EMSA 2012: Teamwork, Communication, Collaboration

Thrombolysis Reviewed

SPA Conference Success

Midazolam and Morphine versus Ketamine
Views and opinions expressed in this journal are not necessarily those of the Paramedics Australasia, the editor, the publisher or printer. It is not for Paramedics Australasia or the publisher to ensure that advertisements published in the journal comply with all aspects of The Trade Practices Act 1974.

Published by Emergency Media Pty Ltd
Level 1, 560 Lonsdale Street, Melbourne Vic 3000
Direct all advertising enquiries to 1300 855 444.
Print Post approved: 338663/60646. ISSN 1836-2907.

Contents

The Desktop .......................................................... 2
Australian Resuscitation Council .......................... 3
Board Matters
Paramedicine Role Descriptors .......................... 3
Paramedic Registration ........................................ 4
PA accepts Readers’ Digest Most Trusted Profession Award ...... 5
Student Paramedics Australasia
From the Director .................................................. 7
Club Red Challenge .............................................. 8
Experiences of a Student Paramedic Abroad .......... 8
Faces of SPA .................................................. 9
Special Feature
SPA Conference ..................................................10
Frontline
A Review of Pre-Hospital Thrombolysis: Decreasing the time to Reperfusion following AMI ................. 15
Midazolam and Morphine Versus Ketamine for Sedation
Post Prehospital Intubation; A Literature Review .......... 19
Special Feature
Emergency SA 2012 ........................................... 22
Education and Training
Flexible Learning Stream ......................................24
The ‘Physician's Model’ for Clinical Scenarios .......... 27
Employer News and Views
Shaping the Future ............................................. 30
Sitemed National Telstra Australian Business Awards Winner ..........................30
Chapter News ...................................................31
Research and Development ..................................32
Community News .............................................34
Events Calendar .............................................36

Editor’s Choice $150 prize
For this edition the winner is Catherine Hannell, for her article on Morphine, Ketamine and Midazolam for Sedation. Well done Catherine!
Once again paramedics have received national recognition as the most trusted profession. As the regional body representing the paramedic profession, Paramedics Australasia attended the presentation of the most trusted profession award held by Reader’s Digest in Sydney on Wednesday 25th of July. PA members Cameron Edgar, an Aeromedical Paramedic from NSW, Crystal Cooke a student paramedic at Charles Sturt University, and David Tassicker, Chair of the ACT Chapter of Paramedics Australasia, accepted the award on behalf of all practitioners.

The recent registration consultation has been a great opportunity for policy makers to gain a better understanding of the depth and breadth of our profession and the environments in which paramedics provide health care. The build-up to the consultations has been demanding but very rewarding. Conducting workshops on registration while still maintaining a busy continuing education program and necessary meetings with Governments, Health departments and other stakeholders has proved quite a challenge and stretched our capacity to the limit. However these workshops and meetings created a great deal of interest and gave many paramedics a far better insight into the issues associated with registration and regulation.

I’m delighted to say that we also received support from many stakeholders including some private sector providers, governments, and ambulance services. What was exceptional were the offers of volunteer services from members and others who wanted to contribute to the work of Paramedics Australasia in the registration debate. Those unsolicited offers of assistance have proved to be of particular value.

I would like to thank those who took the time to contribute to the consultation program and the Paramedics Australasia regulatory survey. The resulting engagement with front-line practitioners was the most comprehensive review of the profession ever attempted in Australia and resulted in a magnificent overall response.

The information from the survey has been vital in informing our submissions and in providing the best picture for Health Ministers to see the benefits of paramedic registration under the AHPRA model. Paramedics Australasia continues to work closely with Health Workforce Australia on a number of projects. We have been working with Health Workforce Australia since its inception on a range of topics related to health workforce issues facing Australia such as a demographic study of the paramedic workforce, prescribing rights for health professionals and the pilot studies now being developed for an extended care model of paramedic practice.

No report would be complete without mentioning our busy program of continuing professional development activities in each Chapter and our growing links with other professions in joint activities that form an important component of any future Australian health system. These links are a sign of growing maturity and recognition of paramedics as vital participants in health care delivery. Among these ventures was the recent South Australian EMSA (Emergency South Australia) Conference, which brought together Paramedics Australasia (PA), the Australasian College for Emergency Medicine (ACEM), and the College of Emergency Nursing Australasia (CENA). This highly successful conference for emergency healthcare professionals was an excellent example of teamwork, collaboration and cooperation that should be the hallmark of interprofessional practice.

Coming up in October will be the Australasian Trauma Society (ATS) Conference Trauma 2012 to be held from the 26th-28th October at the Perth Convention Centre. This Conference, focussing on Resuscitation and Rehabilitation is being held by the ATS in conjunction with the Royal Perth Hospital and Paramedics Australasia.

Finally don’t forget the PA Conference 2012 will be held at the Wrest Point Convention Centre, Hobart from 1st to 3rd of November 2012. I encourage you to register early and look forward to seeing you there.
July Meeting

Council members met in Melbourne on 20 and 21 July 2012. Among the matters considered were guideline changes including Guideline 9.1.6 Management of Suspected Spinal Injury and Guideline 10.5 Legal and Ethical Issues Related to Resuscitation.

The process of guideline development for the community-based setting is often challenging due to the lack of high-level evidence to inform the recommendations. When guidelines are aimed at a lay audience, there are additional challenges in designing advice regarding immediate care that must be provided without recourse to advanced clinical judgement and examination skills. As the imperative is to do the greatest good until advanced care arrives, the guidelines tend to be conservative in recommending the need for further medical assessment, and this was evident in discussions around when to call an ambulance in cases of head injury. As head injury may encompass diverse injury patterns and consequent risk from minor scalp lacerations to traumatic brain injury – and it is unreasonable to ask the lay carer to make judgements about the seriousness of the injury – the basic life support guidelines need to adopt a low-risk approach, which may result in an increase in calls to ambulance services to enable a more informed assessment of the injury.

One of the guidelines flagged for review is Guideline 9.1.7 Emergency Management of a Crushed Victim. This is an important guideline, as despite the apparent low frequency of cases, the individual’s understanding of this injury and the initial management of the victim is sometimes coloured by urban myth and variable approaches to first aid teaching. Indeed, even paramedic education resources contain advice that has been handed down over generations and that are based on case reports where cause and effect cannot be proven. As questions in the training setting regularly involve the theme of crush injury and whether to remove or leave the compressive force, it is important that the ARC develops guidelines that are based on the highest level of evidence available to help to address these concerns.

An update to Guideline 14.2 Acute Coronary Syndromes: Initial Medical Therapy was tabled. This included the addition of ticagrelor. This new antiplatelet agent is a pyrimidine derivative that binds reversibly to the P2Y1,2 receptor. The drug has a more rapid action than clopidogrel and the action of the drug is reversible. Trials have shown a reduction in mortality in patients with acute coronary syndrome (ACS) with or without ST-segment elevation when treated with ticagrelor compared with clopidogrel. A large multi-site clinical trial is currently underway to study the efficacy and safety of pre-hospital compared to in-hospital administration of ticagrelor in STEMI patients planned for Percutaneous Coronary Intervention (PCI). One Australian state is listed as a study site, and the outcome of this trial may have important implications for the paramedic management of ACS.

References

Board Matters

The clinical roles currently found within paramedicine are described in the following manner;

PROFESSIONAL STREAM
- Paramedic (Paramedic)
- Intensive care Paramedic (ICP)
- Retrieval Paramedic (RP)
- General Care Paramedic (GCP)

TECHNICAL STREAM
- First Responder (FR)
- Patient Transport Attendant – Level 1 (PTA1)
- Patient Transport Attendant – Level 2 (PTA2)
- Basic Life Support Medic (BLSM)

AMBULANCE COMMUNICATIONS STREAM
- Emergency Medical Dispatch Support Officer (EMDSO)
- Emergency Medical Dispatcher (EMD)

To view these descriptors please visit the PA website at www.paramedics.org.au and look under ‘What is a Paramedic?’.

Paramedicine Role Descriptors

Paramedics Australasia has developed a set of role descriptors to provide an introductory overview of the current clinical roles within Paramedicine in the Australian and New Zealand contexts. This work covers the broad classifications of professional, technical and communications streams of engagement.

Due to the current absence of national regulation in Australia (registration of some paramedics is pending in New Zealand), the scope of practice for individuals engaged within Paramedicine may and does vary between jurisdictions and engaging organisations. It should be noted that the legislative framework within Australia and New Zealand creates some local specific influences on paramedical practice e.g. controlled substances legislation.

Paramedics operating in the Defence Force operate in accordance with the activities for which the paramedic has been given the authority to perform. This is influenced by the individual’s education and competence, the settings in which they practice and the requirements of the relevant defence service.

For those seeking employment within paramedicine, especially within a statutory (public or private) ambulance service or the Defence Force, it is important to be aware that each of these organisations set their own employment criteria and select applicants on merit. Within paramedicine there are a variety of different clinical roles and scopes of practice that are determined by the practitioner’s education, operational environment & engaging service providers requirements.
Activities have continued apace as Paramedics Australasia members throughout the country have responded to the call of the limited consultation program. Registration workshops were conducted in several jurisdictions to supplement the wealth of materials on the PA website which has provided valuable information to inform practitioners about the key issues.

Participants nationally have acknowledged that the consultation program was the result of effective PA advocacy and the development of a substantial body of solid research, citable references, policy submissions and high level communications over an extended period of time.

- Overall there were eight consultation sessions - Perth, Canberra, Sydney, Melbourne, Hobart, Darwin, Brisbane and Adelaide. The largest was Brisbane with 55 participants drawn from a diverse mixture of stakeholders. PA was prominent at all sessions, generally with several local practitioner members attending and at times one or more national representatives.

- The consultation workshop groups have overwhelmingly supported the proposed Option 4 – National registration under the AHPRA/NRAS framework, with 34 out of 35 discussion groups strongly supporting that option.

- Concurrently PA launched a practitioner survey which received over 4000 responses. This demonstrated the strong support practitioners and students also have for Option 4, with 86.7% supporting that option. A detailed report of survey findings will be included in the next Response magazine.

The overwhelming support for Option 4 from a wide range of stakeholders that included other professions, lobby groups, public and private service providers, practitioners and patients is a pleasing outcome from the intensive PA work at all levels of government, industry and the professions. There is no doubt that the profession has gained in stature and influence as PA has driven the agenda for practice and the fact that paramedics operate away from direct supervision.

Grateful thanks are extended to all who have contributed to date as the PA Board, Chapter Committees and members gear up for the next phase of the consultation program.

PA submitted one national response to the consultation, while a number of Chapters have also made their own submissions. PA’s national response comprehensively discussed the issues, with a particular focus on the options suggested in the consultation paper. The following is the Executive Summary from that paper, with the full paper available online at www.paramedics.org.au.

Response to the Australian Health Minister’s Advisory Council Consultation Paper: Options for Regulation of Paramedics

EXECUTIVE SUMMARY

Today there is a rapidly changing environment for paramedic practice. Many paramedics work outside government-related ambulance services. Paramedics are mobile nationally and internationally. Increasing numbers are employed in the private sector. There is a large market for casual and intermittent roles. The range of clinical interventions is growing rapidly as is the use of alternate referral pathways instead of the transportation of all patients to hospital. Paramedic education has shifted largely from in-service and VET training to the university sector.

This changing environment is increasing the risk of harm to the public from paramedic practice. This increasing risk comes on top of the ongoing risks associated with paramedic practice related to the type of interventions paramedics undertake, the emergency setting for practice and the fact that paramedics operate away from direct supervision.

Paramedics Australia (PA) believes that governments must act urgently to address these risks of harm to the public. PA has long advocated that the only acceptable regulatory approach is the registration of paramedics through the National Registration and Accreditation Scheme (NRAS).

Governments have responded, and in July 2012 a consultation paper was issued by the Australian Health Ministers’ Advisory Council Health Workforce Principal Committee on Options for regulation of paramedics. The consultation paper set out four options for the future regulation of paramedics.

In examining these four options, PA assessed their efficacy in reducing the risk of harm in terms of how effectively they addressed the following seven risk reduction factors:

1. public access to an independent complaints mechanism;
2. ensuring only those who meet approved educational and practitioner standards can use the title of paramedic;
3. preventing paramedics with fitness-to-practice issues from moving from job to job without oversight or restriction;
4. making checks on qualifications, probity and criminal history a condition of practice;
5. compulsory and independent accreditation of training and education programs;
6. regulation which covers all paramedics wherever they choose to work; and
7. regulation which covers all employers of paramedics.

The outcome of these assessments was that PA strongly supports Option 4 which is the registration of paramedics through the National Scheme.

This strong support extends throughout the paramedic profession and other professional and community stakeholders. In a survey conducted by PA 87 per cent or 3298 of the paramedic and student respondents preferred Option 4. The regulatory options were separately examined by a wide range of stakeholders and discussed at consultation sessions nationally with similar overwhelming support for Option 4.

In reviewing the various options, the following observations apply:

Option 1. No change – does not address any of the seven PA risk reduction factors.

Option 2. Strengthen statutory complaints mechanisms—provides an independent complaints mechanism, can prevent paramedics with problems moving from job to job and covers all paramedics and all employers of paramedics to the same extent. By taking a reactive rather than a proactive approach, however, this option does not adequately address the other PA risk reduction factors.

Option 3. Strengthen State and Territory regulation of paramedics through ambulance legislation – places regulatory powers in the hands of a group of major employers, the government ambulance services. Although there may be some difficulties relating to legislative interpretation and the COAG agreement on health practitioner regulation, Option 3 could be framed to ensure approved educational and practitioner standards are met; make practitioner checks a
Paramedics Australasia accepts Readers’ Digest Most Trusted Profession Award

Paramedics Australasia represented the profession at the presentation of the most trusted profession award held by Reader’s Digest in Sydney on Wednesday 25th of July. PA representatives Cameron Edgar, an Aeromedical Paramedic from NSW, Crystal Cooke a student paramedic at Charles Sturt University, and David Tassicker, Chair of the ACT Chapter of Paramedics Australasia, accepted the award on behalf of the profession.

“Australians everywhere place a great deal of trust in paramedics and we are proud to work in a profession that continues to receive such a high level of trust from the public,” Mr Tassicker said.

The award was presented to Cameron, Crystal and David during an afternoon ceremony held to recognise all recipients for the 2012 series of Most Trusted awards. Paramedics have topped the list of professions for the past eight years. Paramedics Australasia the profession will continue to provide a national platform for the development and promulgation of policies and service standards that will enhance the quality of patient care.” said Mr Tassicker.

PA strongly supports Option 4 as being the most effective in reducing the risk of harm to the public, and providing a sound basis on which the contribution of paramedics to the wellbeing of the Australian community can continue to grow and develop. It will also create an appropriate regulatory base for the rapidly growing private sector demand for paramedics in a way that assists practitioner mobility within Australia in line with the objective of a seamless national economy.

### Board Activities

**Paramedics Australasia accepts Readers’ Digest Most Trusted Profession Award**

Paramedics Australasia represented the profession at the presentation of the most trusted profession award held by Reader’s Digest in Sydney on Wednesday 25th of July. PA representatives Cameron Edgar, an Aeromedical Paramedic from NSW, Crystal Cooke a student paramedic at Charles Sturt University, and David Tassicker, Chair of the ACT Chapter of Paramedics Australasia, accepted the award on behalf of the profession.

