Welcome to the Austin Hospital Emergency Department’s 2014 Research Report. Once again, we have had a very successful and productive year. A number of units within the department have expanded their research efforts including our Toxicology Unit led by Dr Shaun Greene, our Quality Unit led by Dr Michael Yeoh and our Education Unit led by Victor Lee.

In February 2014, we welcomed our first University of Melbourne Scholarly Selective (SS) students: Bonnia Liu, Justin Evans, Sophia Ling and Xien Liversedge. Each student had spent several months in late 2013 developing their research protocols and then joined us in the ED to collect data in 2014. Their projects examined elderly patients, vapocoolant spray, workplace chemical exposures and paediatric pain, respectively, and each was highly successful. Testimony to the quality of their work, each was able to present at the Annual Scientific Meeting of the Australasian College for Emergency Medicine – three oral and one poster presentation. This was a splendid opportunity for these undergraduates to present on the national stage.

In February of 2015, we will welcome four new SS students. Juen Ding will examine the use of alternative therapies by paediatric patients. We are collaborating with the Royal Children’s Hospital and Monash Medical Centre on this project. Olivia Grover Johnson will examine the patient experience with procedural sedation, in collaboration with the Department of Anaesthesia. Aadith Ashok will explore the utility of laboratory investigations in the management of supraventricular tachycardia. Marina Lee will explore the importance of vital sign monitoring in the ED. I am sure all our ED staff will make our new students most welcome.

I would like to congratulate all staff who have had successful research endeavours during 2014 and thank those who assisted and facilitated this good work. We can look forward to a successful and stimulating 2015 and beyond.
2014 HIGHLIGHTS

‘Best Paper: Evidence into Action’ award of the Emergency Care Institute
It was an honour for Jo Richardson and David Taylor to receive this award at the ACEM Scientific Meeting in December 2014. It was in recognition of the project entitled ‘Best-practice Pain Management in the ED: a multi-centre, cluster-randomised, controlled, clinical intervention trial.’ that was led by the Austin ED.

‘IV midazolam-droperidol (combination), droperidol (only) or olanzapine (only) for the acutely agitated patient: a multi-centre, randomised, double-blind, controlled trial’ (The SOOTHE Trial)
The Austin ED is lead site for this trial and is collaborating with the Royal Melbourne and St Vincent’s EDs, and Monash and Melbourne Universities. It is the third of the collaboration’s drug trials in the management of the acutely agitated ED patient and we are recognised as world leaders in this area. This patient group is difficult to examine in clinical trials. We are fortunate in Victoria to have a State Legislation and a Research Ethics framework that allows patient consent to be waived. Consent issues have stifled research in this important area in many other parts of the world. After three months of data collection we have enrolled over 100 patients, well on the way to the required sample size of 340.

‘Intramuscular olanzapine versus haloperidol or midazolam for the management of acute agitation in the emergency department – a multicentre randomised clinical trial.
This trial is being run in Hong Kong by Dr Esther Chan. Esther is well known to many of us and was one of our ED pharmacists for several years. Esther undertook the Code Grey study as part of her PhD studies. She is now employed as an Assistant Professor at the University of Hong Kong. The Austin is collaborating in this trial as well as another that is exploring oral drug sedation regimens. It is very pleasing to see one of our PhD students being so successful in her overseas work.

Paediatric Research
In 2014, the Austin led two paediatric projects in collaboration with the Sunshine, Dandenong and the Royal Children’s Hospital and the Monash Medical Centre. These projects explored Complementary and Alternative Medicine use by children and the administration of off-label medications to children in the ED. It is pleasing to report that these projects allowed two advanced paediatric trainees (Paul Joffe and Reetika Dhir) to fulfil their Fellowship research training requirements. The success of these projects will substantially support our application for inclusion within the national PREDICT paediatric research group. In 2015, the Austin will again lead a collaboration that will explore Alternative Therapies (chiropractic, osteopathy, homeopathy etc.) among ED paediatric patients.

