The Forgotten Health Profession – ACAP Lobbies for Paramedics

Emergency Health Care in Pittsburgh

SPA Conference a big success

Clinical discussion on Sudden Coronary Artery Dissection
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The activities over the past few months have been very much focused on the efforts towards registration. As I reported in the winter Response, the National Council of Ambulance Unions had released a position statement supporting national registration, since then we have had very productive discussions and have developed an agreement regarding the principles of national registration of paramedics. We have also agreed on a program of activities to progress registration at a federal and state level. Beyond the scope of the registration issue, the parties have committed to scheduled meetings to ensure that the respective agendas are clear between both groups.

The annual conference of Student Paramedics Australasia was held in Melbourne and has been widely regarded as successful. With over 160 delegates mostly from the student members of the profession the organisers can be very pleased. A wide range of material was on offer and a focus on some of the new (EMS 2.0) and some softer topics (take care of yourself) provided a diverse experience. The continuing growth of SPA and the increasing number of interstate delegates highlights the evolution of this key special interest group. The Board acknowledges the leadership, energy and passion that has been provided by Ziad Nehme in his term as SPA Director. As his term ends we thank him for his contribution in growing this robust student paramedic network.

Welcome and look forward to working with Pauline Murcott who takes over as Director.

Since the last Response the Board with the assistance of Ray Bange has been busy with meetings, presentations and delegations to advance Paramedic recognition and registration in Victoria, Northern Territory, the Australian Capital Territory and Queensland.

In doing this we have begun to create interest and support for the paramedic profession above anything we have been able to achieve before. Our approach has been based on public safety and the lack of recognition of our profession in the National health strategy. We are the forgotten profession. These recent successes are a result of personal interventions of targeted audiences.

We know that we need to intensify our effort, this will require us to maintain a presence at every significant and relevant health-related forum and conference, policy think tank and in the media.

However to do this we need local support, representation and advocacy provided by the membership, or we risk sliding back into obscurity. We must work to identify suitable advocates from within the membership to contribute at Chapter level in taking the message of professionalism and registration to all members and further afield in the public and policy arena.

Guest Editorials

I am very pleased to publish our most recent Guest Editorial – this section is an invited section where key professionals from the out-of-hospital care community are asked to present an article on a topic of their choosing. This may be something designed to stimulate debate, or a piece that reflects their primary passion in the industry.

Dr Hugh Grantham, Executive Director Clinical Services for SA Ambulance Service was invited to write the latest Guest Editorial. His article presents a topic titled ‘Tools or Toys?’, which may stimulate some debate, providing some thought provoking observations that should perhaps be kept in mind at the ACAP conference coming up in October. What are your views about some of the latest and greatest gadgets available? Feel free to drop us an email and let us know your opinion!

If you know of someone who could provide another thought-provoking or stimulating article as part of a guest editorial, please send details through to editor@acap.org.au.

Research and Development

An area that I’d like to work on over coming editions is the “Research and Development” section. This has been lacking contributions for a while now, so I’d like to encourage anyone with an interest in this area to prepare an article, or send me an email with some ideas.

This section can cover anything related to research – including ‘how to’ or provide information on different research approaches and activities; or other development activities relevant to the profession.
Dear Editor,

I read with interest the article on sepsis by Will Plewa in the Winter 2010 Issue of Response. Mr Plewa's article is well researched and well written, and I congratulate him on his paper. I thought I would write to outline the current Ambulance Victoria management of severe sepsis, SIRS and septic shock.

In recent years, MICA Paramedics in Victoria have undergone significant education in the recognition and management of sepsis and SIRS. From 2006 to 2009 MICA Paramedics attended Continuing Professional Education programs that concentrated heavily on this topic. MICA Paramedics have been taught to identify the key criteria to diagnose SIRS or sepsis, and then effectively institute Early Goal Directed Therapy including high-volume crystalloid therapy, incremental intravenous adrenaline and adrenaline by infusion, as well as ventilatory support via non-invasive ventilation (CPAP) or elective intubation if required. Additionally, MICA Flight Paramedics carry and frequently administer noradrenaline by infusion to manage critically unwell sepsis or SIRS patients.

Interestingly, Mr Plewa suggests investigation of the use of antibiotics and corticosteroids in the prehospital environment. Road-based MICA Paramedics currently have the option to consult with the receiving hospital for the administration of ceftriaxone, and this is frequently refused due to the potential for an inability to culture the culprit organism, and also for the possibility of endotoxin shower and further haemodynamic compromise. In regards to corticosteroids, the evidence for their use in sepsis and SIRS is equivocal at best, and as such the use of dexametasone and/or hydrocortisone by MICA Paramedics and MICA Flight Paramedics has been discontinued.

I wish Mr Plewa all the best for his further research and look forward to reading future papers.

Regards,
Ben Meadley
MICA Flight Paramedic
Air Ambulance Victoria.
ACAP Board Advocates for Members

Board continues collaboration with National Council of Ambulance Unions (NCAU)

ACAP represented by Ian Patrick (President), Alan Eade (Vice President) and Les Hotchin (Secretary) met with the National Council of Ambulance Unions in Melbourne on 16 July 2010.

This planned meeting followed an earlier meeting in March to discuss the matter of national registration which resulted in the issue of a joint communiqué on registration. Both parties have agreed to explore common issues and to further develop the agenda for national paramedic registration.

Beyond the immediate scope of registration, the parties have also committed to regular scheduled meetings to ensure clarity and synergistic cooperation in advancing their respective roles.

ACAP continues lobbying for the profession

During May, June, July and August ACAP has maintained a busy schedule of meetings with senior policy advisors, professional groups and political leaders, including:

- Representatives from the Victorian Department of Health in Melbourne;
- Minister for Police, Corrective Services, and Emergency Services, Queensland;
- Shadow Minister for Emergency Services, Queensland;
- Royal College of Nursing Australia in Canberra;
- Leader of the Opposition, Northern Territory;
- Minister for Health, Northern Territory;
- Shadow Minister for Health, Queensland;
- Shadow Minister for Emergency Services, Australian Capital Territory;
- Shadow Minister for Health, Australian Capital Territory;
- Senior Advisor to Minister for Health, Australian Capital Territory;
- Minister for Police and Emergency Services, Australian Capital Territory;
- Health Consumers of Rural and Remote Australia in Canberra; Joint Health Command, Australian Defence Force in Canberra;
- National Rural Health Alliance in Canberra;
- Public Health Association of Australia in Canberra;
- Minister for Indigenous Health, Rural and Regional Health and Regional Services Delivery;
- Services for Australian Rural and Remote Allied Health;
- Centre for Remote Health in Alice Springs
- The Council of Remote Area Nurses Australia in Alice Springs
- Australian Institute of Health and Welfare in Canberra;

Discussions have focussed on the role and funding of out-of-hospital Emergency Medical Services (EMS), the current unregistered status of paramedic practitioners, the importance of registration for public protection and public safety and the opportunities for advancing the issue of registration in the current Australian context. In addition, rural health issues, including equity in access to services and service delivery models to utilise health practitioners better under the health reform agenda were canvassed.

July Board Meeting

The ACAP Board met in Brisbane on Friday 23 July 2010. The meeting discussed a range of issues relevant to progression of the profession. In particular discussions covered issues associated with:

- The restructuring of the College and the steps necessary to ensure that this continues to meet the project timelines.
- The financial arrangements / documents are completed and 4 of the 7 jurisdictions have migrated their financial accounts to the national office.
- The constitution and rules are being finalised.
- The membership arrangements have been completed and have been circulated for final comment before Board endorsement.
- Arrangements for special resolutions at Branch AGM’s to allow the restructuring process to be completed in the Branches.
- Presentation of the revised constitution at the National AGM in October.
- The issue of an information note and associated member feedback survey for the new branding of the professional body.
- The 2010 National Conference in Perth arrangements.
- Education and clinical training of paramedics.
- The national registration of paramedics.
- Research grants and activities.
- Submissions for new Special Interest Groups.
- The SPA annual convention held in Melbourne.

ACAP moves with the times: new times, a new name

As a profession our membership comprises men and women from across the whole spectrum of out of hospital emergency medical services (EMS) and spanning all settings from urban to rural and remote Australia. Despite this, the health reform process has shown that the paramedic workforce needs to have a much higher profile to ensure appropriate consideration of EMS as an integral part of the healthcare system.

In national health policy terms, paramedic practice well merits the title of the forgotten health profession. ACAP was generally unrecognised, as was demonstrated time after time, viz:

- No one outside the immediate membership knows what the acronym ACAP represents.
- When they hear the full name, they still don’t associate it with paramedic practice.
- There is confusion of role with some perceptions that the association might be an educational institution, a union or a body representing ambulance management personnel.
To overcome this situation, ACAP has taken new approaches in presenting the face of the profession. It has engaged actively with policy makers and improved its public and member communications. A new website has been launched (http://www.acap.org.au/) and stronger links have been forged with the educational institutions and student cohorts as well as with external groups and decision-makers.

The Student Paramedics Australasia (SPA) website is a reality (http://www.studentparamedic.org.au/) and helps support the interests of the next generation of EMS professionals, while the on-line Paramedic Shop (http://www.paramedicshop.com.au/catalog/) provides a wide range of merchandise.

The association is now in the final stages of internal restructuring to create a leaner, stronger and more responsive professional body with a national policy outlook.

Among the issues identified in developing a more visible ACAP was the importance of a name that better reflected the needs of the membership and which would cater for the changing nature of EMS. The greatest challenge posed by the present name is the perception of people: most importantly, the decision makers who determine policy directions and resources allocations. A change in name is needed to enhance public and government communications.

The Board therefore proposes to adopt a new name and corporate identity along with the change in structure to facilitate the representation of the professional interests of practitioners. The objective is to create a strong identity that is immediately recognised by all stakeholders and is independent of particular employers – in other words, a strong professional identity to go with the professional service ethos.

“The move to change the name of ACAP is not a decision that has been taken lightly, and is based on sound strategic reasons,” says the National President Ian Patrick. “The Board has been very explicit in identifying the long term benefits that will accrue from such a change”.

Advice has been taken from two independent consultants who have separately recommended the adoption of the name Paramedics Australasia as the preferred option - with a strong and unambiguous professional presence and high level of community and government acceptance. The Board has also canvassed other options including Australasian College of Paramedics and is now in the process of making a final decision.

Any comments on the above alternative names would be appreciated, along with an outline of the reasons for their selection. In this regard the Board must consider the overall merits of any name including its use in many settings; letterhead and banner designs; full colour and monochrome reproduction; searchable databases and web terms, domain protection and a myriad of other factors including the added value and perceptions generated by the language used to describe the profession.

The proposal is to change the name of the association, not the ethos of the profession. In the words of the President - “The new structure, name, website, and other expanded services are just a few of the steps being taken to ensure your professional body meets the needs of the profession in a future where interprofessional practice will be strongly pursued in healthcare”

To have your say on the new ACAP name, please visit the website and leave a comment or contact us, www.acap.org.au

ACAP Website Update

The website continues to improve and provide more timely and relevant information for you. We have now created opportunity for members to place comments on stories that are posted on the web to encourage debate and discussion amongst the membership.

We encourage everyone to visit the site to keep updated on all ACAP activities and relevant news for Paramedics – and if there is something that you would like to see on the site please use the ‘Contact Us’ link to contact the Webmaster with your idea.

Health Ministers; ‘in principle’ support for paramedic registration

The Australian Health Ministers’ Conference (AHMAC) has given ‘in principle’ support for the national registration of paramedics. AHMAC has referred the matter to the Australian Health Ministers Advisory Council (AHMAC) and the further development of proposals is now part of the Health Workforce Principal Committee (HWPC) workplan.

The lead agency in the development of advice to the AHMAC is the Department of Health in Western Australia with the objective of potentially including paramedics within the National Registration Accreditation Scheme by 2014.

The President of ACAP, Ian Patrick said that the profession welcomed this progressive move in the interests of public safety, and looked forward to working closely with the advisory group and other agencies in progressing the registration proposals without delay

ALP Branch recognises need for paramedic registration

The ACT Branch of the Australian Labor Party has unanimously passed a resolution supporting the national registration of paramedics. At their Annual Conference held recently in Canberra, delegates recognised that an appropriate regulatory scheme will advance public safety, help to underpin national practice standards and assist with the mobility of practitioners thus potentially enhancing access to and equity in emergency medical services.

The Conference noted that Paramedics performed complex and demanding roles that were essential in providing out of hospital emergency health care. They were a vital part of the health care system, and it was essential that they operated under a national regulatory system similar to other health-professionals such as registered nurses and doctors.
Urgent need to recognise the vital role of paramedics in health reform

The Australian College of Ambulance Professionals represents more than 5000 practitioners throughout Australia who provide out-of-hospital emergency medical services (EMS) to the community. From this unique perspective the College draws attention to a number of key areas of concern regarding the provision of EMS and the current debate on health care reform.

Health care should begin with the patient, wherever and however the need arises.

Australians in regional and urban communities rely heavily on paramedics to respond (if available) to emergency and general medical incidents that occur away from established hospital emergency facilities.

Regrettably, successive State and Federal governments have ignored both the role of EMS as a fundamental part of the health care system, as well as the need for a sustainable and nationally registered paramedic workforce.

These oversights must be addressed so that all Australians have equitable access to professional emergency and general health care; and to realise the potential opportunities to substantially reduce the overall cost of health care by incorporating the capabilities of EMS within a national health framework.

Among the key issues to be considered without further delay are:

1. The omission of EMS from the health care debate

The Productivity Commission’s Report on Government Services 2009 noted that ambulance services attended 2.88 million incidents nationally in 2007-08 (excluding the NT). The provision of EMS and the role of paramedic practitioners therefore should form a prominent factor to be considered in any discussions on national health care reform.

Instead, EMS is notably absent from the national health care debate. This failure to recognise the role of EMS and the significant contribution of paramedics to health care is a matter of community concern.

Solution: Recognition of EMS as a discrete and integral component of health care

2. The absence of EMS from national funding arrangements

Nationally EMS is administered and funded in a myriad of ways. In all Australian States and Territories except WA and NT, public ambulance services are administered by government under the health or emergency services portfolios. In WA and NT the principal community providers (Ambulance Services) are private charitable organisations operating under contracts to government.

The funding of EMS ranges from government grants, lottery donations and electricity levies, to subscription and insurance schemes and public donations. Cost recovery also comes from fees for services such as transportation. The outcomes are high administrative costs and considerable disparities in funding and standards of care. The urban-rural divide is strongly evident and there are substantial inequities in access to professional (paramedic) levels of care.

Paramedics are acutely aware of the public expectation that EMS is a fundamental community service that should be readily available to all Australian communities. The availability of expert paramedics is even more critical for rural and regional areas (where there is often no access to other services) than in metropolitan areas. The concern for universal access already has been highlighted by key independent bodies such as the Australian Heart Foundation.1

As part of government’s broad commitment to the community, the Commonwealth, States and Territories must act now to provide a level of national funding that will ensure more equitable access to EMS for all Australians. National funding will promote a health system that delivers seamless and high quality patient care from inception.

Solution: Provision of a national stream of base funding for all public EMS
3. The lack of recognition of paramedic practice as a health profession

ACAP supports the Australian government’s health reform agenda that envisions (inter alia) a greater contribution from allied health professionals to community health care. ACAP recognises the benefits of holistic care delivered by health professionals operating in a multidisciplinary environment. It supports the proposed focus on prevention strategies that take advantage of a wider range of expertise and makes better use of existing and emerging health care professions.

However, ACAP notes that the roles of emergency health service practitioners and community paramedics continue to be ignored in national health policy considerations. Greater efforts must be made by the States and the Commonwealth to create a sustainable national paramedic workforce. There needs to be more flexible mobilisation of paramedics within an environment of inter-professional practice.