“Paramedics Australasia accepts Readers’ Digest Most Trusted Profession Award”

Paramedics Australasia represented the profession at the presentation of the most trusted profession award held by Reader’s Digest in Sydney on Wednesday 25th of July. PA representatives Cameron Edgar, an Aeromedical Paramedic from NSW, Crystal Cooke a student paramedic at Charles Sturt University, and David Tassicker, Chair of the ACT Chapter of Paramedics Australasia, accepted the award on behalf of the profession.

“The award was presented to Cameron, Crystal and David during an afternoon ceremony held to recognise all recipients for the 2012 series of Most Trusted awards. Paramedics Australasia the profession will continue to provide a national platform for the development and promulgation of policies and service standards that will enhance the quality of patient care.” said Mr Tassicker.

### eLearning – Two exciting new modules

The PA eLearning site now includes two exciting new packages from which members can learn.

- **Conference Abstracts**
- **Diving Emergencies and Immersion**

Other topics still available through eLearning include:

- Dementia;
- Infection Control;
- Infectious Diseases;
- Stroke;
- National Registration and Paramedics; and
- Journals and Weblinks from around the World.

You can access the eLearning site on the PA website at www.paramedics.org.au.

You will need to log in with your PA Username and Password, if you can’t remember your membership password, please email membership@paramedics.org.au.
Special members textbook offer

Paramedics Australasia is pleased to announce a member only SPECIAL discount offer from ElsevierHealth.

20% OFF RRP

When finalising your purchase you will need to enter the special offer code to receive the discount, this code is available on the PA website at www.paramedics.org.au. Look for Member Rewards under Membership.
From the Director

The SPA committee has been kept busy the past few months with National Conferences, strengthening our industry networks with Health Workforce Australia and preparing a National Student petition to submit to the Government supporting National Registration for Paramedics.

National SPA Conference

The SPA committee needs to be commended for their efforts for organising another successful SPA National Conference which was held Saturday 25th August at the Victoria University Convention Centre in the heart of Melbourne. Coco Giddings and her conference team worked tirelessly to ensure this year’s conference was a huge success in attracting more than 200 delegates Australia wide. The intensive conference program was educational, informative and entertaining with all speakers providing the audience with a plethora of knowledge, skills and information that they can use to advance their professional development and clinical skill. The SPA conference could not have been a success without the support of our financial sponsors including: Ambulance Victoria, St John Ambulance Australia, Edith Cowan University, Zoll, Health Workforce Australia, La Trobe University, Charles Sturt University and Quantum Support Services. A massive thank you to this year’s high calibre health professionals who attended the Future Health Leaders conference.

Future Health Leaders Conference

Three hundred young and enthusiastic health professionals attended the Future Health Leaders Conference at the Adelaide Convention Centre, Sept 1st and 2nd. Five interactive and engaging conference streams explored themes including Rural Health, Mental Health, Global Health, Indigenous Health & Workforce Innovation. Delegates collaborated and discussed the key issues from within their conference stream and produced conference outcome papers with an action plan for the Future Health Leaders Council. Sir Gustav Nossal from the founding fathers of modern immunisation presented a message to delegates that the eradication of infectious disease is possible, with your help. Each delegate walked away from the conference embracing the motto of guest speaker’s for volunteering their time to present at this year’s conference. Planning is already well underway for the 2013: 6th Annual SPA National Conference.

Supporting National Registration for Paramedics

SPA has taken a proactive approach to provide student paramedics an opportunity to support National Registration for Paramedics. SPA circulated a National Petition which was submitted to Government to ensure the views of Student Paramedics are represented nationally. As future Australian health professionals, we, support National Registration for the paramedic profession under the Australian Health Practitioner Regulation Agency and National Law framework for the following reasons:

Registration is the key to ensuring public safety through:

- Placing the responsibility for maintaining fitness to practice directly on the practitioner within a national regulatory framework;
- Ensuring mechanisms for complaint handling that are managed by an independent third party with appropriately broad membership;
- Protection or reservation of title, so that the public can be confident that someone calling themselves a paramedic is appropriately qualified;
- Enhancing community access to care by providing opportunities for paramedics to practice in a variety of community settings; and
- Establishing nationally recognised competencies and skill levels that will facilitate practitioner mobility.

In addition to SPA’s petition supporting National Registration, 965 Student Paramedics completed Paramedics Australasia National Registration online survey to ensure their voice is represented in this national discussion as they represent the future of the profession.

Summary

SPA National Executive Committee continues to work hard at achieving our national goals and initiatives, which promote professional development, education and community engagement. Support for ClubRed (Blood Donations) continues to increase in popularity as Student Paramedics work together to help save lives. We look forward to another busy and successful 2013.

For further information and SPA updates visit: www.studentparamedic.org.au.
This month has seen a three horse race.

1. SPU
2. PARASOC
3. VUSPA

C’mon guys, let’s keep the donations coming!
Red Cross needs your help!

<table>
<thead>
<tr>
<th>SOCIETY &amp; ORGANISATION NAME</th>
<th>UNIVERSITY</th>
<th>MONTHLY DONATIONS</th>
<th>NUMBER OF LIVES SAVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAQUINAS</td>
<td>Australian Catholic University</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>PARASOC</td>
<td>Monash University</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>SCUPA</td>
<td>Sunshine Coast University</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>FUSPA</td>
<td>Flinders University</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>VUSPA</td>
<td>Victoria University</td>
<td>26</td>
<td>78</td>
</tr>
<tr>
<td>SPU</td>
<td>Queensland University of Technology</td>
<td>47</td>
<td>141</td>
</tr>
<tr>
<td>SOAPS</td>
<td>Edith Cowan University</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>HOBSPA</td>
<td>University of Tasmania – Hobart</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ROZSPA</td>
<td>University of Tasmania – Sydney</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>CSUSPA</td>
<td>Charles Sturt University</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>LASPA</td>
<td>La Trobe University</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SPSP</td>
<td>Australian Catholic University – Melbourne</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CANSFA</td>
<td>Australian Catholic University – Canberra</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BRISPA</td>
<td>Australian Catholic University – Brisbane</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CQUSPA</td>
<td>Central Queensland University</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ISPA</td>
<td>University of Queensland – Ipswich</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>NATIONAL TOTAL</strong></td>
<td><strong>158</strong></td>
<td><strong>474</strong></td>
</tr>
</tbody>
</table>
A recent story emerged this year about the story of a paramedic student using the skills they learnt in an impromptu situation overseas. After some inquiries were made, SPA asked Shauna if she would share the experience with us, and how the knowledge she learnt at university helped her.

Name: Shauna Quirk
Age: 26
University: Edith Cowan University
Year level: First
Degree: Bachelor of Science (Paramedical Science)

I left home when I was eighteen years old to travel for a year. I returned nine years later to Australia and moved to Perth to start a paramedical degree through St John’s Ambulance. In the nine years I was able to travel independently through all seven continents. I have worked all over the world, doing various jobs.

Currently in order to fund my studies I work in tourism and take groups of people around South America. The company that I work for at the moment has a main clientele of the young at heart, or seniors who often describe themselves as recycled teenagers. I am able to work in this role as I have previously lived and worked in South America taking groups of approximately 16 people around the continent on public transport. When I work, now, in South America, the age group is much older and this opens up the potential for different challenges.

Last month while working in South America a passenger in his early seventies attempted to stand up on a plane. However, he fell back down into his chair and became unresponsive. I was two rows in front and was unaware of what was happening. Excited tourists started to fill the aisles in what I thought was anticipation for exploring the Inca Capital of Peru, Cusco.

It was at this point I started to hear some commotion in the back from where I was at the front of the plane. Being in the front and in a cramped South American plane, I was unable to see what was happening. It was at that point that there was a cry for help, and my name followed shortly after. I did what I feel anyone in my position would have done. I jumped out of my seat and went over to the gentleman.

When I arrived his eyes were rolled back, his skin was white and clammy. It wasn’t the patient that scared me the most, it was the wife’s expectations of me to help him. At that point I wished that I had more knowledge and that I was no longer a student paramedic, but a qualified paramedic. I remember saying to myself “I wish, I already knew”. I was nervous, but when I checked his pulse I couldn’t feel anything and at the same time, couldn’t see his chest rise. I thought about how I was going to get him down onto the aisle floor to start CPR.

I asked for a doctor immediately in both Spanish and English. I proceeded to ask the passengers around me to sit down so I could lay him down in the aisle. I laid him down and continued through the primary survey. I positioned his head and checked his airway. To my and everyone else’s relief, after a short time he responded. He opened up his eyes and said “I’m fine”. Although it was quite a simple thing, I am so very happy that it worked.

Being a proud man he wanted to stand and walk off the plane. I was able to convince him otherwise as he still had a very weak heart and with the addition of his recent travel, it could have made things worse.

He was taken in a very basic Peruvian Ambulance to a local Western hospital where he remained for three days. The good news is that he was able to make it to see Machu Picchu. He acknowledged that he had a fragile body, but was willing to take the risk to travel to South America. He wanted to see this historical site, as it was a dream for him.
Saturday the 25th of August marked the 5th Annual SPA Conference. The SPA committee worked tirelessly in the lead up to the event to ensure that the conference program was packed with engaging and inspiring speakers, the conference showbag stuffed with free goodies, and the Youngcare Charity Raffle table overflowing with prizes.

We were excited and more than a little amazed to watch conference ticket sales climb to an all-time high, with 200 delegates expected to turn out on the day. And turn out they did, to the beautiful Victoria University City Convention Centre, where the unseasonably warm winter’s morning could be enjoyed from the twelfth floor, overlooking Melbourne and the Yarra River. The air was thick with anticipation, and the conference promised to be our best yet.

SPA was fortunate to have both Jon McGrath and Ross Salathiel, Mobile Intensive Care Paramedics (MICA) who work in rural Victoria and have a wealth of experience behind them, provide conference delegates with an insight into pre-hospital cardiac arrests through the analysis of cases they have attended themselves.

Factors that affect paramedics in their resuscitation of cardiac arrests in the pre-hospital environment were discussed; providing students with an in-depth insight into not only the treatment, but the logistical challenges of a pre-hospital cardiac arrest with a focus on rural care. We were pleased to have had such experienced paramedics provide such a valuable insight into this topic!

The International Perspective Session started with Tristan Scott (previous CSU/SPA President) who has recently moved to New Zealand to work for St John Ambulance as a Paramedic. Tristan shared his story of triumph as he transitioned from Student Paramedic in Bathurst, to full-time employment as a Paramedic in New Zealand.

Then Benjamin Gilmour, a degree-qualified paramedic with worldwide experience. Having worked on ambulances in Mexico, South Africa, Pakistan and Iceland, his story amazed, amused and inspired delegates. Benjamin is also a writer and filmmaker, director of the film ‘Son of a Lion’ and author of ‘Warrior Poets’ and ‘Paramedico’.

Ben showed video clips from his worldwide adventures which provided a completely different perspective to Paramedic Practice.

We were also lucky enough to have two qualified and very experienced clinical minds speak at the conference on the topic of acute myocardial infarction.

With over 35 years of medical and clinical experience between them, Michael Stephenson, Ambulance Victoria MICA paramedic, and Professor Ian Meredith, Director of Monash Heart at Southern Health as well as Monash Cardiovascular Research Centre.

They presented on cutting edge treatment pathways and clinical procedures for the treatment of acute myocardial infarction, including medically induced hypothermia for the improvement of outcome for myocardial infarction patients, the use of thrombolytics, percutaneous coronary interventions and other advanced cardiac care.

The final conference session included Ruth Townsend and Greg Seiz. Ruth is lecturer in Health Law, Ethics and Human Rights jointly in the School of Medicine and the Australian National University College of Law. Ruth worked as a registered nurse, paramedic and solicitor prior to becoming a lecturer. Ruth was able to provide delegates with an informative and practicable approach in maintaining ethical standards throughout all elements of Paramedic Practice.

Greg Seiz is a forensic mental health nurse and is completing a paramedic post graduate degree. Greg was able to provide great insight into the needs of paramedics for understanding and managing mental health issues in the field.

This year we had a record response of entrants into the poster competition with 18 students submitting work from across Australia. Judged by the industries best; Richard Larsen, Ian Patrick and Alan Eade, posters were marked against a set of predetermined criteria including presentation, structure and content to name a few.

Posters were made by students as a visual display of work that they had previously submitted at University and were a great snapshot of what our future graduates have to offer. Feedback from judges was that student research was of a high calibre this year and covered a broad range of topics. With a poster titled ‘Paramedics in Palliative care’, Vanessa Webb won first prize of $1000. Second prize was awarded to Simon Dousek who won $400 and Fiona Renshaw came in third with a prize of $200. Those in 4th-11th place were awarded $50 each. Not bad for a piece of work already written!

All prize money was kindly donated by La Trobe University and Health Workforce Australia.

Club Red is having another successful year in 2012. Red Cross from Victoria attended this year’s conference, with lots of interest. SPA is looking to broaden the donations, and has been provided with information on the closest donation sites relevant to each university society.

In some cases, a mobile donation site can be arranged to come to a university for donation. SPA continues its strong support of blood donation and Red Cross, including their presence at this year’s conference.

This year we continued with our tradition of holding a conference raffle with all proceeds going to charity. We had a great turnout with over $2500 raised for our partner charity YoungCare, which is something the paramedic student body should be proud of! Since the inception of the YoungCare Charity Raffle at the SPA National Conferences we are proud to announce we have successfully raised $11,500 for YoungCare. We had one notable prizes this year including Paramedic Australasia conference tickets, MICA placemats, fixed wing placemats and paramedic starter kits. The raffle would not have been possible without the generous support of our sponsors.

Finally we would once again like to thank the SPA committee, Paramedics Australasia National, our Conference speakers, sponsor and delegates for ensuring the 5th SPA National conference was a huge success.
Norovirus Gastroenteritis
A plague on all your ambulances
By Fiona Renshaw, Second-year paramedic student at Monash University

Introduction

What is it?
Norovirus is the most common cause of gastroenteritis. In Victoria, from the period of 2001 to 2010, there has been no Norovirus Gastroenteritis (NVG) outbreak at least once a year. NVG outbreaks usually occur in colder months. Symptoms include diarrhea, vomiting, abdominal pain and fever.

How does it spread?
NVG is highly infectious. It can be transmitted from person-to-person, foodborne, waterborne, and contaminated surfaces. Norovirus can withstand a wide range of temperatures, is resistant to chlorination, can survive for a long time on surfaces, has a diverse range of strains and is highly mutable so no long-term immunity is possible.

Importance to paramedics
The nature of the ambulance service means that paramedics share facilities, equipment and staff. Unclean surfaces and infected staff could lead to the transmission of NVG between patients and paramedics. The pervasive nature of NVG means that transporting infected patients to hospital can lead to NVG outbreaks within the receiving hospital.

Objectives

The objectives of this poster are:
To inform paramedics on how to protect themselves and their patients from NVG
To help paramedics prevent the spread of NVG
To aid in the decision of when to transport NVG patients

Methods

A review of the current literature and guidelines pertaining to NVG outbreaks was examined using CINAHL, EMBASE and MEDLINE.

