Austin Hospital Emergency Department

Research Report 2011

Compiled by

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FOREWORD

Welcome to the Austin Emergency Department’s 2011 Research Report. Last year, I noted that it was particularly pleasing that there was an expanding range of our ED staff contributing to the department’s academic output. This trend continued in 2011, largely led by the activity of our Toxicology Unit. Also notable is the increasing amount of work being done by Dr Michael Yeoh, head of the ED Quality Unit. This work has involved a wide range of quality assurance activity, much of which will both inform our own ED procedures but will also progress to presentation and publication. Overall, I am pleased to report that our strong record in publication and presentation continues to improve.

Research Staff

In 2011, we welcomed Meagan Ward into our Research Unit. Meagan has a background in Dietetics and has worked at the Austin previously. She is now embarking on a different career direction and works as our Quality Assurance and Research Assistant.

In December 2011, we sadly farewelled Esther Chan. Esther has been an honorary Research Fellow in the ED for the last 3 years during her PhD candidature. The main plank of her PhD was the Code Grey study (described below). I am delighted to report that Esther was awarded her PhD in late 2011. She has now followed her husband to Hong Kong and has been appointed as Assistant Professor in the Department of Pharmacy Practice at the Hong Kong University. While Esther’s departure is a loss to our department, it is a pleasure to see her embarking upon a promising academic career overseas.

In May 2011, we bid farewell to our four AMS students. Jessica Shill had continued our ED pain management research and helped develop a clinical pain management target (see below). Natalie Tan and Chris Edwards investigated the value of ED screening for undiagnosed or undertreated hypercholesterolaemia and hypertension, respectively. Bryan Ngui continued our previous work into the difficulties of managing obese patients in the ED. All projects were very successful and will make excellent publications later this year. In mid-2011, the AMS program was suspended as a result of the change in the University of Melbourne medical degree from an under- to a post-graduate degree. A modified AMS program will commence in 2013 and we will, once again, support the work of a number of students.

We would like to congratulate Dr Justin Curran, one of our advanced trainees in Emergency Medicine, who successfully completed the ACEM Regulation 4.10 research requirement. Justin gave an excellent presentation in Queenstown NZ, in July, entitled ‘The National Coroners Information System: a valuable source of lessons for Emergency Medicine’. This research required many long hours of synthesising and analysing thousands of NCIS records.
2011 Highlights

1. The Code Grey study
No doubt the highlight of 2011 was the completion of our NHMRC funded Code Grey study. This was a multi-centre trial (led by the Austin) that compared three drug regimens for the sedation of acutely agitated ED patients. While this was a very difficult study to undertake, the results were very exciting. We showed that combination drug regimens (midazolam/droperidol and midazolam/olanzapine) are greatly superior to midazolam alone (common practice). These findings will have a significant impact upon clinical practice. They were very well received at the Australasian College for Emergency Medicine (ACEM) ASM in November and will be presented again at the International Conference for Emergency Medicine in Ireland next June. We were cheeky enough to submit the manuscript to *NEngJMed* and, although rejected, it was actually sent out for review and received three very encouraging reviews. We are about to submit a revised manuscript to the *BrJMed*.

2. Procedural Sedation study
In 2010, we were relieved to complete data collection in this large multi-centre project (11 sites, led by the Austin) that evaluated sedation practices in Australian EDs. In that year, the work won two research awards. In 2011, we published a suite of three papers that completed this project. In addition to these publications, this project was very successful in assembling a large national collaboration and maintaining enthusiasm and timely data collection throughout.

3. 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, Metropolitan Ambulance Victoria, the University of Melbourne and the Austin Health Respiratory Medicine department, we undertook an ambitious trial using a pig model. The results clearly demonstrate that the lateral chest thrust is the superior technique. These findings are likely to affect a change in resuscitation guidelines world-wide.

4. 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 are extremely promising. We are now planning a large multi-centre, national trial (led by the Austin) to roll the target out into practice. We were fortunate to win the 2011 Morson Taylor Research award that will fund the study. At present, the collaboration is almost confirmed and we expect data collection to begin in May.