A significant outcome of the lack of recognition of EMS as an integral component of health care is the omission of paramedic practice from the list of health professions designated by the Commonwealth Government and other bodies. Other nominated health professions benefit from numerous incentives – scholarships and educational support – that do not apply to paramedics.

Policy changes are needed that recognise the challenges of professional practice in providing EMS in regional and more remote areas. Mechanisms must be put in place that make the job of a rural paramedic attractive and systems must be implemented to support rural paramedics in continuing professional development.

Much has been said about hospitals and emergency care, but the reality is that emergency health care should start with the patient and not at the hospital or clinic door. The clinical interventions performed by paramedics often keep patients alive until they can receive more definitive care.

Paramedic interventions also have the capacity to keep patients out of the hospital system entirely, reduce morbidity, reduce the length of hospital stay, and reduce hospital-based interventions – all of which may contribute significantly to a reduction in the social and economic burden on the health system.

Solution: Recognition by all governments that paramedics are health professionals and provision of support arrangements to suitably foster rural and remote practice.

4. The absence of a national regulatory framework for EMS and the lack of independent national registration of paramedics

Australia has no national regulatory scheme for the independent accreditation of statutory and private EMS service providers. One also looks in vain for a national practitioner registration scheme like other health professionals (e.g., nursing, medicine, dentistry, pharmacy, etc.) and which one finds in the UK, Canada or South Africa (and which is proposed for New Zealand).

It would be unthinkable for an emergency department in any hospital to have 300,000 or more patients a year come through its doors to be treated by unregistered clinical staff. Yet this is the situation with EMS providers. Ambulance Victoria alone responded to 436,037 emergency incidents in 2008-2009. These included 120,625 road incidents across five rural regions, 312,924 incidents in the metropolitan region and 2,488 emergency air incidents.

Today’s paramedics deal with life and death and make routine clinical decisions on a daily basis, administer life-saving medications, and perform other clinical interventions such as CPR, defibrillation, intubation, cannulation, thoracentesis, etc. often without knowing a patient’s medical or social history. Paramedics regularly triage, assess and clinically manage unconscious, incoherent or combative patients, sometimes in multi-casualty situations.

Many of the procedures undertaken by paramedics would fall within the scope of Medicare if they were performed by another practitioner with a Medicare provider number.

Other health care workers have independent regulatory bodies - and to practice as a nurse or medical practitioner for example, you must hold registration within the relevant jurisdiction. Similarly, hospital emergency departments across Australia answer to clinical governance processes with independent accreditation under defined performance frameworks.

Emergencies can occur anywhere - and a uniformly high standard of professional health care is a community expectation. This is a national issue with State responsibilities to ensure the appropriate jurisdictional framework under a federated political system. In addition to protecting the public, a regulatory regime is needed to foster practitioner mobility and enhance workforce sustainability that will better support Australia’s rural and more remote regions.

In the public interest, States and Territories therefore cannot stand aside, but must take action to correct this inexplicable regulatory oversight.

Solution: The independent national registration of paramedics within the same or closely related national framework and processes being introduced for other health professionals under the COAG regulatory arrangements.

Summarising some other issues

While various health professions have been recognised as having a role to play in the provision of primary health care, many are ill-equipped to perform the invasive clinical interventions that form an integral part of out-of-hospital emergency care, and for which paramedics are uniquely qualified. There is a place for all in the health care team, and paramedics hold the specialised skills and expertise to contribute more to community health care through EMS.

In concert with the enhanced roles envisaged for all health professionals, ACAP supports the expansion of opportunities for education and multi-skilling across all health disciplines crucial to effective health care delivery. It supports nationally recognised educational pathways that will allow greater workforce sustainability and mobility, with up-skilling and cross-credit movement between disciplines, employers and clinic/hospital situations.

ACAP emphasises the importance that should be placed on appropriate technological approaches to the education and continued professional development of all health care workers and the beneficial patient outcomes available through the application of advanced technology and electronic patient records. In the vital moments of acute emergency care, the paramedic, perhaps more so than other practitioners, welcomes the availability of secure and confidential medical records that provide immediate access to a range of patient history.

To fulfil community expectations of real health care reform that recognises the needs of patients, ACAP reiterates its view that there should be:
• a single national regulatory regime for the registration of all paramedics embracing the private, public, not-for-profit and defence sectors under the general umbrella of the COAG regulatory arrangements for other health professionals;
• an independent, community represented and professionally accountable system of accreditation for paramedic educational programs and associated clinical training;
• replacement of the current multitude of jurisdictional EMS funding arrangements by a single national system of funded infrastructure providers (both private and public) with a mandated national system of provider licensing and accreditation; and
• recognition of paramedic practice as a distinct field of health care with consequent access to educational support and scholarships, specific rural and remote area support, continuing professional development assistance, and Medicare coverage consistent with that applying (after the present reforms) to other health and allied health professions.

Governments and other health professions can play their part in remedying the previous omission of EMS from the health care policy arena. They can provide support for policies that recognise EMS as a fundamental part of health care within a national context. They can actively promote the implementation of national paramedic registration that will ensure appropriately qualified and experienced paramedics are available, when needed, to care for our sick and injured.

Your help is sought in bringing about these necessary changes.

For further information, contact:
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Attachment A

18 Propositions designed to improve EMS delivery in Australia

Proposition 1
That the State and Federal governments designate out of hospital Emergency Medical Services (EMS) as a discrete component of health care with funding and other performance outcomes considered within the context of the delivery of health care.

Proposition 2
That as a matter of general policy, all accredited EMS providers should be required to adopt the general philosophy of health care embodied in the Principles for Australia’s Health System articulated by the National Health and Hospitals Reform Commission (NHHRC).

Proposition 3
That as a matter of general policy, where EMS is provided as a contracted service by an entity acting as a primary agent of government service delivery, the relevant jurisdiction introduce legislation to enable the declaration of the contracted EMS service provider as a “public body” subject to the same ethical obligations, integrity and accountability provisions as other government agencies/departments.

Proposition 4
That the provision of EMS incorporate a broad range of deliverables with the requirement that accredited service providers report the outcomes transparently across key health care performance indicators on a regular basis, as well as reporting any sentinel events to appropriate quality oversight and health care review bodies.

Proposition 5
That the State, Territory and Commonwealth governments liaise at COAG level with a view to the early introduction of a national scheme of comprehensive mandatory reporting of performance indicators for EMS. This may build on and expand the initial work done in association with the Australian Productivity Commission. The contribution of EMS to national health care objectives should be captured by the collation of specific data relating to EMS funding and performance, with public reporting of outcomes and within the datasets of the Australian Bureau of Statistics under appropriate occupational classifications.

Proposition 6
That the State, Territory and Commonwealth governments require all accredited EMS providers to adopt a rigorous basis for patient data collection that embraces the elements of (say) the Victorian VACIS system or demonstrate the adoption of an equivalent system for the capture of key performance data that is compatible with VACIS and national e-health medical records.

Proposition 7
That all accredited EMS providers operate under a national licensing system that incorporates regular accreditation to nationally benchmarked service standards and clinical governance regimes.

Proposition 8
That in addition to any jurisdictional requirements, the various State and Territory governments and the Commonwealth government develop and implement a national scheme of independent accreditation and performance auditing for those entities (government or private) seeking to operate as EMS providers.

Proposition 9
That, as part of the framework for EMS quality and service accreditation, EMS service providers be required to implement independent and transparent complaint management and resolution mechanisms. This complaints process should provide regular reporting and sharing of complaint and outcomes data to prevent blame shifting and to identify systemic provider problems separately from practitioner competency issues.

Proposition 10
That, in addition to any local jurisdictional requirements, the various State and Territory governments should consult with COAG and the Commonwealth government with a view to developing and implementing a national scheme of independent registration for paramedics.

Proposition 11
That in supporting the introduction of a national scheme of paramedic registration, the State and Territory governments consult
with the Commonwealth government to ensure the development of appropriate workforce sustainability and occupational models that recognise the diverse educational pathways for paramedics and the need for appropriate clinical training. In the public interest the establishment of any regulatory regime for paramedics should be based on a national perspective applied universally across the profession and encompass public, private and defence personnel.

Proposition 12
That in concert with the development and implementation of a national scheme of paramedic registration, the State and Territory governments support the development of independent course accreditation of programs for paramedical practice that reflects the community of interest in the program objectives. Accreditation should be performed under principles no less transparent and representative than those developed under the COAG health professionals’ regulatory regime.

Proposition 13
That in concert with proposed arrangements to capture relevant data and implement new approaches for professional entry clinical training of health professionals, specific provision be made for the inclusion of paramedical practice. Paramedicine should be defined as a discrete field of professional health care and similarly, accredited EMS service providers should be designated as clinical placement facilities.

Noting that the patient interventions within EMS are performed by individual practitioners, government should review its use of terminology generally, with the use of Emergency Medical Services (EMS) in preference to ambulance services to better describe the scope of out of hospital emergency health care. Similarly, the term paramedic should be restricted in the public interest and used to describe a professional person whose education, training and skills enable them to deliver a range of out of hospital emergency procedures and who complies with strict practice guidelines and a code of ethics.

Proposition 14
That all accredited EMS providers adopt a program of structured call-taking and resource allocation based on best practice methodologies (depending on the available communication means) together with appropriate location and communication technologies based on cost effectiveness and regional needs to ensure optimal response outcomes.
Melbourne’s glamorous Crown Promenade Hotel played host to over 160 budding paramedic students from across Australia for the annual SPA Conference. With the theme of ‘See into the Future’, the day presented an industry full of challenges and changes reflecting the nature of current day pre-hospital care. Welcomed by some refreshing smiles and a show bag full of interesting goodies, the paramedics of the future were excited for an informative day.

The outgoing SPA director Ziad Nehme opened the 2010 conference drawing a focus towards the high level of professional standards currently represented in students, aligning with the 8 values stated in the Australian College of Ambulance Professionals (ACAP) Code of Professional Conduct.

The introduction also saw Tony Walker, General Manager of Regional Services for Ambulance Victoria; paint a graphic of the past 25 years and the drivers forcing significant rapid changes in the paramedic of the future. A younger workforce, higher public demand and pre-hospital care as a primary health role were all recognised as contributing to the advancement of paramedic practice.

The first of the sessions saw a conversational type approach on ‘Working Overseas’ with Greg Friese from the USA, and Scott Stewart from the UK with both giving an insight to working in their respective EMS systems and the possibility of short term employment stints. Discussions included the level of education, rates of pay and the realistic level of practicality. This presentation provided a useful insight into other pre-hospital care systems and international paramedic practitioners.

Justin Dunlop from Ambulance Victoria provided an interesting display on ‘Emergency Management’, covering the history and an overview of an Emergency Management Unit (EMU). A large focus of this unit is to examine major historical disaster events such as the collapse of the Twin Towers and the Bali Bombings, for the purpose of gaining valuable knowledge for further improvement and development. Justin provided a very informative presentation highlighting the clear message for paramedic students; the Ambulance service has limited resources, therefore, be proactive, and give a well detailed SITREP.

Rounding out the sessions for the morning was Dr Anne Creaton promoting the work of the ‘Aeromedical Adult Retrieval’ transport system, whilst advocating female paramedics to take up the aeromedical challenge. Dr Creaton outlined the broad role of the adult retrieval service, also providing telephone advice, bed coordination, and trauma line advice and referral. Interestingly, the logistical challenges faced in aeromedical retrieval proved to be the biggest hurdle to overcome, adversely affected by poor weather conditions, technology failures, highly acute patients and the inability of the aircraft to return to 30,000 ft.

A spectacular array of healthy foods at lunch fuelled the stomachs and astute minds of the students. Whilst getting to know fellow student paramedics and catching up with friends, conference goers were also able to view and experience new technologies. A practical interactive demonstration of new ‘toys’ was given by REM Systems showcasing the airway marvel, the AIRTRAQ device.

A major fundraising initiative for SPA is the Youngcare Charity Raffle which was once again the highlight of this year’s conference. Conference delegates had the opportunity to win over 55 fantastic prizes including Ambulance Victoria Fixed Wing and MICA placements, ACAP Conference Registrations, and an extensive range of medical supplies, textbooks and novelty items. There was certainly a room full of envy towards those lucky students who secured placements with fixed wing and the MICA single responder unit. Also up for grabs were 4 registrations for the 2010 ACAP Conference in Perth.

Last year’s raffle raised $1235 for Youngcare and this year’s target of $2000 was always going to be difficult to surpass. Fortunately, the generosity demonstrated at this year’s conference was truly astounding raising over $3000 for this worthwhile cause. The immense generosity of conference delegates will assist in creating change to the lives of young Australian’s with high care needs.

The second half of the conference was greeted by the always engaging, MICA Group Manager Mick ‘does he take a breath’ Stephenson who presented ‘The Future of Resuscitation in Cardiac Arrest’. The unexplainable disparity between rural and metro survival rates were discussed, the correlation between algorithmic care and survival rates, and the 4 big issues post cardiac arrest were discussed in depth. Future changes to resuscitation are inevitable and desirable to achieve greater patient outcome and dispel the disparity between rural and metro care. This may involve promotion of algorithmic care in rural areas.

Alan Eade hit the student paramedic nail on the head with the most important message of the conference! For those students who were unable to attend, here it is; Paramedicine is a position of privilege! This message also clearly portrayed the aspects of trust, respect and communication as being important tools that student paramedics need to master in order to improve the patient’s care and overall clinical outcomes.

The final part of the day was promoting the importance of learning tools such as blogs to trade information on the techniques, approaches and equipment used by different EMS systems. The Chronicles of EMS, an entertaining video insight showed similarities and differences between systems across international borders. This is an effective way to establish positive and ‘needs improvement’ aspects of paramedic practice.

At the closing of the 2010 SPA Conference we collectively shed a tear for our illustrious retiring Director, Ziad Nehme. The dedication, enthusiasm, and passion Ziad has shown towards his ‘baby’ should be commended and admired, and is much appreciated by all young paramedics who aspire to his success.

Congratulations must go to the SPA Executive team on a highly successful conference. Hope to see you all at next year’s 2011 SPA conference which will be even bigger and better!
The new-look SPA website has finally launched! While much work remains to be done with content and extra features, the site provides the foundation for what will be SPA’s most critical communication medium.

A very enthusiastic web design team sat down over many months to slowly construct everything from the graphic design to content management. Leading the team are two enthusiastic paramedic students - Coco Giddings (Communications) and Nicole Robertson (Web Editor) are friends from university and worked on the project since they stepped into their roles in late 2009.

Nicole was asked a forward question “SPA is currently working on its third website re-development, what was wrong with the first two?”

“We wanted to produce a website that is professional and effectively conveys what SPA represents, which is something we felt previous designs didn’t do very well” Nicole said. We want the new website to be interactive and dynamic, as well as being a useful portal for students to access relevant information on events, research, news and other things like study tips and student research.”

Interactivity is an important aspect of every website. Our previous two sites lacked this important component, and much time has gone into developing the new site to ensure our users find it a rewarding experience. We have also put time into researching popular websites, establishing a consensus on what features work and which don’t. Most importantly, we want the SPA website to be modern, dynamic and fresh, and we hope to continue developing it with student feedback.

SPA’s new website aims to keep student paramedics up to date with the latest news and information, both within Australasia and abroad. This includes current activities surrounding the drive towards paramedic registration such as position statements from the CAA and ACAP. SPA’s new website directs students to submissions put forward by ACAP on a number of different areas including responses to national and state inquiries. Additionally interesting news articles and issues raised in the media are published to keep students informed on the public perception of paramedics and the provision of emergency medical services in the community.