Findings

Protect your patients
Hygiene is paramount to preventing disease transmission. It is possible to transmit the disease to a future patient if appropriate cleanliness is not maintained.
- Clean and disinfect all equipment used on NVG patient before future use.
- Clean and disinfect stretcher and change bed linen.
- Clean and disinfect any surfaces that were frequently touched by you or the patient.
- When mopping the ambulance, change mop head when finished.
- Change clothes and wash in a separate load if clothing is soiled.

When to transport:
- If an NVG patient is adequately hydrated and has adequate support, they are safe to be left at home. However, severely dehydrated patients should be transported to hospital to avoid complications.
- Consider transporting if patient is elderly and persisting symptoms such as vertigo can lead to falls.
- If transport is required inform the receiving hospital immediately so appropriate safeguards can be enacted to prevent the disease.

Summary

Paramedics are instrumental in preventing the spread of NVG in the following ways:
- By maintaining appropriate a high level of hygiene after treating patients
- By protecting themselves so as not to become carriers
- By knowing when it is necessary to transport patients with NVG

References

The Role of Paramedics in Palliative Care: A literature review

Vanessa Webb
4th Year Nursing Paramedic student at Monash University

Background
Medical advances are ensuring individuals are now living longer with terminal illnesses, which is increasing demand for palliative care from a healthcare system that is already struggling to meet the needs of an ageing Australian population (1-5). Palliative care is provided to patients living with an ultimately fatal medical condition and is underpinned by the principle of providing comfort care to an end-of-life (EOL) patient irrespective of the treatments ability to prolong life expectancy (6-9).

Of the 140,000 Australians who die each year 28,000 are under definitive palliative care (6). Palliative care is not exclusively hospital based as many EOL patients explicitly state they wish to die at home (6, 8, 10-12). Whilst most patient needs will be met by dedicated palliative care teams, paramedics may be requested during an acute change in condition or if the patient's family become unable to cope with the impending death at home (7, 10, 13). If an acute change occurs in public paramedics may also be called by unrelated bystanders even if the patient is coping adequately with the situation (7).

Objective
To examine the role paramedics play in palliative care and suggest areas for improved practice.

Methodology
A literature review was undertaken using electronic medical databases Ovid Medline and CINHAL Plus from 1999 to 2012. Search keywords included: palliative care, paramedic, pre-hospital, EMS, EMT and ambulance.

Findings
Honouring EOL patient wishes is particularly challenging in the pre-hospital environment (14), as demonstrated by the incidence of unwanted field resuscitations (5, 13-15). This is because many paramedic protocols do not clearly differentiate between palliative and non-palliative deaths (5). Accordingly unwanted procedures are often initiated even when death is expected (14). This causes obvious complications for the patient because their right to autonomy has been removed, as has their ability to die with dignity (8). Families may also experience traumatisation due to the perceived disregard for the patients final wishes (15).

Such complications often arise because paramedics use standardised treatment algorithms (7, 8, 16), which focus on providing uniform interventions in specific emergency situations without variation (7). This 'one-size-fits-all' ethos ignores the importance of acting in accordance with the patient's individual wishes, disregarding the patients self-determination of 'quality of life' (8). It is therefore vital specific palliative guidelines be developed by ambulance authorities to ensure paramedics can provide appropriate treatment to those seeking comfort care only.

Additionally there is a perceived lack of paramedic educational preparation in order to undertake EOL tasks (8, 10, 14), particularly regarding when to honour written or verbal requests (8, 14). Thus paramedic curricula should incorporate instruction on when and how to modify active intervention in palliative patients (8, 14). This is crucial an inappropriate paramedic decisions in palliative care are often the result of fictitious information deficits (16).

Conclusion
The role of the paramedic in palliative care is to understand that medical action isn't solely focused on preventing death, but also respecting the competent patients stated wishes and accepting the natural limits of human life. It is imperative that paramedics understand not only the preferences of the palliative patient but also why these choices have been made.

References
NOVEMBER 1 - 3 WREST POINT CASINO, 410 SANDY BAY ROAD, HOBART TAS 7000

The national conference from the 1st to 3rd of November this year will feature speakers and topics covering areas of interest to all who are engaged or interested in pre-hospital emergency care, including:

- Pierre Poirier, Chief of security and emergency management, Ottawa, Canada;
- Dr Simon Young, Director of Emergency Medicine, Paediatric Physician, RCH Melbourne;
- Dr Jeff Ayton, Chief MO, Australian Antarctic Division, Hobart;
- Dr Jason Bendall;
- Dr Tim Wolfe, Emergency Physician, Clinical Faculty, Emergency Department, Jordan Valley Medical Centre, Salt Lake City, Utah;
- Dr Lars Wik, National Competence Centre of Emergency Medicine Oslo University Hospital, Norway;
- Dr Brett Williams, Monash University, Melbourne.

- The treatment of hypothermia
- Extended Care Paramedicine
- Resuscitation
- Education
- Challenges of polar medicine
- Trauma
- Prehospital research in Australia
- Pre conference workshops in simulation, EMS research (see below)

The conference will be opened by the Governor of Tasmania, His Excellency Peter Underwood, who has graciously invited conference participants to a reception at Government House on Friday 2nd November 2012 (booking when registering is essential).

THE CONFERENCE DINNER WILL BE HELD AT WREST POINT ON SATURDAY EVENING, THE 3RD OF NOVEMBER AND WILL FEATURE THE TASMANIAN ROYAL AUSTRALIAN NAVY BAND.

Pre-conference Workshops being held on Thursday 1st of November include:

ADVANCED SIMULATION DE-BRIEFING (1 day) - Debriefing for Meaningful Learning
This workshop will analyse current debriefing methods used after simulations and provide the participants with the tools to conduct their own effective simulation debriefings.

Target audience: Health care professionals, educators, trainers and lecturers interested in advancing their knowledge of simulation. Participants involved in the simulation workshop may be eligible to acquire Continuing Professional Development (CPD) points accredited to their relevant associations (PA or and the Royal college of Nursing Australia (RCNA).

RESEARCH METHODS

EMS Evidence Based Practice (3.5 hours) - Learn about the principles of Evidence Based Practice (EBP) as it relates to EMS.

EBP is an approach to health care that incorporates the evidence relating to patient management, the strength of that evidence and the benefits and risks of alternate management strategies. This workshop caters for clinicians who wish to improve their clinical practice through enhanced skills in reading, interpreting and applying the medical literature.

Target Audience: Paramedics, doctors, nurses, academics and other health professionals with an interest in basing their practice on best evidence.

EMS research workshop (3.5 hours) - Learn how to conduct EMS research and understand the literature.

Undertaking emergency care research is thought by many to be too complex and time consuming, but it doesn’t need to be. This intensive workshop aims to equip participants with skills to assist them in preparing a research question, developing a proposal and contributing to the EMS knowledge base through research.

Target Audience: Paramedics, doctors, nurses, academics and other health professionals with an interest in conducting EMS research and understanding the literature.

For registration and information go to http://www.paramedics.org.au/conference
A Review of Pre-Hospital Thrombolysis: Decreasing the time to Reperfusion following AMI – A Wellington BHSc Paramedic student investigates

Amanda Weaver & Sean Thompson

Abstract

Problem

33-40% of patients with acute myocardial infarction (AMI) are initially cared for and transported by emergency ambulance services (EAS). However controversy exists over how EAS systems can achieve timely reperfusion of patients who present with ST elevation myocardial infarction (STEMI). Wellington Free Ambulance's (WFA) current practice, where thrombolysis or primary percutaneous coronary intervention (PCI) is indicated, is to transmit the 12-Lead electrocardiogram (ECG) to the appropriate Coronary Care Unit (CCU) and liaise with the on-call cardiologist. If the crew has not heard back from the cardiologist within five minutes of transmission they phone the CCU for authorisation to thrombolyse. Although paramedic and hospital staff strive to decrease access times for patients with AMI, there is potential to improve door to thrombolysis or door to PCI times. In up to 20% of cases there are difficulties with ECG transmission. This can cause delays in accessing reperfusion. Furthermore, delays can increase when communication with the on-call cardiologist is not immediately available.

Method

Current research from ProQuest, Science Direct and Elsevier databases was analysed to assess if pre-hospital thrombolysis administered by advanced life support (ALS) paramedics benefits patient outcomes and reduces costs.

Results

Research indicates that paramedics can independently obtain and interpret 12-Lead ECGs with high accuracy, comparable to physicians. Studies also show that ALS paramedics can safely administer a thrombolytic in the field where avenues of transmission and/or communication with the on-call cardiologist are not immediately available. Further studies confirm that pre-hospital thrombolysis reduces all cause in-hospital mortality by 2% per hour of early treatment, with no significant associated hazards. ALS paramedic-administered thrombolysis has shown improved patient outcome as well as cost savings associated with shorter time to reperfusion.

Conclusion

Most literature shows that it is safe, feasible, and financially beneficial for ALS paramedics to obtain and interpret a 12 Lead ECG and when indicated, administer a thrombolytic. It is concluded that one strategy to reduce door to reperfusion times is to provide ALS paramedics with the authority to independently administer thrombolytic agents.

Introduction

Time to reperfusion therapy for patients who present with an acute STEMI or BBB has been identified as an important predictor of outcome. Literature demonstrates that a prehospital 12-Lead ECG obtained and transmitted by a paramedic to the on-call cardiologist significantly reduces the time to administration of thrombolytic therapy. However transmission of the ECG can be difficult in up to 20% of cases, and may be delayed if communication with the cardiologist is not immediately available.

Every effort should be made to decrease access time for patients with AMI; from symptom onset to thrombolysis or PCI. Ambulance services need to evaluate implementation strategies to reduce the time from symptom onset to intervention. Reduced onset to intervention time leads to increased survival and a reduction in costs.

The purpose of this review is to evaluate current literature to determine if ALS paramedics can correctly diagnose acute STEMI and BBB patterns in the pre-hospital environment and so reduce reperfusion access times. The evaluation will also consider the safety of autonomous ALS paramedic thrombolytic administration in the event of transmission failure and/or when communication with the on-call cardiologist is not available.

Patient Profile

A 51-year-old male experienced sudden onset of three out of ten left sided chest pain and left arm tingling at 1200. He had difficulty breathing, felt dizzy, sweaty, and had difficulty focusing. He took two Paracode and believed the symptoms were beginning to resolve. The patient’s family were concerned and called for ambulance assistance. The 111 call-taker instructed the patient to take 300mg of aspirin.
On ambulance arrival at 1231 the patient was conscious and alert with a Glasgow Coma Scale (GCS) of 15. He continued to experience three out of ten chest pain and had the following vital signs:

<table>
<thead>
<tr>
<th>Vital Signs: 12:31pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart rate</td>
</tr>
<tr>
<td>Blood pressure</td>
</tr>
<tr>
<td>SpO2</td>
</tr>
<tr>
<td>Respiratory rate</td>
</tr>
<tr>
<td>Temperature</td>
</tr>
<tr>
<td>Pupils</td>
</tr>
<tr>
<td>Blood glucose</td>
</tr>
</tbody>
</table>

The 12-Lead ECG showed a normal sinus rhythm. The patient appeared pale and diaphoretic, complained of continued dizziness and mild shortness of breath. He was given 0.8mg of glyceryl trinitrate (GTN) and a 20 gauge intravenous cannula was inserted in his right hand. The GTN reduced the patient’s pain to two out of ten.

At 1243 the patient was transported to the Wellington Emergency Department (ED); a journey time of approximately one hour. After a further 1.2mg of GTN the patient’s pain was one out of ten and his blood pressure was 133/96. At 1310, one hour and ten minutes after the sudden onset of pain and with 35 minutes estimated arrival time to ED the patient’s 12-Lead ECG showed ST elevation in leads V3, V5 and V6 and flipped T waves in limb lead III. He now fit the WFA criteria for pre-hospital thrombolysis and ALS paramedic assistance was requested. The 12-Lead ECG was transmitted to CCU however multiple failed attempts to transmit meant that no authorisation for thrombolysis was given.

The patient did not receive thrombolysis therapy in the field. The crew were directed to transport the patient to the ED rather than directly to the catheterisation laboratory. If ECG transmission had been successful the patient would likely have received thrombolysis in the field, or been transferred directly to the catheterisation laboratory for PCI. The Cardiologist saw the patient in the ED. The patient underwent angioplasty, and was stented for an atero-septal AMI.

This case has been identified because it reflects a continuing problem with access to pre-hospital thrombolysis.

### Improving prehospital systems for AMI

A patient with who presents with an acute STEMI or BBB, in the presence of clinical features convincing of infarction, should receive either thrombolysis or PCI as soon as possible. Current literature states that treatment delay is strongly associated with adverse outcomes. International guidelines recommend a time limit not exceeding 30 and 90 minutes respectively, from first medical contact to initiation of thrombolysis or PCI.

Initial pre-hospital treatment typically involves analgesia, vasodilation with nitrates, and anti-coagulation with aspirin and/or clopidogrel. Thrombolytic agents and/or PCI are the next line of defence to treat acute thrombotic conditions. The aim of thrombolysis is to restore myocardial blood supply following coronary artery occlusion by breaking down the fibrin matrix of the clot. When the clot dissolves, blood flow is restored to the ischaemic tissues. However thrombolytic agents also alter haemostasis. If bleeding occurs it can exceed 30 and 90 minutes respectively, from first medical contact to initiation of thrombolysis or PCI.

Regardless of which strategy is used – thrombolysis, PCI or both – successful reperfusion in the shortest time is the key determinant of optimal patient outcomes. Studies show that organised STEMI community networks consistently provide faster treatment for AMI where Paramedics, Emergency Departments and CCU teams deliver rapid co-ordinated treatment.

Despite years of consistent pre-hospital 12-Lead ECG transmission, door to access times that were initially reduced have increased and the initial reduction has not been sustained. Researchers suggest there are several factors that increase door to thrombolysis or PCI times and if these factors could be analysed and addressed, clinical outcomes may improve.

### Reducing door to reperfusion times

Increased scene time due to pre-hospital 12-Lead acquisition and transmission may be a factor in delayed reperfusion where the transport time is less than ten minutes. However this must be compared with possible delays in admission, ECG acquisition, and catheterisation laboratory activation on arrival at hospital. A small single-centred study showed that pre-hospital scene times may be delayed up to seven minutes by the acquisition and transmission of an ECG. In contrast, an average hospital delay of 22 minutes from time of arrival to the start of invasive treatment was shown. The study shows that early diagnosis through the transmission of pre-hospital 12-Lead ECGs can reduce overall door to reperfusion times.

The acquisition and transmission of a pre-hospital 12 Lead ECG may reduce overall time to reperfusion by as much as two thirds.

One single-centred prospective interventional study compared door to access times of patients who underwent PCI following activation of ED and catheterisation laboratory after ambulance ECG transmission. The study examined the time to PCI of patients with and without field activation. The median time to access was reduced from 98 minutes (73 to 126.45) for ED activation to 56 minutes (36.5 to 70) following field activation. Further studies suggest the transmission of a 12-Lead ECG from the community directly to a cardiologist should become routine to minimise reperfusion delay even when the catheterisation laboratory was activated at short notice due to short transport times, no detrimental delay in receiving PCI was noted. Transmission of 12-Lead ECGs should be considered even for short transport times to allow for preparation and direct admission to the catheterisation laboratory.

