Austin Hospital Emergency Department

Research Report 2012

Compiled by

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Welcome to the Austin Hospital Emergency Department’s 2012 Research Report. Last year, I reported a continuing expansion in the range of our ED staff contributing to the department’s academic output. Our Toxicology Unit continues to be very active in publication and presentation of research initiatives. Dr Michael Yeoh, head of the ED Quality Unit, has begun a number of projects that, while certainly useful for our internal use, are also likely to result in highly publishable reports. It is also pleasing to see a growing interest in research among other disciples within the ED including physiotherapy, care coordination and pharmacy.

I am pleased to report that our strong record in publication and presentation continues to improve. Not only is there a growing interest in research within the ED, it is clear that the research undertaken has increased in complexity and impact. This is evident in the prizes that have been awarded, our publications in prestigious journals and the way that our research findings have or are likely to affect changes in clinical practice.

Austin Health is increasingly poised to contribute to the development of Emergency Medicine research both nationally and internationally. We are now represented on the Boards of the Queensland Emergency Medicine Research Foundation (QEMRF) and the Australasian College for Emergency Medicine (ACEM) Foundation. Both Foundations are important bodies that are defining emergency medicine research in Australasia and are developing funding and other support structures. Austin Health staff also serve as Chair of the ACEM Clinical Trials Group and as Deputy Chair of the International Federation for Emergency Medicine (IFEM) Research Committee.

It is also clear that our ED’s sedation research is being increasingly recognised at the international level. In 2011, the Austin led a national project that explored various aspects of procedural sedation. This work resulted in a suite of publications in *Emerg Med Australas*. In 2012, we published our ‘Code Grey’ trial in the prestigious *Annals Emerg Med*. This multi-centre, randomised clinical trial was also led by the Austin and comprised part of Dr Esther Chan’s PhD studies. Six other publications also relating to the sedation of the acutely agitated ED patient stemmed from Esther’s excellent work. We are now expanding our sedation trials and are collaborating in the development of sedation trials in Hong Kong, Qatar and Australia. Funding applications have been lodged for the Hong Kong and Qatar trials and we will lodge an NHMRC application for the Australian trial next week. Our collaboration is particularly hopeful about securing this NHMRC funding as our last two sedation trials were supported by the NHMRC.
2012 HIGHLIGHTS

The Code Grey study
As mentioned above, we published this trial in the prestigious *Annals Emerg Med*. The paper was entitled ‘Intravenous droperidol or olanzapine as adjuncts to midazolam for the acutely agitated patient: a multi-centre, randomised, double-blind, placebo-controlled clinical trial’. We showed that combination drug regimens (midazolam/droperidol and midazolam/olanzapine) are greatly superior to midazolam alone (common practice). The trial was funded by an NHMRC project grant, was awarded the ACEM Morson-Taylor Research Award for the best proposed protocol and was runner up in the Best Paper by a Fellow at the ACEM Annual Scientific Meeting in 2011. It is notable that the findings have resulted in changes to clinical sedation guidelines including the popular *Therapeutic Guidelines* (2013).

The Choking Resuscitation trial
Recently, the Australian Resuscitation Council removed from its guidelines the use of lateral chest thrusts for the removal of foreign bodies in the upper airway. This was due to a lack of evidence as to the efficacy of this technique. In collaboration with the Diver Alert Network, the Austin Health Respiratory Medicine department, Metropolitan Ambulance Victoria and the University of Melbourne, we undertook an ambitious trial using a pig model. The results clearly demonstrated that the lateral chest thrust is the superior technique. In 2012, we published our findings in the prestigious *Resuscitation* journal. The paper was entitled ‘Lateral versus anterior thoracic thrusts in the generation of airway pressure in anaesthetised pigs’ and has already attracted considerable interest and comment. We expect that the findings will change the guidelines for management of patients with an obstructed upper airway. The project won the Best Paper by a Fellow at the ACEM Annual Scientific Meeting in 2012 and was runner up in the Best Respiratory Poster section at Austin Research Week in 2012.

ED Pain Management trial
In 2011, we completed the second of our projects into the development of a clinical target that ED staff can aim for in order to maximise patient satisfaction with their pain management. The findings were published in *Acad Emerg Med* with the paper entitled ‘Variables associated with a high level of patient satisfaction with their pain management’. Our two Pain Management studies have been extremely useful in informing the development of our proposed TARGET Pain trial (see below).
MAJOR ONGOING AND PLANNED ACTIVITIES

‘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 will lead this trial and will collaborate with the Royal Melbourne and St Vincent’s EDs. It is the third of our collaboration’s trials in the management of the acutely agitated ED patient. This patient group is difficult to examine in clinical trials. We are fortunate in Victoria to have a State Legislation and 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.