‘Accuracy of Cone Beam CT for scaphoid trauma compared to X-Ray and MRI’
Austin Health acquired a ‘cone beam’ CT scanning machine in 2014. This allows for focussed CT scanning of limited areas of the body, thus avoiding substantial radiation exposure. We are collaborating with the Radiology Department to determine the value of the cone beam CT in the diagnosis of scaphoid fractures. Our enrolment numbers are slowly increasing and we look forward to some exciting outcomes.
‘The Health of Scuba Divers who continue to dive with medical co-morbidities’

For many years, potential scuba divers were screened for medical co-morbidities that might impact upon their diving safety. Despite an absence of evidence, many divers were excluded from the sport as a result. More recently, the medical screening has moved from the traditional ‘yes/no, you can/cannot dive’ towards a personalised ‘quantification of risk’. As a result, there is now an increasing number of divers with a range of medical conditions. Many of these divers are members of the Diver Alert Network (DAN), an organisation that provides education and insurance for scuba divers. In collaboration with DAN, we now completed enrolment in a suite of projects that aimed to evaluate the absolute risk of diving with medical co-morbidities.

National and International Collaborations

Through membership of the ACEM Clinical Trials Group and the Research Committee of the International Federation for Emergency Medicine, the Austin leads a range of collaborative projects. At the national level, these have included a prospective observation study of the management of acutely agitated patients, determination of research priorities in emergency medicine, and pain management initiatives. At the international level, we are leading projects that will examine the direction and extent of selection bias in convenience sampling, ED workplace manpower distribution and the utility of clinical investigations.

International Conference for Emergency Medicine (ICEM)

This conference was held in Hong Kong in June of 2014 and our ED was heavily involved. The results of over 10 projects, that the Austin has either led or contributed to, were presented.
ARTICLES PUBLISHED IN 2014 BY AUSTIN ED STAFF


Rotella JA. Are your airway skills ACE?. Life in the Fast Lane http://lifeinthefastlane.com/airway-skills-ace/ 2014


Wong A, Vohra R. GETUP, American College of Medical Toxicology Newsletter February and June 2014, http://www.acmt.net/newsletter.html

Wong A, Koutsogiannis Z, Greene S. GETUP, Asian Pacific Association Medical Toxicology Newsletter February and July 2014


ARTICLES ACCEPTED FOR PUBLICATION – In press


PUBLISHED ABSTRACTS


Evans J, Taylor DMcD, Hurrens F, Yeoh M, Howden B, Ward P. ‘The effects of vapocoolant spray on skin sterility prior to intravenous cannulation’
- Austin Health Research Week Abstracts, October 2014. TUES92, p127
- ACEM, Annual Scientific Meeting, Melbourne, December 2014


Ling S, Taylor DMcD, Robinson J. ‘The Nature and Outcomes of Workplace Chemical and Toxins Exposures as reported to the Victorian Poisons Information Centre.’
- Austin Health Research Week Abstracts, October 2014. TUES93, page 128
- ACEM, Annual Scientific Meeting, Melbourne, December 2014

Lippmann J, Taylor DMcD, Mitchell S. ‘Important medical co-morbidities: their impact on the practices of recreational scuba divers’
- Austin Health Research Week Abstracts, October 2014. TUES89, page 124
- ACEM, Annual Scientific Meeting, Melbourne, December 2014

Liu B, Taylor DMcD, Liversidge XL, Ling S. ‘Identifying the special psychological needs of elderly patients in the emergency department’
- Austin Health Research Week Abstracts, October 2014. TUES91, page 126
- ACEM, Annual Scientific Meeting, Melbourne, December 2014

Liversidge XL, Taylor DMcD, Liu B, Ling S, Taylor SE. ‘The association between provision of 'adequate analgesia' to emergency department paediatric patients and parent satisfaction’
- Austin Health Research Week Abstracts, October 2014. TUES90, page 125
- ACEM, Annual Scientific Meeting, Melbourne, December 2014


Smith G, Broek A, Morgans A, Taylor DMcD, Cameron P. ‘Comparison of the Valsalva manoeuvre and human dive reflex to identify maximum vagal tone generation, and examination of the impact of postural variation within each manoeuvre’ 15th ICEM, Hong Kong, June 2014. p196