### Pre-hospital 12-Lead ECG interpretation

Research indicates that ALS paramedics can achieve a high success rate (99.7%) in obtaining diagnostic quality pre-hospital 12-Lead ECGs. ALS paramedics have also been shown to accurately identify STEMI and BBB patterns from a 12-Lead ECG with proficiency comparable to that of physician controls.

Consistent results from trials show that early identification of STEMI reduces time to primary treatment. Patients presenting on weekends or nights when the catheterisation laboratory is closed benefit the most, as this is when most delays occur.

In contrast to these results, one study compared the positive predictive value of paramedic recognition of STEMI with that of emergency physicians. The conclusion was that paramedic interpretation might not be high enough to activate the catheterisation laboratory. It must be noted that the paramedics in this trial were only given three hours of training in ECG recognition and had little or no clinical experience in this regard.
Communication and transmission complications

Currently, to confirm the diagnosis of STEMI the transmission must be fault-free and a physician must be available. Transmission problems occur in up to 20% of cases. This may be due to network failure, module problems or base station problems, resulting in delays in accessing treatment. Delays also occur when there is no immediate return of communication from the on-call physician\(^1\)\(^{-1}\).\(^{1}\)

One strategy to overcome these complications is 12-Lead ECG transmission directly to a handheld device carried by the on-call cardiologist\(^2\). This has shown to be effective, however a 4-5 minute transmission delay is common\(^1\)\(^{-1}\). Although this delay can be factored into the time to thrombolysis, it does not address issues of complete transmission failure, or when there is no return communication from the physician.

ALS paramedic-led thrombolysis

The benefits of thrombolysis are time-dependent, with a 48% reduction in mortality if treatment is administered within an hour of onset of symptoms\(^1\)\(^{1}\). Brooks\(^1\) recommends a focus on the use of pre-hospital thrombolysis as an alternative to direct transport for PCI or in-hospital thrombolysis. To overcome the issues surrounding transmission failure and delays due to the availability of the on-call cardiologist, recommendations have been made to issue ALS paramedics with the authority to administer a bolus of thrombolytic agents if the field where avenues of transmission and communication have failed\(^3\)\(^{6}\),\(^{6}\).

Literature has shown the feasibility and safety of autonomous pre-hospital thrombolysis by ALS paramedics. Trials have identified an average time-saving of 48 minutes for autonomous ALS paramedic-administered thrombolysis from call to administration\(^1\)\(^{1}\).

Adverse events must be considered when administering thrombolytic agents. These include death, re-infarction (defined as two out of three of chest pain, further ST elevation, or further cardiac enzyme increase), stroke, cardiogenic shock, hypotension (systolic <90mmHg), Killip class II-IV, recurrent angina or ischaemia, significant arrhythmias, or major bleeds\(^2\)\(^{7}\). However evidence shows that the side effects and complication rates are not statistically significant and differ little between hospital and pre-hospital thrombolysis\(^9\).

The benefits of ALS-administered thrombolysis can be seen in improved patient outcomes. However there are also cost savings associated with shorter reperfusion times. One Australian study shows early administration of thrombolysis by paramedics could reduce the 30-day mortality rate by 10.5% and the incidence of heart failure by 40%. With early intervention, AMI patients can expect to live longer and gain greater quality-adjusted life years. It is calculated that cost savings of AUD$3482.00 per life year gained, and AUD$2601.00 per quality year can be expected\(^10\).

A broad volume of literature has demonstrated the feasibility, safety and financial benefit for ALS paramedics to obtain and interpret a 12 Lead ECG, and when indicated, administer a thrombolytic in the field – either independently or under direction\(^3\)\(^{1}\)\(^{1}\).

Recommendations

It is the recommendation of this author that the current practices of Wellington Free Ambulance and the hospitals that it works with be continued in order to achieve the best possible outcomes for patients presenting with STEMI or LBBB AMI\(^1\)\(^{-7}\).

If it is deemed that network and transmission failure delays cause increased time to reperfusion and compromise patient outcomes, it is recommended that ALS paramedics autonomously administer thrombolysis, provided appropriate training has been given.

Research is required to evaluate the conditions under which an ALS paramedic could be authorised to autonomously administer thrombolytic agents. The author recommends a New Zealand-specific cost-benefit analysis of autonomous ALS paramedic administration of thrombolytic agents where avenues of transmission and communication have failed.

About the Authors

Amanda Weaver (BHSc Paramedic, BEd) is a paramedic and clinical auditor with Wellington Free Ambulance. Amanda undertook this research to complete her third year paramedic degree studies at Whirinapsi New Zealand.

Sean Thompson (BHSc Paramedic, PG Cert Adv ParaPrac, BAplSc, MPA) is the Third Year clinical tutor on the BHSc Paramedic degree at Whitireia New Zealand, and supervised Amanda’s research. He is an ALS paramedic with Wellington Free Ambulance.

References:


17. Anonymous, (2013). Infarction prevention; studies from the monash university, cardiovascular research center provide new data on infarct prevention. Heart Disease Weekly, April, 287. Retrieved from ProQuest database


Midazolam and Morphine Versus Ketamine for Sedation Post Prehospital Intubation; A Literature Review

Catherine L Hannell

Abstract

Objectives: To review the current literature and compare the efficacy of Midazolam Hydrochloride and Morphine Sulphate versus Ketamine during sedation post prehospital ETI.

Methods: Journal articles using the keywords and phrases prehospital intubation, Ketamine, sedation and rapid sequence induction were retrieved and reviewed.

Results: Concomitant Midazolam Hydrochloride and Morphine Sulphate administration results in dose-dependent hypotension, which can be potentially deleterious for the patient. Ketamine has shown promise for use across a wide range of patient conditions and demographics. Ketamine exhibits an ability to maintain a reliable haemodynamic profile and results in potent sedation and analgesia once the dissociation threshold is reached.

Conclusions: Ketamine has the potential to be a more suitable sedative agent for use post prehospital ETI when compared to a combination of Midazolam Hydrochloride and Morphine Sulphate.

Key words: endotracheal intubation; ketamine; midazolam; morphine; paramedic; prehospital; sedation

Introduction

This literature review will use current evidence based practice to highlight the importance of proficient prehospital airway management, emphasise the significance of paramedic led endotracheal intubation (ETI) and detail the categories of ETI and sedation. It will then focus on the practice of prehospital sedation post ETI, describe the ideal sedative agent for use in this setting and discuss the risks and benefits involved. The current literature regarding the combination of Midazolam Hydrochloride and Morphine Sulphate will then be compared to Ketamine as a sedative agent post prehospital ETI. Finally, recommendations and conclusions will be drawn from the evidence, with the aim of furthering prehospital research.

Methods

A literature search in Science Direct, EbscoHost, Proquest and Informit was performed. Articles published between January 1st 2001 and June 30th 2012, listed with key words “prehospital intubation”, “ketamine”, “sedation” and “rapid sequence induction” were retrieved. References of relevant articles were searched for additional articles. From these searches, twenty journal articles were found to be appropriate and one book was also referenced in this literature review.

Ethics

This literature review is centred on investigations into humans. Due to this piece of research being an evaluation of previous studies, repeated informed consent from participants in these studies was deemed inappropriate. Proficient airway management of the severely sick or injured patient is one of the highest priorities in the emergency prehospital setting. Rapid control of the patient’s airway reduces the risk of potentially deleterious side effects including systemic hypertension, intracranial hypertension, intraocular hypertension, myocardial strain, tachycardia and cardiac dysrhythmias. Furthermore, timely airway control minimises the risk of pulmonary aspiration and allows for physiological control of oxygen and carbon dioxide concentrations in the blood.

Endotracheal intubation (ETI) is considered the gold standard of airway management in both the prehospital and hospital settings. Consequently, ETI is employed by Ambulance Services throughout Australia and the world. ETI is an important component of the resuscitation of critically ill patients and is performed only when indicated as an emergent, lifesaving procedure. ETI is achieved by the insertion of an appropriately sized endotracheal tube (ETT) into the trachea with the assistance of a laryngoscope. An ETT may be used to maintain a patent airway, prevent aspiration of material from the digestive tract, permit suctioning of tracheobronchial secretions and to administer positive pressure ventilations that cannot be provided effectively with the use of a bag valve mask or laryngeal mask airway. Once the ETT is inserted, post intubation checks and continuous monitoring of the patient must be performed. This includes the use of direct visualisation of the vocal chords, waveform capnography, pulse oximetry, chest auscultation, cardiac monitoring and visualisation of chest wall movement during ventilations.

Despite prehospital intubation being introduced in the early 1970s,Paramedic led intubation remains a controversial topic. There is sound supportive evidence that ETI can be safely and effectively undertaken by Paramedics. According to Gunning et al, well trained Paramedic teams utilising standardised operating procedures can safely perform ETI in the prehospital setting. However, the overall success of prehospital ETI is dependent upon levels of clinical exposure and cumulative ETI experience. In the case of failed intubation, all Paramedic ETI providers must be skilled in bag valve mask ventilation and laryngeal mask insertion as an avenue for airway rescue.

There are three main categories of ETI: ETI without the use of pharmacological agents; known as cold intubation, drug assisted intubation (DAI) and rapid sequence induction (RSI). DAI and RSI are utilised in some Australian Ambulance Services, however their concepts are beyond the scope of this literature review which will primarily focus on the practice of cold intubation and the use of sedative agents to maintain the insertion of the ETT.
Cold intubation was first introduced into Paramedic practice for patients who suffered a cardiac arrest and has been extended to comatose patients over time. A study performed by Bernard revealed that patients requiring ETI, who were successfully intubated in the prehospital environment using cold intubation, had a lower mortality rate than non-intubated patients. This clearly demonstrates that successful cold intubation is preferable when compared to the absence of intubation. Once cold intubation has been achieved, adequate sedation to maintain the ETT must be administered. For simplicity, cold intubation will be referred to as ETI.

An ideal prehospital sedative agent for the maintenance of an ETI would be readily available and straightforward to use. The agent would also have a rapid onset of action and would preserve pharyngeal reflexes, cardiorespiratory drive and intracranial pressure. As well as this, it would also be an effective analgesic, have a short duration of action and would fail to induce anaphylactic reactions. Due to these specifics, it is widely accepted among the prehospital community that there are currently no known ideal prehospital sedative agents available. Ambulance Services are therefore advised to select the best drug or best drug combination most suited to the goals of the procedure and the dynamic characteristics of the prehospital patient and environment.

Each sedative agent boasts different side effects and some agents are more suited to prehospital use than others. Intubating and subsequently sedating the patient to maintain the ETI does not come without inherent risks to the patient as all sedative agents induce side effects of some description. The severity of these side effects must be balanced against a risk versus benefit model for the patient. These side effects may cause cardiovascular, respiratory and neurological compromise. However, failure to sedate the patient post ETI allows for the possibility of negative physiological responses including hypertension and tachycardia. These responses may be indicative of patient discomfort and worsen long-term patient outcomes.

Midazolam Hydrochloride is often utilised by Ambulance Services in this setting. Midazolam is a type of benzodiazepine which exhibits sedative, hypnotic, amnesic, anxiolytic, muscle relaxant and anti-convulsant properties. Multiple studies have demonstrated the administration of Midazolam to be relatively safe in euvoeamic patients or in the presence of continuous haemodynamic monitoring for early detection of hypotension. Such invasive monitoring however, is only available in the Operating Suite or Intensive Care Unit. While Midazolam exhibits better amnesia and greater potency than many other sedatives, it unfortunately results in dose-dependent hypotension and tachycardia. These responses may be indicative of patient discomfort and worsen long-term patient outcomes.

Opioids such as Morphine are not ideal as an adjunct to prehospital sedation for similar reasons to Midazolam. Concomitant Midazolam and Morphine administration in this setting, increases the risk of hypotension in critically ill patients. This practice is therefore not recommended prehospitaly. Inadequate sedation achieved by these sedatives and analgesics may lead to adverse events including unplanned extubation, loss of venous catheters, agitation, difficulty with ventilation, barotraumas, hypertension, intracranial hypertension and hypoxaemia. Each of these individual events has the potential to worsen long-term patient outcomes and collectively they may result in higher rates of patient mortality.

There are many sedative agents used for prehospital sedation post ETI. These include but are not limited to Etomidate, Thiopental, Propofol, Ketamine, and the combination of Midazolam and Morphine as previously mentioned. According to current literature, the use of Ketamine may be more appropriate in this setting when compared to other pharmacological agents currently used by prehospital providers.

There are many positive features of Ketamine that appear to make it an ideal drug for prehospital use. Ketamine is the most widely used anaesthetic in the world due to its wide margin of safety, low cost and overall effectiveness. It has been proven by research that Ketamine can be safely used by non-physician personnel as it has been used reliably for many years in areas of medical care where there are limited numbers of practitioners, monitoring equipment and alternative sedatives.

The underlying pharmacology of Ketamine is fundamentally different from that of other sedative agents. Ketamine is a dissociative anaesthetic which exerts its effect by disconnecting the thalamocortical and limbic systems within the brain. The result is the central nervous system becoming dissociated from outside stimuli such as pain, sight and sound, effectively sedating and anaesthetising the patient. This causes the patient to experience potent sedation and analgesia. Once the dissociative threshold is reached, the administration of additional doses of Ketamine does not enhance sedation as dissociation is not dose-dependent; it is either absent or present.

A key feature of Ketamine is that it has shown promise as a sedative agent in the prehospital setting for a wide range of conditions. This is particularly pertinent due to the varied range of unpredictable patient presentations treated and managed in the prehospital environment. Patient demographics where Ketamine would be ideally suited for prehospital sedation post ETI include both adult patients and paediatric patients older than three months of age. Patient conditions where Ketamine would be ideally suited for sedation post prehospital ETI include status asthmaticus due to its bronchodilating properties, status epilepticus due to its anti-convulsant properties, head injuries and any other condition or traumatic injury resulting in hypoperfusion due to Ketamine’s ability to maintain a reliable haemodynamic profile.

As mentioned previously, all sedative agents have their own array of negative side effects and Ketamine is no exception. Ketamine inhibits the reuptake of catecholamines producing sympathomimetic effects resulting in mild to moderate increases in blood pressure, heart rate, cardiac output and myocardial oxygen consumption. While this aspect is responsible for Ketamine’s desirable haemodynamic profile in the hypoperfused patient, for these reasons it is recommended to avoid the use of Ketamine in patients with known coronary artery disease, congestive heart failure or pre-existing hypertension. This is due to the fact that it has the potential to exacerbate these pre-existing conditions. Absolute contraindications to Ketamine administration include patients who are younger than three months of age due to a higher risk of airway complications and patients who have known or suspected Schizophrenia due to a likely exacerbation of their condition. Unlike other sedatives, Ketamine does not produce muscle relaxation but instead may produce random purposeless movements. Hypertoncity and clonus may occur and on rare occasions, physical restraint of the patient may be required.

