Centre for Clinical Research in Emergency Medicine

The Centre for Clinical Research in Emergency Medicine (CCREM) is a Centre within the Harry Perkins Institute of Medical Research, established in 2008 with start up and ongoing funding from Royal Perth Hospital, the Royal Perth Hospital Medical Research Foundation, and the Discipline of Emergency Medicine, University of Western Australia. Our research involves collaboration between academic emergency physicians working in the Emergency Department (ED), a team of research nurses recruiting patients presenting to the ED with acute illnesses, and scientists analysing samples in the laboratory using immunological and molecular biological techniques. We are unique in having a wet lab within the ED, which allows for timely specimen preparation. CCREM research approaches include observational studies and laboratory work designed to uncover the mechanisms of disease, and randomised controlled trials designed to improve clinical care. We also endeavour to integrate laboratory and clinical research, using laboratory studies to help us understand the results of clinical trials. CCREM provides opportunities for both laboratory and clinical post-graduate honours and PhD students, and research terms for Emergency Medicine Advanced Trainees at Royal Perth Hospital and Fiona Stanley Hospital.

CCREM staff and associates

Royal Perth Hospital
Clinical Academics
Professor Daniel Fatovich MBBS FACEM PhD, Program Director
Associate Professor Glenn Arendts MBBS MMed FACEM
Professor Simon Brown MBBS PhD FACEM
Dr Stephen Macdonald BSc MBChB DCH FRCP FACEM

Research management and administration
Ellen MacDonald RN, GradDipFN, Clinical Nurse Manager
Cathy Read RN, National Coordinator PSP Study
Sophie Damianopoulos, Administrative Officer
Fiona Seroney, Administrative Officer

Laboratory
Dr Erika Bosio BSc, PhD, Research Fellow (Sept - Dec)
Dr Shelley Stone BSc PhD, Research Fellow (Jan - Aug)
Ms Claire Neil BSc, Research Officer

Research Nurses
Lilian Offer RN, Helen Hamersley RN, Jen Wurmel RN, Kristy Matthews RN, Naomi Sweeting RN, Ann-Marie Woodward RN, Christie Flanagan RN
In February, transition occurred from Fremantle Hospital to Fiona Stanley Hospital, without the associated research infrastructure.

Armada Health Service
Clinical Academic
Dr Stephen Macdonald BSc FBChB DCH MRCP FACEM
Dr David McCutcheon MBBS FACEM

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South West Area Health Service
Clinical Academic
Dr Hugh Mitenko MBBS FACEM

Awards for research excellence
John Gilroy Potts Award, Australasian College for Emergency Medicine

Edward Brentnall Award, Australasian College for Emergency Medicine

Best paper by a Fellow, Australasian College for Emergency Medicine
G Arendts. Results of the ED-CoNeCT RCT.

Royal Perth Hospital, Medical Research Foundation, Research Encouragement Award
Creamer A. Investigating the immune mechanisms of acute human anaphylaxis.

Jean Kahan Memorial Scholarship, Harry Perkins Institute of Medical Research
Smart L. 3 year scholarship.

Translation of research to clinical practice
The NET Trial evaluated the Abbreviated Westmead Post Traumatic Amnesia Score (AWPTAS) in assessing patients post minor head injury. Armadale Hospital was a control site for the study. As a result of local interest after involvement in the study, training of Armadale staff has been arranged by the trial investigators in using AWPTAS to assess these patients. A working group has been established to guide its implementation at Armadale Hospital.
Local
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Smart L. Endocan in sepsis due to community-acquired pneumonia. Medical Research Foundation Research Day, Royal Perth Hospital.
Smart L. Endothelial glycocalyx damage in sepsis. Harry Perkins Student Seminar Day, Harry Perkins Institute of Medical Research.

Annual Research Symposium
Chair: Yusuf Nagree and Daniel Fatovich. 22 October 2015

The Concussion Study
Daniel Fatovich, Professor, Emergency Medicine, University of Western Australia and Emergency Physician, Royal Perth Hospital

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Peter Watson, Registrar, Fiona Stanley Hospital

Notable New Funding
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Ongoing Funding


Sim M, Wong M, (Arendts G. AI). Better access to home hospital for residents in aged care facilities. Western Australian Health Targeted Research Fund. 2014-17 $345,769

Dey I, Love J, Arendts G, Hare M. Emergency Department Delirium Initiative (EDDI): A study targeting the early identification of patients at risk of delirium. Western Australian Health Targeted Research Fund. 2013-16 $260,000

Brown S. Immunological mechanisms and management of critical illness and injury. National Health and Medical Research Council Career Development Fellowship. 2012-2015 $76,000 per annum


Conferences

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New Research Projects

**Coordinated by CCREM**

**Identification of biomarkers that correlate with clinical features and outcomes following concussion (Concussion)**
Clinical data, imaging, neuropsychological testing and blood samples of patients with concussion will be correlated with outcomes. This may lead to the development of improved tools for diagnosis and prognosis.