Taylor D McD. The TARGET Pain trial - painful for whom, the patients or investigators? ACEM, Annual Scientific Meeting, Melbourne, December 2014

  - 15th ICEM, Hong Kong, June 2014. p209

  - 15th ICEM, Hong Kong, June 2014. p209

  - ACEM, Annual Scientific Meeting, Melbourne, December 2014
  - 15th ICEM, Hong Kong, June 2014. p207
  - Austin Health Research Week, October 2014. WED JLLT, page 198

Taylor D McD. ‘Sedation of the acutely agitated patient: an update on mono versus combination therapies and intravenous and intramuscular routes’
  15th ICEM, Hong Kong, June 2014. p50

Taylor D McD. ‘A new approach to pain management in the Emergency Department’
  15th ICEM, Hong Kong, June 2014. p81

Thom O, Cooney H, Taylor D, Kasza J, Fraser J. ‘Bolus fluid resuscitation in medical Emergency Department patients – limited impact after the initial bolus’
  15th ICEM, Hong Kong, June 2014. p189

Thom O for the ACEM Clinical Trials Group. ‘Defining clinical trial priorities - the experience of ACEM clinical trials group’
  15th International Conference on Emergency Medicine, Hong Kong, June 2014


Wong A, Graudins A, Kerr F, Greene SL. Paracetamol Toxicity: what are the implications of a change in Australian guidelines? Emergency Medicine Australasia

**CONFERENCE/SEMINAR ORAL PRESENTATIONS BY ED STAFF**

**Evans J.** ‘The effects of vapocoolant spray on skin sterility prior to intravenous cannulation’ ACEM, ASM, Melbourne, December 2014

**Gelperowicz P.** ‘The role modelling in Emergency Medicine’. ACEM, ASM, Melbourne, December 2014

**Greene SL.** ‘Party Drugs’ ANZICS/ACCCN 2014 Annual Scientific Meeting, Melbourne October 2014

**Greene SL.** ‘New psychoactive substances. The rise of the new amphetamines.’ Australian Drugs Conference, September 2014.


**Greene SL.** ‘Cannabinoid receptor agonists’ ACEM, ASM, Melbourne, December 2014

**Joules E.** ‘Evidence based management of Atrial Fibrillation in the Austin ED’. Victorian Allied Health Conference in Melbourne, 2014

**Joules E.** ‘Management of AF in the Austin ED. ECIICN Forum, Melbourne, February, 2014

**Lee V** ‘Interprofessional Emergency Department Simulation - An evaluation of nursing and medical perspectives.’ ANZAHPE 14 Conference

**Ling S.** ‘The Nature and Outcomes of Workplace Chemical and Toxins Exposures as reported to the Victorian Poisons Information Centre’ ACEM, ASM, Melbourne, December 2014

**Liversidge X.** ‘The association between provision of ’adequate analgesia’ to emergency department paediatric patients and parent satisfaction’ ACEM, ASM, Melbourne, December 2014

**Rotella JA.** ‘Diversity in Medicine’ panellist. University of Melbourne Medical School MD Student Conference. July 2014


**Taylor D.** ‘The TARGET Pain trial - painful for whom, the patients or investigators?’ ACEM, Annual Scientific Meeting, Melbourne, December 2014

**Taylor D.** ‘Best-practice Pain Management in the ED: a multi-centre, cluster-randomised, controlled, clinical intervention trial’

- ACEM, ASM, Melbourne, December 2014 (Best Paper session)
- 15th International Conference on Emergency Medicine, Hong Kong, June 2014
Taylor D. ‘Comparison of the Valsalva Manoeuvre and Human Dive Reflex to identify maximum vagal tone generation, and examination of the impact of postural variation within each manoeuvre’  
15th International Conference on Emergency Medicine, Hong Kong, June 2014

Taylor D. ‘Sedation of the acutely agitated patient: an update on mono versus combination therapies and intravenous and intramuscular routes’  
15th International Conference on Emergency Medicine, Hong Kong, June 2014

Taylor D. ‘A new approach to pain management in the Emergency Department’  
15th International Conference on Emergency Medicine, Hong Kong, June 2014

Wong A. GETUP, ACMT international meeting, Phoenix, USA, March 2014.