This is an obvious downside to the use of Ketamine in the prehospital setting as numbers of available and qualified personnel are often lacking.
The ability of Ketamine to induce hallucinatory reactions during recovery is legendary. However, this literature review is focused upon the use of Ketamine for prehospital sedation post ETI which would imply that these patients are critically ill and are unlikely to be extubated and have their sedation ceased in the prehospital environment. Therefore, the management of Ketamine emergence in this particular setting would theoretically occur in hospital where there are more personnel and resources to cope with this unlike event. Hypersalivation is an infrequent side effect of Ketamine more commonly seen in paediatric patients and is rarely of clinical significance. During the rare event of hypersalivation, suctioning of tracheobronchial secretions on occasions may be required. Clinically significant hypersalivation due to Ketamine administration can be effectively treated by the concomitant administration of the anti-cholinergic drug Atropine.

Results
Proficient prehospital ETI and subsequent sedation requires regular theoretical and practical training and an extended knowledge of how to appropriately deal with airway compromise. If continual training of prehospital providers is lacking, this may act as an inhibiting factor toward achieving proficient airway management of the severely sick or injured patient.

When considering appropriate sedative agents for sedation post prehospital ETI, Ketamine seems a likely candidate. The information presented in this literature review, indicates that Ketamine may be a more appropriate sedative agent in this setting when compared to the combination of Midazolam and Morphine.

As mentioned previously, Ketamine has the ability to induce emergence hallucinatory reactions on rare occasions. In the unlikely event of this occurring in the setting of Ketamine induced sedation post prehospital ETI; this can be effectively managed with small titrated doses of Midazolam. Concomitant administration of Atropine can reliably and effectively prevent hypersalivation.

Limitations
All of the studies incorporated within this literature review have the potential to possess limitations. All but three studies failed to make mention of these potential constraints. One particular study relied on self-reported data which may have biased their results. A second study failed to incorporate any controls or randomisation into their research. A third piece of research employed a relatively small sample size which had the potential to skew their results. Due to the limitations of the studies incorporated within this literature review, it is possible that the data that was utilised to draw conclusions may be biased. When possible, multiple references were used to find solid supportive evidence in an attempt to alleviate this.

Further Research
Further research in this field is strongly warranted. Studies incorporated within this literature review failed to indicate the appropriate route of administration and dose which would be required for Ketamine sedation post prehospital ETI in both the paediatric and adult cohorts.

Conclusion
Concomitant Midazolam and Morphine administration results in dose-dependent hypotension, which can be potentially deleterious for the patient. Ketamine has been proven to be an ideal sedative agent for prehospital use as it has shown promise for use across a wide range of patient conditions and demographics. Ketamine also exhibits an ability to maintain a reliable haemodynamic profile. Ketamine has the potential to be a more suitable sedative agent for use post prehospital ETI when compared to a combination of Midazolam Hydrochloride and Morphine Sulphate.

Competing interests: No relevant disclosures.

References

About the Author
Catherine L Hanlett; BHSc (Paramedic), MPA, is an Advanced Care Paramedic with the Queensland Ambulance Service.
Emergency SA 2012

The biennial Emergency SA Conference (EMSA) was held in Adelaide on the 24th and 25th August. This conference has become a key event for the SA Chapters of Paramedics Australasia, the College of Emergency Nursing Australasia and the Australasian College for Emergency Medicine.

This year’s event saw almost 200 Emergency Doctors, Nurses, Paramedics, Students, General Practitioners and others from South Australia and interstate come together for learning opportunities and a chance to practice skills with EMSA’s strong stream of clinical workshops.

Keynote speakers this year included Dr Seton Henderson who travelled from New Zealand to talk about the Christchurch Earthquake and the expansive medical response that occurred as a result, this was followed by a discussion on SA Health’s Emergency Management Unit and their active processes that can be enabled in the event of an emergency, particularly earthquake. Detective Superintendent John DeCandia from SA Police gave an informative discussion on the background of outlaw motorcycle gangs that could be helpful to emergency personnel.

The second day saw Professor Jack McLean from the Centre for Automotive Safety Research give a perspective on road trauma and medical response, followed by Professor Russell Gruen discussing haemorrhage control in severely injured patients, including the emerging role of tranexamic acid.

Both days had two streams of presentations on a range of topics from general updates in ARC Guidelines and burns management, a look at forensics and emergency care, bariatric care, trauma systems, emergency childbirth, psychological and psychiatric emergencies, stroke and reperfusion therapy, assessing suspicious head injuries in children and general discussions on making better clinical decisions.

The third stream covered practical clinical workshop sessions on difficult/surgical airways, ventilator skills, ENT emergencies, toxicology and the use of the snake venom detection kits, and hand injuries and use of nerve blocks. The unique aspect of these workshops is the collaborative nature, where doctors, nurses and paramedics work side-by-side to practice and use their skills.

The final session for the conference was an entertaining debate arguing the statement “Ambulance Diversion is a Drug and a Perfect Therapy for ED Overcrowding”.

One of the unique qualities of EMSA conferences is the networking opportunity for everyone involved and the collaboration between the three emergency care disciplines. EMSA aims to break down the barriers and encourage everyone to work together and learn together for better emergency medical care.

“The Australian Health Workforce Ministerial Council, of which I am a member, has asked that an investigation into the inclusion of paramedics into the scheme be undertaken by July, 2014. I strongly support the registration of paramedics. Unfortunately, not all of my colleagues around the table have a similar view. I think it’s fair to say that the Western Australian government and South Australian governments probably the most strongly support, and some of the other states as well. So I appreciate that this is a pressing issue for many members of the profession and I give you my undertaking that I will do everything that I can while I am Minister for Health, to advance that cause.”

Quote from SA Minister for Health and Ageing, the Hon. John Hill in his opening speech at EMSA 2012.
Flexible Learning Stream

Gary Strong, Craig Drayton, Carmel Haggerty

Paramedicine is a very ‘hands on’ branch of healthcare. Can students acquire the skills, knowledge and attributes of a professional paramedic by distance learning? How can ambulance staff and volunteers access quality, industry approved education and at the same time continue to live and work in their own communities? Can inequities in access to education be overcome, using good technology and good teaching? If so, what will be the impact on a workforce which depends heavily on volunteers?

New Zealand has embraced degree level education for paramedics. In 2008 a Health Select Committee Inquiry made fourteen recommendations on the provision of ambulance and paramedic services in New Zealand. Amongst these were nationally recognised training and qualifications for paramedics and the registration of paramedics under the Health Practitioners’ Competence Assurance Act 2003 (HPCA). Increasing professionalisation was a key theme.

The New Zealand government had earlier approved and accredited Bachelor of Health Science (BHSc) Paramedic programmes to be delivered by two tertiary institutions, Whitireia Community Polytechnic (trading as Whitireia New Zealand) and Auckland University of Technology (AUT). It is widely expected that in the near future, registered paramedics will need to be educated to a minimum level of Bachelor Degree.

Both paramedic degrees are based in the North Island. Auckland and Wellington are well served, but until recent years potential students from outside these areas mostly faced a stark choice: relocate, or get left behind. For the young and mobile, relocation is no barrier to success, but for those with family obligations and community ties, uprooting in order to study full time is not a realistic option. Nor would it be good for the local ambulance services if current working paramedics moved away for months at a time to upgrade their education. Existing ambulance officers, whether paid or volunteers, should be offered the same educational opportunities as the new generation of entrants to the profession.

In 2008-9, the growing number of enquiries from existing ambulance officers wishing to enrol in a BHSc gave rise to the vision at Whitireia of a more flexible programme which would enable currently practising paramedics and volunteers to attain the qualification without having to become full time students and relocate to Wellington. This was particularly important as outside of the major cities, the provision of ambulance services in New Zealand is heavily reliant upon volunteer and community support. Delivery of BHSc Paramedic by distance learning, using contemporary learning methodology and technology, would help to ensure that the drive towards professionalisation became woven into the fabric of ambulance services’ community base.

The BHSc (Paramedic) programme in Wellington is a partnership, hosted and delivered by Whitireia using the skills and talents of clinical tutors employed by Wellington Free Ambulance (WFA). This arrangement has numerous benefits, including straightforward access to clinical placements for students consisting of 1040 hours over three years. The syllabus derives originally from the Victoria University (Melbourne) programme and was first offered in New Zealand in 2002. By 2009 the degree was well established and was providing a substantial contribution to the paramedic workforce in Wellington and beyond. Keen to realise the vision of wider accessibility, Whitireia and WFA approached the National Ambulance Sector Office (NASO) with a project plan and funding request to make the BHSc Paramedic available ‘off campus’.

The project and funding was approved, resulting in a new stream of the BHSc (Paramedic) called the Flexible Learning Stream (FLS). It was now possible to go from the National Diploma in Ambulance Practice (the industry-standard Basic Life Support qualification) to the second year of the Whitireia undergraduate degree from throughout New Zealand, via a short academic pre entry course. The first group of eight students commenced at the beginning of 2010. Just over two years later, the FLS is producing its first graduates and has more than 80 current students.

Education at its best aims to be student centred in the same way that optimum healthcare is patient centred. From the students’ point of view, the FLS aimed to provide:

- A reduced need to travel for education
- Less need to seek time off in order to attend class
- The ability to study when it suits – essential for shift workers
- The availability of quality education wherever there is internet access
- The opportunity to have a qualification that belongs to the individual and is recognised outside of ambulance services
- The facility to study at one’s own pace

In addition to the logistical benefits, students studying by distance have to be largely self-directed, putting them in the driving seat of their own learning. Here was the opportunity to offer autonomy and empowerment alongside accessibility. At the same time, it was recognised that face-to-face time was important for learning and practicing practical skills. As a result, the FLS was built with an approach known as blended learning.

### The benefits of Blended learning

Blended learning is learning that ideally combines the benefits of distance learning with the value of face to face contact. The FLS is taught primarily by distance with students completing lessons, activities and assignments over the internet each week of the semester. The FLS also consists of up to two weeks of face-to-face block courses on campus each semester. These block courses focus on practical skills, simulation and assessment.

Students also learn through reflection upon their own clinical experiences and placements with health providers throughout their study, both online and in block courses.

---

**Key Terms:**

| Distance learning: | students are remote from their tutors, and may study online or by correspondence |
| Online learning: | students are remote from their tutors, studying online |
| Blended learning: | a mix of distance and face to face. Often referred to as ‘flexible learning’ as this term puts the emphasis on providing the students with increased choice and flexibility |
| Flexible learning: | see ‘blended learning’ above |
| Face to face: | traditional classroom teaching/learning that takes place in a class room or physical setting |
| Contact time: | time there is direct contact between student and tutor |
| Clinical time: | time spent in clinical experience or placement |
| Pedagogy: | philosophy of teaching and learning |
The clearest benefit of blended learning is the increase in flexibility for students – this is the reason that FLS was developed. But there are educational as well as logistical benefits. Researchers have found that, on average, distance learning students have equivalent or better academic performance than solely face-to-face students. This may be because the increased self-direction required for distance learning encourages a more active, student-centred style of learning.

**Comments from Students:**

"The flexibility of combining study with full-time work is both challenging and rewarding. Distance learning provides the opportunity to fit study in around other activities, whilst the block courses are an excellent opportunity to touch base with both the tutor and other students. Undertaking the degree this way has been of enormous benefit to my clinical practice and combines the best of both worlds – a great learning platform and an opportunity to put new knowledge and skills to immediate use on the road."

*Helen Gibbons, BHSc (Paramedic) Student*

"Great to feel part of a ‘student family’ – new experience for me!"

*Sarah Knowles, BHSc (Paramedic) Student*

The students in the flexible learning stream also enjoyed the diverse perspectives and experience bought to the class by students from different locations, ambulance services and working environments. Also, the occasions when ‘on campus’ and FLS ‘off campus’ students have worked together in the classroom or simulations have led to especially positive feedback.

Online learning specialists describe a process of ‘socialisation’ leading to ‘knowledge construction’. The student is empowered through interaction with peers to build their subject matter knowledge. Peer and tutor review helps keep discussion on track towards learning outcomes. So, if distance learning is beneficial, then why not teach paramedicine completely online? The most obvious reason is that paramedicine is a practical occupation with many hands-on skills. The experience of physically practising skills and scenarios cannot be fully replicated online. The blended learning approach allows educators to move theoretical learning online and use the limited face-to-face time for intensive practical learning. Also, educational research has found that solely distance learners can have a higher perceived workload, feel more isolated and feel less supported in their study than blended learning students. From an employers’ perspective, blended learning has significantly reduced the need to release staff from rosters for education time. From the student’s point of view, it enables learning that integrates theory and practice.

**Integrating Theory and Practice**

In healthcare education, integration of theory and practice is essential to the development of the expert practitioner. None of the FLS students are ‘novices’, to use Dreyfus’ terminology, but are on a journey to expertise that requires them to apply theory in practice, reflect on its application, seek peer and tutor input through online discussion and return to practice with improved confidence and competence. This is a continuous learning cycle and relies on the student being a paid or volunteer ambulance officer with regular patient contact. This is an important differential: on campus students are allocated clinical time as part of their learning hours. For the off campus student, their regular shifts in their own locality comprise the majority of their clinical hours, allowing them the opportunity to contextualise learning. An essential prerequisite is the support of their line manager, who can help to provide appropriate supervision.

**Issues and Challenges**

The development of a new version of an undergraduate degree requires commitment or ‘buy-in’ from everyone involved. First the academic tutors: are they ready to move away from the security of traditional classroom teaching into the unfamiliar territory of the virtual world? Without enthusiasm from this group, and a willingness to take risks, the project could have been a non-starter. This was more than preparing to teach a new topic, this was preparing to teach existing topics in a whole new way. There are two strands to the development tutors need: technical skills, i.e. how to design learning using the online platform ‘Moodle’, and pedagogy. Pedagogy refers to both the art and the science of education. Implicit in all forms of teaching is a philosophy of how students learn. The challenge in preparing online tuition is to understand the factors that will keep a student engaged and ensure that learning outcomes are achieved. Much has been written on this subject, but for the group of tutors at the time, this was a new journey, embarked upon whilst still keeping up with their regular on campus workload. The journey included learning about tools such as Coursecast, Articulate and PeerWise. What was not well understood in the beginning was the differential in time input required for good online tuition. Estimates vary, and literature is variable in relation to how much preparation time is needed to create one hour of effective, engaging online teaching, with no research relating to the applied sciences located.

Also crucial was the support of Whiteriea services such as information and communication technology (ICT), the Library and the Online Learning Centre. Whiteriea is traditionally a campus based institution, with strong links to the local community. The challenge for the organisation was to expand its horizons to fully include the growing number of off campus students in its community. Infrastructure designed to meet the needs of face to face students needed to be adapted for those who would rarely visit the campus. Robust connectivity and information technology are essential, along with ease of access to library services, especially electronic journals and databases.

For the student, technical as well as socialisation issues were envisaged. In 2009 it was considered essential that course resources were available on CD-ROM, for those with poor access to broadband Internet. However a CD has never been requested, so perhaps the reality of internet access in rural New Zealand is not as bleak as we had been led to believe. Access to tutors and fellow students was a further concern. How successfully this has been addressed is a question for an upcoming evaluation process, but strategies deployed include regular Course Casts (short videos from the tutors) and news updates, and accepting a certain amount of informal ‘chat’ in online discussion as well as academic and reflective writing. More recently Whiteriea has installed a telephone system that automatically emails voicemail messages to staff. This allows students to contact tutors by landline 24-7, and enables tutors to respond remotely from their laptops.

