 years at Western Health.*

Instability markers in wrist fracture

Researcher(s): Alyza Gossat, Amar Winayak, Anne-Maree Kelly, Sharon Klim & Peter Ritchie

Collaborator(s): Wei Lim, Radiology

This study aims to determine whether features of the patient or the wrist fracture can predict success of management. This will help us identify patients for whom early surgery is the preferred treatment.

Compliance with a COPD bundle of care

Researcher(s): Alexis Gerber, Catriona Moynihan, Sharon Klim, Peter Ritchie & Anne-Maree Kelly

This study will explore compliance with a recommended group of treatments for chronic obstructive pulmonary disease in the emergency department. It will identify gaps in care requiring improvement activities.

OUR GRANTS & AWARDS

Project Grant:

Keijzers G, Kelly AM et al The AANZDEM study Queensland Emergency Medicine Research Foundation \$92,100, 2014-2015



MELBOURNE NEUROPSYCHIATRY CENTRE

Head of Department:

Prof Christos Pantelis

Number of Researchers & Students:

Researchers: 18; Students: 13

OUR RESEARCH OUTPUT:

5

Projects

48

Publications

24

Presentations

6

Chapters

SUMMARY OF RESEARCH ACTIVITIES

The Melbourne Neuropsychiatry Centre (MNC) is a clinical research centre of The University of Melbourne and Melbourne Health. It is based in three sites:

1. National Neuroscience Facility (NNF), Alan Gilbert Building, Parkville;
2. Neuropsychiatry Unit, Royal Melbourne Hospital, Parkville;
3. Western Centre for Health Research & Education (Western CHRE), Sunshine Hospital.

The centre was established in 2004 and focuses on understanding the neurobiology of mental disorders from childhood to adulthood. The centre consists of six streams of research and involves over 90 people, including research staff, students and professional staff. The centre receives support from major grants from NHMRC and ARC (including, Program, Project, Enabling and collaborative grants with the EU, and Fellowships), as well as other national and international funding agencies. In 2014, the centre at WCHRE held approximately \$10 million in direct grant funding from a total of 24 collaborative grants and produced 54 publications during 2015. The centre consists of six interdigitating streams of research, as follows:

The Psychosis and Developmental Neuropsychiatry stream,

led by Prof. Christos Pantelis, seeks to understand the neurobiology of disorders emerging in childhood and adolescence, including psychotic disorders. We seek to understand the pattern and timing of changes as these disorders emerge and become established; and to identify neurobiological and genetic markers of these illnesses. This will improve early (pre-illness) detection and diagnosis, and provide novel mechanisms for treatment. A major component of this work is undertaken at Western CHRE, involving recruitment of patients with psychotic illnesses (including severe unremitting forms of schizophrenia), and studies in children with developmental disorders (including autism spectrum and children with schizotypal features).

The Depression and Anxiety

Neuroscience stream, led by A/Prof Ben Harrison, is interested in how the brain supports complex human emotional experiences and behaviours. This research is primarily focused on how alterations in normal function may contribute to common mood and anxiety disorders. Since 2012, the group has established a base at Western CHRE and Sunshine Headspace, involving recruitment and treatment of young people with affective disorders, including depression, and with brain imaging using the latest MRI scanning at Sunshine Hospital.

The other streams of MNC are mainly based in Parkville:

The Clinical Neuropsychiatry stream, led by Professor Dennis Velakoulis, is based at the Neuropsychiatry Unit (NPU), John Cade Building, Royal Melbourne Hospital.

The Systems Neuropsychiatry stream, led by Dr Andrew Zalesky, aims to understand how different parts of the human brain interact with each other to produce complex behaviour and why these astoundingly complex interactions breakdown in individuals with serious mental illness.

The Gene-Environment

Neuropsychiatry (GENE) stream, led by Dr Chad Bousman, aims to discover biomarkers for major mental illnesses such as schizophrenia and major depression, which would revolutionize psychiatry.

The Social Affective Neuropsychiatry

(SAND) stream, led by A/Prof Sarah Whittle, aims to characterise neurodevelopmental risk and resilience factors for common mental health problems in children and adolescents, particularly mental disorders such as depression and anxiety.

OUR RESEARCH

Identifying neuroimaging biomarkers of psychosis onset and relapse

Researcher(s): Chris Pantelis et. al

Collaborator(s): Austin PET Centre & Austin Hospital, Orygen Youth Health Psychiatry Units at Sunshine Hospital, Murdoch Childrens Research Institute, Brain & Mind Research Institute, NSW, Department of Psychiatry, University of Adelaide, Neuroscience Research Australia (NEURA), Albert Road Clinic.

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 55 participants, including patients at all stages of psychosis and schizophrenia as well as healthy controls.

The CRC Psychosis study – part of CRC for Mental Health; study examining patients with treatment-resistant schizophrenia

Researcher(s): Christos Pantelis, Ian Everall, Chad Bousman, Suresh Sundram, Christoffer Rahm & Samuel Lieblich

Collaborator(s): Neuroscience institutes involved in schizophrenia and neurodegenerative disorders in Melbourne (Florey Institute for Neuroscience & Mental Health) and Perth (QEII Medical Centre).

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 which is 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.

Neural predictors of treatment response in youth depression

Researcher(s): Ben Harrison, Christopher Davey, Christos Pantelis, Patrick McGorry, Rebecca Kerestes, Chad Bousman, Katerina Stephanou & Sarah Whittle

Collaborator(s): Orygen Youth Health, Department of Radiology Sunshine Hospital

In this study, we are using 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 + medication versus psychotherapy + placebo. In doing so, this project will represent the largest cross-sectional study of brain function in young people with depression; 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.

The OPTiMiSE study – part of an EU study funded by NHMRC, examining early treatment in psychosis

Researcher(s): Christos Pantelis, Patrick McGorry, Marc Seal, Chad Bousman, Aswin Ratheesh & Sashin Kumar

Collaborator(s): The OPTiMiSE Consortium, Europe Orygen Youth Health, The Melbourne Clinic, Southern Health

Randomised-controlled pilot trial investigating the use of cannabidiol as an adjunctive treatment in patients with chronic psychotic disorder

Researcher(s): Christos Pantelis, Mahesh Jayaram, Naveen Thomas, Michael McDonough, Nadia Solowij, Murat Yucel, Chad Bousman, Brad Roberg & Antonia Merritt

Collaborator(s): Western Health Pharmacy, Dorevitch Pathology, Western Health Imaging

The aim of the study is to evaluate the feasibility of conducting a larger definitive trial by identifying strategies to overcome barriers for conduct of a full trial. We are currently in the project set up phase and hope to commence recruitment in 2016. Finding effective and acceptable treatment options for chronic psychosis remains a priority and a challenge for clinicians and researchers in mental health.

OUR GRANTS & AWARDS

NHMRC-EU Grant

Prof Christos Pantelis, Prof Stan Skafidas, Prof Dennis Velakoulis, Prof Ian Everall. PRONIA - Personalised Prognostic Tools for Early Psychosis Management NHMRC \$ 386,686 2014-2017

NHMRC-EU Grant

Prof Patrick McGorry & Prof Christos Pantelis. PSYSCAN - Translating neuroimaging findings from research into clinical practice NHMRC \$ 366,081, 2014-2017

MELBOURNE NEUROPSYCHIATRY CENTRE

(CONTINUED)

NHMRC Project Grant

Dr Vanessa Cropley, Prof Christos Pantelis, Prof Bernhard Baune, A/ Prof James Olver, Prof Paul Amminger. Investigating neuroinflammation and its relationship with progressive brain structural loss in schizophrenia NHMRC \$447,525 2014-2017

NHMRC Project Grant

Prof Paul Amminger, Prof Christos Pantelis, Dr Thomas Whitford, Dr Sarah Whittle, A/Prof Alexander Fornito, Dr Daniel Hermens. Erythrocyte Membrane Fatty Acid Concentrations and Myelin Integrity in Young People at Ultra-High Risk of Psychosis NHMRC \$390,879, 2014-2017

NHMRC Project Grant

A/Prof Benjamin Harrison, Dr Christopher Davey, Prof Murat Yucel, Dr Sarah Whittle, A/Prof Alexander Fornito, Dr Jesus Pujol, Prof Christos Pantelis, Prof Patrick McGorry. Neural predictors of treatment response in youth depression NHMRC \$498,820, 2014-2017

NHMRC Project Grant

Fornito A, Bousman C, Zalesky A, Harrison BJ, Cropley, Velakoulis D. Dopamine, fronto-subcortical circuits and risk for schizophrenia NHMRC \$828,633 2013-2017

NHMRC Project Grant

Fornito A, Cropley V, Thomas P, Harrison BJ, Pantelis C, Francey S. A combined PET-fMRI study of frontostriatal dysfunction in first-episode psychosis" NHMRC \$ 606,562, 2014-2018

Research Grant (Support Scheme)

Prof Pantelis C, Dr Harding, I, Dr Testa, R, A/Prof Harrison B, Prof Skafidas S Neural. Correlates of Childhood Schizotypal Personality Disorder Relative to Autism Spectrum Disorder and 'Typically Developing' Children. University of Melbourne \$41,000, 2014 - 2015

Project Grant

Soriano-Mas C, Harrison BJ, Sato J, Morena L, Munuera P, Via E, Subira M, S. Cortico-limbic connectivity in patients with emotion regulation alterations: modulating factors and development of personalised therapies based on functional neuroimaging.

NHMRC-EU Grant

Prof Christos Pantelis, Prof Patrick McGorry, Dr. Marc Seal, Dr Chad Bousman, Dr Aswin Ratheesh, Dr Sashin Kumar. Optimising current therapeutic approaches to schizophrenia: The OPTiMiSE consortium. NHMRC \$979,375, 2010-2015

CRC for Mental Health

Christos Pantelis, Ian Everall, Brian Dean, Chad Bousman, Suresh 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

Project Grant

Dr Christopher Davey, Prof Patrick McGorry, A/P Andrew Chanen, Dr Sarah Hetrick, Dr K Yuen. Youth depression alleviation: a randomised controlled trial of cognitive behavioural therapy with fluoxetine or placebo NHMRC \$1,200,000, 2012-2017

Royal Melbourne Hospital Home Lottery Research Grant

Prof Christos Pantelis, Dr Vanessa Cropley, Dr Gursharan Chana, Ms Liliana Laskaris, Prof Ian Everall. Investigating immune dysregulation at different stages of schizophrenia. RMH \$25,000, 2015

Western Health Research Grant

Christos Pantelis, Mahesh Jayaram, Naveen Thomas, Michael McDonough, Nadia Solowij, Murat Yucel, Chad Bousman, Brad Roberg & Antonia Merritt. Randomised-controlled pilot

trial investigating the use of cannabidiol as an adjunctive treatment in patients with chronic psychotic disorder Western Health \$10,000, 2014-2015

FIS Project Grant

Cardoner N, Fullana MA, Lopez-Sola C, Via E, Martinez I, Harrison BJ. Extinction recall as a biomarker and predictor of treatment outcome in anxiety disorders (OCD & PD): a functional MRI study FIS Project Grant, Instituto de Salud Carlos III (Govt. Spain). 80.465,00€, \$114,000, 2013-2016

NHMRC

Andrew Zalesky, Prof Christos Pantelis, Prof Dennis Velakoulis, Chad Bousman, Pro Ian Everall. Resilient brain networks in patients with schizophrenia and their unaffected siblings NHMRC \$474,226, 2016-2019

NHMRC

Chanen A, McGorry P, Nelson B, Cotton S, Jackson H, Thompson K, Bartholomeusz C, Jovev M, Ratheesh A, Davey C, Pantelis C. Randomised controlled trial of aripiprazole for treatment of auditory verbal hallucinations in borderline personality disorder NHMRC \$2,748,148, 2016-2019

NARSAD Young Investigator Grant

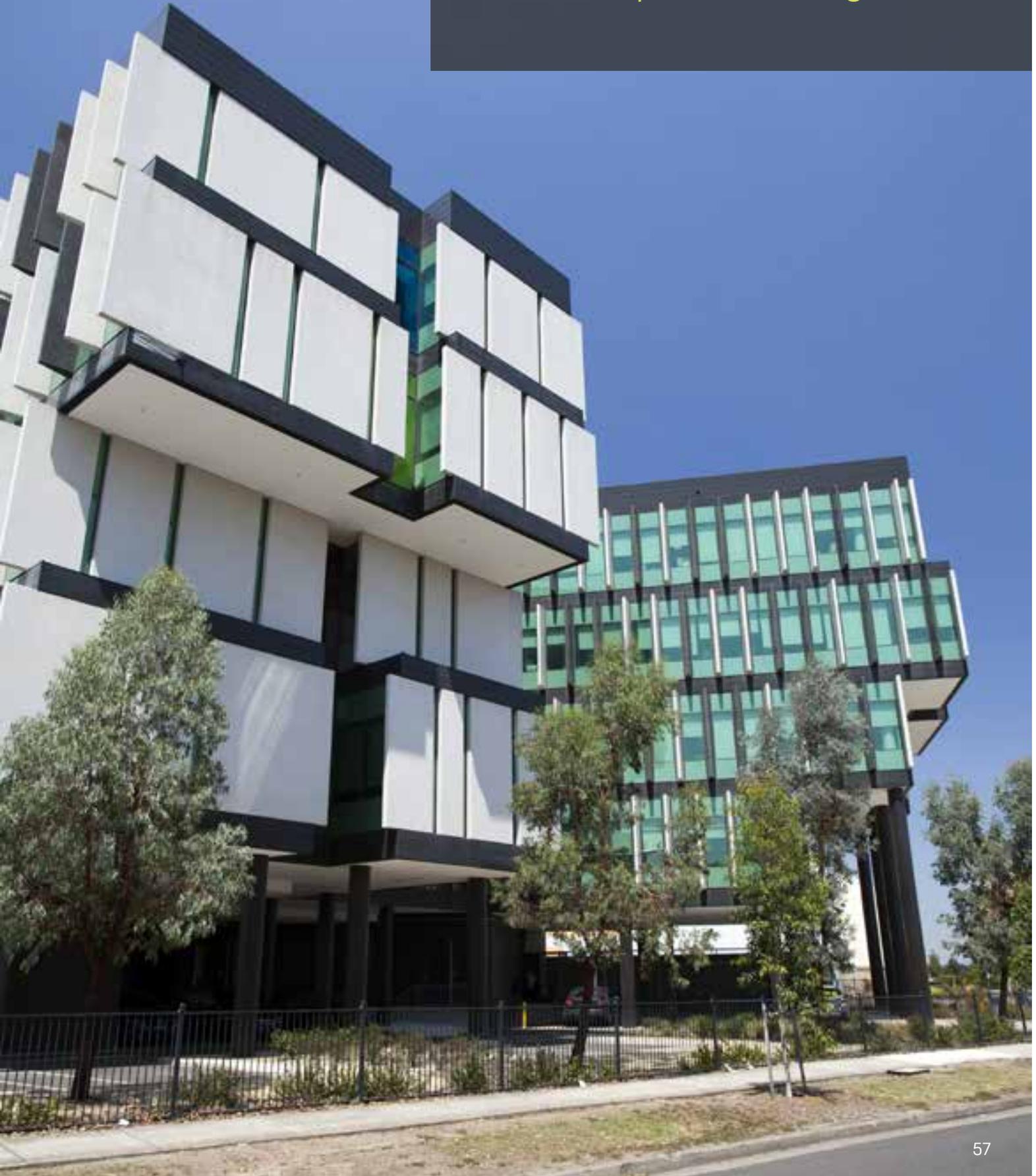
Chad Bousman Christos Pantelis, Stan Skafidas, Ian Everall. Development of a gene-based classifier for the diagnosis of schizophrenia NARSAD \$53,680 2014 - 2016

NARSAD Young Investigator Grant

Vanessa Cropley, Alex Fornito, Christos Pantelis. Investigating the dopaminergic basis of dysregulated frontostriatal circuitry in psychosis: A PET [18F] FDOPA and resting-state functional imaging study NARSAD \$60,000, 2014 - 2016

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

In 2014, the centre at WCHRE held approximately \$10 million in direct grant funding from a total of 24 collaborative grants and produced 54 publications during 2015.