‘A randomized clinical trial comparing intravenous medications for the management of acute agitation in the emergency department of Hamad Medical Corporation, Qatar’
This is the second of our proposed trials of drug sedation for the acutely agitated patient. We have been invited to collaborate in this trial and share our expertise and experience in this area.

‘Intramuscular olanzapine versus haloperidol or midazolam for the management of acute agitation in the emergency department – a multicentre randomised clinical trial.
This is the third of our sedation trials and will be 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.

‘Best-practice pain management in the ED: a multi-centre controlled, intervention trial.’ (The TARGET Pain trial)
The Austin ED will lead a collaboration of EDs across Australia in examining a clinical tool expected to significantly improve pain management in the ED. This tool was developed by our earlier two pain management studies. This study won the ACEM Morson-Taylor Research Award in 2011. At present, we are waiting for final ethics approval at 3 sites before beginning data collection.

Paediatric studies:
As a forerunner to joining the Australian PREDICT group that undertakes paediatric research in EDs, the Austin has set up and is leading two paediatric studies:

- ‘The use of Complementary and Alternative Medicines among Paediatric Emergency Department Patients’
- ‘Off-label medications administered or prescribed in Paediatric Emergency Departments’

In these studies, we are collaborating with the Royal Children’s, Sunshine, Monash Medical Centre, Dandenong and Casey Hospitals. Not only will these projects be useful for our paediatric research experience and to establish a sound collaboration, they are each being used by two paediatric trainees to fulfil their research requirements before fellowship.
RESEARCH STAFF NEWS

Meagan Ward commenced work in our Research and Quality Units in 2011. We will be pleased to welcome Meagan back to work in a few weeks at the completion of her maternity leave. Congratulations, Meagan, on your little red headed boy.

We would like to congratulate Drs Shona McIntyre and Justin Curran who have both worked as registrars in our ED. In 2012, both published papers based on the research that they undertook to fulfil the ACEM research training requirement.

We would also like to congratulate Dr Michael Yeoh on his appointment as Section Editor (Review Articles) for *Emergency Medicine Australasia*. For a number of years now, Michael has written the ‘In other journals’ section of our journal and is highly skilled at summarising and critiquing emergency medicine articles from around the world. I am sure Michael will make a fine section editor.

In mid-2011, the Advanced Medical Science program was suspended as a result of the change in the University of Melbourne medical degree from an under- to a postgraduate degree. During this program, a large number of medical students spent a year undertaking research in our ED. A modified AMS program, the Scholarly Selective program, will commence in the second half of 2013 and we will, once again, support the work of a number of students. I have interviewed a number of interested students already and there is considerable interest in the ED for this program.

Finally, I would like to congratulate all staff who have had successful research endeavours during 2012 and thank those who assisted and facilitated this good work. We can look forward to a stimulating 2013 and beyond.

D. Taylor
ARTICLES PUBLISHED IN 2012 BY AUSTIN ED STAFF


Davidson A, Taylor DMcD, Babl FE. A Primer for Clinical Researchers in the Emergency Department, Part III: How To Write a Paper. 
Emerg Med Australas 2012; 24: 357-362


Khan M, Taylor DMcD, Taylor SE, Jao K, Chae J, Harding AM, Mitchell E. Complementary and alternative medicine use is associated with important clinical adverse events among patients on warfarin. (reprinted with permission) Aust J Pharm 2012; 90: 81-85


Yeoh M. ‘From other journals’ Emerg Med Australas 2012; 24: 120-121
Yeoh M. ‘From other journals’ Emerg Med Australas 2012; 24: 213-214
Yeoh M. ‘From other journals’ Emerg Med Australas 2012; 24: 584-585
Yeoh M. ‘From other journals’ Emerg Med Australas 2012; 24: 688-689
ARTICLES ACCEPTED – In press

Wong A, Koutsogiannis Z, Greene S, McIntyre S. A case of haemolysis and methaemoglobinemia following amyl nitrate use in an individual with G6PD deficiency. Accepted Acute Journal Medicine In Press

Crane J, Delany C. Physiotherapists in emergency departments: responsibilities, accountability and education. Accepted Physiotherapy In press


Smith GD, Dyson K, Taylor DMcD, Morgans A, Holdgate A, Cantwell K. Effectiveness of the Valsalva Manoeuvre for reversion of supra-ventricular tachycardia in the prehospital and emergency medicine settings. Accepted Cochrane Collaboration Library In press