New Zealand now has just two providers of emergency ambulance services, St John and Wellington Free Ambulance (WFA). Almost all potential students were volunteers for or employees of one of these two services. Anecdotally, many ambulance officers saw Whiteriea as providing the ‘WFA degree’ (and AUT the ‘St John degree’). For Whiteriea to attract students to the FLS stream, these widespread misconceptions needed to be challenged. A programme of positive engagement with St John managers at all levels has helped to depoliticise perceptions of the programme and encourage student enrolments from throughout New Zealand. At the same time Whiteriea and AUT BHSc programmes have developed a strong and open working relationship which has assisted in challenging the misconceptions.
Recognition of Prior Learning and Pre Entry

Experienced ambulance officers who are keen to gain a bachelor’s degree need to be assured that their prior qualifications and experience are valued, yet at the same time tertiary education providers have a duty to maintain academic standards. Matching stages of a degree to established industry qualification or practice levels can be hazardous. Potentially, recognition of prior learning (RPL) can lead to either a lessening of expected standards or an increased failure or dropout rate.

Addressing these issues, Whitireia insists that students who enter the FLS programme via RPL undertake a pre entry course introducing them to Biological Sciences, Pharmacology and Academic Writing at a tertiary level. Originally this ran for five weeks, but dropout rates were high due to the time pressures placed on already working paramedics. This pre entry course was increased to ten weeks in 2010, with a noticeable reduction in dropout rates. A further reduction in dropout rates has been achieved by consistently advising new students not to take on too many topics at once and to pace themselves according to their work and home commitments.

The pre entry programme is studied entirely online and is designed to ensure that students are fully prepared for engagement in year two. Students who can demonstrate prior learning in health sciences at this level are exempt. Many FLS students find the programme a valuable stepping stone into (online) academic study, while some discover that perhaps they have ‘bitten off more than they can chew’. For these students, the opportunity to slow the pace and cover one topic at a time is offered. If they do decide to drop out altogether, the potential fallout, both emotional and financial, is less than if they were enrolled in the degree.

Benefits to date

The increase in student enrolments is one measure of success. Clearly there is a demand for this kind of programme from all over New Zealand. Ambulance officers who enrol demonstrate a desire for self-improvement which is often unrelated to any personal gain, save the satisfaction of feeling better equipped to ‘do the job’. The recent enrolment of a small number of full time (but still off campus) FLS students is an affirmation of the programme’s reputation, as are the positive comments observed by tutors in the course of online discussions. Further measures of success will be applied in a detailed evaluation of the project scheduled to begin in July of this year and to encompass 2012 course completions. To date, feedback has been received from students, tutors and external stakeholders through the programme advisory, and indications are that the FLS programme is meeting the needs of students and the paramedic profession.

A further positive spin off of the FLS project was the development of the WFA online Paramedic Learning Lounge, a professional development site for WFA paramedics. In a high demand operational environment, web based professional development has become an essential feature of in-service education. Well-designed online modules with clear learning outcomes can be used to ensure that all staff have access to training updates, avoiding the hit-and-miss relationship that exists between classroom teaching and 24–7 shift patterns. The partnership arrangement between Whitireia and WFA means that both parties are able to share online material for mutual benefit, giving life to the concept of ‘reusable learning objects’[10]. In the box below is an example of a clinical skill development process that can be utilised in both the FLS and WFA in-service education.

Learning example: intravenous cannulation

In the year two clinical paper the skill of IV cannulation is introduced, using the following sequence of learning:

1. Read/view written and multimedia material including IV insertion video
2. Answer online quiz
3. Participate in online case based discussion
4. Attend block course, practice IV insertion on task trainer
5. Complete assessment using task trainer
6. Practise IV insertion on placement under supervision
7. Complete practice record, case histories and reflective log on clinical learning experiences

NB in order to practice independently, students in New Zealand must be assessed and granted Authority to Practice by their employer.

The story of the FLS at Whitireia so far suggests that a blended learning approach offers a powerful strategy for student engagement and achievement in paramedicine. Geography is no longer a barrier to success. The South Island in particular has been the source of many new enrolments, students who are keen to integrate theory and practice in their own locality. The same applies to a range of North Island enquirers and students. Over the next few years, Whitireia graduates will comprise a wide demographic mix, with perhaps up to fifty per cent from the FLS stream, i.e. already employed or working in an ambulance service.

It is too early to say what will be the precise impact of these developments on local ambulance service provision. FLS is being offered at a time when New Zealand ambulance services are turning their attention towards meeting the increasingly complex urgent healthcare needs of their clients. If Whitireia is getting it right, then the most important attribute of its graduates will be that they have acquired the habit of lifelong learning and professional development, and can adapt to meet the changing demands of patient care in the 21st Century.

References

The ‘Physician’s Model’ for Clinical Scenarios
An innovative approach to paramedic education and assessment

Jason Quick

Abstract
The Bachelor of Health Science-Paramedic Science degree program is fast becoming the sole pathway for people wishing to fulfil their career as a paramedic. First year undergraduate paramedic practice introduces the student to fundamental skill sets demanded of the paramedic on a daily basis such as equipment use and basic, linear and codified clinical approaches to patient care. Paramedic clinical practice at a second year level then launches the student toward the more complex nature of pre-hospital management, commanding extended capabilities in clinical reasoning, critical thinking and effective communication.
Historically, paramedic clinical scenarios operate under the ‘Jockey-Driver model’, which mimics the general role-play that occurs within operational environments. This approach anecdotally causes considerable stress and frustration to many second year students, as they are yet to develop the capability necessary for more advanced levels of care. Anecdotal reports by clinical teaching staff highlight a perceptual narrowing by students, as well as less desirable moment-by-moment reactive patient management when using this jockey-driver model at second year level.

In 2010, the Victoria University Paramedic undergraduate degree program implemented an innovative approach to second year paramedic clinical practice – the Physician’s Model for clinical scenarios. Emulating hospital emergency department processes, the ‘Physician’s Model’ allows the lead student to literally adopt a ‘hands-free’ role, providing opportunity for clinical reasoning, critical thinking, delegation and verbal patient assessment. Meanwhile, two paramedic students from the same year level perform all necessary skills under their complete guidance and direction.
Anecdotal reports from staff along with student feedback suggest enriched student capabilities in strategic thinking, enhanced scene and patient management for complex scenarios, as well as increased graduate attributes. Staff also reported easier identification of cognitive capabilities and student competency during assessment tasks.

Key terms
Clinical assessment, clinical education, clinical reasoning, clinical scenarios, critical thinking, health education, paramedic education, Physician’s Model, strategic thinking, whole systems.

Introduction
The Bachelor of Health Science-Paramedic Science degree program is fast becoming the sole pathway for people wishing to fulfil their career as a paramedic. Consequently, entry into universities that offer the paramedic degree is highly competitive nationwide. Those students who gain admission into a tertiary program are then committed to a minimum three year undergraduate degree that aims to develop capabilities across a wide array health science subjects including anatomy, physiology, pharmacology and social sciences to name a few. As graduate paramedics they are also equipped with industry specific knowledge and skills including paramedic clinical science and clinical practice - working toward industry recognised competency benchmarks for theoretical and clinical work-readiness prior to entering the workforce.

First year paramedic practice introduces the student to fundamental skill sets demanded of the paramedic on a daily basis such as equipment use and basic clinical approaches to patient care. The majority of the skills learned in the first year of their undergraduate degree are psychomotor skills, codified and primarily protocol driven which are then applied to simple patient scenarios using linear thinking with minimal patient complexity. Undergraduate paramedic clinical practice at a second year level then launches the student toward the more complex nature of pre-hospital management, commanding extended capabilities in clinical reasoning, critical thinking and effective communication. As such, the transition from first to second year alone proves quite challenging for most students.

Historically, paramedic clinical scenarios operate under the ‘Jockey/Driver model’, mimicking the general role-play that occurs out on road in the ‘real’ clinical setting. Generally, the ‘jockey’ adopts a lead clinician role, assuming primary care of the patient. The ‘driver’ undertakes a secondary, yet equally important supporting role for the jockey, assisting with equipment, logistical support and transportation en route to hospital while the jockey continues...
with patient care in the ambulance. Despite the interchangeable nature of many of these duties, there still remains a generalised distinction between clinician and supportive roles, albeit focusing on a team approach. Undergraduate students have used similar models in an attempt to emulate real-world conditions during their learning and practical application within paramedic clinical scenarios. This approach reportedly causes considerable stress and frustration to many second-year students, as they are yet to develop the skills of delegation, communication and critical thinking beyond their protocol-driven, linear approach to scenarios, with emphasis on psychomotor skills learned in first year. Anecdotal reports by staff highlight a perceptual narrowing, as scenarios become multi-dimensional and complex, drawing from multiple knowledge bases whilst still trying to perform skills, anticipate patient presentations and delegate tasks all at the same time. There were also reports of significant decreases in students’ eye contact and communication, and less provision of some of the ‘softer’ paramedic skills such as rest and reassurance and social interactions with patients and colleagues. Students focused on performing the immediate skill at hand, as prepped to do so in earlier years of their clinical program, rather than demonstrating higher-order, strategic systems-wide assessment and management based on sound clinical reasoning. Without this broader view, students were struggling to engage with anything more than a codified moment-by-moment skill sets, sub-optimal in complex patient situations.

Review of the Literature
A comprehensive review of the literature has been conducted. The review extended to include primary, secondary and tertiary sources of information inclusive of academic papers and peer-reviewed journals inclusive of electronic and paper-based searches. Usual search methods were employed in this process.

From this extensive search it became apparent that no literature relevant to the concept of the ‘Physician’s Model’ for clinical scenarios was available for reference. The literature search uncovered numerous articles on critical thinking and clinical reasoning within the clinical learning environment of health-related disciplines. Although applicable to student learning, these articles were not relevant to the aspects of student outcomes purposed to this mode of instructional technique. The gap in literature suggests that the concept of the Physician’s Model for clinical scenarios is ground-breaking, reflecting innovative pedagogy for clinical education.

Discussion
In 2010, the Victoria University Paramedic Degree program implemented an innovative approach to second-year undergraduate paramedic clinical practice. Appropriately coined as “The Physician’s Model” for clinical scenarios, the model requires three students instead of two, allowing the lead student to literally adopt a ‘hands-free’ role, whilst having two paramedic students perform all necessary skills for them. Meanwhile, the lead student utilises the time for strategic thinking including clinical reasoning, critical thinking, team leading, and if necessary, discussion with preceptors.

Similar whole-systems models and approach to patient care can be demonstrated in any hospital emergency department. During critical situations, a multi-disciplined environment is borne in which practitioners work independently and synergistically, performing various and specific hands-on tasks at any one time. Meanwhile, the lead physician adopts a primarily strategic, critical thinking role, ensuring efficiency and a whole-systems best practice approach.

A skills imperative was identified, one where students needed a system that nurtured the development of cognitive processes separate to psychomotor skills learned in first year. Students can then reintegrate this new capability back into more conventional modes of practice as they advance through further levels of education.

The potential for this model within the student-paramedic learning environment then carried the two-fold task of transposing and preparing the model for the clinical practice laboratory and implementation into the curriculum.

The transition between concept and clinical laboratory was relatively straightforward. Pre-empting student and preceptor concerns was important to safeguard smoother transition from current to intended modalities, as well as minimising distractions to achieving student learning objectives.

Clinical re-enactments were performed involving staff and volunteer students using the Physicians Model. Anecdotal reports by staff highlight a perceptual narrowing, as scenarios become multi-dimensional and complex, drawing from multiple knowledge bases whilst still trying to perform skills, anticipate patient presentations and delegate tasks all at the same time. There were also reports of significant decreases in students’ eye contact and communication, and less provision of some of the ‘softer’ paramedic skills such as rest and reassurance and social interactions with patients and colleagues. Students focused on performing the immediate skill at hand, as prepped to do so in earlier years of their clinical program, rather than demonstrating higher-order, strategic systems-wide assessment and management based on sound clinical reasoning. Without this broader view, students were struggling to engage with anything more than a codified moment-by-moment skill sets, sub-optimal in complex patient situations.

Review of the Literature
A comprehensive review of the literature has been conducted. The review extended to include primary, secondary and tertiary sources of information inclusive of academic papers and peer-reviewed journals inclusive of electronic and paper-based searches. Usual search methods were employed in this process.

From this extensive search it became apparent that no literature relevant to the concept of the ‘Physician’s Model’ for clinical scenarios was available for reference. The literature search uncovered numerous articles on critical thinking and clinical reasoning within the clinical learning environment of health-related disciplines. Although applicable to student learning, these articles were not relevant to the aspects of student outcomes purposed to this mode of instructional technique. The gap in literature suggests that the concept of the Physician’s Model for clinical scenarios is ground-breaking, reflecting innovative pedagogy for clinical education.

Discussion
In 2010, the Victoria University Paramedic Degree program implemented an innovative approach to second-year undergraduate paramedic clinical practice. Appropriately coined as “The Physician’s Model” for clinical scenarios, the model requires three students instead of two, allowing the lead student to literally adopt a ‘hands-free’ role, whilst having two paramedic students perform all necessary skills for them. Meanwhile, the lead student utilises the time for strategic thinking including clinical reasoning, critical thinking, team leading, and if necessary, discussion with preceptors.

Similar whole-systems models and approach to patient care can be demonstrated in any hospital emergency department. During critical situations, a multi-disciplined environment is borne in which practitioners work independently and synergistically, performing various and specific hands-on tasks at any one time. Meanwhile, the lead physician adopts a primarily strategic, critical thinking role, ensuring efficiency and a whole-systems best practice approach.

A skills imperative was identified, one where students needed a system that nurtured the development of cognitive processes separate to psychomotor skills learned in first year. Students can then reintegrate this new capability back into more conventional modes of practice as they advance through further levels of education.

The potential for this model within the student-paramedic learning environment then carried the two-fold task of transposing and preparing the model for the clinical practice laboratory and implementation into the curriculum.

The transition between concept and clinical laboratory was relatively straightforward. Pre-empting student and preceptor concerns was important to safeguard smoother transition from current to intended modalities, as well as minimising distractions to achieving student learning objectives.

Clinical re-enactments were performed involving staff and volunteer students using the Physicians Model. Any concerns expressed by clinical teaching staff or students were noted and questions raised and addressed as they were discovered. Staff then deliberated, discussing the appropriateness and efficiency of the model in achieving the desired student attributes.

Frequently Asked Questions (FAQ’s) were compiled after identifying potential concerns that may be raised by the greater staff and student cohort. Concerns for concern included conflicting roles between delegator and paramedic crewmembers during patient assessments, or process issues that may arise should paramedic crews perform poorly on behalf of the delegator.

This ensured consistency of response and ultimately alleviating stresses that may hamper student learning. It was also important to maintain constructive alignment between learning objective, teaching method, assessment process and facilitator capability, understanding that students are more likely to engage when learning, activity and practical examination are coordinated, and carry necessity as a ‘need to know’.