NEPHROLOGY

61 year old Gail Kellett, who suffers from both heart disease and chronic kidney disease, in Sunshine Hospital, with A/Prof Craig Nelson.

Head of Department:

A/Prof Craig Nelson

Number of Researchers & Students:

Researchers: 2; Students: 3

OUR RESEARCH OUTPUT:

13

Projects

5

Publications

5

Presentations

1

Proceeding

SUMMARY OF RESEARCH ACTIVITIES

In 2015, the Department of Nephrology continued to participate in multicentre international trials exploring new therapies for Diabetic Nephropathy and anaemia complicating kidney 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 a collaborative project between WH/KHA/NHV/MRNWMML/DOH-Vic funded by the Department of Health in Victoria Renal Health and Aboriginal Health Clinical Networks, continued in 2015 with 22 Primary Care practices recruited and more than 300,000 patients. A legacy grant from MRNWMML was awarded in 2015 to expand this program to other related chronic disease, diabetes and cardiovascular disease.

The HUG program, a world first pilot of telehealth in Home Dialysis, funded through the Department of Health, Victoria, continued in 2015 and was expanded to include all new home dialysis patients.

OUR RESEARCH

EMAP-CKD VIC: Electronic Mapping and Assistance to Primary Care in Chronic Kidney Disease (CKD) Detection and Management in Victoria - A Pilot project

Researcher(s): Craig Nelson

Collaborator(s): Department of Health Victoria/KHA and HNV/KHA/MRNWMML

This project aims to detect unrecognised CKD in the community and provide management strategies via outreach from the health service to primary care using electronic processes, to improve CKD care in Primary Care. Western Health has a large burden of Chronic Disease in its catchment. This project aims to establish processes to reduce the burden and late presentation of kidney disease to our health service, and to establish a WH catchment CKD data repository.



HUG Project - Home dialysis Utilizing Telehealth Guidance

Researcher(s): Craig Nelson

Collaborator(s): Department of Health Victoria

This project aims to increase support and monitoring of patients by using telehealth solutions to enable patients to safely perform home dialysis.

We aim to provide real-time answers to questions via the telehealth solution in multiple different languages and to offer real-time video links for technical trouble shooting 24 hrs per day to further assist people in our community.

Improve Trial: The IMPROVE-CKD trial: A randomised, double-blind, placebo-controlled trial to assess the effect of phosphate reduction with lanthanum carbonate on arterial compliance and vascular calcification in patients with chronic kidney disease stages 3-4

Researcher(s): Craig Nelson

Collaborator(s): 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(s): Craig Nelson

Collaborator(s): 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.

The 'FAVOURED' Trial: A randomised, double-blind, placebo-controlled, factorial-design trial to assess the effect of aspirin and fish oil (omega-3 fatty acids) in the prevention of early thrombosis in arterio-venous fistulae in patients with Stage IV or V chronic kidney disease requiring haemodialysis

Researcher(s): Vicki Levidiotis

Collaborator(s): Australasian Kidney Trials Network

Failed dialysis access requiring temporary vascular access leads to greater blood stream infection. The objectives of this trial are to determine whether the use of the omega-3 fatty

acids and to a lesser extent, aspirin, will effectively improve postsurgical outcomes for patients with de novo arterio-venous fistulae (AVF).

OUR GRANTS & AWARDS

MRNWML Legacy Grant:

A/Prof. Craig Nelson. Expansion of eMAP CKD into Diabetes and Cardiovascular Disease MRNWML \$250,000, 2015-2017

NHMRC Centre for Research Excellence:

A/Prof Craig Nelson (AI). Chronic Kidney Disease Centre for Research Excellence NHMRC \$2,500,000, 2014-2020

Amgen Research Grant:

A/Prof. Craig Nelson. EMAP-CKD VIC extension, Managing complications of Stage 3+ CKD in Primary Care: Amgen Pharmaceuticals \$60,000, 2013 - 2015

Western Health Research Grant:

A/Prof Solomon Cohny. Divided Dosing to Reduce Prednisolone Associated Hyperglycaemia Western Health \$10,000, 2014-2015

NEUROLOGY

Head of Department:

A/Prof Zelko Matkovic

Number of Researchers & Students:

Researchers: 8; Students: 4

OUR RESEARCH OUTPUT:

13

Projects

17

Publications

7

Presentations

3

Chapters

5

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

In 2015, the Neuroscience Research Unit had been very active in a large number of acute stroke research studies. Two PhD students completed their clinical research component in the department.

Strong collaborations have been established with other research groups in Victoria, especially the Melbourne Brain Centre, and with several academic centres nationally and internationally (Sri Lanka, USA and New Zealand).

Innovative research collaboration has been established with the bio medical engineering lead research group in the University of Melbourne, Neuroscience Research group, La Trobe University and Rajarata University, Sri Lanka.

Our contributions to research have been highlighted in a large number of peer-reviewed publications. We are one of the most innovative neuroscience research groups in Australia. This is especially so in the field of neuropsychology in acute and post acute stroke patients, involving our strong collaboration with Professor Sheila Crewther and her group from La Trobe University. We will continue to foster local, regional and global collaborations to bring home "tomorrow's care today" to promote better brain health through excellence in neuroscience research at Western Health.

OUR RESEARCH

Start Extend IA: Extending the Time for Thrombolysis in Emergency Neurological Deficits — Intra-Arterial

Researcher(s): Tissa Wijeratne et al

Collaborator(s): Melbourne Brain Centre, Florey Institute, Royal Melbourne Hospital

Clot busting therapy remains the main treatment for most acute ischemic stroke patients to date. This trial looked at combining this with novel imaging to select the best candidates and also to use clot retrieval using new stent techniques. The trial was positive and disability reduction was almost doubled. The original paper was published in NEJM in early 2015 and has been cited by more than 400 authors. About 14,000 patients with stroke or stroke related conditions are admitted to our public hospitals in Victoria every year. About 1400-1800 patients with stroke or stroke related symptoms are managed at Western Health every year. This study helped us to dramatically improve stroke care for our patients.

START-EXTEND rCT: STroke imAging pRevention and Treatment - Extending the time for Thrombolysis in Emergency Neurological Deficits

Researcher(s): Tissa Wijeratne et al.

Collaborator(s): Melbourne Brain Centre, Florey Institute, Royal Melbourne Hospital

This trial looked at extending the time window in clot buster therapy in acute ischemic stroke patients up to nine hours. Appropriate patients were selected with the aid of sophisticated imaging guidance technology. This trial gives an ideal opportunity for our wake up stroke patients and stroke patients with delayed presentation to the hospital with an opportunity to receive cutting edge stroke care.

Tenecteplase versus alteplase for Stroke Thrombolysis Evaluation Trial (TASTE)

Researcher(s): Tissa Wijeratne

Collaborator(s): Hunter Valley Stroke Service, University of New South Wales

This study involves a clinical trial of TNK, a new clot buster medication that shows promise for acute ischemic stroke patients.

NURSING AND MIDWIFERY

Executive Director Nursing and Midwifery:

A/Prof Denise Patterson

Number of Researchers & Students:

Deakin and VU Researchers: 6;
Deakin Students: 6

OUR RESEARCH OUTPUT: (DEAKIN & VU)

32

Projects

20

Presentations

19

Proceedings (Deakin)

24

Publications

1

Chapters (Deakin)

2

Proceedings (VU)

SUMMARY OF RESEARCH ACTIVITIES

There has been a significant increase in the amount of research being done in Nursing and Midwifery, particularly in projects that translate to clinical practice and education.

Our research was strongly represented at the 2015 Best Care forum (Best Poster award) and Western Health's 2015 Research week, with a record number of posters and presentations. In addition, our research findings have been presented at numerous international and national conferences.

Under the leadership of Prof Paul Bennett, Deakin University - Western Health Nursing Research, we conducted professional development sessions and provided individual consultations to support research activity and foster research skills. The inaugural Deakin University - Western Health Nursing Research Grant was awarded to Ms Krystyna Bender and colleagues who are conducting a pilot study exploring a new workforce model in the area of haemodialysis.

Victoria University (VU) - Nursing and Midwifery led research by staff from Nursing & Midwifery Unit at VU predominantly focusses on producing high quality graduates with excellent clinical skills, and a clear understanding of the barriers that affect the ability of nurses and midwives to successfully provide care. Research undertaken by this unit investigating how to help pregnant women (particularly from low education and socioeconomic backgrounds) make the nutrition choices for a healthy baby.

OUR RESEARCH

Exploring risk factors associated with Primary Postpartum Haemorrhage

Researcher(s): Glyn Teale, Cate Nagle, Kathrin Thomas, Denise Patterson, Tina Pettigrew, Lauren De Luca & Emily Karahalios

This study will provide useful descriptive data to assess and monitor the standard and outcome of care of women who experience a severe PPH. The findings will be used to inform future changes to Clinical Practice Guidelines, clinical practice and education.

Vietnamese women's attitudes to and experiences of breastfeeding: a qualitative study

Researcher(s): Cate Nagle, Christine Kerr, Marieta Pring, Ms J. Nguyen & Mary Carolan-Olah

This study explored contemporary breastfeeding practices and experiences of Vietnamese-speaking women. It identified facilitators and barriers to breastfeeding experienced by Vietnamese-speaking women. Its findings informed the development of a culturally sensitive resource for Vietnamese women.

NURSING AND MIDWIFERY

(CONTINUED)

Valuing nurse unit managers' voices: A qualitative approach

Researcher(s): Paul Bennett, Cate Nagle, Denise Patterson, Anne Wright & Wei Chun Wang

The aim of the study is to explore and understand the perspectives of Nursing & Midwifery Unit Managers. Twenty-eight interviews were conducted. This study may provide information to improve leadership training and to enhance nurse and midwifery managers' performance. The findings may be used to inform the development of nursing and midwifery leadership in order to continually improve quality care to patients, families, carers, and consumers.

A haemodialysis exercise program: A pilot study exploring a new workforce model

Researcher(s): Krystyna Bender, Paul Bennett, Wei Wang, Craig Nelson & Elizabeth Skinner

The study investigates whether exercise during dialysis:

1. Improves the physical function of people on dialysis
2. Is acceptable to dialysis patients and nurse clinicians
3. Provides pilot data for a larger randomised controlled trial

This project is significant because no sustained haemodialysis exercise model has been reported in the literature and nowhere in Australia has a clinical intradialytic exercise program lasted for more than one year.

Handover between anaesthetists and post anaesthetic care unit (PACU) nursing staff using ISBAR principles: A quality improvement study

Researcher(s): Patricia Kitney, Raymond Tam, David Bramley, Paul Bennett, & Wei Wang

This study aims to improve compliance with accepted Western Health clinical handover standards.

This study has shown ISBAR compliance in handover between anaesthetist and PACU nursing staff can be improved through education augmented with posters.

However, significant elements of decreased compliance have also been observed. Various contextual factors are likely to affect ISBAR compliance and should be considered when employing strategies to improve handover standardisation.