The new SPA website will provide a gateway for students to access a variety of events relating to their education and professional development. These include ACAP professional development nights, both the ACAP and SPA conferences, and a selection of conferences organised by other agencies in the health sector. We aim to provide a schedule of events applicable to students that is easy to navigate and clearly outlines the potential benefits of attendance. We hope that through providing this service we can help students avoid the confusion that comes from having to check various websites and read numerous emails, which are often directed to qualified paramedics, making it hard to determine whether or not each event is relevant. In addition we plan to get the university societies involved and publicise university specific social events such as fundraising and networking opportunities.

SPA’s new website caters for potential students, current students and graduates. For potential students we provide information on the role of the paramedic in the community as well as details regarding university courses through which students can gain entry in to the profession. The current students section will present a photo gallery from events, an interactive education section which will feature video playlists on a number of topics including practical skills, study tips and interviews with students. For graduate students we will offer employment options, interview skills and tips from recent graduates on topics such as surviving induction and adjusting to their role.

Assisting the community is the overall goal towards which paramedics strive, and student paramedics are no different. Although student paramedics do not play a major role in the clinical treatment of patients prior to employment, they are able to make a difference to the community through other means such as volunteering and donating blood. The new SPA website provides students with information about the different volunteer programs that are available to students both nationally and overseas, SPA’s partnership with Youngcare and our contribution to Club Red (Red Cross Blood Service).

The new website can be seen at www.studentparamedic.org.au. We welcome any feedback you may have at enquiries@studentparamedic.org.au.
Volunteering is an exciting and rewarding way to develop a student’s clinical skills and professional attributes while concurrently undertaking studies at university. Student Paramedics Australasia (SPA) has committed to highlighting the success of our young paramedics in embracing the role of volunteers and their importance in local communities.

To celebrate the launch of the Volunteering Section on the SPA website, we are honored to showcase the work of volunteer and paramedic student, Catherine Colbert. Catherine is currently completing her paramedic studies at Flinders University while volunteering for the SAAS Volunteer Regional Response Team (VRRT). Catherine has provided an overview of her volunteering role and provided specific details that may be of interest to paramedic students considering this valuable opportunity.

I started volunteering because I wanted to obtain more experience with emergency and non-emergency patient care. The South Australian Ambulance Service (SAAS) Volunteer Regional Response Team (VRRT) is a rewarding opportunity to be involved in patient care, and is particularly aligned to novice paramedic students. VRRT provides an important role within the community by providing a rapid response service to emergency medical calls in regional areas of South Australia.

The application process was thorough, consisting of an interview with three senior members of the response team, a regional team leader, as well as a medical and fitness examination. Once successful, I completed an accelerated Certificate IV in Health Care (Ambulance) as I had already completed one year of the Paramedic degree.

This training involved two weeks’ skills training, driver training and assessments, and in addition I was required to have completed five metropolitan emergency ambulance placements before I was able to accept any shifts. Training was held on Thursday evenings, which gave me the opportunity to practice my practical skills and discuss concepts I have recently learnt at university with my fellow VRRT members.

My first volunteer shift was an enormous challenge. In fact, getting into the station proved difficult enough, having set off the security alarm on arrival and being unable to figure out how to turn it off! Being responsible for all patient care is a big responsibility and is distinctly different to university clinical placements where there is always someone more qualified to step in when needed. As a result of having this added exposure, I now feel more confident in undertaking clinical placements and practicals while at university.

Volunteering has also opened up numerous opportunities for me to gain extra experience and additional training I would have otherwise missed out on. I recently took part in a training day with the SES, and it was particularly beneficial to understand their role in the community and witness how they operate as a team.

The training day was centered on a scenario which SAAS ran with the SES where the roof of a car was cut off while I was inside the vehicle treating a simulated patient. It was something I had yet to experience at university or clinical placements. I was also able to assist with training members of the SES team for the day, which enabled me to confirm my knowledge and contribute to improving their skills.

Being a part of a VRRT is a very positive way to become involved with the community. There is a truly rewarding feeling that comes with helping a member of your community, particularly when you are often their first point of call in a time of need.

It is often difficult to find a balance between study and work, but the VRRT is unique in the way that I can accept shifts whenever it is personally suitable, making balancing my multiple commitments more manageable. I would definitely recommend volunteering for VRRT or a similar program for anyone who is interested in getting involved in a volunteer program. It is a fantastic way to consolidate everything that you have learnt at university. Each job that I attend is different, which maintains my interest, as I really have to think about each patient individually.

The local staff on the stations we go to are always particularly friendly and helpful, and having support from these people and fellow team members’ makes volunteering a really enjoyable experience. Overall, my experiences with volunteering have been very positive and beneficial to my personal and professional development, and I look forward to continuing my experiences with SAAS.
Rural and Remote Symposium and CAA Convention and Open Conference

The CAA Symposium will be held in the Swan Valley just outside Perth on Monday October 11th and Tuesday October 12th 2010. The program focuses on changes and impacts that the new health reforms in Australia and New Zealand will bring to the rural and remote areas. A big part of the symposium will be dedicated to the rural workforce and management of staff in these areas.

The CAA Convention follows the Rural and Remote Symposium and will be held in Perth. The first day is an extended Board meeting followed on day two with the open conference which is a free event with all welcome. The conference theme is again focused on new health reforms and its impacts to the business of ambulance services.

The CAA Ambulance Awards will be presented at the Convention dinner to be held on Wednesday 13th October, 2010. The Symposium and the Convention meetings link with the ACAP Conference providing a week of excellent discussion and presentations on ambulance related topics.

New CAA Membership

The Board is very pleased to welcome Wellington Free Ambulance (WFA) as a member of the CAA. The Wellington Free Ambulance Service is an Incorporated Society. The service was established in 1927 by Sir Charles Norwood and since then has been the sole emergency ambulance provider for the people of the greater Wellington region.

WFA operates out of 11 ambulance stations around the region, with a modern fleet of fully equipped mobile service ambulances, rapid response units, and patient transfer ambulances. The service also has a fully equipped fleet of four wheel drive rescue ambulances, incident command vehicles and a fully resourced event unit.

In addition to being the sole emergency ambulance provider to New Zealand’s capital city, the service also holds contracts for the provision of road ambulance services for regional air inter hospital transfers. The service is run by its own board of directors. The Board is skills-based and made up of representatives from the business community and the medical profession.

Currently the service employs over 100 full time permanent paramedics, with 30 volunteer paramedics, and 20 event medics to support frontline crews. The service is supported by 50 non-operational staff and 48 comms centre personnel.

On average, WFA will attend to emergency calls for help every 10 minutes. This equates to approximately 140 calls per day, or 47,000 calls every year. WFA serves a population of 450,000 people in the greater Wellington region. One in every ten people will receive help from WFA every year.

Wellington Free Ambulance is the first ambulance service in New Zealand to have gained compliance against the new Ambulance and Paramedical Service standard (NZS 8156:2009). This standard assures the community that WFA continues to lead New Zealand in the provision of ambulance and paramedical care. Wellington Free Ambulance has a long and proud history. The service has a reputation for innovation, clinical excellence and ambulance sector leadership.

The CAA/ACAP Key project: Accreditation for Paramedic Education Programs

As advised in the Autumn edition of Response, the CAA had planned a series of workshops as a second stage in the Paramedic Education Programs Accreditation Project (PEPAP) in order to validate the draft Paramedic Professional Competency Standards designed for use by higher education providers to complement the Guidelines for the Assessment and Accreditation of Entry-level Paramedic Education Programs, and to further clarify the expectations of industry of the skills required of entry-level paramedics. This draft competency standards document was put together by the CAA’s Ambulance Education Committee (AEC), through consultation with both educators and paramedic professionals during 2009.

These workshops took place during February and March in each Australian state capital. Over 50% of participants were currently practicing paramedics, ACAP and union representatives. Other stakeholders taking part included university and Vocational Education and Training (VET) sector academics and educators.

Activities in the workshops included open discussion of benefits, issues, and concerns related to the development and implementation of competency standards. Participants were asked to discuss in groups and relate back to the group the main points of discussion. This resulted in a wealth of information and, overall, stakeholders were very positive toward the notion of developing competency standards for entry-level paramedics. A main activity of each day was the focus on case studies of paramedic practice. Data from each workshop was merged and analysed for review by a working group in order to identify major themes and issues and to re-work the draft into a usable document to complement the Guidelines. The mapping process from the case study activities was brought together into one document, which the working group reviewed at a meeting in Adelaide in April this year. Other feedback received from the workshops (for example in relation to accreditation processes and its implementation) were noted and referred to the AEC for further consideration.

The final competency standards document resulting from the consultations around Australia was approved by the AEC for use in conjunction with the Guidelines for the Assessment and Accreditation of Entry-level Paramedic Education Programs. On approval, it was noted that the Paramedic Professional Competency Standards would be, as are the Guidelines, a living document subject to continual review and improvement. The Professional Paramedic Competency Standards are now on the CAA’s website.

The CAA wishes to thank all workshop participants and all others involved in the competency standards project.
Special Feature

Emergency Medical Services in Pittsburgh, USA
A Study Tour supported by the Rod Kershaw ACAP/SAAS Scholarship

Chris Cotton

Overview
Commencing in 2009, the Rod Kershaw scholarship gives one SAAS employee who is also a member of ACAP the opportunity annually to submit an application to go anywhere in the world to investigate a pre-hospital system or allied concept and report back to SAAS and ACAP on their findings. The successful applicant is then joint funded by ACAP SA branch and SAAS to undertake this activity.

The scholarship
I was the awarded this scholarship for 2010 and travelled to the USA where I visited three EMS systems; Pittsburgh, San Diego and Los Angeles. I also visited the JEMS journal management team in San Diego for discussions on how ACAP can collaborate with them, as well as attending the annual Safar Symposium in Pittsburgh and the annual Society for Academic Emergency Medicine conference in Phoenix Arizona.

I am grateful for the opportunity to undertake this scholarship, and as part of my conditions of accepting this award I have been asked to write up my experiences for Response and the SAAS internal magazine, SAAScene. My trip was huge, and is too long to write up in one instalment. I will present it over two or three articles.

PITTSBURGH

Hospital system in Pennsylvania
There are three level one trauma centres in Western Pennsylvania, all of them within a few miles of each other in the city of Pittsburgh. Outside the city limits there are many smaller hospitals, so serious cases are usually transported by ambulance or helicopter to the level one centres. There appears to be competition between some of the hospitals for certain types of cases; STEMI's in particular, as PCI attracts a greater fee for example than thrombolysis does and whichever hospital gets the PCI gets more money (especially from insurance).

University of Pittsburgh Medical Centre (UPMC) “Presby” (Presbyterian) has about a 700 bed capacity and the local EMS in the city is generally quite close, so “scoop and run” is well adhered to maxim for the city-based paramedics.

EMS in Pittsburgh and Pennsylvania
In Pittsburgh proper there are approximately 350,000 people, with 1.2 million people in the greater Allegheny County. The county has 68 ambulance service providers over 130 municipalities, and many of these outside Pittsburgh proper are small, independent services who are often intensely loyal and proud of their local ambulance service.

Some of them may only operate between two and six ambulances and run on a shoe-string budget. There are a mix of career and volunteer paramedics in these services, depending on where you go.
Some paramedics contracted to smaller services work at multiple stations to make more money so they can support their families. Some of the agencies operate a subscription scheme to give ambulance coverage to their community.

Focussing on the city of Pittsburgh, there are roughly 60,000 ambulance calls per annum, and these are spread over the 13 ambulances in the confines of Pittsburgh, and are staffed by approximately 150 career road paramedics, supported by 15-20 admin and support staff, including medical directors and supervisors. There are two ALS trained staff on each ambulance. In the greater county of Allegheny outside of the city there is usually at least one ALS qualified paramedic on each ambulance.

Some of the smaller independent services find it difficult to stay afloat, so the University of Pittsburgh Medical Centre (UPMC), where some of the dispatches are coordinated from try to help them out where possible by offering them advanced notice of a particular day in a given time period (eg one month) where they will be responsible for all inter-hospital transfers. This helps them to plan some predictability ahead, especially with rostering.

**Pre-hospital QI Program**

Flight and road crews are provided a free copy of EMSCharts.com software for patient care record (PCR) documentation. Most crews outside the city of Pittsburgh use this electronic system. The inner city Pittsburgh paramedic system bought their own e-PCR program just prior to when the UPMC version was released. Either way there is an obligation by all services to ensure their PCR’s are submitted electronically (pdf) within 24 hours of attending an ED, whence they become part of the patient’s notes. Many crews therefore only verbally handover a patient at the time they drop a patient off, and then go back to their base to write up their ePCRs. These forms have a number of data fields built in to their software so that data can be filtered, searched and cross-matched as necessary.

All PCR’s are reviewed in order of escalation by:

1). Peer review
2). Base manager review
3). MD review

This way 100% of cases are guaranteed to be audited in many systems and the opportunity exists for comments by any of the above along the way as feedback. Where a protocol violation has occurred, it is up to the individual clinician to own up before it is discovered by peers or upliners. If a paramedic commits a protocol violation and they don’t own up immediately the penalties for being found out later are severe. Once identified as a violation the PCR is automatically reviewed by a medical command doctor who makes comment regarding whether there is grounds for remedial training or whether no further action is required. It is this latter which usually occurs, as most violations are not significant.

**Medical Dispatch System**

They operate a similar dispatch system to that previously used by SAAS in that they assign a numerical value to cases. 0 = known, or suspected fail of primary survey (eg CPR in progress), 1 = unknown emergencies or potential for life threat (ie bronchospasm). 2 is for “get there as quickly as possible but no lights and/or sirens” and 3 is non-urgent.

**Paramedic Education**

Most paramedics in Pittsburgh do a two year certificate course to become a paramedic. UPMC’s health and rehabilitation sciences department offers a bachelor of emergency medicine degree to paramedics over four years, and includes a critical care and management class component.
Certification is provided by the state of Pennsylvania and paramedics must keep up this certification by “ConEd” or continuing education which is done by spending a certain number of hours on continuing education activities and some time with one of the four doctors who help administer the protocols. The bachelor of emergency medicine is gaining in popularity, but the majority of current paramedics did not start out in that system and most don’t currently have it.

National Registration
National registration is available to all paramedics, but is not a requirement for practice. It is most relevant for those who wish to transfer from one jurisdiction to another. Once transferred, the paramedic is dedicated almost entirely to supporting their operations.

Stat Medevac helicopter retrieval/transport service

I spent a day working at the Medevac Three base in an area known as Cranberry, about 20 miles north of Pittsburgh. The local hospital had already performed a CT scan and the diagnosis was confirmed. En route her MAP was remaining too high so the crew consulted to Medical Command for permission to give her labetolol, which was approved. Dilantin was also drawn up but not administered.

Sub Arachnoid Haemorrhage case

We attended a call to a hospital approximately 10 miles north of the base to fly an elderly lady with a sub arachnoid hemorrhage back to Presby. The local hospital already had performed a CT scan and the diagnosis was confirmed. En route her MAP was remaining too high so the crew consulted to Medical Command for permission to give her labetolol, which was approved. Dilantin was also drawn up but not administered.

Equipment and shifts

These critical care flight paramedics usually work 24 hour shifts and can sleep anytime they have downtime. They have venous lactate monitors on board, can RSI and are currently using the CMAC device to view airways live on a computer screen when they are intubating someone. They love this device. Flight paramedic Troy Morrissey says he has not failed a single intubation since it was implemented. They also have the EZ IO drill and use it almost routinely for adult cardiac arrest, and of course for paediatric cases as well. They are currently trialling portable tissue (StO2) monitoring.

Stat MD Medical Command

Stat MD is a not-for-profit organisation run by the UPMC and provides clinical advice to the rotor wing, Stat Medevac and ground ambulance crews. Four emergency physicians rotate through the 24/7 control room. This room, on the 13th floor of UPMC Presbyterian hospital, is the hub of medical command for all air operations, and also advises local hospitals of impending arrivals by road or rotary wing aircraft.