An introduction to the Physician’s Model followed for both student and facilitator, providing the rationale for implementation. A familiarisation PowerPoint presentation accompanied the introduction, further exploring and highlighting the mechanics, aims, philosophy and benefits of the model.

A live demonstration ensued, using a relatively low-acuity patient scenario example so that students could focus on format rather than the patient’s needs. Students were also provided with the FAQ’s companion document that addressed and clarified any possible concerns.

Each FAQ was opened with a plain language question, worded in a manner that anticipated technical jargon as well as contemporary colloquialism. This was followed by a concise short answer specifically directed as a response to each question. Each short answer question was supported by a rationale that linked the answer to learning and scenario objectives, as well as how this benefited the student when applying the capability to a real clinical setting.

The prelude was well received by both students and facilitators. Students acknowledged the potential benefits of the model in assisting them to develop cognitive aspects such as scene management, communication and strategic capabilities including clinical reasoning and critical thinking. Facilitators responded similarly, with additional acknowledgement of the potential benefits in the assessment of students’ cognitive attributes under examination conditions.
Students commenced using the Physician’s Model with relatively simple, linear scenarios prior to progressing to second year complexity. Despite the students’ appreciation, there remained a small percentage that opposed the format when scenarios became more complex and challenging. As supported by Horgan (2003), students can often resist active learning strategies in the first instance, but often return to appreciate and adapt once they familiarise with the new approach to learning. Resistance amongst the second year cohort was minimal, with those students embracing the format soon after experiencing the benefits when faced with complex scenarios. This was not surprising given Horgan’s findings. Students continued with the Physician’s Model for scenarios for their entire second year of clinical practice, covering medical emergencies and trauma scenarios based on varying degrees of complexities aligned to their clinical learning outcomes for their year level.

To ensure constructive alignment, assessments were also performed using the Physician’s Model prior to advancing to third year practice. Students responded positively to using the Physician’s Model for assessments, finding reassurance in knowing that their practical scenario assessments were not going to carry them through clinical work instruction (CWI) drills and examinations. Clinical teaching staff reported less perceptual narrowing by students at any given moment as well as over the duration of the entire scenario. There were also notable improvements in identifying immediate and emergent patient conditions. Clinical teaching staff also noted students maintained broader scene awareness, demonstrating enhanced team leadership skills including, communication, delegation, resource awareness and coordination resulting in improved operational and allocative efficiencies.

Clinical teaching staff observed improvements in scene management and coordination of paramedic crews, as well as additional resourcing including higher levels of clinical care (Intensive Care), police and other emergency services simultaneously. Anecdotal reports also showed students developing a greater awareness of time, and abilities in allocating resources in a manner that reflected operational and clinical best practice – all attributes that reflect enriched capabilities of clinical reasoning and critical thinking.

The challenge then became one of reintegrating the student paramedic into an actively strategic role, one that commands both psychomotor and cognitive focus. Such process is used at the third year level, as they refine skills and focus on clinical readiness in preparation for advancement into the workforce. It can be hypothesised that if opportunities to disseminate and refine cognitive capability such as the Physician’s Model are not utilised, students may endure greater challenges, requiring more intense resourcing in order to achieve competency. They may also enter the workforce with underdeveloped capability that demonstrates a limited moment-by-moment reactivity, as opposed to a whole-systems approach that proactively transforms patient management. Research using appropriate and effective measures is currently being constructed to determine the efficacy of The Physician’s Model, exploring possible benefits to student outcomes and learning experiences.

Conclusion

Depending on their stage of development, undergraduate paramedic students require varied and often innovative learning techniques that maximise student capability. Scenario based activities that separate psychomotor skills from cognitive process encourage opportunity and ‘head-space’ for clinical reasoning and enhanced strategic, critical thinking. The Physician’s model for scenarios is based on this very premise, allowing students to focus on cognitive development in a controlled environment such as a clinical laboratory. Once psychomotor and cognitive aspects have been nurtured independently and with equal importance, both capability sets can be simultaneously reintegrated back into clinical scenarios for further development and refinement. From a clinical educator perspective, the Physician’s Model also provides enhanced opportunity to isolate and focus on strategic capabilities that often become difficult to identify when students are also required to perform psychomotor skills during complex patient environments.

Follow PA on Facebook

If you’re on facebook, an easy way to follow news from Paramedics Australasia is to ‘Like’ our page!

Our facebook page is continually updated with the latest news relevant to Paramedics across Australia, as well as providing advice on local CPD activities as they are posted on our website. This makes it even easier for you to follow PA and a great way to communicate with other Paramedics through comments and additions to the PA facebook page.

To have a look and ‘Like’ us type this link into your browser
http://on.fb.me/nSZuBa, or search for Paramedics Australasia on facebook.

Reference


About the Author

Jason Quick
BHlthSc (Paramedic Science), GradCert (Mobile Intensive Care), currently ALS Paramedic with Ambulance Victoria, and Lecturer/Unit Coordinator of Clinical Sciences/Paramedic Science at Victoria University.
Shaping the Future

What will ambulance services in Australasia look like in 10-20 years' time?

This is the theme of CAA's conference this year which will give our delegates the opportunity to explore the interplay between demographic changes — part of the focus of my last column in Response; technological innovation; workforce dynamics and public policy. We won't exhaust these topic in our two days in Hobart (3-4th October) but we will give them a thorough airing. More information about our conference, including registration details, may be found at www.caa.net.au.

We have decided this year not to run our conference back-to-back with PA's. This decision was based on feedback from our members that the back-to-back arrangement made for too long a period out of the office at one time. The fact that our records show that only four people attended both events in Sydney last year supported this decision. We'll re-evaluate after 2012's experience.

This year's conference is a full two day affair with a stimulating array of local and international speakers and, of course, plenty of opportunities for networking. We look forward to seeing as many people there as possible to take advantage of the exceptional value on offer this year. We also wish PA well with their conference and hope that more CAA delegates make it to that event this year.

It's the CAA's 50th Anniversary this year (along with the Beatles and the Rolling Stones) and, as well as looking forward, we have been reflecting on the achievements of the ambulance sector in Australia and New Zealand over that period. Things have certainly come a long way in that time and the ongoing exchange of ideas, knowledge and experiences between the ambulance services of Australia and New Zealand, supported and facilitated by the CAA, has played a large part in this.

CAA's history shows that there has always been a dynamic between the sharing of ideas, the avoidance of re-inventing the wheel, and the need to fit in with the requirements and characteristics of particular jurisdictions and communities. This is particularly the case in a federated country such as Australia but is also true in other systems. Avoiding a 'one size fits all' mindset has always been important and remains so.

This dynamic will continue to be a challenge in the future too. There will be pressures from the national health reform agenda for greater uniformity across Australia on some issues. For example, as our hospital system moves towards more consistent and activity-based funding and more consistent performance reporting, the links between hospitals and pre-hospital (and out-of-hospital) care will push us in the direction of consistency.

On the other hand, we need to recognise that there is really no such thing as 'the health system' in general. We have a set of specific health systems, with specific providers, in specific communities with their own characteristics, as well as a common (-ish) underlying framework. From a patient care perspective the 'horizontal linkages' between particular practitioners and providers are what makes a care system work. Where these linkages occur across State and national boundaries issues of commonality, such as in the area of user charges, do arise. This prompts some to call for uniformity in user charges for ambulance (as there is for Medicare funded services) but we need to recall that States and Territories levy a whole range of taxes and charges and that ambulance fees need also to be seen in that context as well as being compared across state borders.

As I wrote in my last column, the ageing of the population, across Australasia, and the increasing prevalence of chronic diseases and the multiple, simultaneous health issues that are characteristic of caring for older people not to mention the ‘grey nomad’ phenomenon, will make such horizontal linkages even more important.

Diversity in service models and practices between services also supports innovation as people try new things and then share the experience with their peers and colleagues. As I said, a balance between consistency and responsiveness to local needs is the goal.

Similar challenges are faced in other countries too. I had the privilege recently of attending the Emergency Services Chiefs of Canada (EMSCC) Annual Conference in Vancouver which was coupled with the 8th meeting of the International Roundtable on Community Paramedicine. Canada’s 35 million people are spread across 13 Provinces and Territories, each with a distinct health system, culture and provider network. As with Australia’s State and Territories these Provinces are responsible for ambulance services but they operate a mix of unitary and multiple provider service delivery models. Three provinces share the same contracted provider while Ontario has many (I counted nearly 50), as their system is organised on a county, rather than a whole of province basis. The United States (and there were quite a few US delegates in Vancouver) have around 20,000 services across their 50 states – which to me seems like a lot! Such events are a highly valuable opportunity to compare notes, open the mind to new ideas and to benchmark Australasian practice and policy against that of others. There is much to learn from talking to people who do similar work to us in such different contexts.

I followed this up with a meeting of the relatively newly formed Association of Ambulance Chief Executives (AACE) in London including a phone link with the EMSCC. Each of our organisations place a high value on forging and maintaining international links.

When we are looking to the future, international best practice must be our goal. Learning from other people’s achievements, avoiding the same pitfalls and sharing ours with them can benefit us all. Small-minded parochialism is our enemy in this and it was pleasing to see over twenty Australian delegates at the EMSCC event – from ambulance services and universities (including a group of students from Charles Sturt University in NSW). We look forward to welcoming a number of international delegates to Hobart on the 3rd October and to continuing the international dialogue that enriches our sector. I hope to see you there too.
Onsite health and emergency response company Sitemed has won a prestigious 2012 Telstra Australian Business Award.
Sitemed, founded by Paramedics Australasia Board member Nicole Nott, was named as the winner of the HTC Start-Up Award category, for businesses that have been operating for between one and three years, at a gala awards ceremony in Sydney last night (29 August).
The award judges said the company was particularly impressive “with their rapid path to profitability, clear growth plans and tenacity to remove obstacles in their way” and was backed by solid business acumen and leading edge technology.
Sitemed specialises in the provision of health services and emergency medical, fire and rescue response to the construction and mining industries, as well as event services to corporate clients.
The company has differentiated itself from its competitors by offering a turnkey solution for employers and their workforce with the provision of fully equipped mobile medical centres, qualified advanced life support paramedics, emergency services officers, emergency vehicles and state-of-the-art medical equipment.

Sitemed’s founder and General Manager, Nicole Nott, acknowledged the work of the company’s employees as being integral to the company’s success. “Sitemed is a great business because of our team of people,” she said.

“Health and emergency response workers are consistently ranked by the community as the most trusted people in the community and the team at Sitemed live up to these expectations. They focus on the wellbeing of their clients and patients, and support their co-workers and the company overall.

“In offering the services that we do, our sole purpose is to ensure that workers go home safely to their families at the end of every shift and it’s a responsibility we take very seriously.

“We also focus on working with employers to support them in their duty of care to their workers and ensure that they don’t just meet their legal obligations, but that they meet their moral responsibility to provide a safe workplace.

“The whole Sitemed team has worked incredibly hard over the past three years so it’s very gratifying to be rewarded with this prestigious award. I’m absolutely delighted that we’ve been recognised in this way.”
SOUTH AUSTRALIA

Annual Chapter Meeting

This year’s annual chapter meeting (ACM) was held at the SA Aquatic & Leisure Centre at Marion on the 01 August. The ACM saw a number of committee members resign and new members elected. One of the key members of the SA committee, James Pearce, who has been on the SA committee for the past 6 years and the chapter secretary for the last 12 months, resigned his position. James had been instrumental and the driving force behind a number of large events over this period including the very successful registration symposium held at the beginning of the year which had 120 people attend.

As a thank you and to show the appreciation of his effort and dedication to PA, James was presented with a plaque from the committee.

The new SA chapter committee following the ACM is

Executive
- Cliff Collett – Chair
- Kim Nguyen – Secretary
- Matt Callaway – Treasurer

General Committee Members
- James Gardiner
- Nick Williams
- Glen Cuttance
- Tim Pointon
- Dana Brand

The ACM also saw Cindy Hein, the SA chapter ARC rep, give a presentation on the latest from the ARC and an update on the RINSE trial which had recently commenced in SA as part of the Australian multi centre trial involving Vic and WA.

Grant Gallagher also gave a brief presentation about his scholarship to Israel as part of his Rod Kershaw ASM commitments.

Registration Activity

During the previous couple of months the drive towards national registration has taken up a large part of the committee’s time. The release of the consultation paper by the HWPC and the PA registration survey has seen the committee promoting and encouraging PA members, non PA members, volunteers, military and the private sector to become involved in the process.

On the 1st of August, Mr Ray Bange once again held a workshop in Adelaide to explain the pros and cons of national registration and open up discussion about the four options presented within the HPWC consultation paper. PA (SA) was also represented by two of its committee at the Adelaide Consultation forum on the 10th of August.

CPD and Scholarship Activities

Over the previous few months PA members were again offered a number of clinical events to attend, not only those run by the SA chapter but also events run by CENA, the ADF and Flinders University disaster management faculty.

This year’s Rod Kershaw ASM scholarship was won by Grant Gallagher, SAAS Paramedic and PA (SA) member. Grant will be co-sponsored by PA and SAAS for $7,000 towards expenses on a study tour to explore Israel’s emergency medical service, ‘Magen David Adom’. Grant will observe an EOC, visit ambulance stations and work on the front line with ride-along shifts.

The PA (SA) committee also offered 3 x $1000 sponsorships to any PA (SA) member who would like to attend the PA national conference in Tasmania this year. Applicants only had to submit a 100 word application explaining why they would like to attend the conference.

EMSA2012

The EMSA 2012 conference, a joint conference between PA, ACEM and CENA is a premier biannual medical conference in SA and was held on 24th and 25th August. See the special feature in this edition for the news from the event.

Membership

The SA chapter membership continues to grow at a steady pace due the current registration debate which has highlighted the work PA, as a national body, does to support and promote paramedic professionalism and development.

NEW ZEALAND

Registration

Ambulance New Zealand has submitted its comprehensive application for regulation of the paramedic and Defence Force medic roles to the Ministry of Health. The Health Practitioners’ Competency Act (HPCA) is currently under review and therefore the application for regulation will not be considered until the legislative review is complete. This is anticipated to be early in 2013.

Go to http://www.ambulancenz.co.nz/news/ for up to date information on New Zealand paramedic registration.

PANZ Membership

We warmly welcome anyone wishing to join the New Zealand chapter of PA – whether you are a paramedic, affiliate, student or member of the NZ Defence Force. Contact us via the PA website under NZ Chapter information, or email sarah.werner@paramedics.org.au

PANZ Facebook

The New Zealand chapter of Paramedics Australasia is now on Facebook. Follow us on http://www.facebook.com/#!/pages/Paramedics-Australasia-New-Zealand-PANZ/243747499078485 Keep informed on New Zealand news, events, updates, and articles of interest. Everyone is welcome!
WESTERN AUSTRALIA

Registration Activities

The WA Chapter for Paramedics Australasia has continued campaigning and discussing paramedic registration in WA. The first of many consultation forums was held by the Health Workforce Principle Committee in Western Australia. It was well attended by an array of paramedic interest groups within WA. These interest groups included ambulance services, industrial and mining medical services, education providers, and employee union bodies.