OUR GRANTS & AWARDS

Deakin University

Western Health -Deakin Nursing Grants:

Ms Krystyna Bender, Prof Paul Bennett, Dr Wei Wang, A/Prof Craig Nelson, Dr Lizzie Skinner. A haemodialysis exercise program: a pilot study exploring a new workforce model Western Health-Deakin University \$9926.20, 2015

QPS:

Rasmussen B, Nagle C, McNamara C. Physical, social, psychological and cultural factors influencing breastfeeding intention, initiation and duration among women with diabetes living in Victoria Deakin University \$15,000, 2015

QPS:

Forbes H, Bucknall T, Horan B, Phillips D, Nagle C, Miles M. Investigating the feasibility and reliability of a task trainer incorporating haptics and virtual reality to enhance clinical-decision making of midwifery students Deakin University \$10,807, 2015

Novo Nordisk Research Grants 2015:

Rasmussen B, Skouteris H, Nankervis A, Nagle C, McNamara K, and Steele C. Physical, social, psychological and cultural factors influencing breastfeeding in women with diabetes. Australian Diabetes in Pregnancy Society: \$6600, 2015

Victoria University

Western Region Aged Care Incorporation

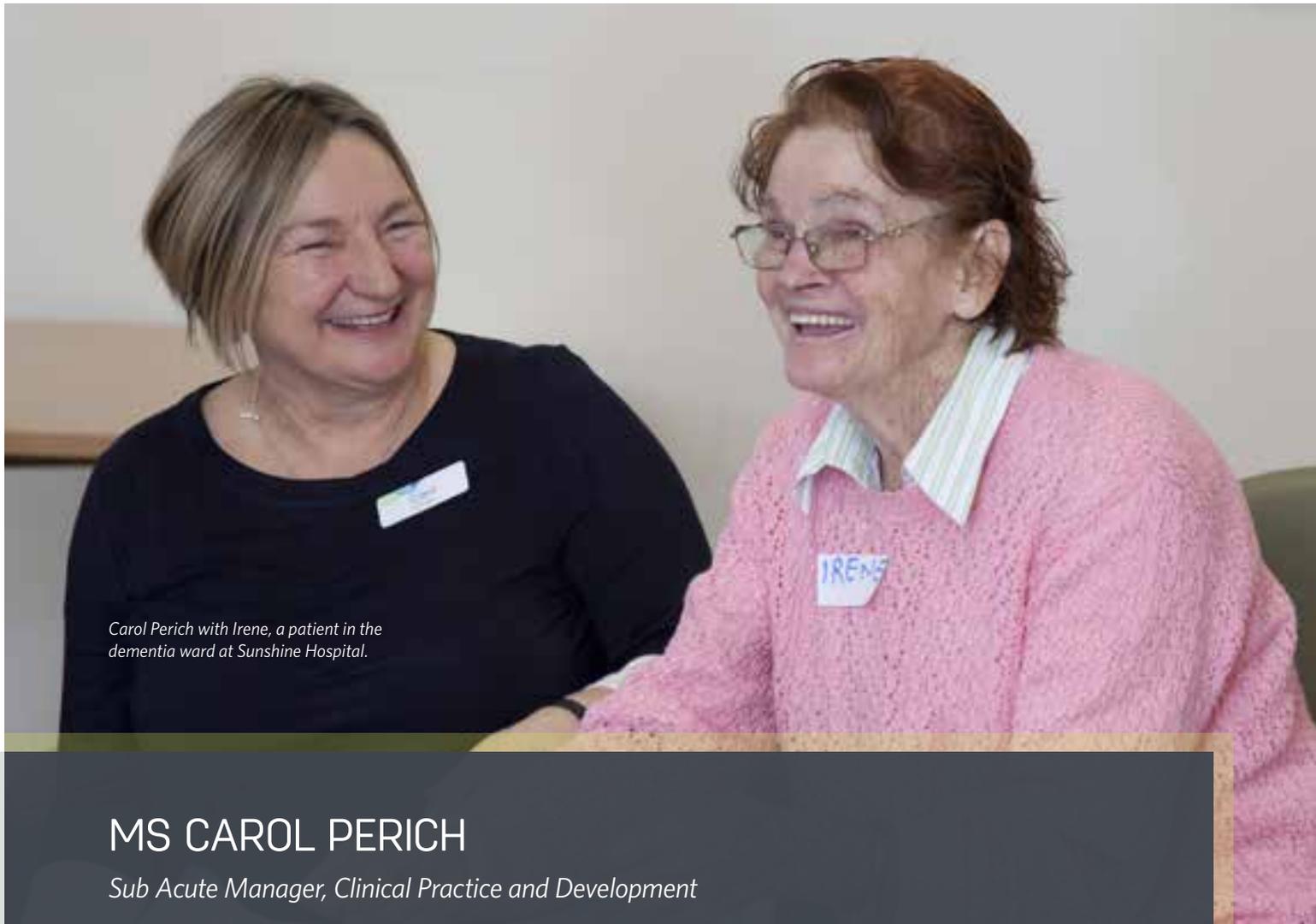
A/Prof Deb Kerr. Linking sub-acute care to community support services: A carer focused intervention. \$10,000, 2015

Diabetes Australia Research Trust

Prof Mary Carolan-Olah. Food for thought: Eating for your baby \$59,000, 2012-2015

Lord Mayor Charitable Fund

Prof Mary Carolan-Olah. Growing a healthy baby: getting the balance right in pregnancy \$49,849, 2015-2017



Carol Perich with Irene, a patient in the dementia ward at Sunshine Hospital.

MS CAROL PERICH

Sub Acute Manager, Clinical Practice and Development

A research project led by Carol Perich is helping dementia patients become calmer, more engaged with others and less dependent on medication.

The project, a creative arts program for dementia patients in a hospital setting, is the first of its kind in Victoria.

Ms Perich won the 2015 Mavis Mitchell Scholarship for her work on the project, known as the Creatively Ageing Program.

It involves qualified instructors running dance, visual art and music classes with patients at Sunshine Hospital's Dementia Assessment and Management Unit.

The unit caters for highly agitated patients with moderate or severe dementia. Patients stay at the unit for an average 38 days while they and their families receive specialised help.

Ms Perich said "her research challenged the traditional view that medication was the best way to manage agitated dementia patients." "You can do research into a new drug but every medication has side effects," she said.

"Whereas keeping people active, both mentally and physically, has no negative side effects, it's very enjoyable and it has a big impact on minimising a patient's agitated behaviour."

A trial of the Creatively Ageing Project involved patients and staff taking part in three art-based sessions each week during two three-month periods.

Results from the trial, including findings from staff surveys, revealed the project has been effective in changing patient behaviour and staff attitudes.

Patients were happier and less aggressive on the days that the art therapy sessions took place, compared with the non-art therapy days. The trial reduced the need for patients to be given extra medication to quell agitated behaviour.

It also improved staff knowledge about how to use meaningful activities rather than extra medication as the first option to manage the behaviour of individual patients.

The trial's effectiveness has led to the program being embedded into the unit's weekly schedule, with nurses and community volunteers now running regular art, music and dance therapy sessions for the patients.

Ms Perich said it was important to carry out research on how to engage patients with dementia because it helped families as well as the patients themselves. Families are able to adapt and use the art therapy activities when their relative returns home. "It's worth investing in programs like this because the benefits are huge for patients, their families and staff," Ms Perich said.

"When we have family members present during the activities we've had comments like, 'I didn't ever think I'd see my husband smile again,' and others say, 'It's really good to see he can still enjoy himself.'

"It's really powerful for a family member to say that. It's great for them to see their relative can still have times of enjoyment."

ONCOLOGY AND HAEMATOLOGY

Head of Department:

Prof Michael Green

Number of Researchers & Students:

Researchers: 29; Students: 30

OUR RESEARCH OUTPUT:

47

Projects

43

Publications

43

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The Oncology Haematology service is a well-known and longstanding provider of cancer care in Victoria, especially in Melbourne's western suburbs. 2015 has been a year of movement and change for the Oncology Haematology Unit. Most of the unit and its services, moved from Footscray to Sunshine Hospital. This resulted in a hiatus in activity and accrual.

We continued our longstanding (and funding) membership of Cancer Trials Australia and further developed a partnership with the Victorian Comprehensive Cancer Centre. We have maintained our collaboration and partnerships across industry as well as with collaborative research groups such as 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.

A substantial amount of activity throughout 2015 was focused on organising and facilitating the move to Sunshine Hospital. This was a complex task, especially ensuring all legal and governance requirements were met so that research and clinical trial activities and relationships were re-established at the new site.

The Cancer Research service began a collaboration with Sunshine/Peter Mac combined Radiotherapy Centre and opened two Radiotherapy trials. The service continued to work across all tumour streams with a significant increase in accrual to trials in the Lung, Breast, Upper GI and urogenital tumour streams. We continued our collaboration with Associate Professor Peter Gibbs' laboratory at the Walter and Eliza Hall Institute, led by Dr Jeanne Tie researching the potential of circulating tumour cells in disease prognosis. This research has the potential to change practice in the field of colorectal cancer medicine and the wider oncology domain. It continues to give Western Health patients access to ground breaking new research and its applications.

The year saw 40 trials open to accrual across the spectrum of Pilot studies as well as, Phase 1b-3b trials across diverse tumour streams, in Haematology and Radiotherapy. Overall, the service recruited 79 patients to clinical trials during the year.

OUR RESEARCH

CLASSIC study - a prospective randomised study of ctDNA in guiding adjuvant therapy for stage II colon cancer

Researcher(s): Jeanne Tie

Collaborator(s): Peter Gibbs Walter Eliza Health Institute (WEHI), Melbourne Health, Dorevitch Pathology

This study will assess whether measuring circulating DNA from peripheral blood samples can assist in making decisions about treatment for newly diagnosed patients. It is an exciting trial that could potentially change practice around the way treatment decisions are made in this patient group. The results could potentially lead to similar trials across other tumour streams.

A phase III, double-blind, placebo-controlled, randomized study of Taselisib plus Fulvestrant versus placebo plus Fulvestrant in postmenopausal women with estrogen receptor-positive and HER2-negative locally advanced or metastatic breast cancer who have disease recurrence or progression during or after aromatase inhibitor therapy GO29058 "Sandpiper"

Researcher(s): Catherine Oakman

Collaborator(s): Shirley Wong, David Campbell, Sally Greenberg, Frances Barnett, Roche (sponsor), Austin Health (participating site), Mater Hospital QLD (participating site)

The study will assess whether Taselisib—a new PI3K inhibitor will improve time to progression and survival for women with Her 2- negative locally advanced or metastatic breast cancer who have progressed on or after Aromatase Inhibitor Therapy. This trial provides access for our patients to Taselisib which is not otherwise available in Australia. This is an additional treatment option for women at this stage of their breast cancer and may improve their overall prognosis.

CLL6 - An Australasian, Phase III, Multicentre, Randomised Trial Comparing Lenalidomide Consolidation Vs No Consolidation in Patients With Chronic Lymphocytic Leukaemia (CLL) and Residual Disease Following Induction Chemotherapy

Researcher(s): William Renwick

Collaborator(s): Andrew Lim - WH & Duncan Carradice - WH, ALLG (sponsor)

The research will investigate whether the addition of Lenalidomide treatment as consolidation for patients with CLL that have residual CLL is beneficial to this patient group. It gives patients with residual CLL disease an additional treatment option and access to close observation in their follow up care after induction treatment for CLL. The trial may improve relapse and general survival for participants who receive Lenalidomide.

PROSPER - A Multinational, Phase 3, Randomized, Double-Blind, Placebo-Controlled, Efficacy and Safety Study of Enzalutamide in Patients With Nonmetastatic Castration-Resistant Prostate Cancer (MDV3100-14)

Researcher(s): Shirley Wong

Collaborator(s): David Campbell, Medivation (sponsor), Peter Mac (participating site), Southern Health (participating site)

Investigates if Enzalutamide is an effective addition for men with non metastatic prostate cancer.

This trial offers men with non-metastatic prostate cancer, that is castration resistant- ie initial therapy does not or has stopped working, another non-invasive treatment option.

Yosemite A 3-Arm Phase 2 Double Blind Randomised Study of Gemcitabine, Abraxane Plus Placebo versus Gemcitabine, Abraxane plus 1 or 2 Truncated Courses of Demcizumab with 1st Line Metastatic Pancreatic Ductal Adenocarcinoma

Researcher(s): Lara Lipton

Collaborator(s): Sumitra Ananda

This study investigates whether adding Demcizumab, an IgG humanized monoclonal antibody, to the initial treatment for metastatic pancreas cancer improves outcomes for these patients. This trial offers patients with metastatic pancreatic cancer (a cancer with poor outcomes when metastatic) the option to receive this new drug, which may lengthen time to progression.

OUR GRANTS & AWARDS

WCMICS 2014/15 Funding Program:

Dr Sally Greenberg. Improving the pathway to cancer diagnosis and specialist review by analysing patient presentation to the Emergency Department Western and Central Melbourne Integrated Cancer Services (WCMICS) \$89,380, 2015

WCMICS 2015/16 Funding Program:

Ms Meron Pitcher. Integrating Primary Care Practitioners in Multidisciplinary Cancer Care WCMICS \$113,483, 2015

WCMICS 2015/16 Funding Program:

Dr Adrian Dabscheck. Determining the feasibility of a multi-disciplinary Psycho-Oncology Team at Western Health using a partnership model. WCMICS \$70,682, 2015

WCMICS 2015/16 Funding Program:

Dr Suzanne Kosmider. Management of Male Sexual Dysfunction following treatment for Colorectal and Prostate Cancer Survivors at Western Health WCMICS \$93,044, 2015

AGITG Scientific Meeting 2015:

Dr Edmond Kwan. Use and impact of bevacizumab in patients undergoing liver resection in routine clinical practice AGITG - 2015

Western Health Research Week Best Poster presentation:

Dr Edmond Kwan. Review of an innovative health service approach, the Symptom Urgent Review Clinic (SURC), to improve efficiency and quality of care for breast cancer patients receiving adjuvant chemotherapy Western Health - \$1,500, 2015

PAEDIATRIC EMERGENCY MEDICINE

Head of Department:

Dr David Krieser

Number of Researchers & Students:

Researchers: 3; Students: 5

OUR RESEARCH OUTPUT:

12

Projects

3

Publications

5

Presentations

1

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

The paediatric emergency department at Sunshine Hospital (SH PED) treats more than 22,000 children per year. Infectious respiratory and gastrointestinal illnesses dominate in children under five years in most paediatric EDs, and our department is no exception. Injuries including fractures, head injuries and lacerations are also frequent presentations.

We also recognise that children presenting to our department may have issues broader than their reason for presentation, and that the ED can become a gateway for a child and family into other areas of the health and welfare system. For example, a child who presents with acute gastroenteritis should have a brief assessment of their development, and referral is made, if needed, so that the system can provide more support to them and their family. In a similar fashion the social needs of families need to be recognised by our staff during every ED presentation.

Research undertaken in our department in the last 12 months includes:

- Bell's Palsy Retrospective Audit as part of the PREDICT network - This will be presented at the International Conference for Emergency Medicine (ICEM) in Cape Town in April 2016.
- Parental Understanding of Fever in Children (PUFIC) study - Data

analysis is complete and presentation at ICEM in Cape Town in 2016 is planned.

- PREDICT Research Priorities Delphi Study. The top priorities identified in this study will form the basis for future work by the PREDICT network and inform funding bodies so that research in key areas can be prioritised. Presentation at the ACEM annual scientific meeting and at the ICEM in 2016 has been confirmed.
- The use of a questionnaire to stratify risk in minor head injury in children.