Smith G, Taylor DMcD, Morgans A, Cameron P. Prehospital synchronised electrical cardioversion of a poorly perfused AVNRT patient by paramedics. Accepted Prehosp Disast Med In press
PUBLISHED ABSTRACTS

- *Resuscitation* [http://dx.doi.org/10.1016/j.resuscitation.2012.11.024](http://dx.doi.org/10.1016/j.resuscitation.2012.11.024)
- Austin Health Research Week 2012 – Abstract no. 403
- Proceedings of the 17th Congress of the Asian Pacific Society of Respirology, Hong Kong, December, 2012


Taylor SE, Taylor DMcD, Jao K, Goh S. ‘A clinical intervention trial of nurse-initiated analgesia for paediatric patients in the emergency department.’
Austin Health Research Week, October 2012 – Abstract no. 325

Proceedings of:
- European Shoulder and Elbow Society ASM, September 2012 (Dubrovnik)
- Australian Orthopaedic Association ASM, October 2012 (Sydney)
- Shoulder and Elbow Society of Australia Biennial ASM, October 2012 (Brisbane)

Taylor D, Garewal D, Evans M. Correlation of shoulder stability scales following the Latarjet Procedure
Proceedings of:
- European Shoulder and Elbow Society ASM, September 2012 (Dubrovnik)
- Australian Orthopaedic Association ASM, October 2012 (Sydney)
- Shoulder and Elbow Society of Australia Biennial ASM, October 2012 (Brisbane)

Chan E, Taylor DMcD, Kong, D, Knott JC, Phillips G, Castle D. ‘IV droperidol and olanzapine as adjuncts to midazolam for the acutely agitated patient: a multi-centre, randomised, double-blind, placebo-controlled, clinical trial’
- *Emerg Med Australas* 2012; 24 (Suppl. 1): 18
- Proceedings of the American Society of Hospital Pharmacists. December 2012
- Proceedings of the International Society for Pharmacoeconomics and Outcomes Research ISPOR, 15th Annual European Congress, Berlin, November 2012

Ngui B, Taylor DMcD. ‘Obesity has few adverse effects on the patients’ experience in the Emergency Department’
*Emerg Med Australas* 2012; 24 (Suppl. 1): 15

*Emerg Med Australas* 2012; 24 (Suppl. 1): 15
Thom O, Cooney H, Fraser J, Taylor D. ‘Pathophysiology of fluid responsiveness in the emergency department – preliminary results from the NICER trial.’
*Emerg Med Australas* 2012; 24 (Suppl. 1): 32

CONFERENCE/SEMINAR ORAL PRESENTATIONS BY ED STAFF

Greene S. ‘Poisoning and Toxicology Update’ 2012 ACT Branch conference of Society of Hospital Pharmacists of Australia


Greene S. ‘Prescription Opioid Analgesia Harm in Australia’ 2012 APAMT Conference, Hong Kong

Robinson J. ‘Tantalizing, Trippy And Toxic…….What’s really in that energy drink?’ Toxicology Autumn Forum 2012, Melbourne

Druda D. ‘Not All Antipsychotics Are Created Equal…What you need to know in a crazy world’ Toxicology Autumn Forum 2012, Melbourne

Karro J. ‘She Was Afraid To Come Into The Water….Do you really want to swim in Australia?’ Toxicology Autumn Forum 2012, Melbourne

Greene S, Koutsogiannis Z. ‘Don’t Blame it on the Moonshine…..Toxic alcohol poisoning with a twist’ Toxicology Spring Forum 2012, Melbourne

Druda D. ‘Fifty Shades of Lead…….Lead for the Emergency Physician and GP’ Toxicology Spring Forum 2012, Melbourne

Greene S, Koutsogiannis Z. ‘What’s New in the Literature…..New practice points’ Toxicology Spring Forum 2012, Melbourne

Lee V. ‘Are Workplace-Based Assessments (WBAs) the Weapons of Mass Destruction (WMDs) of Assessment? ACEM Annual Scientific Meeting, Hobart, November 2012

D Taylor ‘A clinical intervention trial of nurse-initiated analgesia for paediatric patients in the emergency department.’ ACEM Annual Scientific Meeting, Hobart, November 2012 Winner of the ‘Best Presentation by a Fellow’ award

D Taylor ‘The optimal technique for removal of upper airway foreign bodies: a repeated-measures, cross-over trial in a porcine model.’ ACEM Annual Scientific Meeting, Hobart, November 2012 Finalist, ‘Best Presentation by a Fellow’ award

D Taylor ‘Activities of the ACEM Clinical Trials Group’ (Invited speaker) ACEM Annual Scientific Meeting, Hobart, November 2012