5. Toxicology Research
I am pleased to report that our ED’s Toxicology Unit, in collaboration with the Victorian Poisons Information Centre, had a very productive 2011. This is evidenced by numerous publications and conference presentations. Shaun Greene is leading this effort and a number of interesting projects are being developed. I expect that the department will be a national leader in toxicology research in the next few years.
The Future

Research activity often comes in cycles. In 2011, we completed a number of large studies and published the results of earlier ones. Towards the end of the year, we were actually collecting data in only a few studies but remained busy writing up a number of completed projects. Concurrently, a number of new studies were being developed with completed protocols and ethics approvals pending. Many projects are multi-centre and have led on from our earlier collaborations.

As our ED has a large paediatric patient census, we are particularly interested in progressing our paediatric research. To this end, the Austin ED will be leading a multi-centre collaboration (Austin, Royal Children’s and Sunshine Hospitals, Monash Medical Centre) that is working up two paediatric projects planned to commence early this year.

As well as paediatric research, we plan to continue other multi-centre work. In late 2011, I was appointed as Chair of the ACEM Clinical Trials Group. This should greatly facilitate the assembly of multi-centre collaborations, especially with the backing of the ACEM.

Finally, I would like to congratulate those staff who have had successful research endeavours during 2011 and thank those who assisted and facilitated this good work.

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Shafiei T, Gaynor N, Farrell G. The characteristics, management and outcomes of people identified with mental health issues in an Emergency Department, Melbourne, Australia. *J Psych Mental Health Nurs* 2011; 18: 16

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. *JPPR* 2011; 41: 265-270


Chan EW, Taylor DMcD, Phillips GA, Castle DJ, Knott JC, Kong DCM.
May I have your consent? Informed consent in clinical trials – feasibility in emergency situations. *J Psych Intens Care* 2011; 7: 109-113

**Chan EW, Taylor DMcD, Kong DCM.** Intravenous olanzapine for acute agitation in the emergency department. *JPFR* 2011; 41: 135-137


Hayward CS, Stokes MA, **Taylor DMcD, Young S, Anderson V.** Changes in SWB following injury to different brain lobes. *Qual Life Res* 2011; 20: 629–641


**Chan EW, Taylor DMcD, Knott JC, Kong DCM.** Variation in the management of hypothetical cases of acute agitation in Australasian Emergency Departments *Emerg Med Australas* 2011; 23: 23-32


**Yeoh M.** ‘From other journals’
Articles accepted for publication (In press):


PUBLISHED ABSTRACTS

Wood DM, Greene SL, Dargan PI. Control of mephedrone (4-methylmethcathinone) in the UK appears effective in reducing presentations to the emergency department with acute toxicity related to its use. Clin Toxicol (Phila) 2011; 49: 522-523

Wood DM, Greene SL, Dargan PI Co-ingestion of opioids with acetaminophen does not appear to increase risk of adverse outcome following acetaminophen overdose.. Clin Toxicol (Phila) 2011; 49: 532


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
• J Emerg Med 2011; 41: 209
Chan EW, Knott JC, Liew D, Taylor DMcD, Kong DCM. The use of olanzapine via an unapproved route in the management of acute agitation
Proceedings of the Asian College for Emergency Medicine ASM. Bangkok, July 2011

Chan E, Knott JC, Liew D, Taylor DMcD, Kong D. Pharmacoeconomic evaluation of midazolam versus droperidol in the management of acute agitation in the emergency department
Proceedings of the Asian College for Emergency Medicine ASM. Bangkok, July 2011

Chan E, Taylor DMcD, Knott JC, Kong D. Management of acute agitation in Australasian Emergency Departments: variations in practice
Emerg Med Australas 2011; 23 (supp. 1): 21


Kerr F, Judkins S, Taylor DMcD. Multi-sourced feedback is acceptable to and improves the performance of emergency physicians Emerg Med Australas 2011; 23 (supp. 1): 9
CONFERENCE/SEMINAR ORAL PRESENTATIONS

Bolch S. A shared audit database can improve processes, communication, education and data collection in brain-dead and donation-after-cardiac-death organ donation DonateLife Annual Forum (Sydney), March 2011