Other research activities include co-supervision of neuropsychologist, Coco Bernard, in her PhD, presentations at two European psychology meetings and the use of nasogastric hydration in infants under 2 months admitted with bronchiolitis.

Future work includes:

- PREDICT studies (Dr Lisa Barrow is the PREDICT Site Representative)
- Steroids vs placebo in paediatric Bell's palsy (BELLPIC) Study
- Levetiracetam vs phenytoin as second line treatment of Paediatric Status epilepticus (CONCEPT) Study
- Radiation doses and diagnoses in imaging of the cervical spine in ED attendees aged 0 to 25 years
- An audit of high flow humidified nasal cannulae oxygen therapy for infants with bronchiolitis

OUR RESEARCH

PREDICT Research Priorities: a Delphi Study

Researcher(s): Heather Deane & David Krieser

Collaborator(s): Franz Babl (RCH), John Cheek (Monash), Simon Craig (Monash), Meredith Borland (PMH Perth), Stuart Dalziel (Starship, NZ), Nicholas Cheng (Westmead, NSW), Ed Oakley (RCH), Liz Cotterell (PREDICT Rep) & Cate Wilson (PREDICT)

The top 10 research priorities among practitioners in paediatric emergency medicine in Australia and New Zealand have been determined using an iterative Delphi process. Over 200 individual research questions were identified, collated and then prioritised. The following are the top 5 responses and projects related to this are already being planned.

1. In children who require emergency intubation, does the use of high flow nasal oxygenation during intubation attempts, compared with standard practice, improve outcome during and post intubation?
2. In children presenting to the emergency department with presumed sepsis does low volume compared with high volume fluid resuscitation improve outcome?
3. In children presenting with traumatic neck pain, does cervical spine CT scan compared with cervical spine plain films diagnose more clinically important cervical spine injuries?
4. In children with severe asthma does a specific IV agent compared with another IV agent (or placebo) result in improved outcomes?
5. In children presenting to the emergency department with presumed sepsis does early compared to late vasopressor therapy improve outcomes?

Research efforts should be directed to projects of importance and to projects that have the potential to improve practice. Funding will be more likely to be directed to such projects, and the outcomes will assist people more profoundly.

Parental Understanding of Fever in Children (PUFIC) Study

Researcher(s): Doris Tham, David Krieser & Emily Karahalios

This study demonstrated that fever fear is more common in families of Asian and Indian background. In addition, 45% were found to define fever as a temperature less than 38 degrees, which is a normal temperature. Education on a community level is required and must be culturally appropriate and understandable to our population.

Development of an educational program for parents and staff may reduce anxiety and inappropriate management of fever prior to ED presentation.

Nasogastric hydration in infants with bronchiolitis less than 2 months of age

Researcher(s): Sharmila Rengasamy & David Krieser

Collaborator(s): Ed Oakley (RCH), Sonny Bata (RCH), John A Cheek (Monash), Kim Jachno (MCRI), Franz E Babl RCH; MCRI), On behalf of the Pediatric Research in Emergency Departments International Collaborative (PREDICT)

Data from a recent multi-centre randomized controlled trial have shown that nasogastric hydration (NGH) is as efficacious and safe as intravenous hydration (IVH) in older infants with bronchiolitis with a lower number of attempts required to achieve access. No prospective study had included infants under 2 months. Of 491 infants

less than 2 months of age admitted with bronchiolitis, 211 (43%) received non-oral hydration: 146 (69%) via NGH, 65 (21%) via IVH. No patients with NGH aspirated.

The younger infants with bronchiolitis required more ICU admission (19.9% vs 8.5%), ventilatory support (15.1% vs 3.2%), and resulted in more complications such as apnea (5.5% vs 0.3%), and desaturation (21.9% vs 5%). No cases of pulmonary aspiration were seen in either group.

The majority of infants less than 2 months of age with bronchiolitis can be safely hydrated using nasogastric hydration.

Vitamin D deficiency among children with fractures presenting to Sunshine Hospital ED.

Researcher(s): Dae Kwon, Chris Harris, Abhay Khot, David Krieser & Christine Rodda

Collaborator(s): Danny Liew, Sharron Brennan & Peter Ebeling

Vitamin D deficiency has increasingly been recognized in the Australian population, and may play a role in fracture occurrence. The risk of Vitamin D deficiency was assessed using lifestyle factors and skin pigmentation in children (2-18 years) presenting to SH ED. If vascular access was required consent to obtain samples for Vitamin D levels was obtained. 162 children were recruited and 82% were at risk of Vitamin D deficiency. 34% of the total sample and 52% of the at risk group (based on lifestyle factors, skin pigmentation) were Vitamin D deficient. In children with fractures an assessment of risk of Vitamin D should be made and treatment considered.

PHARMACY

Head of Department:

Kent MacMillan

Number of Researchers:

Researchers: 2

OUR RESEARCH OUTPUT:

1

Project

SUMMARY OF RESEARCH ACTIVITIES

Year 2015 was a challenging yet exciting year for the Pharmacy Department. With the relocation of several clinical services at Western Health from Footscray to Sunshine Hospital, Oncology Pharmacy and Clinical Trials Pharmacy services have both moved to Sunshine Hospital as a result.

Clinical Trials Pharmacy has expanded its services for the first time across two sites (Footscray Hospital and Sunshine Hospital as of February 2015). This initiative was fostered from collaboration with the Western Health Research Coordinators. It will help to facilitate and support current studies at Western Health and, more importantly, promote and encourage more research and Clinical Trials conducted at Western Health in the near future.

The Medgap project was a Quality Assurance project undertaken in 2015, looking at assessing the rollout of an interim residential care medication administration chart. This chart was implemented to ensure that all patients have an up-to-date medication chart available at the aged care facility in time for the first scheduled medication dose.

Another highlight of the year involved our senior oncology pharmacist, Ray Kong, who was awarded Western Health's Inspire Award. The award acknowledged Ray Kong's excellence in leadership demonstrated during the relocation of Oncology Pharmacy Services from Footscray Hospital to Sunshine Hospital.

OUR RESEARCH

Medgap Project

Researcher(s): Adrian Weeks
& Joanna Edwards

Collaborator(s): Jen Tiet, Pharmacy
& Justin Neagle, Pharmacy

This study aims to assess the roll-out of an interim residential care medication administration chart.

The chart aims to ensure that all patients have an up-to-date medication chart available at the aged care facility in time for the first scheduled medication dose. This project will help ensure that the new practice is beneficial.

OUR GRANTS & AWARDS

WH Inspire Award

Mr Ray Kong 2015

RESPIRATORY AND SLEEP DISORDERS MEDICINE

Head of Department:

Dr Anne Marie Southcott

Number of Researchers & Students:

Researchers: 25

OUR RESEARCH OUTPUT:

19

Projects

4

Publications

11

Presentations

1

Chapter

9

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

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 RESEARCH

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

Researchers(s): Lata Jayaram

Collaborator(s): Andrew Gillman, Sue Casanelia, Valerie Yee, Victor Reginato, Anita Morris, Lynnette Reid-Price & Anne Marie Southcott

This 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, health care utilisation, and quality of life. Asthma management is often poorly adhered to after discharge, resulting in exacerbation, readmission, and occasionally death. A new model of care may offer better outcomes for Western Health patients.

Comparison of an extendable four-nap protocol Vs the straight five-nap protocol for the Multiple Sleep Latency Test: Impact on diagnostic outcomes and treatment options.

Researcher(s): Jeremy Stonehouse

Collaborator(s): Lynnette Reid-Price

The Multiple Sleep Latency Test (MSLT) is a daytime sleep study, performed to evaluate excessive sleepiness. Data from 264 MSLT performed at Western Health during a three year period were retrospectively analysed according to a four nap and five nap protocol, to see whether the number of naps performed was clinically significant in terms of international diagnostic criteria and eligibility for pharmaceutical treatment options.

The MSLT involves four or five naps, spaced at two hourly intervals throughout the test day. This test is labour-intensive for scientific staff and tedious for patients to perform in hospital. With appropriate clinical evidence, shortening the test to a four nap extendable protocol has reduced staff resources and improved the patient experience without compromising clinical utility.

Reliability of DLCO measurements at 2,4 and 6 minute time intervals in restrictive and obstructive respiratory conditions

Researcher(s): Lynnette Reid-Price

Collaborator(s): Georgette Mchaleh, Ceilito Samson, Emily Karahalios, Lata Jayaram & 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 on 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.

OUR GRANTS & AWARDS

Western Health Research Grant:

Clarice Tang Optimal time of implementation for pulmonary rehabilitation Western Health \$20,000, 2015

RHEUMATOLOGY

Head of Department:

A/Prof Keith Lim

Number of Researchers & Students:

Researchers: 10

OUR RESEARCH OUTPUT:

8

Projects

5

Presentations

1

Chapter

4

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

The Rheumatology Department has a diverse research involvement in several multi-centre studies ranging from new biologic therapies in osteoarthritis and autoimmune inflammatory arthropathies. We are also publishing work on the natural history of osteoarthritis, a prevalent health problem in our ageing population.

We are entering an exciting time with collaborative clinical initiatives with the physiotherapy department involving knee brace research as an adjunct to our management of people with knee osteoarthritis (OA). We are expanding our research activities to include basic science with laboratory accreditation to evaluate cytokines in joint fluids.

Our research is clinically orientated. It is based on an ethos of improving our understanding and management in order to optimise care of the most common rheumatological problems we encounter in clinical practice.

Some of our unit members play active roles in the Asia Osteoarthritis Network which is now based in Melbourne. This network provides a collaborative, regional approach to foster a better understanding and approach to managing osteoarthritis and pain. Our Head of Unit, A/Prof. Keith Lim has been invited to many local and international conferences to share our clinical research experiences.

We have presented our research at local and international conferences including APLAR. Our vision for the department is to be at the forefront of clinical research as well as providing our trainees with the best advance training across Melbourne hospitals. It is hoped that our trainees develop a strong appreciation of clinical and research practices.

Our vision for the department is to be at the forefront of clinical research as well as providing our trainees with the best advance training across Melbourne hospitals.

OUR RESEARCH

Differences in rates of arthroplasty between Hip and Knee Osteoarthritis (OA) patients

Researcher(s): Chamila Dabare, Kim Le Marshall, Albert Leung & Keith Lim

Collaborator(s): Emily Karahalios & Carolyn Page

This study looks at risk factors and outcome measures in knee and hip OA in a cohort that has been managed with a structured programme and followed closely prospectively. This study aims to contribute to filling the evidence gap on outcome differences in hip and knee OA.

Differences between patients with Hip and Knee Osteoarthritis

Researcher(s): Kim Le Marshall, Bernard Yee, Paul Dieppe & Albert Leung

Collaborator(s): Carolyn Page (SVH), Prof. Peter Choong (SVH), Bernard Yee (UK), Prof. Paul Dieppe (UK), Sharmayne Brady & Keith Lim

This study provides new insight into the clinical characteristics of patients with hip and knee osteoarthritis. Our initial analysis shows that patients with hip OA present later compared with knee OA. The study can provide clinicians with a greater understanding about the natural history of hip and knee osteoarthritis, thereby tailoring treatment accordingly.

Unloader Knee brace in osteoarthritis of the knee

Researcher(s): Kristy Yap, Joanna Hall, Phuong Tran, Albert Leung & Keith Lim

Collaborator(s): Carolyn Page (SVH) & Paul Silk (Physiotherapy WH)

This study evaluates the use of the unloader knee brace in patients with osteoarthritis as a non-pharmacological and non-surgical option in pain management. Osteoarthritis is a common problem with increasing prevalence. This study could provide evidence for the use of a special knee brace as another treatment option.

GM-CSF study

Researcher(s): John Hamilton, Keith Lim & Cecil Hor et al

Collaborator(s): John Hamilton

This study evaluates the role of GM-CSF in patients with rheumatoid arthritis to aid in the development of a new biologic therapy. It may provide further insight into the cytokines involved in inflammatory autoimmune arthropathies and offer an avenue to add new biologic therapies to the armamentarium of therapies available.

A prospective study evaluating the short term efficacy of caudal epidural steroid injections for chronic lumbosacral radiculopathy

Researcher(s): Low S, How J.A, Leung A, Ang N.H, Le Marshall K, Dabare C, Bhattacharjee S, Munda M, Liew D, Lim K

Our study aimed to elucidate the short-term efficacy of epidural injections in chronic lumbosacral radiculopathy and identify factors that may influence caudal epidural steroid injection (CESI) response. This project adds to the body of evidence for the use of steroid injections in patients with radicular low back pain. We also identified predictive factors for the outcome of such injections.



DR SOOK MENG LEE

Geriatrician

Health workers should not assume that people living in squalor choose to live that way, according to a senior geriatrician at Western Health.

Dr Sook Meng Lee is the lead author of the largest neuropsychological study ever done in Melbourne of patients living in squalid conditions in their own homes.

The study of 69 patients living in messy, unsanitary conditions examined patients' brain function including memory, problem-solving, planning and organisational skills. Most of the patients were aged over 65.

Dr Lee said people living in such conditions rarely sought help and tended to only come into contact with health services when they required urgent medical attention.

She said there was a commonly held belief throughout society and among health professionals that people living in squalor wanted to live that way and be left alone.

But research, including Dr Lee's study, showed that many people in these circumstances had executive brain dysfunction, due to underlying conditions such as dementia, stroke and alcohol abuse.

"Squalor is not a benign condition," Dr Lee said. Patients living in squalor faced health hazards and life-threatening risks if they returned home without having their cognitive function adequately assessed and managed by experts.

Their cluttered homes were fire risks and they sometimes endured persecution from neighbours or family members.

"Living in squalor is a prevalent condition," Dr Lee said. "One out of every 700 people over the age of 65 years live in squalor. In our study, 40 per cent of the patients also exhibited hoarding behaviours, which has a prevalence of one in 200 people.

"If we believe the myth that these people want to be left alone we could be abandoning them because many of them may not choose to live this way.

"To assist these people properly, we need to get them assessed properly."

Dr Lee and her colleagues work with partners such as cleaning companies, service providers including the Salvation Army and Wintringham, the RSPCA and the Metropolitan Fire Brigade to help patients return to safer, cleaner homes.