Wong A. The Global Educational Toxicology Uniting Project (Invited), Toxicology and Poisons Network Australasia Conference, Newcastle, Australia, May 2014.


Toxicology cases + GETUP, ACEM conference, Melbourne, Australia, Dec 2014.
CONFERENCE/SEMINAR POSTER PRESENTATIONS BY ED STAFF

  • 15th International Conference on Emergency Medicine, Hong Kong, June 2014
  • ACEM, Annual Scientific Meeting, Melbourne, December 2014

  • University of Melbourne Medical Student Convention. June 2014
  • Austin Health Research Week, October 2014

‘Medication costs in an emergency department.’ Harding AM, Welton CG, Yeoh M
  • Medicines Management, 40th SHPA National Conference, September 2014
  • Austin Hospital Research Week Conference, October 2014


‘The Nature and Outcomes of Workplace Chemical and Toxins Exposures as reported to the Victorian Poisons Information Centre’ Ling S, Taylor DMcD, Robinson J.
  • University of Melbourne Medical Student Convention. June 2014
  • Austin Health Research Week, October 2014

‘Important medical co-morbidities: their impact on the practices of recreational scuba divers’ Lippmann J, Taylor DMcD, Mitchell S
  • ACEM, Annual Scientific Meeting, Melbourne, December 2014
  • Austin Health Research Week, October 2014

‘Identifying the special psychological needs of elderly patients in the emergency department’ Liu B, Taylor DMcD, Liversidge XL, Ling S
  • ACEM, Annual Scientific Meeting, Melbourne, December 2014
  • University of Melbourne Medical Student Convention. June 2014
  • Austin Health Research Week, October 2014

‘The association between provision of 'adequate analgesia' to emergency department paediatric patients and parent satisfaction’
Liversidge XL, Taylor DMcD, Liu B, Ling S, Taylor SE
  • University of Melbourne Medical Student Convention. June 2014
  • Austin Health Research Week, October 2014

‘Evaluation of an Emergency Department interprofessional simulation program: What are the behavioural outcome benefits for ED doctors and nurses?’ Rotella JA,

‘Prehospital management of supraventricular tachycardia in Victoria, Australia: safety and effectiveness of therapies.’ Smith G, Taylor DMcD, Morgans A, Cameron P. 15th International Conference on Emergency Medicine, Hong Kong, June 2014

‘Paediatric Emergency Department patients administered a high rate of off-label drugs’ Taylor DMcD, Joffe P, Taylor S, Jones A, Cheek J, Craig S, Graudins A, Dhir R, Babl F, Krieser D. 15th International Conference for Emergency Medicine, Hong Kong, June 2014

‘Best-practice Pain Management in the ED: a multi-centre, cluster-randomised, controlled, clinical intervention trial’
- Townsville Hospital Research Week, October 2014
- Centre for Clinical Research, Emergency Medicine. Royal Perth Hospital, Oct 2014
- Nambour General Hospital Research Day, 2014

‘Correlations between patient-assessed shoulder instability scale scores’


PRIZES

Taylor D, Richardson J

Best Paper: Evidence into Action award The 2014 Emergency Care Institute
Awarded at the ACEM, ASM, Melbourne, December 2014 after the Best Paper session
ONGOING RESEARCH PROJECTS

• A Multicentre, Randomised Trial of Acupuncture Alone, Acupuncture Plus Pharmacotherapy and Pharmacotherapy Alone in Patients Presenting to Emergency Departments with Acute Low Back Pain, Migraine and Ankle Sprain.