Medjet airline Medical Advice service

Stat MD also is contracted by a number of US and Canadian airlines to provide in-flight medical advice and direction to crews in the event of a medical emergency during flight. They are one of two companies in the USA who do this; the other is Phoenix, AZ based. All airlines contracted with Medjet have kits comparable to any doctor’s bag, and have a rage of IM and IV medications, airway management adjuncts and a portable defibrillator on board. Radio communication with the planes can allow Stat MD to talk directly with anyone tasked with treating a patient. They also provide advice on whether a plane needs to be re-routed if a patient needs urgent medical treatment outside the scope of what can be provided on board the aircraft. The profit from providing this service pays for the staff in the medical command centre.

Med Assist Service

In addition to the airline consult service Stat MD also coordinate an insurance-style service called “Medjet Assist”. Airlines and passengers can contact them and check on requirements for upcoming flights for people with significant medical problems where problems could arise during the flight. They liaise with the patient’s family medicine practitioner and with the airlines to get the “right fit” for the flight. They can provide someone to accompany them on the plane also.

Safar Symposium

This was held over two days; 01 and 02 June at the Starzl Biomedical Sciences tower in Pittsburgh. The symposium is held in honour of the late Dr Peter Safar, who is greatly revered in Pittsburgh for the development of modern methods of resuscitation, setting up intensive/critical care units and starting the “Freedom House” Ambulance project in Pittsburgh in the 1960’s.
His development of current methods of CPR and his work with the late Asmund Laerdal, a toy and doll manufacturer to produce a life-size doll capable of having CPR performed on it was radical for its time and enabled widespread dissemination of teaching of CPR, and has saved thousands of lives worldwide. The first iteration of the doll produced by the two for resuscitation is housed behind glass in the Safar Centre at UPMC.

The symposium traditionally is held over just one day, but this year they opened it up to two days in order to showcase the latest research being done by trainees from different departments in the hospitals and research centres. There were over 100 poster and oral presentations by trainees from different disciplines, most of whom are doing research in the field of emergency preservation and resuscitation or related fields. Most of the research is targeting neurological damage in anoxic brain injury and is looking at novel therapies designed to limit chemically-mediated inflammation that occurs in response to anoxia. Most still involve rat studies and are a way off clinical trials in humans, but importantly this ground work needs to be laid in order for this research to progress to humans.

This inter-departmental research trainee’s day was a chance for like-minded people to share their research projects with other researchers who may not otherwise realise what other research is being carried out that they might be able to tap in to. It is also a chance to celebrate and acknowledge their work. It culminated with the presentations being assessed by a panel of judges who awarded the Nancy Caroline Fellowship Award for excellence in research. Nancy Caroline was a close associate of Peter Safar’s and was heavily tied up with EMS in Pittsburgh and wrote the well known “Emergency Care in the Streets”, which for many years guided paramedic practice in the USA and was also popular in Australian paramedic circles.

Day two of the symposium started with a presentation by the centre’s director professor Pat Kochanek on the remarkable life of Dr Safar, and this was followed up by associate professor of medicine, Thomas Rea from King County Seattle with his talk “the resuscitation grail: innovation, translation or tall tales”. This talk focussed on the fact that resuscitation, critical ischaemia and subsequent reperfusion issues are a complex series of events that are not as yet fully understood and there appears to be no one single treatment that is effective globally. Different therapies are targeting different issues but there appears to be an interdependence of therapies, especially in relation to timing, sequencing and doses of medications in the victim suffering cardiac arrest. Chain of survival links and post resuscitation care certainly appear to influence survival.

Physiology-specific therapies are certainly gaining momentum, such as VF waveform analysis and CPR and defibrillation timing to where on the scale the fibrillating ventricles are at the time.

**Resuscitation Outcomes Consortium (ROC)**

This group are collecting systemic and uniform data across multiple sites on cardiac arrest and outcomes. Australia is uniquely positioned to help out here because we only have a handful of providers of pre-hospital care, whereas in the USA there are approximately 3000 agencies. The idea is to gather as much demographic data on resuscitation cases as possible, and from there join the dots to get a big picture from the data of what is working and what isn’t.

**Novel studies using a rat model of VF cardiac arrest**

Studies are being undertaken in rat models at the Safar centre. In anaesthetised rats they induce VF and measure multiple parameters such as Overall Performance Category (OPC) after return of spontaneous circulation (ROSC). Neurological recovery in these rats is measured by the Morris Water test, where resuscitated rats are placed in to a round and featureless water tank with a lone platform somewhere in the tank just below the surface of the water. There are symbol markers on the wall in the room where the tank is, and if the rats can see these and are able to recognise and remember a symbol they can eventually find the platform and when they are subsequently removed from the platform they can fairly easily find their way back to it. Those rats that perform poorly in these tests are usually because they have sustained some kind of anoxic brain insult from the resuscitation efforts. This is one of the only ways they measure neurological recovery effectively in rats.

Looking at the data from the work with rats, it is apparent that inflammation after cardiac arrest in long term non-survivors shows higher levels of inflammatory mediators, especially TNF alpha in the striatum of the brain.

**Journal Club meeting**

I was fortunate to attend one of the weekly journal club meetings held in the Safar centre. Hosted by Safar Centre director, Professor Pat Kochanek it involved about
15 participants, mostly researchers, medical students and some MDs. The two presentations were presented by those with an interest in a particular topic.

Prof Kochanek says they look at lots of different articles ranging from effectiveness of CPR to mitochondrial DNA, and everything in between.

The two topics presented in the meeting were one on PPAR-y which inhibits oxidative stress and is thought to be neuroprotective (by inhibiting ROS) and for which the potential exists to improve outcomes by increasing its presence, and one on HSP60 which is released from dying cells and is implicated in the release of neurotoxic nitric oxide. Preventing this could reduce the cellular penumbra of death in neuronal damage.

Research Champions in Pre-hospital care

Dr Cliff Callaway is the Associate Professor and Vice Chair of Emergency Medicine at UPMC, as well as working for the “post cardiac arrest service” UPMC provides. Cliff works out of an office with anywhere between 6 and 20 people there at one time and oversees most of the research for UPMC in pre-hospital care. These people are co-researchers, doctors, biomed scientists, etc…. They do a number of different things in the way of research, but there is a large focus on cardiac arrest and CPR. They have a lady (Melissa) who works with the electronic PCR forms and maintains a cardiac arrest registry. She often meets the crews at the hospitals and interviews them about the case. Her co-worker Joe’s role is to examine the data from MRx’s and link it to the e-PCR’s. The data gathered from the MRx includes waveform characteristics and other analyses such as thoracic impedance, rate, depth of compressions and ventilations. It also records the amount of time with no CPR, and records the audio from the scene. At first local crews were a bit worried/sceptical about this, but they have now realised that the tool is not designed as a policing measure, rather as a data gathering tool. Some of the crews are now so comfortable with it that they even joke on the audio file when they are at a call “are you ready Joe? We’re about to defib”. In Cliff’s office, it is Joe who records all this data in a way that is linked to the e-PCR and then enters the monitor data with it.

Dr David Hostler is an Associate Professor of Emergency Medicine and the director of the Emergency Responder Human Performance lab which was active the day I was there. His staff had a fire fighter who they made hot by getting him to exercise in their “hot” lab (up to 100 F) and then took blood from him to measure his platelet number and quality. In Increased temperature environments platelets are activated to become more sticky and likely to agglutinate, and this can make fire fighters more susceptible to having an AMI. They are also looking to measure what happens when they are given aspirin weekly.

I spent a day with one of the paramedic system medical officers, 35 YO Dr Frank Guyette. Frank started out as an EMS volunteer at the age of 16 and initially did a bachelor’s degree in biology and then his masters in cellular biology, followed by medical school in New Orleans. He shifted to Pittsburgh to work at UPMC for his residency in emergency medicine and decided to stay on to do his fellowship in EMS and then a master’s in public health and disaster medicine.

His interest in emergency medicine stemmed from his early days as a volunteer paramedic with a small county service, and then through exposure to emergency cases in his work rotating through medical command, either in the control room where he takes calls from road crews wishing to vary from a protocol or “riding the jeep” where the ambulance service MD’s drive around backing up road crews to serious cases.

Along with Cliff and David, Frank is part of the Resuscitation Outcomes Consortium (ROC), a group of 10 universities across the USA and Canada that looks at trauma and cardiac arrest data via interconnected registries.
Is it a tool or just another toy?

As we move around the trade stands at another conference admiring all the latest and greatest we should be asking ourselves whether we are looking at the absolutely indispensable tool or not. Emergency kit appeals to all of us, we can all think of the job when we would/could/should have used it. How cool it would be to have had the latest and greatest monitor, rescue knife or colour coded rescue splint. Interestingly there are other things that we use every day on every job that somehow don’t seem to have the same shiny appeal. Oxygen masks are just oxygen masks and bandages are boring. If you give me a new monitor with a coloured display, an orange coloured box and two more applications than the last model, then I feel I must have one yesterday.

How am I going to decide whether I am being seduced by a very appealing toy or I am looking at the thing that is going to revolutionise my patient care for the next decade? It is no good asking “would I use it now?”, because on that basis we would never have tried anything, nor would you move forward at all. Somebody has to be the first to try the new device/technology and whilst not wanting to be first one, one would hate to be last. Once upon a time the first MAST suits must have sat there on the trade display and looked like the best thing since sliced bread. They were so appealing that even when the evidence came pouring in they were a very hard tool/toy to give up. Today you would have difficulty giving one away. What were the questions that were not asked when that piece of new technology appeared?

We need to embrace new technology in order to move forward. We need to encourage manufacturers to improve our equipment and above all we need to provide them with considered feedback to base their improvements on. If we do not engage with them and give them the benefit of our considered feedback then we cannot complain if the products get heavier, look glossier and cost more without actually making patients better.

It is time that we ask the questions: “what would make my job easier/safer?” and “what does my patient really need?”. And having asked them, consider the answers carefully before providing our manufacturing partners quality information to design our future with. It is only by remembering that the customer is our patient and we are only the customer’s representative that we are likely to deliver the best advice that will help design the tools of the future.

Don’t feel guilty, we’ve all been dazzled by the displays and spent hours justifying a need for a new and better mousetrap, we are probably more discerning than the average consumer. It is nevertheless up to us to become the intelligent guiding partner rather than the bedazzled child in a sweet shop.

Next time you see the latest orange coloured gizmo spare a second to ask yourself why it is there and why it looks the way it does. If it fails the intelligent consideration test it is probably because it was designed without the input of a health professional with an eye for the patients’ needs.
H1N1 in Post-Pandemic Period

At a virtual press conference in August 2010, the Director-General of the World Health Organisation (WHO) Dr Margaret Chan declared the H1N1 virus to be in the post-pandemic period, stating that the H1N1 virus had largely run its course as determined by the Emergency Committee for WHO. The Committee based its view on reports from several countries and an assessment on the overall global situation.

The following is part of the statement Dr Chan made at the opening of the press conference.

“As we enter the post-pandemic period, this does not mean that the H1N1 virus has gone away. Based on experience with past pandemics, we expect the H1N1 virus to take on the behaviour of a seasonal influenza virus and continue to circulate for some years to come.

“In the post-pandemic period, localized outbreaks of different magnitude may show significant levels of H1N1 transmission. This is the situation we are observing right now in New Zealand, and may see elsewhere.

“In fact, the actions of health authorities in New Zealand, and also in India, in terms of vigilance, quick detection and treatment, and recommended vaccination, provide a model of how other countries may need to respond in the immediate post-pandemic period.

“Globally, the levels and patterns of H1N1 transmission now being seen differ significantly from what was observed during the pandemic. Out-of-season outbreaks are no longer being reported in either the northern or southern hemisphere. Influenza outbreaks, including those primarily caused by the H1N1 virus, show an intensity similar to that seen during seasonal epidemics.

“During the pandemic, the H1N1 virus crowded out other influenza viruses to become the dominant virus. This is no longer the case. Many countries are reporting a mix of influenza viruses, again as is typically seen during seasonal epidemics.

“Recently published studies indicate that 20–40% of populations in some areas have been infected by the H1N1 virus and thus have some level of protective immunity. Many countries report good vaccination coverage, especially in high-risk groups, and this coverage further increases community-wide immunity.

“Pandemics, like the viruses that cause them, are unpredictable. So is the immediate post-pandemic period. There will be many questions, and we will have clear answers for only some. Continued vigilance is extremely important, and WHO has issued advice on recommended surveillance, vaccination, and clinical management during the post-pandemic period.

“Based on available evidence and experience from past pandemics, it is likely that the virus will continue to cause serious disease in younger age groups, at least in the immediate post-pandemic period. Groups identified during the pandemic as at higher risk of severe or fatal illness will probably remain at heightened risk, though hopefully the number of such cases will diminish.

“In addition, a small proportion of people infected during the pandemic, including young and healthy people, developed a severe form of primary viral pneumonia that is not typically seen during seasonal epidemics and is especially difficult and demanding to treat. It is not known whether this pattern will change during the post-pandemic period, further emphasizing the need for vigilance.

“As I said, pandemics are unpredictable and prone to deliver surprises. No two pandemics are ever alike. This pandemic has turned out to be much more fortunate than what we feared a little over a year ago.

“This time around, we have been aided by pure good luck. The virus did not mutate during the pandemic to a more lethal form. Widespread resistance to oseltamivir did not develop. The vaccine proved to be a good match with circulating viruses and showed an excellent safety profile.

“Thanks to extensive preparedness and support from the international community, even countries with very weak health systems were able to detect cases and report them promptly. Had things gone wrong in any of these areas, we would be in a very different situation today.”

Further information is available on the WHO website at www.who.int

Editor's note: The following article by Chloe Abel serves as a timely reminder to remain vigilant for all viruses and continue to use appropriate infection control procedures.
H1N1 Influenza Briefing Report
Chloe Abel

Introduction
In April 2009, the World Health Organisation declared a public health emergency of international concern with the outbreak of a variant strain of swine influenza that was spreading on a global level. Australia has reacted to the outbreak aggressively in an attempt to contain the disease, and seize the spread. Due to the rapid nature of the disease, all health care professionals, especially paramedics need to be made aware of the virus, its symptoms, treatment and protective methods that need to be implemented to reduce the transmission of this disease. Due to the pandemic nature of this disease, specific changes have been implemented affecting the treatment and transport of patients with suspected H1N1 Influenza. There were also changes made to paramedic protective equipment requirements and also to cleaning and disinfection procedures. These changes are imperative for the safety of the community, the prevention of the spread of the disease and the paramedics themselves. This document outlines the current epidemiology and public health facts regarding the outbreak.

What is H1N1 Influenza and what are the symptoms
It was only a matter of weeks between the first reported case of H1N1 (swine) influenza being indentified in North America and the worldwide pandemic spreading to more than 25 countries, including Australia. H1N1 Influenza is a combination of the triple-reassortant swine influenza A (H1) viruses and a Eurasian swine influenza virus, which is transmissible between humans. This particular strain differs from general swine influenza virus in that they are occasionally transmitted from swine to human, but rarely transmitted human to human. The virus is typically described as an acute, upper respiratory infection, similar to seasonal influenza. H1N1 Influenza patients generally present with symptoms such as fever (>38°C), with a cough, sore throat, headache, rhinorrhoea and/or muscle aches. Diarrhoea and vomiting present in some cases, and these symptoms are not seen in seasonal influenza. Paramedic knowledge of what to look for is imperative for both their own protection, and also so they can correctly treat and transport these patients to the appropriate setting. The severity of cases is broad, ranging from mild respiratory infections to severe and even fatal pneumonia, however this particular strain of the virus is not associated with high mortality rates. The H1N1 virus has an incubation period of 18 to 72 hours. During this time the patient is asymptomatic, but is capable of spreading the disease from the period of one day prior pre symptom onset to seven days post symptom onset. The virus is transmitted between people similarly to seasonal influenza, through airborne droplets from coughs and sneezes, touching by infected people and fomites.