SUB ACUTE AND AGED CARE

Clinical Services Director:

Dr Kris Ghosh

Number of Researchers & Students:

Researchers: 20

OUR RESEARCH OUTPUT:

15

Projects

1

Publications

12

Presentations

2

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

The Division of Subacute and Aged Care Services extended its research activities during 2015, with a focus on developing and improving best care for patients and carers. Strong collaborations and partnerships have been established across diverse stakeholders, which will yield additional research activities in 2016.

The department's strengths in squalor research were further supported in 2015, with Dr Sook Meng Lee establishing a collaboration with Professor Stephen MacFarlane, Alfred Health, an international leader in this field. Dr Stephanie Ward continues to work with the Monash University School of Public Health on several NHMRC funded projects, and has promoted collaboration with Western Health as a site for the ASPiVLU randomised controlled trial of aspirin for non-healing venous ulcers.

Carol Perich, Manager of Clinical Practice and Development, was awarded the 2015 Mavis Mitchell Memorial Scholarship to build on and sustain the work completed on the Dementia Assessment Unit through the Creatively Ageing Project. The trial was the first of its kind in a hospital environment to engage people with dementia in meaningful activities, provide enjoyment and re-instate a sense of self-worth.

The Division is thrilled to welcome Professor Gustavo Duque, as Chair of Geriatric Medicine and Director of the Australian Institute for Musculoskeletal Sciences (AIMSS), and Dr Kris Ghosh as Clinical Services Director. Our commitment to service innovation and quality, together with Professor Duque and Dr Ghosh's expertise and enthusiasm, will ensure that 2016 will be an exciting year for further research development in sub-acute and aged care at Western Health.

OUR RESEARCH

Strengthening the connection between subacute care and community services: A carer focused intervention

Researcher(s): Anita Panayiotou & Kathryn Gosetti

Collaborator(s): Debra Kerr, Victoria University, Alzheimer's Australia Vic.

This study aims to improve the awareness of community support programs for people providing care to subacute inpatients, and increase access and engagement with community support programs by carers. By seeking support and engaging with dedicated support services, secondary aims are to reduce

SUB ACUTE AND AGED CARE

(CONTINUED)

carers' depression, anxiety, stress and burden levels, and reduce hospital representations and readmissions for patients.

These positive outcomes will potentially enable carers to continue providing care over a longer period of time and hence reduce the need for, and additional costs associated with, repeated hospital presentations and admissions, and permanent residential care. In turn, this may enhance quality of life for the care recipient by helping them to remain in their home environment for as long as possible.

Risk screening and assessment for avoiding preventable harm in older people in hospital

Researcher(s): Anita Panayiotou

Collaborator(s): Bernice Redley, Deakin University

The aim of this project is to scope tools and strategies used by health services to screen and assess older people in hospital to avoid preventable harm; identify what works well and make recommendations informed by good practice and best evidence. Hospitals pose risks for older people and their overall wellbeing may be adversely affected by the experience of a hospital admission.

The findings from this project are expected to inform guidance and resources to assist clinicians and health services to improve harm prevention practices, recommend standardised approaches to assessment and reduce unnecessary variation across health services.

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

Researcher(s): Ngoc Le, Melanie Reed, Candice Poupard, Catherine Giuliano, Cathy Davey, Liz McAullay, Hannah Furlong, Euhin Koh & Laurinda Ndenzako

The aims of this project were to:

- Determine whether a new subacute amputee rehabilitation service co-located onsite reduces acute length of stay compared with the period before the service was established
- Document the patient demographics for major amputee patients admitted to Footscray Hospital Ward 3B. Explore possible barriers that could prolong patient length of stay in rehabilitation
- Describe patient outcomes for major amputee patients on discharge from Footscray Hospital Ward 3B and compare to state averages

Optimal management of amputee patients is important to patients and healthcare organisations. The findings of this study can be used to guide ongoing quality improvements to the service.

Aspirin in venous leg ulceration - an RCT (ASPiVLU)

Researcher(s): Stephanie Ward & Elizabeth Dapiran

Collaborator(s): Carolina Weller, School of Public Health and Preventive Medicine, Monash University

This is a randomised controlled trial to evaluate the efficacy of aspirin in promoting healing of venous leg ulcers. Venous leg ulcers are a significant burden for patients, with prolonged healing times. Some evidence suggests aspirin may promote healing, but this needs evaluation in a clinical trial.

Intravenous antibiotic administration by the Western Health Aged Care Liaison Service

Researcher(s): Inese Tucker

Collaborator(s): Mark Murray, Bridie Stewart & Drew Moir

This is a quality assurance project seeking to describe the cohort of patients receiving intravenous antibiotics as part of Western Health's residential care in-reach service and to determine prescribing compliance with the therapeutic guidelines recommendations. The aim is to improve and better target an important clinical service.

Strong collaborations and partnerships have been established across diverse stakeholders, which will yield additional research activities in 2016.

Music therapy in action in the dementia management ward at Sunshine Hospital.

OUR GRANTS & AWARDS

NHMRC Project Grant:

Stephanie Ward, Elizabeth Dapiran
Aspirin in Venous Leg Ulceration
(ASPiVLU) NHMRC \$750,000,
2014-2017

NHMRC Project Grants

Stephanie Ward, Study of
Neurocognitive Outcomes Radiological
and retinal Effects of Aspirin in Sleep
Apnoea: \$850,000, 2012-2016

Mavis Mitchell Memorial Scholarship:

Carol Perich, Creatively Ageing:
Person-Centred Care on the Dementia
Assessment and Management Unit
at Sunshine Hospital, Western Health
\$5,000, 2015

Bank Vic Allied Health Grant:

Merridy Moore, Education in supported
communication for hospital staff: Use
of consumer stories to enhance staff
education Bank Vic \$6,000, 2015

Other Collaborations

ASPREE Fractures and Falls Substudy:
\$1,200,000 2014-2017

**Aspirin for venous ulceration
randomised controlled trial:**
\$750,000 2014-2018

ASPREE NEURO study:
Aspirin and Cerebral Micro
haemorrhages: \$875,000 2015-2018

**Statins in reducing Events
in the Elderly (STAREE):**
\$5,100,000 2014-2018



SURGERY

**Clinical Services Director,
Perioperative and Critical Care
Services:**

Dr Andrew Jeffreys

**Director of Department of Surgery
and Head of Urology:**

Prof Helen E O'Connell

Western Health is a centre of excellence for surgical training and delivers a wide range of surgical services to a large and diverse community in the West. Our research base is progressively evolving across the multiple sub-specialities as shown by the high quality and range of surgical research contributions in this report.

Surgical research involves the evaluation of devices, surgical service research, research into the efficacy and complications of the operations themselves, anatomical research,

research into surgical conditions, including the underpinning molecular biology and finally the evidence base for surgical education.

Research is the precursor to surgical practice improvement and research undertaken at Western Health is making a contribution toward this.

We look forward to further advancing our surgical research portfolio and building on the achievements of our predecessors.

In the operating theatre at Footscray Hospital, (l to r): Recovery Assistant Nurse Unit Manager, Yvonne Webster and anaesthetic nurse Olga Learoyd, with the Director of Anaesthesia and Pain Medicine, Dr Rick Horton.



GENERAL AND ENDOCRINE SURGERY

Head of Department:

Mr Bill Fleming

Number of Researchers & Students:

Researchers: 5

OUR RESEARCH OUTPUT:

4

Projects

5

Publications

2

Presentations

1

Chapter

3

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

The General and Endocrine unit is committed to contributing to the pool of knowledge in Endocrine Surgery and other aspects of General Surgery. Our research is primarily focussed on questions that will improve our patients' clinical care.

In 2015, we have undertaken a few quality assurance studies, which have been presented at national meetings. Our ongoing projects are a prospective study examining quality of life in our thyroidectomy patients who are having surgery for benign disease. This will evaluate patients pre-operatively and up to six months post-operatively, and the information gathered may help us give our patients realistic expectations for improvement in their symptoms after surgery.

We have also instituted a project focussing on junior medical staff training and used pre- and post-testing to assess how well they understand the material.

OUR RESEARCH

Post-operative hypocalcaemia in total thyroidectomy patients with incidental parathyroidectomy

Researcher(s): Carolyn Chew & Bill Fleming

Collaborator(s): Ran Li & Michael Ng, Western Health

This project examined the correlation of hypocalcemia when parathyroid glands were inadvertently removed during surgery. It was orally presented at the 2015 General Surgeons of Australia Annual Scientific meeting.

How does thyroidectomy for benign thyroid disease impact upon quality of life? A prospective study

Researcher(s): Synn Lynn Chin & Laura Chin-Lenn

Collaborator(s): Tracey Lam, Carolyn Chew & Steven Chan, Western Health

This is a prospective study examining the quality of life of patients following thyroidectomy for benign disease. This study is ongoing and will be orally presented at the Asian Association of Endocrine Surgeons meeting in 2016. Benign thyroid disease is common and indications for surgery are often difficult to measure. There are few studies addressing whether surgery improves symptoms.

Size matters: Discrepancy between sonographic and pathological evaluation of thyroid nodules

Researcher(s): Carolyn Chew & Laura Chin-Lenn

Collaborator(s): Tracey Lam & Steven Chan, Western Health

This project examines the correlation between ultrasound and pathology size of thyroid nodules. It was orally presented at the Royal Australasian College of Surgeons Annual Scientific Congress in 2015 and is currently being prepared for publication. It is well documented, particularly for small size nodules, that there is a size discrepancy between sonographic and pathological evaluation of nodule sizes, which may lead to different clinical decisions. We did not find any discrepancy in this study in nodule size between sonographic and pathological evaluations.

Improving the management by hospital interns of post-thyroidectomy bleeding

Researcher(s): Ammar Tayaran & Laura Chin-Lenn

Collaborator(s): Steven Chan, Western Health

This project focuses on educating junior doctors about the most life-threatening complication for patients post thyroid surgery. This project is ongoing and will be orally presented at the Asian Association of Endocrine Surgeons meeting in 2016. Junior doctors should be educated in post-operative emergencies that are rare but life threatening.

Annette Tepper, Regional Sales Manager for award sponsor, Covidien, with recipient, Dr Hayden Snow. They are standing in front of a Western Health banner at an event. Dr. Snow is holding a certificate that reads "Western Health Research Week 2015" and "Kendall Francis Prize".

Annette Tepper, Regional Sales Manager for award sponsor, Covidien, with recipient, Dr Hayden Snow

DR HAYDEN SNOW

Surgical Registrar

Not many trainee surgeons have had their research published in a prestigious international medical journal. Dr Hayden Snow is one of those people.

The findings of his study into the comparative effectiveness of two surgical techniques used during a laparoscopic appendectomy were published earlier this year in the *International Journal of Surgery*.

Dr Snow's initial interest in the topic was sparked by the variety of surgical practices used to prevent post-operative infections in patients, especially patients with a perforated appendix.

He was aware of an ongoing and unresolved debate in the surgical literature about the merits of using irrigation versus suction to remove contaminated fluid in the abdomen during an appendectomy.

"A lot of the existing evidence in the literature about whether some of these operative techniques make a difference is pretty limited and of poor quality," Dr Snow said. "So we were trying to do a high quality study to put the issue to bed."

Dr Snow's randomised trial involved patients with advanced appendicitis – those with pus on their appendix or a perforated appendix. Patients were randomly selected to have their contaminated abdominal fluid removed either by irrigating the infected area with saline or by removing the fluid with a suction tool.

The trial found there was no difference between the two techniques in the rate of post-operative abscess formation inside the abdomen. Regardless of which technique was used, the abscess rate was the same.

"It's an important result because it proves that you are not doing your patients a disservice by performing either technique," Dr Snow said.

"It means that if we're looking for ways to prevent post-operative infection in patients we need to look at other techniques or medications to try to do that."

The randomised trial and the analysis of its results took three years to complete. Last year Dr Snow won Western Health's Kendall Francis Prize for his research.

He said surgeons were well placed to do surgical research. Their daily work enabled them to understand some of the limitations of designing a study in the surgical field and they understood what was technically feasible.

Dr Snow said it was hard for trainee surgeons to find the time for meaningful research between studying for exams and doing clinical training and course work. However, some of his peers were also doing extensive research, including Dr Matthew Read, who is investigating the precursors of oesophageal cancer for his PhD while also completing his surgical training.

"Matt is doing world-class research that has important implications for oesophageal cancer," Dr Snow said. "You can get involved in research at a laboratory level which is what Matt has done with his PhD, or you can get involved at a clinical level, which is what I've done with my study."

ORAL AND MAXILLOFACIAL SURGERY

Head of Department:

A/Prof Arun Chandu

Number of Researchers & Students:

Researchers: 2; Students: 2

OUR RESEARCH OUTPUT:

2

Projects

4

Publications

2

Presentations

1

Chapter

SUMMARY OF RESEARCH ACTIVITIES

The Faciomaxillary surgical unit provides treatment for patients sustaining facial injuries, facial infections, dentofacial deformity and other oral conditions and pathology. The unit's main research activities are currently focussing on the outcomes of implants placed in private practice; and the relationship between patient use of drugs and alcohol and facial trauma. Drugs and alcohol usage is a major factor in interpersonal violence in the western region and it has a significant impact on patients presenting to Western Health.

OUR RESEARCH

Studies into the interaction of alcohol and fractures of the facial skeleton

Researcher(s): Kai Hsiang Lee

Collaborator(s): Arun Chandu

1. Survey of Oral and Maxillofacial Surgeons on their current understanding and practice of alcohol screening and brief alcohol intervention
2. Survey of Emergency Physicians on their current understanding and practice of alcohol screening and brief alcohol intervention
3. Psychological impact of facial trauma
4. Effectiveness of a brief intervention for alcohol involved facial trauma patients on their future drinking behaviour

Sporting related facial fractures; Three years experience in Western Melbourne

Researcher(s): Jamie Olsen

Collaborator(s): Arun Chandu

Sporting related facial fractures: A retrospective analysis of 3 years experience at Western Health.

Three years retrospective data was collected between Jan 2011 to December 2014 from all sites at Western Health.

Sporting injuries were stratified according to what type of sport caused the injury, what the injury/ies were and treatment modality.

This research will identify risk sports and age groups and help to target campaigns for safety measures such as mouth guards and helmets.