D Taylor ‘Management of the Acutely Agitated Patient’ (Invited speaker) 14th International Conference on Emergency Medicine, Dublin, June 2012

D Taylor ‘Emergency Medicine Research: opportunities for just about anything!’
D Taylor ‘Informed Consent in Acute Care Research’
Research in Acute Care Forum: ED, ICU and Anaesthesia, Melbourne, March 2012

D Taylor ‘IV droperidol and olanzapine as adjuncts to midazolam for the acutely agitated patient: a multi-centre, randomised, double-blind, placebo-controlled, clinical trial’ 14th International Conf. on Emergency Medicine, Dublin. June 2012

Taylor SE, Taylor DMcD, Jao K, Goh S ‘A clinical intervention trial of nurse-initiated analgesia for paediatric patients in the emergency department.’ Austin Health Research Week, October 2012

- Austin Health Research Week, October 2012
- Short-listed for the ‘RJ Pierce Award – Best Respiratory Poster’
- 17th Congress of the Asian Pacific Society of Respirology, Hong Kong, Dec 2012

Chan E, Taylor DMcD, Kong D, Knott JC, Phillips G, Castle D. ‘IV droperidol and olanzapine as adjuncts to midazolam for the acutely agitated patient: a multi-centre, randomised, double-blind, placebo-controlled, clinical trial’
- 3rd Schizophrenia International Research Society Conf., Italy. April 2012
- 15th Annual European Congress, International Society for Pharmacoeconomics and Outcomes Research, Germany. November 2012
- American Society of Hospital Pharmacists. December 2012

Shill J, Taylor DMcD, Ngui B, Taylor SE, Ugoni AM, Yeoh M, Richardson J. ‘Meeting a simple clinical target results in a high level of patient satisfaction with their pain management’ 14th International Conference on Emergency Medicine, Dublin. June 2012
PRIZES

Taylor D
Best Paper by a Fellow of the Australasian College for Emergency Medicine (ACEM) 2012 ACEM Annual Scientific Meeting (Hobart)
‘The optimal technique for removal of upper airway foreign bodies: a repeated-measures, cross-over trial in a porcine model’

Taylor D (co-investigator)
The 2012 Frank McDermott Award
Awarded by the National Trauma Research Institute for the publication that led to the greatest improvements in care of severely injured patients in Australia or NZ:

Taylor D (co-investigator)
Best Paper 2012 Bienniel Conference of the Shoulder and Elbow Society of Australia, Oct. (Brisbane)
‘Shoulder and Subscapularis function post Latarjet Procedure’
ONGOING RESEARCH PROJECTS

- Poisoning due to fungi ingestion – a retrospective study of cases reported to Australian Poisons Information Centres
- The Charcoal Cocoa Palatability (CharCoP) study
- VPIC calls involving intentional overdose in early adolescence
- 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
- Reported Ingested Dose Of Paracetamol As a Predictor Of Risk Following Paracetamol Overdose.
- Evaluation of the effect of a Medical Emergency Team (MET) call for emergency department patients
- Evaluation of the Aim@15 project in the emergency department
- Continuous monitoring of incidents and adverse event in the ED
- The use of complementary and alternative medicines among paediatric emergency department patients
- Medical conditions among Australasian scuba divers
- Effectiveness of the management of Supraventricular tachycardia in the prehospital setting: A retrospective case series
- The ARISE Australasian Resuscitation in Sepsis Evaluation Trial
- Effectiveness of the Valsalva Manoeuvre for reversion of supra-ventricular tachycardia in the prehospital and emergency medicine settings
- Comparison of two postures for use in the Valsalva Manoeuvre: a repeated-measures clinical trial in healthy subjects
- 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 nurse-initiated analgesia for paediatric patients in the Emergency Department, ethics project number
- Off-label medications administered to paediatric ED patients
- Best practice pain management in the ED: A multi-centre, controlled, intervention trial
• The Retrospective Pneumothorax Project
• A randomised controlled trial of invasive versus conservative treatment of primary spontaneous pneumothorax
• Management of Acute Agitation in the Emergency Department of Hamad Medical Corporation in Qatar – A Comparative Prospective Study
• Evaluation of the Shoulder and Subscapularis function post Latarjet Procedure
CURRENT COLLABORATIONS WITH EXTERNAL INSTITUTIONS

- St Thomas’s Hospital London
- King’s College Hospital, London
- Hamad General Hospital, Qatar
- University of Hong Kong
- University of Melbourne
- Monash University
- La Trobe University
- Diver Alert Network (Asia-Pacific)
- Metropolitan Ambulance Victoria
- 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)