Who is at risk?
H1N1 Influenza affects people across the lifespan, however it is primarily common amongst children. The mean age of those infected is 21 years and relatively equal in terms of gender. The disease is primarily seen in school aged children and young adults, unlike seasonal influenza which mostly affects the elderly. Children have been linked to the excessive spread through schools and kindergarten settings, and then taking the virus to their homes, creating a snowball effect. Individuals who are affected by social disadvantage, on both an individual and community level are at a greater risk of contracting the virus; such as low socioeconomic status, rural or remote living, reduced education and being of Aboriginal or Torres Strait Islander decent. Pregnant women, children, senior citizens and others with specific health needs are also at an increased risk. According to the Department of Health and Aging, people with one or more co-morbidities are more likely to be hospitalised from the virus. Co-morbidities include chronic lung disease, obesity, hypertension, diabetes, immunosupression, neurological disease, cardiac disease and pregnancy. Of those diagnosed with H1N1 Influenza, that were critically ill as a result, 98.2% had at least one co-morbidity. Paramedics need to be aware of the vulnerable individuals in society so that they can prepare themselves before arrival at the location of suspect H1N1 Influenza patients.

Requirements for Ambulance Paramedics and Pre-hospital Care
Many health care workers, including paramedics, will come in contact with the H1N1 influenza virus. For this reason, it is important that safety measures are put in place to reduce the chances of contracting and spreading the disease further. For paramedics, in accordance with infection control procedures, the use of standard precautions (gloves, eye protection) are important, with additional Personal Protective Equipment (PPE), such as P2 or N95 face masks, being implemented when treating suspected H1N1 infected patients. It is also important to note that if Paramedics themselves are showing symptoms of the virus or believe they may have been in direct contact with an infected person (without PPE), then they should remain in isolation, not continuing to work. The use of Personal Protective Equipment by Paramedics is paramount to the success of this implemented plan. The P2 or N95 masks are surgical standard masks. Ambulance Victoria has standardised the original infection control guideline to ensure that paramedics are wearing a mask at all times whilst “managing any patient with confirmed influenza, regardless of the procedure being performed”. Another strategy that is to be employed in an attempt to contain the disease are some changes in the triple zero call centre, with staff providing “specific telephone triage for potential H1N1 influenza cases based on the national call-taking script”. Therefore, the relative risk of paramedic contraction of the disease can be minimised through correct preparation by the Paramedics. Paramedics who treat patients suspected of H1N1 influenza, must also be in contact with the receiving hospital, as certain Emergency Departments, have specific areas or clinics dedicated to the treatment, and importantly, the isolation of these patients.

Some hospitals also have a specific “Swine Flu” plan put in place that includes the use of a specific triage system that includes particular flu clinics which isolate suspected H1N1 infected patients, rather than allow these patients into the Emergency department where they can further contaminate patients, staff and equipment. For this reason, Paramedic compliance with such measures is imperative to the prevention of the spread of the virus.
The Influenza virus has the capability to survive on external surfaces for an extended period of time\(^1\). For this reason, paramedics are required to thoroughly disinfect their ambulances following the treatment and transport of a suspected infected patient. Using similar methods to hospital staff, effective methods of disinfection in the ambulances include; changing the linen, disposal of any used equipment and the disinfection of any contaminated surfaces. According to Nadkar et al\(^6\), chemicals that are effective in the inactivation of the H1N1 influenza virus include “disinfectants such as 70% ethanol, 5% benzalkonium chloride (Lysol) and 10% sodium hypochlorite”. Using these chemicals, the ambulance vehicles need to be thoroughly cleaned prior to the next case. All masks and gowns (if used) should also be disposed of appropriately.

It also should be noted that basic hygiene methods cannot be forgotten. Hand hygiene is a basic, yet powerful determinant in the spread of disease. Paramedics should ensure that hand hygiene standards are being met\(^5\).

Conclusion

Overall, in order to combat the spread of pandemic H1N1 Influenza or “swine flu”, Paramedics need to be aware of specific changes and apply these during practise.

Compliance in these areas is paramount to the prevention of continuing spread of the virus. Paramedics need to be aware of what to look for in terms of symptoms and the correct processes for treatment and transport. Paramedics also need to ensure that they are compliant with personal safety equipment use and the disinfection of ambulances is completed to a high standard.

About the Author

Chloe is currently completing her second year of Bachelor Nursing/Bachelor Emergency Health (Paramedic) at Monash University. She has a keen passion for emergency medical care and wishes to eventually complete her Masters degree to become a MICA paramedic in the future.

References

Abstract
Sudden coronary artery dissection (SCAD) is a rare condition that often results in acute myocardial infarction (AMI) and sudden death. This paper discusses the pathogenesis of AMI as well as the rarity of SCAD and presents the case of a 54 year old man with an inferior AMI and witnessed cardiac arrest, treated by Paramedics. The patient was managed at the Royal Hobart Hospital and discharged shortly after. Six months post the often fatal condition this patient is leading a normal healthy life.

Introduction
Patients presenting with cardiac related chest pain are a common occurrence for paramedics. The well known process of atherosclerosis, occlusion and myocardial infarction is often the basis of provisional diagnosis by paramedics. However detailed history taking and thorough examination by the paramedic may raise suspicion of another uncommon and rare cause of myocardial infarct. This paper will discuss a rare case of a coronary artery aneurysm presenting as inferior myocardial infarction, with witnessed ventricular fibrillation that was managed by Paramedics and diagnosed by staff at the Royal Hobart Hospital.

The Case
Ambulance Tasmania was called to a previously healthy, fit, active 54 year old male complaining of sudden onset severe central chest pain, while playing a casual game of tennis with his teenage daughter. The patient drove a short distance from the tennis court to his home a few minutes after the onset of pain, where he asked his wife to call an Ambulance. On arrival after the onset of pain, while playing a casual game of tennis with his teenage daughter, his wife to call an Ambulance.

A Cardiac monitor was applied and electrocardiogram (ECG) revealed a sinus rhythm with significant ST segment elevation in leads II, III and aVF as well as ST segment depression in lead I and aVL. Other leads of the 12-lead ECG were unremarkable including chest leads V1-V6 and right precordial V4R.

Treatment
Inferior acute myocardial infarct (AMI) with reciprocal changes was provisionally diagnosed and prompt treatment was initiated. Oxygen was administered via mask at 8 litres per minute, acetylsalicylic acid (Aspirin) 300mg orally and glyceryl trinitrate (GTN) 400mcg sub lingually while a 16g cannula was inserted in the right cubical fossa. Five minutes later his blood pressure remained 150/90 and heart rate 80/min. There was no change to the pain level and a further 800mcg of GTN was administered. Due to difficult terrain leading from the house to the ambulance the patient walked uphill to the ambulance stretcher.

Upon departing the scene for hospital his blood pressure was still unchanged at 150/90, heart rate 76/min. The patient remained pale and diaphoretic and quite anxious with no change to the pain level. Morphine 3mg was administered intravenously and over the next ten minutes GTN 1.2mg was administered followed by a further 800mcg. Twenty five minutes after arrival at the scene the patient became unresponsive, with no palpable pulse and ventricular fibrillation (VF) detected on the ECG monitor. A pre-cordial thump gave no effect, however a single defibrillation at 200 joules returned cardiac output and the ECG revealed a sinus bradycardia.

His Glasgow Coma Score (GCS) improved from 1,1,3 to 4,2,5=11 however less than a minute after the initial cardiac arrest the patient became unresponsive again and the ECG monitor confirmed VF. Defibrillation at 200 joules for the second time returned spontaneous circulation, his conscious state improved to GCS 4,5,6=15, the blood pressure returned to 150mmHg systolic and the ECG showed a sinus rhythm with the previously noted ischemic changes at a rate of 68/min. On arrival at hospital the patient was conscious and relatively stable.

Follow up
Upon follow up with the patient, he had been admitted to intensive care and was discharged after one week. An angiogram had revealed a dissecting aneurysm of the right coronary artery. The aneurysm and associated arterial wall damage had occluded the right coronary artery, however collateral circulation had formed and the myocardium was well perfused. The patient had been started on anti-platelet and anti-hypertensive medications and will continue to be monitored to determine the necessity of atherectomy, revascularisation or stenting. Six months later the patient reported no further complications and was returning to his normal level of activity.

Discussion
The pathogenesis of AMI is well described in pathophysiology texts. Heuther, Cotran, and Saunders describe chronic coronary atherosclerosis as the most common cause of AMI.

Atherosclerosis occurs as a result of a build up of intra-arterial plaque. This build up of plaque occurs secondary to damage to the endothelial lining of arteries caused by lifestyle factors such as smoking and poor diet high in cholesterol and lipids as well as physiological factors, for example diabetes, hypertension, autoimmune disorders and some infections. The histological progression of atherosclerosis begins when endothelial cells become inflamed, inflammatory cytokines are released which attract immune cells such as leukocytes and monocytes to enter the tunica intima.

Platelet derived and fibroblast growth factors are also released which assist to multiply smooth muscle cells. Monocytes rapidly mature into macrophages which adhere to the injured endothelium and release enzymes and toxic oxygen radicals that further damage endothelial cells but also oxidize low density lipoproteins (LDLs). Oxidized LDL’s are then engulfed by macrophages which penetrate the tunica intima and accumulate. The accumulation of macrophages results in a lesion called a ‘fatty streak’ and the macrophages within are referred to by Heuther as ‘foam cells’.

Sudden Coronary Artery Dissection Presenting as an Inferior AMI
Zac Morgan
This process continues and the multiplying smooth muscle cells produce collagen that encapsulates the fatty streak resulting in a fibrous plaque.1-4 Plaques increase in size over months and years and eventually damages more endothelial cells and infiltrates the lumen of the artery, narrowing the lumen and interfering in the smooth flow of blood through the artery causing turbidity.1-4 The obstruction to blood flow can impede oxygen delivery to distal tissues, and in the case of a coronary artery being obstructed can present as chest pain, especially on exertion commonly known as angina.3 Platelets normally circulate suspended in plasma within the bloodstream. Platelets normally circulate suspended in plasma within the bloodstream. Upon contact with foreign material or collagen, platelets adhere to the site.5 This is a protective mechanism to achieve haemostasis and maintain the integrity of blood vessel walls.4 Platelet activation and aggregation attracts more platelets until a plug has formed covering the plaque lesion. Simultaneously the coagulation cascade occurs by way of two pathways.1,2 The contact activation pathway begins when foreign material enters the blood stream and a chain of enzyme activation and inactivation leads to fibrin and thrombin formation which produces blood clots.2 The tissue factor pathway speeds this process and is activated as platelets begin to aggregate around the lesion.2 The net effect of platelet adherence and coagulation results in the formation of a thrombus around the original lesion which may further occlude the lumen of the artery.

Intra-arterial thrombi are at risk of separating from the lesion due to the high pressure of arterial blood flow and turbidity of blood around the lesion. If the thrombus becomes separated and begins to travel within the bloodstream it is called an embolus and can lodge on other sites where plaque has formed or can lodge in smaller arteries where it may further reduce blood flow or completely occlude flow.1 This process is responsible for the majority of myocardial infarctions, however another process that leads to myocardial infarction that is relatively under-recognised is spontaneous coronary artery dissection (SCAD)1 which was the cause of the case presented earlier.

**Coronary artery aneurysm and SCAD**

Coronary artery aneurysm (CAA) was first reported by Pretty in 1931 upon post mortem examination of a woman aged 42 who had died unexpectedly. The rarity of this condition was confirmed by a 50 year review of literature from 1952 to 2002 by Alpert, Kamineni and Sadhu who found only 152 reported cases. By 2004 Verma et al found that just over 250 cases had been reported in worldwide literature. More recent research by Dreyssse and others indicates that coronary aneurysms have been reported in 4.9% of patients undergoing coronary angiography. CAA is defined as abnormal dilation of a coronary artery 1.5 times the diameter of an adjacent segment of artery11 however cases of giant aneurysms defined as being greater than 2cm in diameter have also been reported.12 The left main coronary artery and left anterior descending artery is most commonly affected by aneurysm in young women, and right coronary artery aneurysm is more frequent in middle aged men.10 Young and middle aged women are more likely to be effected by coronary aneurysms2 and SCAD has been implicated in up to one third of sudden deaths of pregnant women and women up to ten weeks post-partum.9 Coronary aneurysms often present as angina or myocardial infarcts however have been detected during investigations for fatigue, shortness of breath and syncope.5,10 Coronary aneurysms can however develop asymptomatically and Blank describes a surprise finding of a giant right coronary artery aneurysm measuring 5.6 x 4.7 x 8cm first identified by a routine echocardiogram. This patient was asymptomatic however was surgically treated to reduce the risk of sudden rupture. Sudden rupture and dissection of a coronary aneurysm appears to frequently result in acute coronary syndrome or sudden death.7

Case studies have shown that aneurysms generally develop between the tunica media and adventitia of the artery wall.10-12 Dissection of the tunica media or dissection between the media and adventitia are commonly found upon autopsy13 and gives rise to a false lumen that indirectly occludes the true lumen of the artery involved.8,11 Aneurysms have been found to be filled with thrombi12 suggesting that the development of aneurysm is similar to that of atherosclerosis but occurring between arterial walls rather than within the lumen. However, in some cases there has been no damage to the integrity of the endothelium and CAA is common in patients with little or no risk factors for atherosclerosis.7,9-11

This adds to the mystery of the pathogenesis of CAA and some authors have hypothesised that the network of vasa vasorum that supplies blood to the arteries themselves may be implicated and may lead to haemorrhage and the formation of haematoma between the tunica media and adventitia.8

The cause of coronary aneurysms is not well known. Most cases reported in the literature have been young to middle aged, healthy people often without atherosclerotic risk factors.7 Women have been identified as being more prone to CAA than men especially during the peri-partum period presumably due to increased blood volume, hypertension and increases to shear forces within blood vessels.9 Multi-parity has also been identified to heighten risk.7 Multi-vessel coronary aneurysms associated with chronic methamphetamine use has been reported recently also due to the theory of vasospasm, hypertension and increased shear forces secondary to methamphetamine use.15 Infections and vasculitis also appear to be common risk factors due to the damage to the integrity of blood vessel walls.10 Kawasaki disease, which is a lymph node disease that progresses to vasculitis often in young children,13 is well referenced in the literature as a predisposition to CAA. Gukop and others describe a case of a 22 year old male presenting with cardiac tamponade due to a ruptured giant CAA. This patient had been diagnosed with Kawasaki disease at five years of age but was otherwise a healthy young man. Despite these identified risk factors there are many reported cases of idiopathic CAA and SCAD where no cause or risk can be defined.

**Definitive diagnosis**

Definitive diagnosis of CAA and SCAD can only be performed in hospital by invasive coronary angiogram and medical imagery such as computed topography (CT) and echocardiogram.4,11,12 The risk factors mentioned previously and the presentation of an otherwise healthy individual without atherosclerotic prone lifestyle factors with acute coronary syndrome should give rise to the suspicion of coronary aneurysm. In up to 50% of cases SCAD results in sudden death and is not detected until post-mortem examination.2
Definitive treatment

The treatment of CAA is vague, and is usually based on the level of stenosis of the affected artery. Anti-platelet therapy and thrombolysis for patients presenting with myocardial infarction has been reported as successful, however the risk of further haemorrhage and dissection of the tunica caused by thrombolytic agents makes this course of treatment controversial.

Invasive procedures such as stenting and bypass have proven successful in some CAA presentations; however cardiologists report that identifying the true lumen can sometimes be difficult in cases where complete dissection of tunica intima and endothelium has occurred and there is a risk of stenting the false lumen resulting in complete occlusion of the affected artery.