ORTHOPAEDICS

Head of Department:

Mr Phong Tran

Number of Researchers & Students:

Researchers: 15; Students: 4

OUR RESEARCH OUTPUT:

27

Projects

5

Publications

15

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The orthopaedic department performs more than 1500 elective operations per year. In order to improve our clinical outcomes and measure the effect our operations have on our patients, we have embarked on the ambitious project of collecting Patient Reported Outcome Measures for all our patients before and after surgery.

The PROMs project is a long-term longitudinal research project with the aim of assessing patient's reporting outcomes pre-operation, at operation, and 6, 12 months and yearly post operation. Patients are asked to complete general health and joint specific outcome forms.

OUR RESEARCH

Chronic Scaphoid non union fixation with scaphoid plate and bone graft - randomised control trial

Researcher(s): Duy Thuy

This study compares the outcome of scaphoid fractures treated with either plate fixation vs screw fixation. This helps us compare the outcomes of two different techniques so that we can offer the best technique to our patients

transfusion rate and recovery. This helps our patients recover quicker with less need for blood transfusions.

The novel use of peripheral quantitative computed tomography in the presence of a polyester cast: accuracy and reproducibility

Researcher(s): Michael Bullen & Phong Tran

Collaborator(s): Christine Rodda & Peter Pivonka

This study assesses the use of a new imaging method to assess the quality of bone. This has the potential of allowing us to assess the healing progression and bone quality of fractures.

Immobilisation of Internal Fixation of Distal Radial Fractures - randomised control trial

Researcher(s): Narelle Watson & Phong Tran

Collaborator(s): Physiotherapy Department, Western Health

This study assesses the outcome of different lengths of plaster cast immobilisation after fractures of the distal radius. This study will help our patients recover and return to normal function quicker.

Patient specific instrumentation and shoulder arthroplasty

Researcher(s): Richard Dallalana

This study assesses outcomes of a new technique that helps surgeons insert shoulder replacements more accurately. This helps with improving patient outcomes in shoulder replacement surgery.

Tranexamic Acid in Total Hip Replacement - randomised control trial

Researcher(s): Andrew Fraval & Phong Tran

This study assesses the difference that Tranexamic Acid has on blood loss,



DR MICHAEL BULLEN

Orthopaedic Registrar

A research trial by Dr Michael Bullen is investigating whether a new type of scanner normally used to measure bone density can be used to measure fracture healing in children.

The new scanner, called pQCT, has never been used to assess bone fractures in humans. But it has been used in experiments over the past five years to measure bone fractures in animals.

Doctors currently use the pQCT to measure a person's bone density in order to assess bone strength. The advanced scanner also produces 3D images of the bone and it emits lower levels of radiation than conventional x-rays.

Children with fractures usually have to spend a predetermined time in a cast before doctors can take a conventional x-ray to detect whether the fracture has healed.

"At the moment with plain x-ray you can see a child's fractured bone healing

but then you have to use previous experience to estimate how long patients need immobilisation," Dr Bullen said.

"For children, at the end of this set period you do an x-ray. If you can see callous forming, you can say that the fracture's probably healed because most are by this stage."

Dr Bullen said if the trial of the new scanner proved to be successful, children with fractures might be able to have their casts removed earlier than the traditional time periods.

"Because this scanner has lower doses of radiation than a normal x-ray, more scans can be done at set points earlier in the patient's treatment.

The pQCT can also provide a numerical strength estimate of the healing fracture callous.

"Instead of waiting six weeks you could do a scan earlier and potentially take the cast off earlier if the fracture has

healed before the set time of six weeks."

Dr Bullen said the scanner could improve a doctor's ability to assess how quickly a child's fracture is healing.

"The scanner would give us more information to guide our treatment decisions and give us greater confidence that we were not unnecessarily immobilising patients by asking them to wear their cast longer than needed," he said.

Dr Bullen is also conducting a second research project to determine whether a cast's material interferes with the scan's ability to measure fractures.

He said the scanner may have the potential to help adult patients whose fractures were not healing. "There's a long list of potential applications," Dr Bullen said. "You may also be able to use the scanner to guide weight bearing restrictions after a person has had an operation to fix their fracture."

WOMEN'S AND CHILDREN'S

Clinical Services Director:

A/Prof Glyn Teale

The Women's and Children's Division continues to experience significant growth in patient numbers and the complexity of patients cared for. We have recruited a number of new staff and we are aiming to expand on our research activity over the coming year, building on the enthusiastic efforts of a few key staff.

We look forward to the building of the Joan Kirner Women's and Children's Hospital and we envisage a significant increase in research throughput, commensurate with the rich clinical research opportunities at hand.



Clinical Services Director Women's and Children's, A/Prof Glyn Teale with a new mum and her baby at Sunshine Hospital.

MATERNAL FETAL MEDICINE

Head of Department:

A/Prof Joanne Said

Number of Researchers & Students:

Researchers: 1; Students: 2

OUR RESEARCH OUTPUT:

8

Projects

5

Publications

4

Presentations

SUMMARY OF RESEARCH ACTIVITIES

The Maternal Fetal Medicine (MFM) research group has been focussing on the completion of current NHMRC funded projects investigating the role of placental proteoglycans. This has included: completion and submission of a PhD thesis by Tilini Gunatillake investigating the role of placental proteoglycans and glycosaminoglycans and an ongoing collaboration with Prof Mary Wlodek to investigate the role of various heparins in a mouse model.

We have also completed recruitment for a large multi-centred randomised control trial investigating the role of high dose Folic acid in preventing the development of pre-eclampsia (The Folic Acid Clinical Trial (FACT) study). Patient deliveries will be completed in 2016 and the final analysis will be completed in 2016-2017.

We have recruited for another multi-centred randomised trial investigating 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. Once again, pregnancies will all be delivered in early 2016 and data collection and analysis will be completed in 2016-2017.

We have completed recruitment for the FOX study (Fetal oxygenation study) – a study which aims to investigate whether fetal wellbeing can be predicted in growth restricted pregnancies by analysing sensitive changes in the mRNA in maternal blood.

We are involved in recruiting 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. We will commence the two year neurodevelopmental follow-up of these infants in 2016.

OUR RESEARCH

Magnesium Sulphate at 30 to 34 weeks gestational age: Neuroprotection Trial (MAGENTA Study)

Researcher(s): Joanne Said & Rosalyn Pszczola

Collaborator(s): Caroline Crowther, Philippa Middleton, Dominic Wilkinson & Ross Haslam Australian Research Centre for Health of Women and Babies – 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.

MATERNAL FETAL MEDICINE

(CONTINUED)

The Effect of folic acid supplementation in pregnancy on preeclampsia (The FACT Study).

Researcher(s): Joanne Said & Glyn Teale

Collaborator(s): Mark Walker & Shi Wu Wen - Ottawa Hospital Research Institute.

The overall aim of this study is to evaluate a new pre-eclampsia prevention strategy using 4.0mg folic acid supplement in women who are at high risk of developing pre-eclampsia. 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.

Maternal blood test to determine acidaemic status of growth restricted fetuses in utero (The FOX Study)

Researcher(s): Joanne Said

Collaborator(s): Owen Stock, Stephen Tong & 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 in the womb so that we can deliver them before they die in the womb.

Enoxaparin for the prevention of pre-eclampsia and intrauterine growth restriction (The EPPI Study)

Researcher(s): Joanne Said

Collaborator(s): Katie Groom, Lesley McCowan & Claire McLintock - Department of Obstetrics and Gynaecology 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.

Novel approaches to understanding the molecular mechanisms of placental thrombosis in human fetal growth restrictions and pre-eclampsia.

Researcher(s): Joanne Said

Collaborator(s): Paul Monagle & Vera Ignjatovic, Murdoch Children's Research Institute, Royal Children's Hospital, Prof John Whitelock, 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

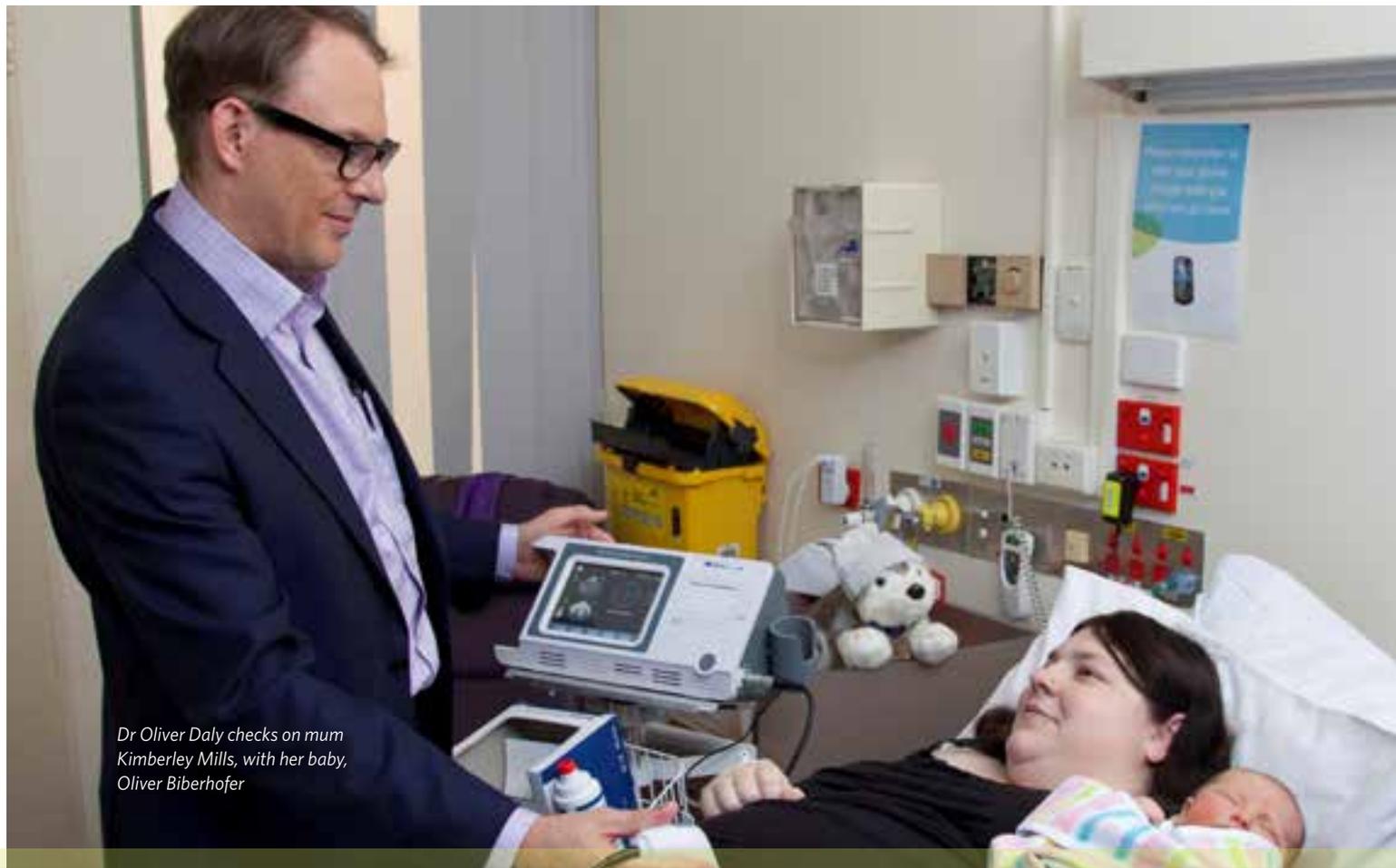
restriction suggesting that disordered proteoglycan function may play a role in these major placental mediated complications of pregnancy.

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.

OUR GRANTS & AWARDS

National Health & Medical Research Council (NHMRC) Project Grant (CIA)

Understanding the role of endogenous and pharmacologic glycosaminoglycans in preventing pre-eclampsia" \$500,146, 2013-2015



Dr Oliver Daly checks on mum Kimberley Mills, with her baby, Oliver Biberhofer

DR OLIVER DALY

Consultant Obstetrician and Urogynaecologist

Pregnant women have to deal with a lot of information about managing their health and preparing for birth. Dr Oliver Daly wanted to find a better way to deliver some of that information, in a more practical, timely manner.

“There’s a limit on the time we have to spend with a patient and often the information we’re delivering is not necessarily relevant to the patient at the time we’re delivering it – it might be relevant further along in their pregnancy,” Dr Daly said.

He and his colleagues were also concerned that most of that information is delivered to patients in English. Yet 60 per cent of their patients are from non-English speaking backgrounds.

“We felt there had to be a better way of giving information to patients which they could review at their own leisure, in their own language, when they needed to access it,” Dr Daly said.

His team has embarked on a project to develop a smartphone app that will deliver specific pregnancy information to patients in a variety of languages.

The app will have unique appeal for Western Health patients because it will provide information about how to access specific pregnancy services offered at Western Health’s campuses. It will also provide emergency contact details if patients need to contact medical staff.

The project is a joint partnership with the University of Melbourne, funded by the Macedon Ranges and North Western Melbourne Medicare Local network. A needs assessment of patients and health staff is underway and the research team will use the results to shape the app’s design and content.

Dr Daly is also involved in another large research project – the first study of its kind in Australia to examine what type of anaesthesia patients prefer when they have an operation to treat activity-related urinary incontinence.

About 5000 patients have the operation each year in Australia. Currently patients are given a general anaesthetic to have a sling inserted

underneath their urethra to stop urine leakage.

A minimally invasive sling has recently been developed and the procedure can now be done using only a local anaesthetic. Dr Daly’s study is investigating the feasibility of this alternative and whether patients are likely to choose it rather than the more expensive, riskier general anaesthetic.

“We need to know whether patients will prefer to use the local anaesthetic,” Dr Daly said.

“Once we’ve established whether patient would like this option we will proceed with the pilot study of putting these slings in under local anaesthetic.

“Our hope is that patients will benefit from not having to undergo a general anaesthetic – that they will have no increase in pain or distress, they will be able to go home earlier and the success rates for the procedure will be the same as a under a general anaesthetic.”