Wong A, Koutsogiannis Z, Greene S, McIntyre S. A case of haemolysis and methaemoglobinemia following amyl nitrite use in an individual with G6PD deficiency ACEM Winter Symposium, Queenstown, NZ July 2011


Taylor DMcD. IV droperidol and olanzapine as adjuncts to midazolam for the acutely agitated patient: a multi-centre, randomised, double-blind, placebo-controlled, clinical trial’ ACEM Annual Scientific Meeting, Sydney, November 2011 Short-listed for Best Presentation by a Fellow award

Taylor DMcD. Obesity has few adverse effects on the patients’ experience in the Emergency Department. ACEM Annual Scientific Meeting, Sydney, November 2011

Taylor DMcD. Public Health screening in the Emergency Department: an extra dimension ACEM Annual Scientific Meeting, Sydney, November 2011

Taylor DMcD. The place of research in an emergency medicine career (Invited Plenary presentation) ACEM Annual Scientific Meeting, Sydney, November 2011


Taylor DMcD. ‘Meeting a simple clinical target results in a high level of patient satisfaction with their pain management’

- ACEM Annual Scientific Meeting, Sydney, November 2011
- 6th Mediterranean Emergency Medicine Congress, Kos, Greece. September 2011 (Free paper – judged in the top 50 of 800 abstracts submitted)

Wong A, Robinson J, Greene S. Hydrofluoric acid poisoning. Data from the Victoria Poisons Information Centre. ACEM Winter Symposium Queenstown NZ 2011

Wong A, Koutsogiannis Z, Greene S. Fava and Kava: A case of Haemolysis and Methaemoglobinemia following amyl nitrate use in an individual with G6PD deficiency. ACEM Winter Symposium Queenstown NZ 2011

Wood DM, Greene SL, Dargan PI. How harmful is Mephedrone? Plant food and bath salts. EAPCCT Congress - Dubrovnik May 2011

Wood DM, Greene SL, Dargan PI. Control of mephedrone (4-methylmethcathinone) in the UK appears effective in reducing presentations to the emergency department with acute toxicity related to its use. NACCT, Washington DC, USA, September 2011

Wood DM, Greene SL, Dargan PI. Co-ingestion of opioids with acetaminophen does not appear to increase risk of adverse outcome following acetaminophen overdose. NACCT, Washington DC, USA, September 2011


Thom O, Cooney H, Fraser J, Taylor DMcD. Pathophysiology of fluid responsiveness in the emergency department – preliminary results from the NICER trial. ACEM Annual Scientific Meeting, Sydney, November 2011


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’. Austin Health Research Week, October 2011

Ngui B, Taylor DMcD, Shill J. ‘Obesity has few adverse effects on the patients’ experience in the Emergency Department’. Austin Health Research Week, October 2011

PRIZES

Simon Bolch
Speakers’ Award, DonateLife Annual Forum (Sydney), March 2011
‘A shared audit database can improve processes, communication, education and data collection in brain-dead and donation-after-cardiac-death organ donation’

David Taylor
The Morson-Taylor Research Award 2011
Awarded by the Australasian College for Emergency Medicine Research Foundation for the most important proposed research project:

David Taylor
IV droperidol and olanzapine as adjuncts to midazolam for the acutely agitated patient: a multi-centre, randomised, double-blind, placebo-controlled, clinical trial’
Australasian College for Emergency Medicine, Annual Scientific Meeting, Sydney, November 2011 (free paper) Short-listed for Best Presentation by a Fellow award
ONGOING RESEARCH PROJECTS

- 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
- Public Health and the Emergency Department: Screening and Intervention for Modifiable Chronic Disease Risk Factors: A National Pilot Project
- 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
- Introduction of an N-acetylcysteine weight based dosing chart reduces prescription errors in treatment of paracetamol poisoning
- 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
- Reducing medication errors: risk minimisation in emergency departments through optimal targeting of clinical pharmacists’ practice
- 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

- 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
- The Northern Hospital
- Cabrini Hospital
- Epworth 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)

CURRENT COLLABORATIONS WITH AUSTIN HEALTH DEPARTMENTS

- General Medicine
- Respiratory Medicine
- Pharmacy
- Paediatrics
- Intensive Care