Similarly, angiography cannot definitively confirm the extent of the dissection and cardiologists risk stenting only part of the dissection which does not fully treat the condition and may lead to the necessity of subsequent overlapping stents. Other invasive treatments include surgical revascularisation such as coronary bypass graft (CABG) surgery which is indicated in multi-vessel aneurysms and cases with significant occlusion of the affected artery, and in the most severe cases heart transplant may be indicated.

In the case described at the beginning of this paper angiography found that collateral circulation had formed and that despite the potentially catastrophic event that occurred while the patient was in ambulance care, stenting or CABG were not indicated.

This patient continues to be treated with daily anti-platelet therapy acetylsalicylic acid (Aspirin) and clopidogrel (Plavix) as well as anti-hypertensive medication ramipril (Tritace). These are aimed at preventing enlargement of the aneurism and preventing further dissection.

The presence of collateral circulation indicates that the aneurism had been slowly developing and compressing the lumen of the right coronary artery over some time. As distal myocardium had been gradually deprived of oxygen, autonomic revascularisation had occurred which allowed some delivery of oxygen and ultimately preserved this patient’s life.

Overview of ambulance treatment

The provisional diagnosis based on the initial presentation of this case was correct and prompt treatment and transport prevented a catastrophic outcome. Early administration of supplemental oxygen was beneficial in ensuring oxygen delivery to ischemic myocardium via the collateral circulation, similarly the action of acetylsalicylic acid in inhibiting platelet aggregation prevented further enlargement of the aneurism.

The use of GTN when treating this patient was beneficial given its action to dilate systemic blood vessels, reducing peripheral resistance and reducing workload and oxygen demand of the myocardium. Initially this patient presented as a classical AMI and atherosclerotic and occlusive progression was initially thought to be the cause of the AMI. However subtle clues within the patient history such as his health, fitness, active lifestyle and denial of smoking suppressed the risk of atherosclerosis and heightened the likelihood of coronary aneurism.

Conclusion

Diagnosis of CAA or SCAD in the pre-hospital setting is not possible, however awareness of the risk factors and the prevalence of these conditions to occur in otherwise fit healthy individuals should be considered by paramedics. Pregnant women in the peri-partum period are at highest risk and any episode of chest pain, acute coronary syndrome, collapse or syncope can be transported by paramedics to hospital for further investigation. This rare condition should be considered when assessing any patient presenting with acute coronary syndrome and prompt paramedic care and hospital intervention can result in favourable outcomes.

The patient in this case was able to return home to his family one week after hospital admission and returned to work shortly after. At six months post a potentially fatal arrhythmia he was leading a normal, healthy life.

About the Author

Zac Morgan is a full time second year student with Ambulance Tasmania in Hobart studying the Associate Degree of Paramedic Studies through the University of Tasmania.
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Faculty
Colin Smart
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When newspaper headlines diagnose stress among paramedics they tend to attribute it to myriad cultural and organisational dysfunctions. Yet stressed paramedics have only one thing in common – their job – while stress itself exists in some form in most people, including the unemployed and retirees. Organisational stressors do not necessarily and uniformly lead to debilitating stress. In an industry that has been nominated by the media as particularly stressful, it becomes important to explore the complex and disparate nature of stressors. This article focuses on the need for more research in the little recognised field of moral distress.

In most industries stress is attributed to work intensity, time poverty and performance demands. In some professions there is a tendency to focus on the dramatic aspects, such as blood, guts and grief. Yet in professions that involve both critical care and human service skills, there are many aspects of the human personality that cannot be boxed in by common cause and effect arguments. A stressor is experienced at its intersection with individual circumstances, values and personality. A stressor is only one factor in a complex picture, and in its collision with an individual personality it does not necessarily lead to chronic occupational stress.

Popular terms such as burn-out and compassion fatigue do not enhance an understanding of the mechanics of debilitating stress. These phrases imply that people have an inevitable breaking-point, and there is a fixed capacity, particularly in caring roles. The palpable reality that not all people succumb to work stressors encourages those in distress to hide, and to minimise or anesthetise their experience.

An understanding of the pathway from stressor to distress in any occupational culture opens the way to intervention strategies, particularly useful in an age when workers are willing to seek counselling rather than blunt their emotions with medication. However, to map the process we must avoid simplification. Ordinary stressors of work volume and intensity usually come to a defined end, relieved by institutional processes, Saturday football and annual holidays. The feeling of being trapped and powerless, grasping after a label to answer the question what is wrong with me, sleepless nights and suicidal thoughts belong to another dimension of distress.

In 1984 in his seminal work Andrew Jameton introduced the concept of moral distress as a suggested category for nurses using the North American Nursing Diagnostics Association (NANDA) diagnostic taxonomy. Moral distress was generally understood as a psychological distress suffered by nurses whose moral compass conflicted with the required work practice. It was associated with futile treatments, untimely deaths, and ethical conflicts, power structures and resource shortages. In many instances nurses could clearly articulate a moral dilemma that had opened the way to symptoms such as loss of sleep and appetite, panic, and an irrational inability to be in a workplace to which they were once deeply committed. For nurses moral distress was characterised by the inability to do no harm, and the increasing suspicion that their work was failing to do good. In its simplest analysis, nurses who felt they were routinely violating the fundamental ethical principles, of non-maleficecence and beneficence, were likely to experience some degree of moral distress. Nurses who dealt routinely with resource poverty, inflexible policy and tragic medical accidents, were able to make strong connections between their own experience and the diagnostic category moral distress. The category has produced hundreds of research articles in the past two decades, and it has been adopted by NANDA, but so far it has not been applied and researched in many professions.

Although early discussion of the phenomena suggested ethics education could help alleviate the problem, my own doctoral research which tested the concept of moral distress among front line children’s welfare workers, suggested a strong link to personality. Moral distress in frontline workers did not impact new employees so much as the survivors – workers who had been in the job for 20 years and who were essentially altruistic in their desire to make a difference in the world. In other words, people with the highest ideals struggled hard to resolve what might be called in psychological language, “cognitive dissonance”, a tension between two conflicting ideas or actions. In effect, the frontline workers who reported this condition were those who had reflected on their successes, compromises, expectations and defeats, and did not have a superficial approach to the conflicts of policy and practice. Conscientious welfare workers who wanted good outcomes for their clients, were often sensitive to a perceived mismatch between an organisation’s stated and acted values, and they were vulnerable to distress that was essentially moral.

Jameton also insisted that moral distress could not be equated to ethical dilemmas. Ethics education can provide a framework for approaching complex situations, and validating the choices, for example, of triage in disasters. Yet education alone cannot alleviate personal anxiety rooted in the strength and independence of value systems. Individuals vary in the extent to which they are able to modify and adapt their motivating principles. In social psychology this is described as “self monitoring” which is the ability to adjust personal behaviour or attitudes in the light of social and cultural demands. The two ends of the self monitoring scale are best characterised by the swinging voter as opposed to the true believer. True believers cannot hide or amend their inclinations without regarding themselves as compromised, and as a result they sometimes seem to be awkward socially. To achieve a sense of personal integrity, some people are driven to be more adaptive while others expect to be taken at face value in all situations. Moral distress may be more associated with a need to firstly, to your own self be true.

The concept of moral distress lends itself to constructive intervention through counselling which focuses on values clarification. Individuals can be led to evaluate their capacity to tolerate perceived compromise and discuss how much adaptation is necessary and possible in order to cope. Moral distress should not be seen as an irreconcilable anxiety, but a tension at the intersection of personal and organisational values. It can be the doorway to a deeper understanding of the values, expectations and personality traits that drive the individual, enabling them to become more resilient workers. To date moral distress has only been researched in a limited way among feminised occupations such as nursing and children’s welfare work. Yet it is the kind of particularised occupational stressor that would lend itself to further research among paramedics.
Supporting the Frontline

Altruism is a personality characteristic highly valued in all organisations. Although it is rarely spelled out in recruitment, altruism is a core attribute for successful community service workers, whether they are frontline children’s welfare workers, ministers of religion or paramedics. People who are prepared to defer their own interests for the urgent needs of others are a rare, essential and precious commodity. Altruism, however, is often powered by a set of values that carries seeds of distress. Many altruists attach themselves to organisations whose priorities and values seem to match their own. When an organisation’s larger agenda, its lack of control of the micro scenes, its financial pressures and policy choices seem to be shifting the focus from people to processes, from intervention to budgets, altruists may become vulnerable.

For workers who want to make a difference in the world, there is a deep-rooted anxiety that time-out does not seem to fix – in fact it intensifies with the years. Workers with a passion or calling for their work should not be driven out by little known condition. The concept of moral distress lends itself to deeper research among paramedics.

References


Bibliography


About the Author

Dr Ann Lazarsfeld-Jensen is currently teaching Ethics and Laws in the pre hospital care program at Charles Sturt University. She has been involved in various research projects into paramedic practice including the national Australian Learning and Teaching Council study of paramedic education in 2008. Part of her previous career in non-profit management included workplace counselling and she was an award-winning author in the Australian Counselling Journal. Her doctoral thesis was titled: A chance to do some good in the world.
Imagine that your service could significantly increase the percentage of cardiac arrest patients walking out of the hospital neurologically intact. Better yet, imagine you could accomplish these results with just a little training and slight changes to CPR methods.

That’s what has been demonstrated by preliminary data for patients found in initially shockable rhythms in Madison, Wisconsin, and several nearby counties. In predominantly rural Rock and Walworth counties, resuscitation rates were just 15% prior to the 2005 implementation of cardiocerebral resuscitation (CCR). However, after CCR was initiated, they rose to 48%.

In the nearby city of Madison, the program was started in 2007 with double-digit survival rates. With public involvement, the survival continues to grow. This article describes the Madison efforts and identifies what we believe have been key components to our resuscitation success.

Background

In early 2007, Madison (Wis.) Fire Department Medical Director Darren Bean, MD, learned about a resuscitation project Richard Barney, MD, and Michael Kellum, MD, were conducting in Walworth and Rock counties. The project centered on changes in CPR that were creating dramatic improvements in outcomes for patients found in a shockable rhythm by EMS.

The most exciting part of Barney and Kellum’s project was not just that 40% of the patient population was walking out of the hospital neurologically intact post-arrest, but that it was occurring in a primarily rural area with BLS first response and delayed ALS response. Bean soon learned that the key to achieving these results was high-quality compressions with no interruptions except for defibrillation. So, he decided to implement this system of CCR in Dane County, Wis., which is home to the city of Madison.

The Madison program was modeled after one developed in Tucson, Ariz., by Gordon Ewy, MD, which was based on research Ewy conducted at the University of Arizona Sarver Heart Center. That research found compressions were occurring only 43% of the time during a normal resuscitation. Further evaluation revealed that compressions were withheld in our system for a number of reasons, including pulse checks, rhythm checks, IV access and airway procedures.

These interruptions resulted in a significant period of no circulation or forward movement of blood in patients. It was further found that oxygenation of the blood when a patient experienced sudden cardiac arrest was normal or very near normal. Ewy proved that the key components to a successful outcome are uninterrupted compression and defibrillation of an oxygenated myocardium.

A New Approach

To achieve optimal results, our system—and many others throughout the country—have found that EMS providers must assess compressions immediately upon their arrival and continue care based on early assessment. If high-quality compressions are occurring, the crews should immediately defibrillate shockable rhythms. If no or poor-quality compressions are found on arrival, EMS should immediately begin compressions at a rate of 100 per minute for two minutes.

Ventilations aren’t administered under these circumstances, and airway management consists only of inserting an oral pharyngeal airway and applying oxygen via a non-rebreather mask at 15 L per minute to support passive negative pressure ventilation. Our crews have been taught to perform compressions in a manner that ensures full recoil off the patient’s chest after each compression, allowing maximal ventricular filling. We’ve also found that it’s valuable for providers to utilize a metronome, or another feedback system, to ensure attainment of the optimum compression rate.

The physical demands of this type of compression regimen require a team approach to prevent fatigue and poor technique. Therefore, the Madison program protocol included frequent changes in individuals performing the compression. Although some systems and guidelines recommend changing rescuers every two minutes, we’ve found it best—if possible—to switch compressors every minute.

To minimize time off the chest, rhythm analysis and defibrillation shouldn’t take more than five seconds. This requires manual defibrillation and charging the unit prior to stoppage of compressions (with charging times to begin at approximately the 185th compression mark). After the first shock, immediately resume compressions at the 100-compressions-per-minute rate.

Establishment of IV or intraosseous (IO) access should be performed without interrupting compressions during the second set of compressions, followed by defibrillation if indicated. Again, 200 compressions should be repeated for two full minutes prior to any active ventilation. Once IV/IO access is secured, we administer 1 mg of epinephrine and 40 units of vasopressin; 300 mg of amiodarone is administered during the second round of 200 compressions; and another 1 mg of epinephrine is given during the third round of 200 compressions.

After six minutes of compressions, our crews secure the airway with an endotracheal tube or a laryngeal mask airway (LMA), the King LT Airway or Combitube. Whichever method is used, it’s critical that no interruptions occur in the performance of compressions, and the most skilled members of the resuscitation team should perform them.
Proper Ventilation

Once the airway is secured, the ventilator makes sure the patient isn’t hyperventilated. To do this, we require the use of end-tidal CO2 (EtCO2) monitoring, which helps providers maintain an EtCO2 of 40 mmHg. The ventilation rate is maintained at a rate of six per minute to start eucapnia. Once patients have a return of spontaneous circulation and an altered level of conscious post-resuscitation, initiation of induced hypothermia is considered.

To realize the best possible organization and timing during resuscitation, our crews utilized the acronym McMAID, which stands for metronome, compressions, monitor, airway, IV and drugs. A “code commander” is established, and this effective technique is assigned to this provider, who oversees resuscitation and guarantees no interruptions in compressions, as well as tracking treatment and timing of interventions performed by the resuscitation team.

Implementation & Training

Initially, all five of the Dane County paramedic-level services were trained in the CCR techniques, as were all EMTs. Training began with updating the systems’ protocols and was followed by lectures and discussions on the new CCR techniques. To ensure readily accessible information, a screen capture of the lecture along with protocol review and several research articles were placed on the department’s online learning management system. Working with the city cable channel, ALS and BLS videos were developed to provide clear demonstrations of all techniques and important information. These were then made available to all emergency responders.

It was discovered early in the program that frequent repetition and feedback were required to prevent a return to previous timing and techniques. To support this, each crew decided to review and practice the McMAID mnemonic, utilizing brief, daily simulations. In addition, the medical director reviewed every cardiac arrest and ECG recording to identify any interruption in compressions and delays in the delivery of defibrillation. This information was then reviewed with the paramedics and fire companies who responded to the call.

Bean and Dane County Medical Director Paul Stiegler, MD, expanded the training program to include city and county law enforcement personnel. Historically, area law enforcement personnel had been hesitant to begin resuscitation prior to EMS arrival. To address this, Bean trained Madison police officers at their annual in-service. With the assistance of Stiegler and area EMS services, all county law enforcement professionals received CCR training.

In August 2008, Wake County (N.C.) EMS Medical Director Brent Myers, MD, MPH, FACEP, provided education on induced hypothermia as part of the CCR program. He presented two sessions and reviewed system protocols for the procedure.

As a part of optimal care, an unconscious adult patient who has a return of spontaneous circulation and adequate blood pressure should be cooled to a temperature of 32–34°C.

Prehospital providers initiate this process with chilled IV fluids—NSS cooled to 40°C—and placing ice packs on the groin, axilla and around the neck. This is continued upon admission to the ED.