OBSTETRICS AND GYNAECOLOGY

Head of Department Gynaecology:

Dr Rupert Sherwood

Head of Department Obstetrics:

Dr Robyn Burr

Number of Researchers & Students:

Researchers: 4; Students: 1

OUR RESEARCH OUTPUT:

12

Projects

4

Publications

SUMMARY OF RESEARCH ACTIVITIES

New research in general obstetrics in 2015 has centred on assessing the implications for patient care of safety and quality improvement projects. In particular:

1. Predicting and preventing post-partum haemorrhage
 - A Bakri balloon project aims to assess the benefits and outcomes of this conservative approach to management of massive obstetric haemorrhage.
 - We Bleed study: Assessing the benefit of a post birth blood collection system to identify women at risk.
 - Introduction of the Maternity Observation Response Chart.
2. Introduction of 'Colour My Care' collaborative antenatal care pathways.
3. Introduction of a comprehensive clinical audit cycle in the care of obese pregnant women.

We have also commenced an uro-gynaecology research program assessing the outcomes of a dedicated bladder care project and assessing patient attitudes to modes of anaesthetics to facilitate incontinence surgery.

Ongoing commitment to the 'Bridging The Gap Project' funded through the NHMRC has seen new quality improvement initiatives expand the project. The Western e-HEALTH patient information portal for Pregnancy research project (We-HELP) will produce a smartphone app to deliver health service specific pregnancy information in a range of languages.

OUR RESEARCH

Bridging The Gap: Addressing refugee inequalities through primary health care innovation

Researcher(s): Lauren De Luca, Glyn Teale & Tina Pettigrew

Collaborator(s): Jane Yelland, Elisha Riggs, Stephanie Brown, Sharon Goldfeld, Fiona Mensah, Murdoch Children's Research Institute, Euan Wallace, Christine East, Mary Anne Biro, Sue Willey, Monash University, John Furler, Senior Research Fellow, General Practice and Primary Health Care & I-Hao Cheng Southern Academic, Professor Rhonda Small Director, La Trobe University, Mr Josef Szwarc Victorian Foundation for Survivors of Torture, Lecturer, School of Nursing and Midwifery, Monash University

The aims of the Bridging the Gap project are to implement and evaluate quality improvement strategies based on the best available evidence designed to:

- Improve access to primary and specialist health care for refugee families
- Build organisational and system capacity to identify and address modifiable risk factors for poor maternal and child health outcomes in refugee populations
- Develop a sustainable framework for ongoing quality improvement and to strengthen services.

Western Health provides maternity care to a significant number of refugee families with identified challenges that support research based improvements in care.

Validation of the Western Health Maternity Observation and Response Chart

Researcher(s): Paula Ball

Collaborator(s): Glyn Teale & Cate Nagle

Western Health is the sixth busiest maternity service in Australia and faces significant challenges in caring for a relatively high percentage of high risk women. This project aims to ensure the early identification of deteriorating patients by use of a specific early warning observation chart.

Our maternity patients are relatively high risk as a result of a combination of socio-demographic disadvantage, the prevalence of obesity and other co-morbidities. These factors increase the chances of complications antenatally, during childbirth and postnatally. Improvements in the ability to identify the deteriorating maternity patient are expected to prevent or limit maternal morbidity and mortality.

Burmese mum Eh Nay Moo and her baby, Arthur. They are participating in the Bridging the Gap research project.

We-HELP

Researcher(s): J Oliver Daly

Collaborator(s): University of Melbourne

The Western e-HEaLth patient information portal for Pregnancy research project will produce a smartphone app to deliver health service specific pregnancy information in a range of languages.

Western Health provides maternity care to a significant percentage of families for whom English is not their first language. This project aims to improve the availability of specific pregnancy specific information in a variety of languages.

OUR GRANTS & AWARDS

We-HELP - J Oliver Daly: The Western e-HEaLth patient information portal for Pregnancy research project Macedon Ranges Medical Care Local \$200,000, 2015



Head of Department:

Dr Martin Wright

Number of Researchers & Students:

Researchers: 13; Students: 5

OUR RESEARCH OUTPUT:

5

Projects

3

Publications

4

Presentations

1

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

The Paediatric Department provides much needed paediatric clinical services to the population of the West. Paediatric presentations are anticipated to increase in the near future, as population growth is expected. This will place further demand on our paediatric department. 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 our paediatric community.

Our department, through collaborations with numerous research groups, has been involved in research projects across a broad range of paediatric conditions. With future plans for the new Joan Kirner Women's and Children's Hospital at Sunshine campus, our involvement in research will only increase as we continue to pursue the delivery of evidence-based best practice in paediatrics.

OUR RESEARCH

Determination of the potential applicability of pQCT evaluation of fracture healing in children

Researcher(s): Michael Bullen

Collaborator(s): Peter Pivonka, Romane Blanchard, Christine Rodda, & Gustavo Duque

This project is evaluating the clinical applicability of peripheral quantitative computerised tomography (pQCT) in the assessment of fracture healing. Current approaches to assess fracture healing are very imprecise and include clinical examination and plain radiographs. It is anticipated that pQCT may provide a more accurate assessment of fracture healing, including assessment of bone material properties, with minimal radiation exposure. It could be applicable to children who have the highest incidence of fracture (with the exception of the frail elderly). This work also promises to provide the basis for the applicability of pQCT to assessment of fracture in underlying metabolic bone disease.

Long-term post-operative follow up in children and young adults with complex congenital heart disease; sub-study: skeletal effects of aspirin vs warfarin anticoagulation

Researcher(s): Alessandro Timmi (PhD student) & Chantal Attard (PhD student)

Collaborator(s): Paul Monagle & Craig Munns

This sub-study is investigating bone density using both DEXA and pQCT in children and young adults with complex congenital heart disease, comparing findings in those treated with warfarin anticoagulation versus those receiving aspirin. It is being undertaken in collaboration with A/Professor Craig Munns at Westmead Children's Hospital, New South Wales.

The Children's Ward at Sunshine Hospital.



Diabetes mellitus care in youth

Researcher(s): Frances Harley

Collaborator(s): Annie Hung, Bala Murthy, Tricia Wong, Janet Rahman CNC & P. Shane Hamblin

This project was a clinical audit looking at the prevalence of cardiovascular risk factors in young adults with Type 1 Diabetes Mellitus, to determine how effectively these were being managed in the Sunshine Young Adult Diabetes Clinic.

The project found that the majority of young people attending this clinic had one or more potentially preventable cardiovascular risk factors. The findings emphasised the crucial importance of ensuring that appropriate clinical care is available to this age group to ensure cardiovascular risk factors such as poor glycaemic control, hypertension, obesity and hyperlipidaemia are optimally managed.

HAPPI Kids Study

Researcher(s): Martin Wright & Christine Rodda

Principal Investigator: Paul Monagle

The "HAPPI Kids Study" is a RCH/Murdoch Institute led project, with Professor Paul Monagle as Principal Investigator. The aim of this project is to establish age appropriate reference ranges for commonly ordered pathology tests.

Parental attitudes relating to weaning from long-term enteral tube feeding

Researcher: Uditha Karlyawasam

Supervisor: Lisa Barrow

Dr Lisa Barrow's dual qualifications as a clinical psychologist and general paediatrician has led her to establish a clinic specialising in weaning children from long-term enteral tube feeding. Uditha Karlyawasam, University of Melbourne, Scholarly Selective student, undertook this study under Dr Barrow's supervision. They developed a questionnaire to assess parental attitudes related to weaning from long-term enteral tube feeding.

OUR GRANTS & AWARDS

Lesley Eric Paddle Scholarship in Paediatric Orthopaedics

Michael Bullen, The applicability of pQCT in the assessment of fracture healing in children University of Melbourne, Lesley Eric Paddle Scholarship \$10,000 (2015), \$7,500 (2016)

UNIVERSITY OF MELBOURNE MELBOURNE CLINICAL SCHOOL – WESTERN CAMPUS

Chair of Medicine:

Prof Gustavo Duque
(1 Dec 2015- Current)

Head of Department:

A/Prof Stephen Lew

Number of Researchers & Students:

Researchers: 10; Students: 21

OUR RESEARCH OUTPUT:

16

Projects

29

Publications

SUMMARY OF RESEARCH ACTIVITIES

The departure of the Chair of North-West Academic Centre (NWAC) Professor Peter Ebeling and the retirement of the Chair of Surgery, Professor Stephen Chan, at the end of 2014 meant 2015 would be a challenging year. Research momentum had to be sustained in the absence of suitable appointments in such important positions. Academic and professional staff within the MMS- Western campus demonstrated their ability to continue with delivering on the research and educational requirements and expectations that have been previously set.

This was achieved in part with the support of our other partners, and in particular our close working relationship with Western Health. Recruitment for the two respective Chairs occurred during 2015. Towards the end of 2015 the Chair of Medicine and Director of the Australian Institute for Musculoskeletal Science (AIMSS) was offered to Professor Gustavo Duque from the University of Sydney.

The year 2016 offers new opportunities for further collaboration with our traditional and new partners which will be further facilitated through the new and revamped AIMSS. An appointment into the Department of Surgery is imminent and this should then complete the leadership positions within the MMS-Western Campus that will help guide research direction and activity in 2016 and beyond.

OUR RESEARCH

Dynapenic Obesity, Musculoskeletal and Cardio metabolic Health in Older Adults

Researcher(s): David Scott & Peter Ebeling

Collaborator(s): Kerrie Sanders & Alan Hayes

This study investigates the effects of poor muscle quality on bone and cardiometabolic health in obese older adults. The study has been conducted at the Western Centre for Health, Research and Education and has formed the basis of Honours projects for two students from the University of Melbourne and two from Victoria University. The project has also resulted in a recent poster presentation at the 2016 World Congress on Osteoporosis in Malaga, Spain, where first author Dr David Scott received a Young Investigator award. The research team has recruited approximately 80 of the targeted 100 participants and is expected to conclude in 2016.

The Associations between Characteristics of Sarcopenia, Vitamin D and falls in Community-Dwelling Older Adults

Researcher(s): David Scott, Peter Ebeling, Kerrie Sanders

Collaborator(s): Terry Haines (Monash), Pazit Levinger (VU), Elizabeth Skinner (Western Health)

Department name: NWAC

This study investigates the contributions of muscle quality and vitamin D status in relation to risk of falling in older adults. The study has been conducted at the Western Centre for Health, Research and Education and has formed the basis of Honours projects for four students from University of Melbourne. We have also worked closely on recruitment with Western Health physiotherapists, led by Dr Lizzie Skinner. The project has also resulted in a journal publication (Journal of Musculoskeletal and Neuronal Interactions) and a poster

presentation at the American Society of Bone and Mineral Research 2014 meeting in Seattle, USA. The research team has recruited approximately 75 of the targeted 100 participants and is expected to conclude in 2016.

Sarcopenia in Hip Fracture Patients

Researcher(s): David Scott & Peter Ebeling

Collaborator(s): Gordon Lynch (UoM), Noni Frankenberg (UoM) & Phong Tran (Western Health)

This project investigates muscle quality in older adults undergoing surgery following a hip fracture. The project has been supported by the Orthopaedics team at Western Health (led by Mr. Phong Tran), and has resulted in a conference abstract. The project is expected to conclude in 2016.

Use of pQCT for assessment of fracture healing in children

Researcher(s): Michael Bullen, Romane Blanchard (UoM), Christine Rodda, Phong Tran (Western Health) & Peter Pivonka

Age- and sex-related changes in cortical bone cellular organization across the human lifespan

Researcher(s): Romane Blanchard, David Thomas (UoM), John Clement (UoM) & Peter Pivonka

Collaborator(s): David Cooper (University of Saskatoon)

OUR GRANTS & AWARDS

Arthritis Australia

C. DiBella, P. Choong, G. Wallace & P. Pivonka Novel treatment approach for early osteoarthritis: The Biopen for direct bio-printing of stem cells into focal articular cartilage defects \$40,000, 2015-2016

ARC L

Influence of athletic footwear on lower limb biomechanics of pubertal girls A. Bryant, K. Bennell, R. Hinman, K. Paterson, P. Pivonka 2015-2017, \$300,000

Early Career Researcher Grant

C Neil, \$36,885, 2015

Learning and Teaching Initiatives Grant

Rachel Jones, \$5,000, 2015

UoM Hallmark

Therapeutic Technologies A. Steward, G. Disting, G. Lynch, P. Lee, P. Pivonka & D. Hoyer \$400,000, 2015-2017

Scholarly Selective Students and Projects:

STUDENT SUPERVISOR	STUDENT	PROJECT TITLE
Mr Phong Tran	Alexander Beath	The effect of plaster versus CAM boot immobilisation on ankle fracture outcomes.
Prof Steven Chan	Marcus Cheng	Investigating the role of 'B' type Ephrin receptors on the spread of colon cancer using in vivo models of hepatic metastases.
Mr Phong Tran	James Drummond	The outcome of hip arthroscopy with combined iliotibial band release, greater trochanteric bursectomy and platelet rich plasma injection for recalcitrant greater trochanteric pain syndrome.
A/Prof Mike McDonough	Joel Greaney	Continuing, curbing down or cessation of opioids in chronic non-cancer patients; a review of patient decisions and outcomes.
A/Prof Christine Rodda	Frances Harley	Prevalence of cardiovascular risk factors in young adults (15-25 years old) with Type 1 Diabetes.
Dr Lisa Barrow	Uditha Kariyawasam	The impact of the Graz Method for tube weaning on parental confidence and outcomes for children with disordered feeding due to tube dependency.
Mr Phong Tran	Alexandra Muirhead	Efficacy of octyl cyanoacrylate adhesive in NOF wound closure.
Mr Phong Tran	Cameron Muirhead	Volar locking plate with non-vascularised bone graft in scaphoid non-union and early mobilisation. A multi-centred randomised trial.
A/Prof Arun Chandru	James Olsen	Prevention of alcohol- related facial injury.
A/Prof Joanne Said	Bridie Stewart	Indications for preterm delivery of growth restricted infants and the outcomes of these deliveries in a Level 2 hospital in Melbourne.
A/Prof Mike McDonough	Sung-Lin Yang	Admission for Alcohol Dependence at Western Hospital: A QA project.