Cathy Campbell, the Manager of Workforce Policy and Planning for the WA Department of Health, and Carol Mirco, the Principle Policy Officer of Workforce Policy and Planning for the WA Department of Health, provided a summary of the Consultation Paper titled Options for Regulation of Paramedic. Carol highlighted that the aim of paramedic registration was aimed at safeguarding the public as well as the title of Paramedic. While the paper stipulated the options for paramedic registration, members of the mining and industrial health services were concerned as to how the term paramedic might be defined in its regulation. The concern of some in the forum was that the term paramedic might be defined by employment and not its scope of practice. While these consultation forums were not designed to discuss the term “paramedic” their concern was noted and will be discussed further within the Health Workforce Principle Committee.

After the presentation, the forum was broken into four groups to discuss two basic questions relating to paramedic registration. The questions designed to assess the adequacy of existing protections for consumers who use the services of paramedics and the impact of the four options of paramedic regulation. The four options for regulation include:

Option 1 – No Change. Rely on existing regulatory and non-regulatory mechanisms, and a voluntary code of practice.

Option 2 – Strengthen statutory health complaint mechanisms. Statutory code of conduct and powers to prohibit those who breach the code from continuing to provide health services.

Option 3 – Strengthen State and Territory regulation of paramedic.

Option 4 – Registration of paramedics through the National Scheme.

Although some seemingly in opposition, the overwhelming view of the forum was that there was no other option than to have national paramedic registration. Almost the entire group felt that options 1, 2, and 3 were band-aid solutions to the issue and expressed a deep concern should these options be elected.

Andy Symons, the Chairman of Paramedics Australasia for the Western Australian Chapter, summarized the view of most in saying, “There is no other way to ensure public safety and protection of the paramedic title than to have National Paramedic Registration. My experience of National Paramedic Registration in the United Kingdom has been positive and will have the same effect here in Australia. I don’t see any problem with a regulatory body that holds both paramedics and their employers accountable as well as helps protect the professional title of Paramedic.”

The WA Chapter has now completed and submitted a response to the formal consultation process. We look forward to hearing the outcomes of the consultation.
Causation, Confirmation and Anecdotes in Prehospital Care

Christopher R. Foerster

Introduction

As our profession continues to progress, it is essential that we fully embrace evidence-based practice not only in our clinical practice guidelines but also in our judgement and beliefs. Unfortunately it seems almost inevitable that we all end up, at times, trusting our own judgement over the evidence from formal research. Even those who are aware of these traps can still fall into them and end up making poor patient care decisions based on misconceptions. Misunderstanding causation, having a confirmation bias, and mistaking anecdotes for evidence can all lead to false beliefs and sometimes to poorer care. These will each be briefly discussed based on examples from the author’s experience. As each is addressed, you will likely be able to recall a recent example where you or a colleague fell victim to these.

Only by being aware of the potential pitfalls can we hope to avoid them to allow us to make the best decisions for our patient care.

Correlation does not imply causation

Despite its routine use by ambulance services around the world, adrenaline does not appear to improve survival of cardiac arrest patients to hospital discharge. On one particularly slow day at work, an educator from one of our regulatory bodies arrived for a surprise visit. He decided to present a brief review of the most important aspects of cardiac arrest care. Rather than focusing on high quality CPR and early defibrillation as might have been expected, he emphasised the importance of the patient receiving intravenous adrenaline. It seemed odd for a paramedic educator to be suggesting such a thing. Despite adrenaline for cardiac arrest becoming the accepted practice, a review of the literature will show that it does not improve final patient outcomes. Naturally, we raised the question of why this was being emphasised given the lack of evidence. The educator responded by saying that he had treated two recent cardiac arrest patients where there was a return of circulation almost immediately after he administered the drug, with these patients both surviving to hospital discharge.1

This educator made a common error in judgement by concluding that something he did must have had a particular impact on the patient. Clearly, the fact that he gave adrenaline and the patients had positive outcomes does nothing to prove that adrenaline is actually what caused these good outcomes. Unfortunately, when it is our own experience we have a tendency to make these types of false conclusions. It may feel nice to assume that what we have done has led to some type of improvement in the patient, but it can lead to erroneous conclusions about what is best for patients and what our treatment priorities should be.

Confirmation bias

During a prehospital study of an Impedance Threshold Device (ITD) for use in resuscitation, many paramedics using the new device fell into the trap of the confirmation bias. The idea behind the ITD was that it could be attached to the endotracheal tube or bag-valve mask and with its special valve it would increase the negative pressure in the chest during CPR to increase venous return, cardiac output, and survival. The researchers were optimistic that their large study, which ended up including over 8700 patients, would demonstrate the benefits of this simple device. As a randomised trial, half of the devices were actually shams, designed to look like the true ITDs, but doing nothing more than allowing air to pass through normally. Almost as soon as the trial started, we began receiving paramedic feedback at the research office that was running the study. Paramedics enthusiastically told us of their love for the new devices and described the hugely improved rates of successful cardiac arrest resuscitation that they were witnessing. We did not have the heart to remind them that while all of the devices looked identical, half of them were shams.

Surprisingly to some, the final results showed that the ITD did not improve patient survival to hospital discharge. Since paramedics are often limited in their knowledge of what happens with a patient after transfer of care at the hospital, it may not be surprising that a mistake like this could be made. More interestingly though for our discussion, the data also showed that there was no increase in the rates of return of spontaneous circulation at the time of arrival at the hospital when using the ITD either.2 The paramedics who were excitedly reporting great success had it all wrong. The paramedics believed that the device would work and many felt that it was working. Their interpretation was skewed by the belief that the device would result in higher resuscitation rates. These overly optimistic beliefs often cloud our interpretations of many prehospital devices and interventions.

Anecdotes are not evidence

One of the easiest traps to fall into is putting too much weight in our own anecdotal experience. A few months ago at work, the supervisor brought in a mechanical CPR device that our service was trialling. As we played with the device, a discussion about the benefits and efficacy of mechanical CPR began among the six paramedics at the station. One paramedic was quick to point out that the devices have benefits, but that they have not been shown to improve patient outcomes from cardiac arrest.3 Another colleague did not dispute this, but in the same breath continued on to describe the improved resuscitation rates he had heard about from a small neighbouring service that was not conducting a formal study. Most of the other paramedics in the station seemed to interpret this as a strong reason for our service to adopt the device as well.

This experience of the other ambulance service is essentially anecdotal and has no place in a professional discussion about the efficacy of medical devices. There simply was not the volume of cases or formal control and assessment of patient outcomes to truly make an informed judgement from their experience. The plural of anecdote is not evidence. True evidence can only come from properly designed and published studies that have been subject to a rigorous peer review process.

Suggesting that anecdotal experience is not valuable in the medicine component of our jobs is not meant to devalue experience overall.
In some aspects of paramedic practice, experience really is what counts. Reading the most prestigious medical journal is not going to help you to become more proficient at extracting the elderly patient who is wedged between the toilet and the bathtub. With experience though, this should become easier. There are many other similar skills that need to be learnt and practised on the job. Experience counts for overall paramedic practice, but for the medicine component we must trust the evidence over our interpretations of our own personal experience.

Conclusion

This is not an article about adrenaline, the ITD, or mechanical CPR. These were simply examples to show how easy it is to allow our interpretation to become clouded and our views skewed. We must acknowledge that while experience brings benefits in our ability to perform many aspects of the job, paramedics are unlikely to individually accrue the volume and breadth of experience that will match the strength of evidence from published trials. Do not discount your own experience, but when considering it you must be aware of these potential pitfalls; it will make you a better paramedic.

About the Author

Christopher Foerster is a paramedic currently studying medicine in Townsville, Queensland. He has an honours bachelor of science degree in paramedicine from the University of Toronto and a master of science degree in disaster medicine and management from Philadelphia University.

In addition to working as a front line paramedic, Chris has also held positions in paramedic research and education. He can be contacted at christopher.foerster@my.jcu.edu.au.

Acknowledgement

I am grateful to Cathryn MacKinnon for her assistance with this article.

References


Jodi’s Story

Jodi and I had been married for 10 years when we moved to Vietnam in 2006. We were two years into a wonderful experience and having the time of our lives. Our two young children were having a wonderful time too.

We were almost pinching ourselves thinking ‘how good is this’. I was away working when Jodi rang me complaining of constipation, abdominal pain and some bloating. The next morning, her doctor recognised an obstruction in Jodi’s bowel and ordered some scans.

The results came in at about 3.00 that afternoon. Jodi had bowel cancer and the tumor had all but blocked her bowel. She was 39 years old.

Just before midnight she was airlifted from Ho Chi Minh to Bangkok for emergency surgery. She was flown at low level due to the risk of her bowel bursting from altitude pressure.

Jodi had a very successful operation but three days later we received the worst news possible – Jodi was diagnosed with Stage IV bowel cancer, the most advanced stage. The cancer had spread to her lymph node and liver. She had at best two years to live.

We spent these two years trying to change those odds but nothing seemed to go our way. Jodi had three major operations, two rounds of chemotherapy, radioactive sphere treatment and we even saw a Chinese herbal doctor.

The hardest thing of all was telling our children, then 8 and 5 years old. We took them away for the weekend and explained that their mum was going to die. Jodi passed away on 16 January 2010 leaving her family and friends devastated.

Jodi was such a giving person. She volunteered at the orphanages in Vietnam and at the international school. She got massive fulfillment from that.

Before her diagnosis she was fit and healthy. She had no symptoms whatsoever. We now know this is typical of bowel cancer.

The thing I miss the most about Jodi is coming home to her. She made everything better. After an average day at work and she was there to put her arms around me and say ‘look, tomorrow’s another day’. She put things in perspective for me – that’s what I miss the most.

In 2010 I set up The Jodi Lee Foundation. From our experience came a massive opportunity to try and make something good out of an awful situation. I don’t want anyone else to go through what Jodi and I went through.

Since then I have run two New York City Marathons and ridden over 1,000 kms from Canberra to Melbourne. The amount of pain I went through to finish these events didn’t compare with the struggle and amount of pain that Jodi had to go through.

I feel like there’s a huge part of Jodi in The Jodi Lee Foundation. The values of the Foundation are values that we held dear in our relationship – integrity, vitality and transparency. At the end of the day there’s not nearly enough awareness about bowel cancer. We are helping to change that.

Everyone needs to be checked for bowel cancer from the age of 40. If each of our events can raise enough awareness to save one person, then clearly it is worthwhile.

I lost my wife Jodi, a beautiful girl, to bowel cancer. Our two children lost their mother. It doesn’t have to happen.

Take a simple screening test at home every year from age 40 – it may just save your life.

FOR MORE INFORMATION CONTACT:

Nick Lee – Founder & CEO
Tel: +61 8 8343 7222
Mob: 0401 678 893
Email: nicholas.lee@jodileefoundation.org.au

Tiffany Young – Communications & Finance
Tel: +61 8 8343 7222
Mob: 0412 503 411
Email: tiffany.young@jodileefoundation.org.au

MEDIA & PR CONTACT
Sophie Callaghan – communikate et al
Tel: +61 8 8331 1444
Mob: 0422 989 329
Email: sophie@communikate.com.au
jodileefoundation.org.au

THE EARLY DETECTION OF BOWEL CANCER SAVES LIVES
OCTOBER

The 37th Annual ANZICS/ACCCN Intensive Care Annual Scientific Meeting (ASM) 2012
When: 25-27 October 2012
Where: Adelaide, SA

Trauma 2012
Resuscitation to Rehabilitation
When: 26-28 October 2012
Where: Perth, WA

The Australasian Trauma Society would like to invite you to participate in Trauma 2012. Trauma 2012 will be held from 26-28 October at the Perth Convention and Exhibition Centre in Perth, WA. We would like to give our products and services vendors the opportunity to partner with us for this exciting and informative event.

The general theme of Trauma 2012 is “Resuscitation to Rehabilitation” and we intend to cover the full spectrum of trauma care from prehospital to rehabilitation.

Provisional topic areas include:
- Resuscitation
- Critical decision making
- Coagulation and blood transfusion
- Surgical innovations
- Military
- Nursing/allied health
- Burden of injury
- Burns/disasters
- New horizons

We anticipate a minimum of 350 delegates to attend Trauma 2012. We expect attendees from every State in Australia and New Zealand as well as from Singapore, Malaysia and adjacent Asian nations.

St John – Traumed 2012
The young and the restless
When: 26-28 October 2012
Where: Whangarei, New Zealand
Web: http://www.traumed.org.nz/subjects/

NOVEMBER

National Primary Health Care Conference 2012
HEALTHY COMMUNITIES, HEALTHY NATION
“From Transition to Action: Integrating Primary Health and Social Care”
When: 8-10 November 2012
Where: Adelaide, SA

Inspire 2012: Reshaping Australia’s Health Workforce
Health Workforce Australia’s Inaugural Conference
When: 13-14 November 2012
Where: Melbourne, VIC

You are invited to be one of 500 anticipated health workforce leaders and educators from around Australia and overseas coming together to learn from expert opinion, explore latest innovations, and be inspired to take the collective action required to transform Australia’s health workforce.

Essential Aspects of Aeromedical Retrieval
RFDS Star Program
When: 23-25 November 2012
Where: Hobart, TAS

This course is a totally different postgraduate medical training experience that captures all the elements of current emergency medicine and trauma courses whilst focusing the participant on the unique aspects of prehospital, aeromedical and retrieval medicine.

This course is for doctors, nurses or paramedics either currently working within the aeromedical environment or looking to gain an insight into this unique specialty.

The style of the three day training is one of total immersive learning which will challenge you both physically and mentally. As retrieval emergencies can occur at all hours, the course program schedule similarly spans into all hours and provides realistic prehospital simulation training as well as the latest updates in prehospital emergency medicine and aeromedical intensive care.

Advanced Life Support Course
When: 25-26 November 2012
Where: Melbourne, VIC
Web: http://www.anaesthesia.nh.org.au/course-overview/w1/i1001239/

FEBRUARY

Queensland Statewide Trauma Symposium 2013
When: 20-22 February 2013
Where: Brisbane, QLD

APRIL

9th International Spark of Life Conference
Resuscitation Systems of Care – A team effort
When: 18-20 April 2013
Where: Melbourne, VIC
Web: http://www.resus.org.au/
International Speakers
- Dr Dana Edelson – (Chicago, USA)
- Dr Mads Gilbert – (Norway)
- Professor Laurie Morrison – (Canada)
- Dr Swee Han Lim – (Singapore)
Australasian Visitor
- Dr Stephen Bernard

12th National Rural Health Conference
Strong Commitment. Bright Future
When: 7-10 April 2013
Where: Adelaide, SA
Web: http://nrha.org.au/12nrhc/

The Conference in Adelaide will capture the inspiration and success of previous Rural Health Conferences, while focusing more than ever before on the positives: on the creativity, teamwork, resilience and sense of community that characterise so many rural and remote areas.

In all likelihood the Conference in April 2013 will find itself just four months out from a Federal Election. In this context it will be critical to keep rural affairs strong on the national agenda, to ensure that progress towards good health and quality of life in rural areas is maintained and quickened.

The Conference at the Convention Centre in Adelaide will feature research reports, reviews of successful health-related services, arts-and-health presentations and analysis of some of the key policy issues of the day impacting on rural wellbeing.