Going Public

Once all emergency responders were trained in CCR, the program was expanded to the public. This expansion was completed in two parts. The first part involved training 9-1-1 center dispatchers in CCR techniques and changing pre-arrival instructions to provide CCR instructions instead of CPR instructions. The second part began with a meeting of the Dane County American Red Cross Chapter in late 2007 at which time they agreed to take on the important task of citizen orientation and training. In early 2008, the National American Red Cross approved a CCR pilot project for Dane County.

In early 2008, Bean also trained members of the Madison mayoral staff and key community stakeholders to develop support and commitment for the program. Over the next year, thousands of community members were trained in CCR techniques. Red Cross staff and Dane County EMS providers brought CCR training to several community-wide programs.

The city of Madison has experienced a significant number of successes during the past two years. At this time, data is being analyzed and the final outcome is incomplete. For 2008, the success rate was 38% for all Dane County ALS agencies, and the preliminary numbers show a slightly higher rate in city limits.

Conclusion

CCR works—plain and simple. The resuscitation results experienced by our services and other organizations that have implemented the process of continuous chest compressions, and have trained and focused on not interrupting compressions, have seen dramatic improvements in resuscitation. These results, combined with community involvement, are similar to the success seen in the laboratory setting.

There hasn’t been a more critical improvement in resuscitation since the implementation of CPR itself. More research is needed to clearly document and refine these preliminary successes experienced by participants, but combining CCR and induced hypothermia will no doubt improve outcomes experienced by responders in the prehospital setting.

Author’s Note: On May 10, 2008, Madison (Wis.) Fire Department Medical Director Darren Bean, MD, was tragically lost when his medical helicopter crashed while returning from a patient transport. Without his dedication and commitment, this program would not have experienced its tremendous success. He’s missed by all who knew him, and this program is a small part of his legacy.

References


This article originally appeared in June 2010 JEMS as “CCR Saves Lives: Simples changes to traditional CPR methods lead to dramatic success.”
ACAP Whyalla Emergency Medical Conference

On Saturday 22nd May over 150 medical professionals, including paramedics, doctors, nurses, medical and paramedic students and emergency service officers from around the state gathered for the first combined emergency medical conference hosted by the Australian College of Ambulance Professionals (ACAP) in Whyalla for nearly 20 years.

Sessions
The conference had a diverse focus on a wide range of emergency medical presentations and updates on mental health by Whyalla mental health team’s Liz Bennett and Deb Papoulis, paediatric assessment by Dr Davinder Gill from WACH, acute coronary syndromes by interventional cardiologist Dr Chris Zeitz, medical retrieval from retrieval paramedic clinical manager David Tingey, envenomation by Chris Cotton and Julian Craig, illicit drug intelligence by SAPOL’s detective superintendent Scott Duvall and an update on, and insight in to the workings of the Australian Resuscitation Council by its chairman professor Ian Jacobs.

A popular aspect to the conference was a series of skills stations on intraosseous needle insertion, advanced airway management, surgical airways, basic CPR, transcutaneous pacing and vascular access/expansion where participants were able to attempt skills in a simulated environment that may be outside of their usual scope of practice. Thanks go to Steve Simmons, Almina Redjepi, Richard Larsen, Mike Reed, David Tingey and Kristian Glover for their generosity in running these skills stations.

One of the most popular skills sessions was one where a CPR certificate was offered to those who needed it for professional development and accreditation. Most of the uptake of this was from the GP community.

Sponsorship
Major sponsors for the conference were Neann and SA Ambulance Service, followed by Cellmed (Harvey Grantham), Implox and Ramsay’s Bookshop. A special thanks goes to the regional office staff based at SAAS’ northern office, without whose proactive help we would not have been able to advertise the conference as widely as we did.

Saudi Arabian paramedic Students and Flinders Uni Medical Students
Two large contingents who travelled to Whyalla to attend the conference were students from the Saudi Arabian Paramedic Association and Flinders University School of Medicine. Both groups were very impressed with the quality of the conference, and wish to establish greater ties with the pre-hospital community here in SA.

Summary
Conferences like this don’t just happen. There are a number of people behind the scenes who work to ensure things run smoothly. Sincerest thanks go to Steph Altus, James Pearce, Mathew and Leah Kemp, Amy Cotton and those already mentioned who assisted running the skills stations.

Conference Dinner
Nearly 100 people attended a post conference dinner and presentation by SAAS chief executive officer, Ray Creen who gave a thought-provoking and entertaining talk on his role as a CEO. Feedback on this talk was excellent, as was the quality of the food served by our hosts at the Palms Convention Centre.
Original Research
Effect of road traffic accident contaminants on pulse oximetry
Gyorgyi Kamaras, Tamas Geller, Csaba Dioszeghy

Recovery from bushfires:
The experience of the 2003 Canberra bushfires three years after
Peter Camilleri, Christine Healy, Elspeth Macdonald, Susan Nicholls, Jolyon Sykes, Gail Winkworth, Memilyn Woodward

Professionalism
Is the Australian Paramedic Discipline a Full Profession?
Brett Williams, Andrys Onsman, Ted Brown

History
Sir Neville Howse (VC), Private John Simpson Kirkpatrick and Private Martin O’Meara (VC) and their contributions to Australian military medicine
Scott Devenish, Peter O’Meara

Invited Commentary
Interprofessional Education and the Health Care Team Challenge:
An interview with Monash University paramedic student, Tegwyn Bath
Brett Williams, Tegwyn Bath, Janice Chesters, Jill Thistlethwaite

Book Reviews
A Review of Two Thesis Help Books for Higher Degree by Research (HDR) Students in the Community Based Health and Emergency Health Areas
Amee Morgans

Cochrane Corner
How effective is hypothermia for neuroprotection in adults after cardiopulmonary resuscitation
Stephen Burgess

Conference Reports
EMS Today Conference. Maryland, USA 2 to 6 March 2010
Malcolm Boyle, Bill Lord

Evidence on trial: has it made an impact on health? Auckland, New Zealand. 22 March 2010
Stephen Burgess

Knowledge translation in health seminar – “Knowledge translation in health: what it is and how to do it” Melbourne, Australia, 11 March 2010
Stephen Burgess
SEPTEMBER

8th Australasian Conference on Safety and Quality in Health Care

Back to the Future – Unlocking the Potential

6-8 September 2010
Perth, Western Australia

2010 International Nurse Practitioner/Advances Practice Nursing Network Conference

8-11 September 2010
Brisbane, Qld
www.rcna.org.au/conferences/INP_APNN%202010/welcome

Australian Health Emergency Coordinators Conference

Resilience – in the face of adversity

16-17 September 2010
Eveleigh, NSW

Improving the Health Care Experience

2010 Conference

20-23 September, 2010
Eveleigh, NSW

PHAA 40th Annual Conference

27-29 September, 2010
Adelaide, SA
www.phaa.net.au/40thPHAA

Reform in Primary Health Care 2010

Integration for Enhanced Patient Care & Community Delivery

28-29 September, 2010
Sydney, NSW
www.primaryhealthform.com/

2nd Rural & Remote Mental Health Symposium

Winds of change: new perspectives on rural and remote mental health

29-30 September, 2010
Sydney, NSW
www.anzmh.asn.au

Celebrating Story: Bringing people and work to life

Leading and learning with story

7-8 October 2010
Melbourne, Vic
www.babelfishgroup.com/

World Health Summit 2010

10-13 October, 2010
Berlin, Germany
www.worldhealthsummit.org

Under the patronage of Chancellor Angela Merkel and President Nicolas Sarkozy, the World Health Summit 2009, held last October, was a great success and has created an overwhelmingly positive response by the many high-profile participants and in the media. The World Health Summit are very happy to continue this tradition and to again bring together outstanding scientists, leading government officials, and high-level representatives from civil society and the health industry. A core and essential function of the World Health Summit is to establish a forum to discuss the most pressing challenges that medicine and global health will face over the next decade and beyond. The Charité-Universitätsmedizin Berlin is very proud to be the host of this initiative, coinciding with the 300th anniversary of this institution.

National Centre for Farmer Health

Inaugural Conference

Opening the Gates on Farmer Health

11-13 October, 2010
Hamilton, Vic
www.farmerhealth.org.au/conference

Australian College of Ambulance Professionals (ACAP) Conference 2010

14-16 October 2010
Perth, Western Australia

Joint Colloquium of the Cochrane & Campbell Collaborations

18-22 October 2010
Colorado, USA

2010 National SARRAH Conference

New Frontiers in Allied Health: Gathering Pearls of Wisdom

20-23 October 2010
Broome, WA
www.sarrah.org.au/site/index.cfm?display=164222

The conference provides a forum for the rural and remote allied health workforce, bureaucrats, educators and consumers to:

- Present on innovative local solutions to issues that can be applied to address similar issues nationally and across disciplines
- Have input and influence from the ‘grassroots’ into national and state health policy and service delivery
- Demonstrate rural and remote allied health leadership in workforce and service delivery innovation
- Promote continuing education and professional development activities essential to support allied health professional practice in rural and remote Australia.
- Promote rural and remote allied health research by professionals who practice in these areas and the presentation of research findings.
- Develop supportive networks
- Promote good health and wellbeing through the delivery of allied health services to and by Indigenous and non-Indigenous people in rural communities.

Optimising Patient Flow 2010

Delivering lower patient waiting times and improved patient outcomes

20-21 October 2010
Sydney, NSW
www.optimisingpatientflow.com.au

Optimising Patient Flow 2010 will provide you with the answers to your key challenges:

- Taking a holistic approach to the coordination of patient flow
- Improving communication and governance amongst all stakeholders to improve patient journeys
- Using clinical support services to assist patient flow and prevent ED admissions.

Evidence Based Healthcare Conference

Experience the Difference – Show the Impact

27-29 October 2010
Adelaide, SA
www.allocationsgroup.com/EBHC2010

NOVEMBER

Evidence2010

Transforming Healthcare

1-2 November 2010
London, UK
www.evidence2010.com

AGPN National Forum 2010

Connecting Care

3-6 November 2010
Perth, WA

Euromed 2010

Digital Heritage

8-13 November 2010
Lemesos, Cyprus
http://www.euromed2010.eu/

Healthachieve2010

Conference & Exhibition

8-10 November 2010
Toronto, Canada
www.healthachieve.com

2010 School of Rural Health Research Conference

Issues impacting on the physical and psychological health of our communities

11 November, 2010 – Shepparton, Vic

General Practitioner Conference & Exhibition

12-14 November 2010
Southbank, Melbourne

First Global Symposium on Health Systems Research

Science to accelerate universal health coverage

16-19 November, 2010 – Montreux, Switzerland
www.who.int/reproductivehealth/symposium_brochure.pdf

TRAUMA 2010

19-21 November 2010 – Melbourne, Australia
http://www.trauma2010.org/
EMS in the Media

Paramedics voted the Most Trusted Profession

Australian Reader’s Digest has released the results of their annual Trust Survey, which among other things, ranks 40 professions we have most faith in. In Australia we tend to place our faith in the people who save our lives, care for us, protect us, and give back to us. So it will come as no surprise to many that for the seventh year in a row, Paramedics have been named the most trusted profession in the land, ahead of Firefighters, Nurses, Pilots and Doctors.

The Trust Survey also revealed Australia’s 100 Most Trusted People. The Top Ten is dominated by people who ‘care and protect’ and is headed by Burns Specialist, Dr Fiona Wood; ahead of Cancer researcher, Professor Ian Frazer; Nobel Prize winner, Professor Elizabeth Blackburn; Clean Up Australia founder, Ian Kiernan; VC recipient, Mark Donaldson; Adventurer and philanthropist, Dick Smith; Mental Health expert & Australian of the Year, Patrick McGorry; Youth worker, Father Chris Riley; Former cricketer and cancer campaigner, Glenn McGrath; and rounding out the top ten is Actor Hugh Jackman.

The full list is published on the Australian Reader’s Digest website at www.readersdigest.com.au

NEW SOUTH WALES

Ambulance and Charles Sturt University sign off

Thee Chief Executive of the Ambulance Service of NSW, Greg Rochford and the Vice Chancellor and President of Charles Sturt University (CSU), Professor Ian Goulter, have signed a Memorandum of Understanding (MoU) which is expected to see an unprecedented level of collaboration in support of boosting CSU paramedic enrolments to 300 students a year.

It will also accelerate study programs to guaranteed jobs, establish graduate mentoring programs and increase joint research. The signing formalises significant collaborative work already underway.

Chief Executive of the Ambulance Service of NSW Greg Rochford said, “The Service is committed to maintaining a well-educated paramedic workforce to ensure the community receives high quality care.

“We have a history of collaboration with Charles Sturt University and have long recognised the benefits of university education in preparing paramedics for the increasingly complex and evolving environment of emergency medical care in the community. The MoU represents a new strengthening of that relationship and will assist us to more effectively attract quality graduates to the clinical workplace and support achieving our vision of excellence in care”.

Clinical placements are integral to the success of undergraduate education and will allow students to be introduced to the Service’s clinical workplace in a structured and safe manner. The increase in student numbers will increase demand for clinical placements, however this is considered an investment by the Ambulance Service of NSW in maintaining a skilled workforce.

The Graduate Internship program facilitated by the Ambulance Service of NSW has also been designed to specifically meet the needs of graduates as they commence employment. The Service looks forward to collaborating with CSU in the development of its mentoring capability. This will extend support for students to ensuring the Ambulance Service of NSW has the capacity to support the development of paramedics throughout their career.

The Vice-Chancellor and President of CSU, Professor Ian Goulter, said, “A major element of the MoU is the Accelerated Paramedic Pathway Program, which allows selected students, after six months of study at CSU, to be guaranteed a job with the Ambulance Service of NSW. They will undertake clinical placements with the service and, once they complete the first two years of the program, will obtain paid work with the Service and have their study costs covered for their last few subjects.

“This and other new programs will be the subject of joint evaluation and research to ensure the University and the Ambulance Service of NSW create a culture of continual improvement in the undergraduate program, professional development opportunities and health provision for the community.”

“Our work goes some way to remedying the fact that paramedics do not feature in the spotlight in the current debate on health reform.” Professor Goulter said.

More information is available on the ASNSW website at www.ambulance.nsw.gov.au.
VICTORIA

Celebrating one million memberships! Thank you Victoria for your support

A family now has ambulance cover for life after becoming taking out the millionth membership of Ambulance Victoria. Former dairy farmer Darren Keath, 45, was today presented a ‘gold’ membership card entitling his family free ambulance treatment and transport for the rest of his life.

The father of four from Lockington, near Echuca, said his family let their membership lapse 18 months ago thinking they were covered by private health insurance. But Mr Keath’s wife, Pauline, urged him to sign up again because she believed $150 for family membership was a small price to pay for guaranteed ambulance cover.

By taking out family membership, Mr Keath’s good fortune of has been extended to his wife, Pauline, daughters, Ashlee, Shannen and Breanna, and son, Dylan.

Victoria’s first ambulance membership scheme started in 1935. Nowadays there are almost three times as many Ambulance Victoria memberships as there are members of Victoria’s AFL clubs in 2009.

Ambulance Victoria CEO Greg Sassella said only ambulance members could be certain they were protected from the high cost of ambulance treatment and transport.

Making dreams come true

Ambulance Victoria made a little boy’s dream come true by making him an honorary flight paramedic for the afternoon.

Intensive care flight paramedic Shaun Ryan met the boy in intensive care some time ago after a nurse approached him about a boy whose wish it was to become a paramedic.

‘I went over and spoke to him and promised that if he got better, he could come visit us and take a tour of air ambulance,’ he said. ‘His dad rang this week to let me know Riley had made a full recovery and wanted me to hold up my end of the bargain.’

Nine year-old Riley McDowell was born with a heart defect and relies on a permanent pacemaker. At only four days old he underwent heart surgery for the first time and at five months old was fitted with the pacemaker.

‘I’m very happy to be here today,’ said Riley. ‘I’ve been waiting for this for a very long time, since Shaun came to see me in hospital.