Head of Department:

A/Prof Alan Hayes

Number of Researchers & Students:

Researchers: 10; Students: 23

OUR RESEARCH OUTPUT:

16

Projects

21

Publications

30

Presentations

2

Chapters

8

Proceedings

SUMMARY OF RESEARCH ACTIVITIES

Work done on level 4 of Western Centre for Health Research and Education (WCHRE) by Victoria University is predominantly performed by staff and students from the College of Health and Biomedicine; affiliates of the Centre for Chronic Disease (CCD) and the Institute for Sport, Exercise and Active Living (ISEAL). The work aims to understand the basic mechanisms underlying a number of devastating diseases, such as breast and colon cancer, cancer metastasis, anti-cancer chemotherapy side effects, inflammatory bowel disease, muscular dystrophy and ageing.

In addition, pre-clinical investigations aim to investigate the effect of stem cells for the treatment of bowel disease, the use of nutraceuticals to ameliorate muscle atrophy and improve metabolism, which are hallmarks of numerous diseases, and potential pharmacological interventions that will provide proof of concept and pre-clinical data to support future clinical trials.

OUR RESEARCH

The Design of Novel Therapeutics for Metastatic Cancers

Researcher(s): JT Price

Collaborator(s): G McArthur, Peter MacCallum Cancer Centre, J Wilce, Dept of Biochemistry, Monash University, 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 used 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.

The enteric nervous system as a target to reduce gastrointestinal side-effects of anti-cancer chemotherapy

Researcher(s): K Nurgali

Collaborator(s): JC Bornstein, Melbourne University, Dept of Physiology, S Brookes, Flinders University, Discipline of Human Physiology, Raquel Abalo, Universidad Rey Juan Carlos, Dept of Pharmacology and Nutrition, Spain

In this project we propose the highly innovative and significant approach to apply the neuroprotective strategy to reduce toxic effects of chemotherapeutic drugs currently in clinical use for the treatment of colorectal cancer (CRC). The development of a high efficacy treatment without dose limitation and reduced side-effects (notably, GI toxicity) will lead to (i) improved clinical outcomes for CRC patients, (ii) reduced healthcare costs and (iii) improved quality of life of patients undergoing chemotherapy. Moreover, the outcomes of this study will unveil the potential for application of the neuroprotective strategy to a large number of drugs that have GI side-effects.

Mesenchymal stem cells for the treatment of enteric neuropathy associated with Inflammatory Bowel Disease

Researcher(s): K Nurgali & Samy Sakkal

Collaborator(s): Richard Boyd, Monash University, Dept of Anatomy and Developmental Biology, Claude Bernard, Dept of Anatomy and Developmental Biology, R Eri, University of Tasmania, Dept of Human Life Sciences

This is the first study investigating the therapeutic potential and mechanisms of mesenchymal stem cell (MSC)-based treatments to alleviate enteric neuropathy associated with Inflammatory Bowel Disease. This project utilises an animal model of spontaneous chronic colitis. Studies in this model provide invaluable data on the efficacy of the MSC treatment at different stages of the disease and the long-term effects of the treatment, making the study immensely clinically relevant.

Studying the mechanisms underlying neuroprotective effects of MSCs in the models of IBD 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 IBD.

Identifying mTOR-dependent growth-related proteins during mechanically-induced muscle hypertrophy

Researcher(s): CA Goodman

Collaborator(s): Alan Hayes (VU), Paul Gregorevic (Baker-IDI)

The purpose of this study is to identify molecules that are regulated by mTOR in response to an increase in

mechanical loading. The identification of these molecules will help provide a clearer picture of how mTOR regulates muscle mass and help to identify potential drug targets that could be used to prevent muscle wasting and/or increase muscle growth.

Metabolism and muscular dystrophy: forgotten cause and potential saviour

Researcher(s): E Rybalka & A/Prof Alan Hayes

Collaborator(s): Matt Cooke (VU), Christos Stathis (VU), Charles Bonsett (Dystrophy Concepts. USA)

The aim of this study is to establish the role defective metabolism has in the progression of muscular dystrophy and investigate potential nutraceuticals as therapeutic adjuncts. Duchenne muscular dystrophy is a debilitating muscle wasting disease that continues to elude a cure.

There is increasing evidence that metabolism is a major contributor to the progression and severity of the disease. Given impaired metabolism and muscle atrophy are also associated with cancer, diabetes and ageing, understanding the metabolic mechanisms and potential new therapies will be widely applicable.

OUR GRANTS & AWARDS

Project Grant

Dr J Quinn, Prof MT Gillespie and Dr J.T. Price. Does causing stress in a bone cause it to become weaker? The role of cell stress responses in inflammation-associated bone loss NHMRC \$653,558, 2014-2016

International Collaborative Research Grant

A/Prof Alan Hayes, A/Prof Sandor Dorgo & Dr David Scott. Assessing and combating dynapenia in diverse ethnic groups of older adults. Victoria University / University of Texas at El Paso \$40,000, 2015-2016

Near-miss NHMRC project grant

Dr K Nurgali and Prof Crispin Dass. The enteric nervous system as a target to reduce gastrointestinal side-effects of anti-cancer chemotherapy. Victoria University \$26,000, 2015

Near-miss NHMRC project grant

Dr K Nurgali, Dr Rajaraman Eri and Dr Samy Sakkal. Mesenchymal stem cells for the treatment of enteric neuropathy associated with Inflammatory Bowel Disease. Victoria University \$26,000, 2015

Clinical Exercise Science Program Grant

Dr E Rybalka, Dr A Petersen, A/Prof A Hayes, Prof G McConell, Dr K Nurgali, Dr C Goodman, Dr R Blazev, Dr M Sullivan-Gunn, C Timpani, Dr E Hanson. Protective potential of BGP-15, Idefenone, and Nitrate against chemotherapy-induced skeletal muscle atrophy and dysfunction Victoria University \$19,900, 2015-2016

AIMSS Seed Funding

Liberatore, Coffey, Virtue, Sherburn, Skinner, Wiggins, Hight & Hayes. The effect of a structured antenatal exercise class on antenatal depression/anxiety, birth weight, gestation, length of hospital stay and postnatal depression on women diagnosed with antenatal depression/anxiety: A pilot randomised trial Australian Institute of Musculoskeletal Science \$10,000, 2015-2016

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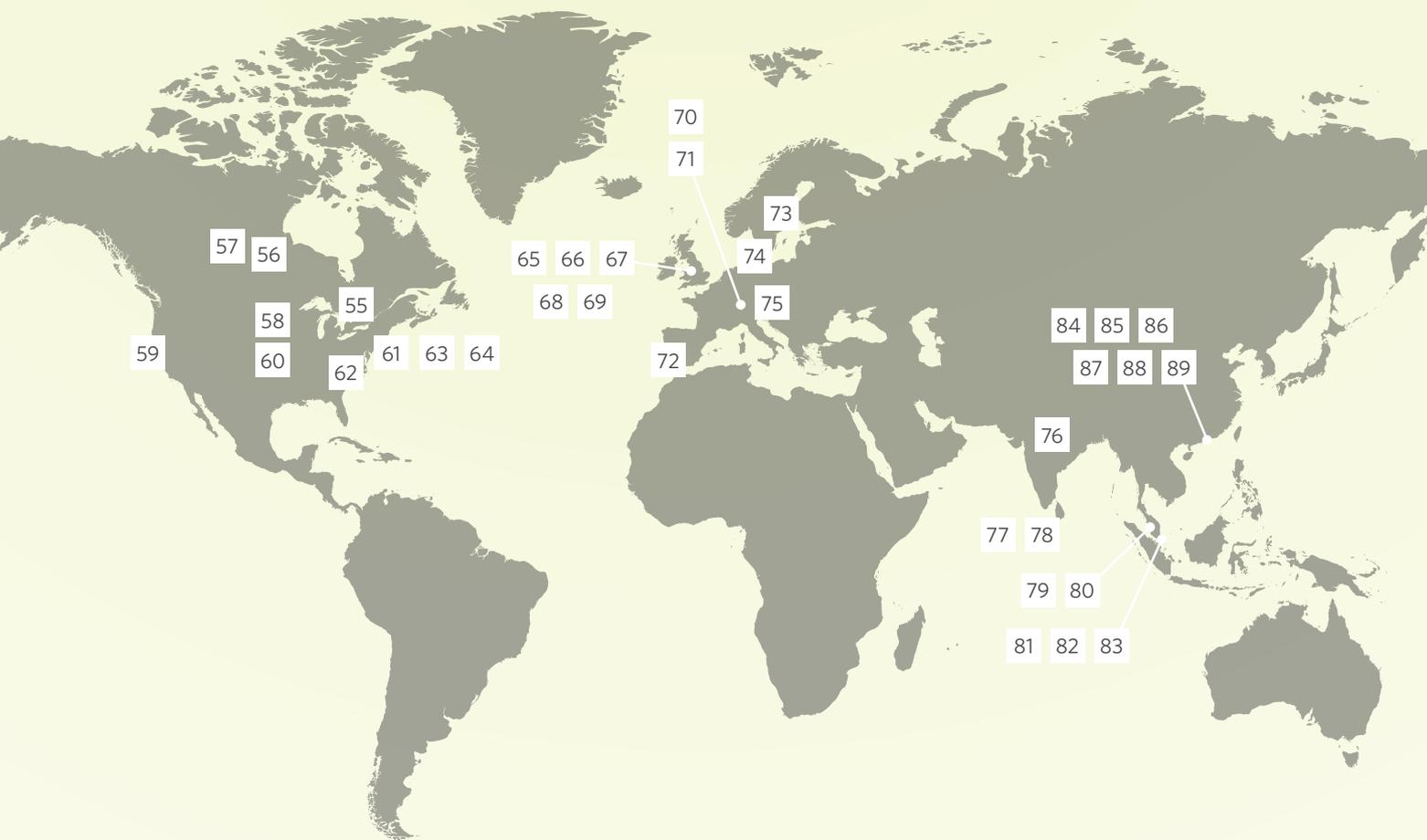
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54. Auckland Bioengineering Institute



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| 62. National Institute of Mental Health (NIMH), Washington DC | 73. Lund University, Sweden | 85. The University of Hong Kong |
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| 65. Nottingham University Hospitals NHS Trust (UK) | 76. Asia Pacific Stroke Association, India | 88. The Chinese University of Hong Kong |
| | 77. National Stroke Association of Sri Lanka | 89. Tuen Mun Hospital, Hong Kong |

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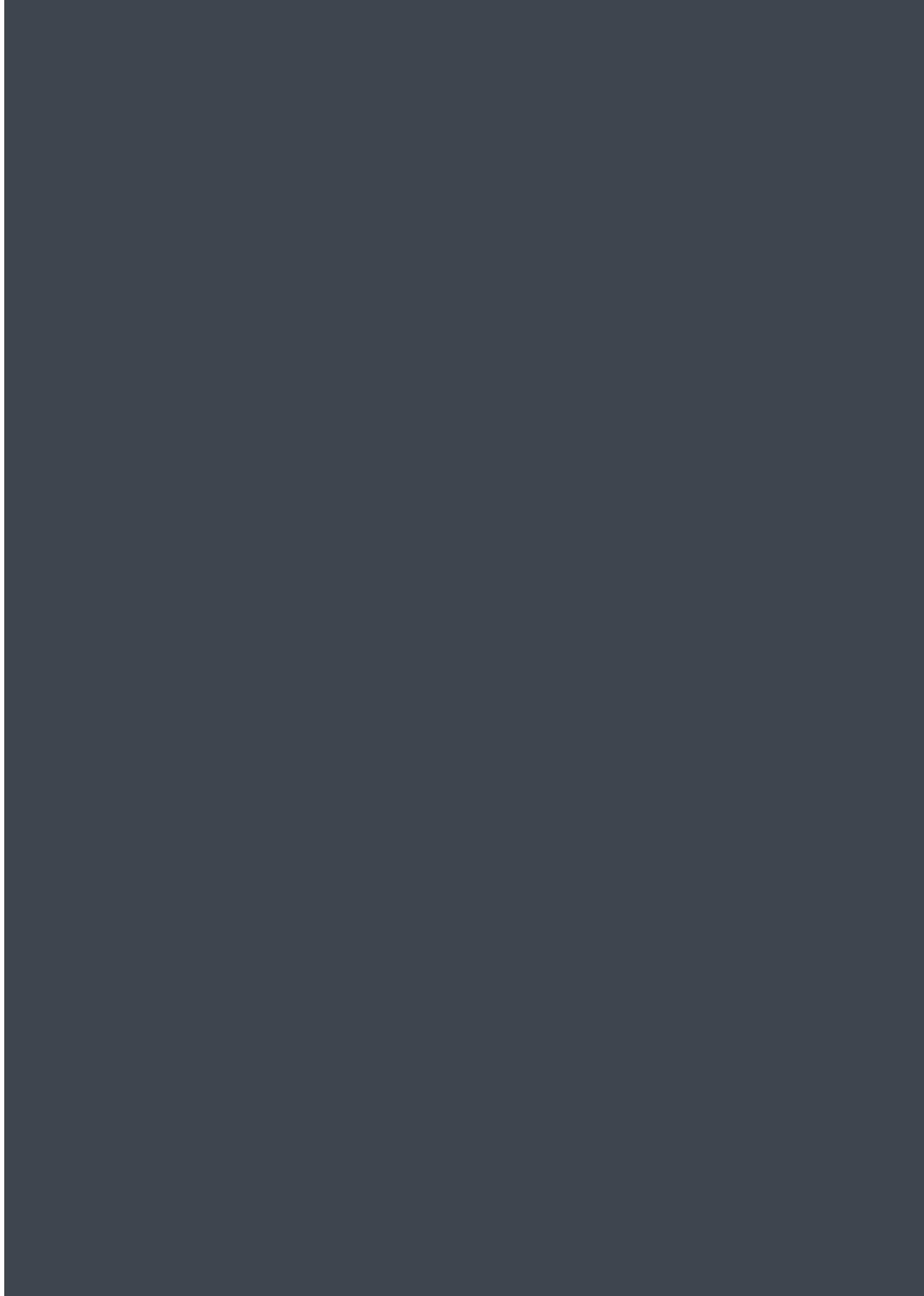
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- Stroke Society of Australasia
- The Cancer Council of Victoria (CCV)
- The Heart Foundation
- The Royal Women's Hospital (RWH)
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- The University of Melbourne
- The Victorian Forensic Paediatric Medical Service (VFPMS)
- University Hospital Geelong
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- Western Region Health Centre

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St Albans VIC 3021
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St Albans VIC 3021
8395 9999

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8345 1333

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9732 8600

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