**Priorities in Emergency Research Studies – Patient EXpectations (PERSPEX)**
A survey of 400 emergency department patients between Royal Perth Hospital and Armadale Health Service, to determine their priorities for emergency department research. Patient priorities for this area have not been previously published.

**Collaborations - patient recruitment at CCREM sites, but coordinated by other centres or units**

**The RESPOND Project**
A multi-centre randomised controlled trial of the RESPOND program to reduce secondary falls in older people presenting to the emergency department with a fall (Monash University).

**Preferences for the organisation of acute health services for older people (PROSpER)**
Preferences for providing acute medical care for people living in residential aged care facilities (University of Sydney).

Ongoing Research Projects

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**Assessing Risk in Sepsis using Tissue Oxygen Saturation (ARISTOS)**
A clinical observational study examining the use of near infrared spectroscopy derived tissue oxygen saturation at the bedside in emergency department patients with sepsis to determine the utility of this measure to predict organ dysfunction.

**Critical illness and shock study (CISS)**
A prospective study of patients presenting to the emergency department with critical illness or injury that compromise the cardiovascular and/or respiratory systems. Currently focussing on the acute immune response to anaphylaxis and septic shock.

**Emergency Department Complex Needs Coordination Team (ED CoNeCT)**
A randomised trial of patient centred intervention to reduce re-presentsations of older people at risk after discharge from the emergency department.

**Emergency Department Delirium Identification (EDDI) trial**
A clinical trial of a new delirium identification tool and early warning system.
Primary Spontaneous Pneumothorax Study
An Australasian randomised controlled trial of conservative management with observation only versus interventional (aspiration and/or insertion of chest drain) treatment of primary spontaneous pneumothorax.

Improving quality of life in residential aged care
A randomised controlled trial to reduce emergency department transfers and improve quality of life in residential aged care facilities.

Sepsis/Saline Trial
A pilot randomised trial of hypertonic saline versus normal saline as the initial bolus fluid in patients with infectious systemic inflammatory response syndrome.

Emergency Department Anaphylaxis Studies (EDA II and III)
(i) A randomised controlled trial of intramuscular versus intravenous adrenaline during anaphylaxis (ii) A study of gene activation and biochemical mediators of anaphylaxis.

Chest Pain Registry
The chest pain registry is a longitudinal study of patients presenting to the emergency department with chest pain and is looking at medium term outcomes of these patients. Co-ordinated by CREM partner, Fremantle Hospital Emergency Medicine Research.

Collaborations - patient recruitment at CREM sites, but coordinated by other centres or units
The prophylactic hypothermia trial to lessen traumatic brain injury (POLAR). This trial will investigate whether early and sustained cooling of patients with severe traumatic brain injury is associated with better survival and less disability compared to standard care in which patients are maintained at normal temperature (Australian and New Zealand Intensive Care Society Clinical Trials Group).

Australian Snakebite Project and Fresh Frozen Plasma Study (ASP-FFP)
A national multicentre prospective cohort study of snake envenoming in Australia (Dr G Isbister, University of Newcastle, Calvary Mater Hospital).

The FluCAN Surveillance System
FluCAN is the first system in Australia to collect high quality and reliable data on hospitalised acute respiratory disease and other influenza related admissions in real time. Royal Perth Hospital participates as the sentinel site for Western Australia. (Dr A Cheng, Infectious Diseases Unit, Alfred Hospital).

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PhD Students
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Ms Abbie Creamer BSc
Dr Lisa Smart BVSc (Hons) DipACVECC

Fiona Stanley Hospital
Clinical Academics
Adj Professor Yusuf Nagree MBBS GradDipCompSci FACEM MBA(E)
Associate Professor Glenn Arendts MBBS MMed FACEM

Research Nurses
Alannah Cooper RN (commenced Dec), Elouise Constantine RN (Jan-Nov)

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**Contacts**

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Department of Emergency Medicine  
Royal Perth Hospital Wellington Street Campus  
Perth Western Australia 6000 Australia  
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Harry Perkins Institute of Medical Research  
Level 6, MRF Building Rear 50 Murray Street  
Perth Western Australia 6000 Australia  
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**Delivering a Healthy WA**