‘I want to be a paramedic because I want to help people like they helped me, even just to hold their hand.’

Mother Julie said the paramedics had been instrumental in his recovery, always visiting him in ICU and lifting his spirits.

‘They have helped him through a really hard time and to see him well again to be able to come out here and watch him play in the fixed wing and chopper is fantastic.’

The visit is a stark contrast to how Riley spent his last school holidays. ‘He was in hospital for his last holidays so this is really great for us,’ said father Danny.

NEW ZEALAND

New Zealand takes the next step towards practitioner registration

In July an education and registration working party for Ambulance New Zealand released a series of discussion documents on registration for ambulance officers and defence force medics in New Zealand. These may be viewed by going to the dedicated website on registration at http://www.ambulancenz.co.nz/

As part of helping practitioners learn more about registration, a consultation program is underway. People with knowledge about regulation will outline the potential impacts of registration. This consultation process began in August with a series of forums throughout New Zealand seeking feedback and comment from interested parties. This will be followed by surveys, focus groups and webinars during September 2010.

The background for regulation in New Zealand focuses around the Health Practitioners’ Competence Assurance Act 2003 (HPCAA), under which New Zealand health professions can be regulated if the government thinks a particular profession has the potential to pose a risk of harm to the health and safety of the public.

To be eligible for regulation, a profession must meet certain criteria set out under the Act and paramedics and New Zealand Defence Force medics may fit into this category.

Each regulated health profession is overseen by a Responsible Authority to ensure compliance with the requirements of the Act. The Responsible Authority is made up of people who are appointed by the Minister of Health. Most of these people come from the profession itself – drawn from the peer group of practising professionals. The Minister also appoints a small number of people from outside the profession to represent the public and users of the particular health services.

The Responsible Authority gets input from the profession to set up:

- scopes of practice
- standards of clinical competence, cultural competence and ethical conduct

They must do these tasks in consultation with the practitioners who will be covered by regulation, as well as others in the sector such as employers.

“This independent and structured approach to practitioner regulation parallels the calls that the profession has made for paramedic registration in Australia” ACAP President, Mr Ian Patrick said. “It is also similar to the general principles for registration under the Australian Health Professions Registration Agency (AHPRA).” http://www.ahpra.gov.au/

Mr Patrick affirmed the intention of ACAP to monitor developments in New Zealand and actively contribute to discussions about practitioner regulation with our New Zealand colleagues and other organisations as appropriate.
Mr Gerardus Hendrikus RABELINK

Mr Rabelink has provided outstanding service to the Queensland Ambulance Service through his dedicated work in special operations. His commitment and contribution have placed Queensland at the forefront of this important and emerging area of ambulance service delivery.

Mr Rabelink’s primary task within the special operations environment includes the establishment of immediate and sustainable logistics arrangements to support the short notice, high intensity deployment of operational ambulance personnel to mass casualty and special operations tasks. His dedication and experience proved critical during the successful deployment of Queensland paramedics in response to the Tsunami disaster in Banda Aceh in January 2005.

Mr Rabelink’s commitment to supplying a world class ambulance service has been demonstrated over 31 years’ service to the community as an outstanding frontline ambulance manager.

Dr Stephen James RASHFORD

Dr Rashford has provided outstanding service to the Queensland Ambulance Service (QAS) through his innovative approach to pre-hospital and emergency care. As Medical Director, Dr Rashford has made a number of cutting edge clinical advancements including the introduction of Ketamine, an intravenous anaesthetic that provides profound pain relief, and the introduction of the QAS state-wide reperfusion strategy. The strategy includes the introduction of 12 lead electrocardiographs in conjunction with ‘clot busting’ drugs such as Tenecteplase to identify and treat patients experiencing a heart attack.

Dr Rashford was also responsible for leading and strengthening clinical quality assurance during call-taking and the development and implementation of the Clinical Audit and Review Tool (CART) within the QAS. The CART assists in the development of contemporary clinical governance and increases the efficiency and effectiveness of clinical audit and review. These advances have placed the QAS at the forefront of emergency pre-hospital clinical practice and have directly led to a great reduction in the pain and suffering experienced by patients. Dr Rashford’s commitment to supplying world class ambulance services is well recognised and has been a key feature in the success of the pre-hospital and emergency response environment in Queensland over many years.

Mr Keith Allen DRISCOLL

Mr Driscoll has over 24 years’ distinguished involvement in the provision of ambulance services through St John Volunteers Northern Territory, Ambulance Service New South Wales and the South Australian Ambulance Service (SAAS); initially as a volunteer followed by Ambulance Officer, Clinical Team Leader, Intensive Care Paramedic and various managerial roles. He is currently appointed within the SAAS as the Executive Director for Metropolitan Patient Services.

Mr Driscoll has an exceptional rapport with staff and staff representatives through his honesty and integrity, open communication style and tenacious achievement orientation. He introduced re-accreditation to the SAAS as a quality assurance activity, a process that remains intact today.

Other initiatives and improvements that can be attributed to his outstanding leadership include Single Paramedic Response and Intervention units, the Bicycle Response Unit, the original development of the SAAS’s Targeted Ambulance Response and its clinical outcomes, and deployment of Automatic External Defibrillators to ambulance teams as a clinical risk management and first response enabler.

Mr Driscoll was the first paramedic to become a member of the Medical Advisory Committee and one of the first clinical managers to join the (then) Medical Directors’ Committee of the Council of Ambulance Authorities. Mr Driscoll recently began supporting the ambulance service provider in Tonga, the Ministry of Health, and has forged a relationship to assist them in continually improving their services.

Ms Rebecca Ruth LUNDY

Ms Lundy has displayed outstanding leadership, commitment and dedication to the continuous improvement and professional development of Communications Centre staff and training frameworks within the ACT Ambulance Service. Ms Lundy joined the Service in 1994 and graduated as an Intensive Care Paramedic 3 years later. In 2001, she took a leading role in improving the clinical and professional development of Intensive Care Paramedic Students through her work as an inaugural member of the operational training and development team. Her dedication to improving the mentoring framework within the Service was formally recognised in 2007 with her being awarded the ACT Community Protection Medal.

Since 2007, Ms Lundy’s professional and personal commitment has continued. She has taken a pivotal role in a number of key service delivery areas including the introduction of new training qualifications for Communications Centre staff, contributing to the development and assessment of a revised Vocational Education Training Framework, and vigorously pursuing change which has culminated in a revised structural framework within the Communications Centre targeted at enhancing services to the members of the Service and the community.

Ms Lundy’s enterprising and distinguished service, particularly within the communications field, is widely acknowledged and respected by her peers and supervisors and clearly represents her high standards of professionalism and dedication to duty.
USA Study Tour for CSU Paramedic Students

Ten paramedic students from Charles Sturt University (CSU) in Bathurst will attend two paramedic conferences and visit three ambulance services in the United States during August to observe how their American counterparts undertake their vital roles in the provision of emergency medical services.

Professor of Paramedic Practice and Leadership at the School of Biomedical Sciences in Bathurst, Peter O’Meara, will lead the study tour by final year students enrolled in the Bachelor of Clinical Practice and the Bachelor of Nursing/Bachelor of Clinical Practice (Paramedic).

“This type of rich study experience offers significant cultural and professional benefits for the students,” Professor O’Meara said.

“First, I expect that our paramedic students will develop a stronger appreciation for the cultural differences of their future patients through their interaction with American paramedics and patients in settings where our students are outsiders.

“Professionally, they will observe the different approaches to the organisation and management of emergency medical services even though the United States and Australia are, on face value, very similar countries. The American health and emergency medicine service systems are very different to our own, and this will challenge the students’ perceptions of how services should be offered to the community.”

The 2010 Paramedic Study Tour in the United States will consist of a number of options as part of the Charles Sturt University CSU Global Experience program.

The first part of the study tour will be attendance at emergency medical services conferences that will be held in Vail, Colorado – The 6th International Roundtable on Community Paramedicine (from 9-11 August) at which the CSU students will present a collective paper on paramedic education in Australia, followed by the Rural Frontier EMS Summit (from 11-13 August).

The CSU students will then visit the Wake County Department of Emergency Medical Services, North Carolina, the Western Eagle County Emergency Medical Service, Colorado, and the Mayo Clinic Medical Transport, Minnesota.

The University and other sponsors are supporting this study program through grants and scholarships for travel, accommodation and conference registration subsidies.

There is a substantial mortality rate in patients admitted alive after out-of-hospital cardiac arrest. The primary objective of our study was to examine trends in in-hospital survival in out-of-hospital cardiac arrest survivors in Canada between 1994 and 2004. The secondary objective was to examine predictors of in-hospital survival in these patients. Data on hospital admissions from April 1, 1994, to March 31, 2004, were obtained from the Health Person-oriented Information Database, maintained by Statistics Canada. We included all patients with a primary diagnosis of cardiac arrest who survived to hospital admission. We assessed survival to hospital discharge in all patients admitted alive. In Canada, 13,263 patients survived community arrest between 1994 and 2004. The annual incidence of hospital admission after out-of-hospital cardiac arrest decreased by 33%, from 5.37 per 100,000 in 1994 to 3.63 per 100,000 in 2004 (P < .0001 for trend). Subsequently, 5,045 patients (38.03%) survived to hospital discharge. The survival rate did not change during the duration of the study. Invasive coronary artery disease management was associated with a greatly increased chance of survival (odds ratio 21.98, 95% CI 17.62-27.42). Also male gender, heart failure, and acute myocardial ischemia were independent positive predictors of survival to hospital discharge; greater age and comorbidities were negative predictors of survival. Finally, there were significant interprovincial variations in survival rates. Our study, the largest of its kind, has 4 main findings. Firstly, between 1993 and 2004, there was a significant and steady decline in admission rates after community cardiac arrest. Second, there was no change in the inhospital survival rates. Thirdly, invasive management of coronary artery disease was associated with a greatly improved chance of survival, and finally, there were important regional variations in survival rates.


Intravenous amiodarone and procaainamide are both used as therapies for refractory supraventricular tachycardia (SVT). However, no studies have compared the efficacy and safety of these agents in pediatric patients. All patients treated with intravenous amiodarone or procaainamide during 25 consecutive months for the following mechanisms of SVT were included: orthodromic reciprocating tachycardia, intra-atrial reentrant tachycardia, and ectopic atrial tachycardia; junctional ectopic tachycardia was excluded. Treatment response was categorized as full success, partial success, or failure. Partial success was defined as clinical improvement and/or arrhythmia control but not meeting full success criteria. Adverse events were classified as major (requiring resuscitation) or minor (management changes). There were 40 episodes of SVT in 37 patients (median age, 34 days; 24 with congenital heart disease). Amiodarone was the initial therapy in 26 cases and procaainamide in 14 cases. If partial and full success are combined, procaainamide was successful in 71% of cases compared with 34% for amiodarone (P=0.046). If partial success is considered a treatment failure, procaainamide was successful in 50% compared with 15% for amiodarone (P=0.029). Ten patients received the second medication after the first failed. Success was achieved in 5 of 8 amiodarone-to-procaainamide crossovers compared with 1 of 2 procaainamide-to-amiodarone crossovers. One major and 10 minor adverse events occurred in amiodarone patients versus 6 minor adverse events in procaainamide patients (P=NS). Conclusions In this cohort, procaainamide achieved greater success compared with amiodarone in the management of recurrent SVT without statistically significant differences in adverse event frequency.


OBJECTIVES: While the short-term (<7-day) safety and efficiency of electrical cardioversion for emergency department (ED) patients with atrial fibrillation or flutter have been established, the 30-day outcomes with respect to stroke, thrombo-embolic events, or death have not been investigated. METHODS: A two-center cohort of consecutive ED patients undergoing cardioversion for atrial fibrillation or flutter between January 1, 2000, and September 30, 2007, was retrospectively investigated. This cohort was probabilistically linked with both a regional ED database and the provincial health registry to determine which patients had a subsequent ED visit or hospital admission, stroke, or thromboembolic event or died within 30 days. In addition, trained reviewers performed a detailed chart abstraction on 150 randomly selected patients, with emphasis on demographics, vital signs, medical treatment, and predefined adverse events. Haemodynamically unstable patients or those whose condition was the result of an underlying acute medical diagnosis were excluded. Data were analyzed by descriptive methods. RESULTS: During the study period, 1,233 patients made 1,820 visits for atrial fibrillation or flutter to the ED. Of the 400 eligible patients undergoing direct-current cardioversion (DCCV), no patients died, had a stroke, or had a thromboembolic event in the following 30 days (95% confidence interval [CI] = 0.0 to 0.8% for all outcomes). A total of 141 patients were included in the formal chart review, with five patients (3.5%, 95% CI = 0.5% to 6.6%) failing cardioversion, six patients (4.3%, 95% CI = 0.9% to 7.6%) having a minor adverse event that did not change disposition, and five patients (3.5%, 95% CI = 0.5% to 6.6%) admitted to hospital at the index visit. CONCLUSIONS: Cardioversion of patients with atrial fibrillation or flutter in the ED appears to have a very low rate of long-term complications.
Survival from out-of-hospital cardiac arrest. Cardiac arrest is an important public health problem and often occurs in the out-of-hospital setting in patients without a prior history of heart disease. Very few communities or emergency medical service (EMS) systems report survival rates for out-of-hospital cardiac arrest. Among those who do, survival rates vary substantially between cities, due in large part to community differences in the chain of survival. To improve survival in cardiac arrest, care must be optimized at each point along the cardiac arrest continuum, including a rapid emergency response, provision of cardiopulmonary resuscitation (CPR) by bystanders, delivery of high-quality chest compressions with minimal interruptions by first responders, rapid defibrillation, and optimization of postresuscitation care, including therapeutic hypothermia. Important current initiatives to improve cardiac arrest survival include hands-only CPR delivered by laypersons prior to the arrival of EMS, dispatcher-assisted CPR, and implementation of hospital-based therapeutic hypothermia protocols to improve postresuscitation care. Optimizing cardiac arrest survival requires a team effort between EMS directors, emergency physicians, cardiologists, hospital leadership, and the public.


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Transport of patients with ongoing cardiopulmonary resuscitation (CPR) occurs frequently. It may not be possible to obtain rapid hospital access while maintaining CPR quality, because the ambulance’s high speed can cause increased vibration and vehicle movement. We aimed to assess how the speed of ambulance affects chest compressions. Five cycles of CPR were performed to the Resusci Anne manikin with the PC skill reporting system by experienced emergency medical technicians in ambulance traveling at one of four different speeds: stationary, 30, 60, or 90km/h.

Performance and acceleration data of chest compressions at different speeds were compared using repeated measures analysis of variance (ANOVA). Fractions of chest compressions with adequate depth, duty cycles, average rates of chest compressions, and no flow fractions showed significant differences among different speeds (p=0.026, <0.001, <0.001, 0.005, respectively), while average depth of chest compressions did not. Accelerations of 2Hz component and ratios of 3 12Hz to 2Hz components showed significant differences among different speeds (p=0.001 for all). None of the outcome variables showed a significant difference between the two types of ambulance. The speed of ambulance affects some aspects in the quality of chest compression during transport. Chest compressions with excessive depth, the average rate of chest compressions, and no-flow fraction increase as the speed of ambulance increase. Increase in the speed of ambulance also causes relative increase of high frequency acceleration in the chest compression, which represents unnecessary movement and force applied.


The results of the now published Italian study are in sharp contrast to the German paper published in 2008 in the New England Journal of Medicine. In that study, cardiovascular events were 2.66 (95% CI 2.33–3.04) times more incident on the 7 days that the German team played during the 2006 world championship tournament. The German study raised significant public concern. The authors suggested that preventive measures be taken, especially in subjects with pre-existing coronary disease. It is debatable whether such recommendations were warranted, since at the time the results of several other studies between watching football games and cardiovascular events were inconsistent...