• Best-practice Pain Management in the ED: a multi-centre, cluster-randomised, controlled, clinical intervention trial

• IV midazolam-droperidol (combination), droperidol (only) or olanzapine (only) for the acutely agitated patient: a multi-centre, randomised, double-blind, controlled trial – the SOOTHE trial

• A Pilot, Randomised, Blinded, Safety and Biochemical and Physiological Efficacy Study of Terlipressin vs. Placebo in Hypotensive Sepsis

• Intramuscular olanzapine versus haloperidol or midazolam for the management of acute agitation in the emergency department – a multicentre randomised clinical trial.

• Towards improving safety and minimising risk: Development, validation and implementation of a medication-related problem risk screening tool for patients presenting to emergency departments.

• The patient experience with procedural sedation in the emergency department

• The nature, direction and extent of selection bias associated with convenience sampling in emergency medicine research

• A pilot trial of restricted volume fluid resuscitation in septic shock.

• Risk Factors Associated with Adverse Events among Patients Sedated for Acute Agitation in Emergency Departments

• Determining the useful laboratory investigations in the management of Supraventricular Tachycardia

• Variables associated with receipt of analgesia and prolonged times to analgesia among Emergency Department patients

• The Importance of Vital Sign Monitoring in the Emergency Department

• The effect of vapocoolant spray on skin sterility prior to intravenous cannulation

• Patient satisfaction with their pain management: The effect of provision of pain management advice and pain score recording
• Variables associated with Incidents and Adverse Events in the Emergency Department

• The nature and outcome of chemical exposure in the workplace reported to the Victorian Poisons Information Centre

• Management of acute agitation in the Emergency Department: A survey of practice in Hong Kong

• The association between provision of 'adequate analgesia' to emergency department paediatric patients and parent satisfaction

• Identifying the special needs of psychological elderly patients in the emergency department

• Hypotension and outcomes in the Emergency Department

• Variables associated with receipt of analgesia and prolonged times to analgesia among Emergency Department patients

• Accuracy of QT Interval measurements on electronic ‘smart’ devices

• Accuracy of doctors’ measurement of ECG based conduction intervals reported to a Poison Information Centre following overdose with cardiotoxic drugs

• The use of complementary and alternative medicines among paediatric emergency department patients

• Off label drug administration to paediatric ED patients – a multi-centre observational study

• Medical conditions among Australasian scuba divers

• The introduction of a chloride physiologic fluid environment in the ED, ICU and OTs and regular audit of the effect of this change

• Evaluation of the Shoulder and Subscapularis function post Latarjet Procedure

• The use of Alternative Therapies among Paediatric Emergency Department Patients

• Incidence and risk factors of adverse events related with the pharmacological treatment of acute agitation in the Emergency Department

• Accuracy of Cone Beam CT for Scaphoid Trauma compared to Plain X-Ray and MRI

• Informed Consent for Emergency Department research projects
RESEARCH COLLABORATION PARTNERS

- Diver Alert Network (Asia-Pacific)
- Metropolitan Ambulance Victoria

- Austin Health departments
  - Pharmacy
  - Anaesthesia
  - Clinical Pharmacology
  - Intensive Care
  - Microbiology
  - Radiology
  - Victorian Poisons Information Centre

- Overseas Hospitals
  - St Thomas’s Hospital London
  - King’s College Hospital, London
  - Hamad General Hospital, Qatar

- Universities
  - University of Hong Kong
  - University of Melbourne
  - Monash University
  - La Trobe University
  - Deakin University

- Australian Hospitals
  - The Avenue Hospital
  - Royal Melbourne Hospital
  - St Vincent’s Hospital
  - Alfred Hospital
  - Monash Medical Centre
  - The Royal Children’s Hospital
  - Sunshine Hospital
  - Dandenong Hospital
  - Casey Hospital
  - Liverpool Hospital (NSW)
  - Prince of Wales Hospital (NSW)
  - The Gold Coast Hospital (QLD)
  - The Mater Hospital (QLD)
  - The Townsville Hospital (QLD)
  - Royal Brisbane and Women’s Hospital (QLD)
  - Princess Alexandra Hospital (QLD)
  - Prince Charles Hospital (QLD)
  - Royal Perth Hospital (WA)
  - Armadale Hospital (WA)
  - Bunbury Hospital (WA)