EMS ASIA 2012

CONFERENCE PROGRAMME

CONTENTS

Welcome Address

Friends and Colleagues in the EMS Fraternity, and
Honored Participants of the EMS Asia 2012 Conference.

It is my pleasure, on behalf of the Organizing Committee, to welcome you all to Penang and to this inaugural EMS Asia 2012 Conference. This conference, jointly organized by the Asian EMS Council with St John Ambulance of Malaysia in Penang and the Penang General Hospital brings together EMS leaders and administrators, emergency physicians and emergency healthcare practitioners, paramedics, EMS practitioners and trainers, from within the Asian region and beyond.

We are proud to offer a conference faculty of 34 international renowned speakers and 18 Malaysian experts, who will share with us their best practices and experiences. In line with the conference theme of “Safety and Quality in Pre-Hospital Care”, the Asian EMS Council is spearheading a conjoint effort to develop a consensus during this conference to improve ambulance safety standards within the region, and work towards better care in our emergency ambulance services.

We certainly hope that you will enjoy the EMS Asia 2012 Conference. Do not forget to enjoy all that the Batu Ferringhi beach can offer; and all the heritage and food that Penang is famous for. It is our pleasure to share this event with all of you and our sincere hope that you will have a fruitful conference, a wonderful holiday and a memorable time.

Dr Teo Aik Howe
Consultant Emergency Physician
Chair, Organising Committee,
EMS Asia 2012 Conference Penang

Organising Committee

Advisor / Ex-Officio	Dato' Dr Yee Thiam Sun
Asian EMS Council Chairman	A/Prof Dr Marcus Ong Eng Hock
Organising Chairman	Dr Teo Aik Howe
Organising Secretary	Khoo Teng Giap
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	Jeff Yeong
	Tan Teik Kean
	Junnie Ooi
	Elsie Ooi
	Leong Khai Sheong
	Oi Siou Hean
	Benjamin Leow

Faculty

Dr Nadine Levick (USA)
Associate Professor Dr Marcus Ong (Singapore)
Dr Tatsuya Nishiuchi (Japan)
Dr Ghulan Yasin Naroo (Dubai)
Professor Jerry Overton (USA)
Dr Subroto Das (India)
Dr Chih-Hao Lin (Taiwan)
Professor Dr Hideharu Tanaka (Japan)
Dr Tareq Al-Hamdan (Saudi Arabia)
Dr Junaid Abdul Razzak (Pakistan)
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Chris Fitzgerald (Australia)
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Lt Col Lim Han Chee (Singapore)
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Alberta Spearfico (WINFOCUS Int)
Prof Dr Luca Neri (WINFOCUS Int)
Matt Perry (Australia)
Mohd Amir Hashim (Malaysia)
Rozita Ajis (Malaysia)
Alex Kenny (Australia)
Tan Teik Kean (Malaysia)
Hiroyuki Takahashi (Japan)
Kok Leon Low (Singapore)
Micheal Rushby (Australia)
Dr Jeong-Mi Park (Korea)
Shuk Kwok-leung (Hong Kong)
Dr Sabariah Faizah Jamaluddin (Malaysia)
Associate Professor Dr Nik Hisamuddin Nik Abd Rahman (Malaysia)
Dr Norlen (Malaysia)
Dr Hafiz Syarbaini Mansor (Malaysia)
Prof Dr Ismail Mohd Saiboon (Malaysia)
Dr Darin Wong (Malaysia)
Dr Lim Chee Kean (Malaysia)
Dato Sri Dr Abu Hassan Asaari Abdullah (Malaysia)
Dr Ahmad Tajuddin Mohamad Nor (Malaysia)
Dr Adi Osman (Malaysia)
Dr Sarah Shaikh Abdul Karim (Malaysia)
Dr Rosidah Ibrahim (Malaysia)
Dr Mahathar Abd Wahab (Malaysia)
Associate Prof Dr Mohd Idzwan Zakaria (Malaysia)

DAY/ TIME	10TH SEPTEMBER 2012, CONFERENCE DAY 1		
0730-1700	Registration		
0800-0830	KEYNOTE ADDRESS Delivering Quality Care - Transformation of PHC in Malaysia - Sabariah Faizah Jamaluddin		*Grand Ballroom*
0830-0930	OPENING CEREMONY		
0930-1000	PLENARY ONE (AMBULANCE SAFETY) "Life First, Safety Second? The Neglected Aspect in EMS" - Nadine Levick		*Grand Ballroom*
1000-1030	*Morning Tea Break*		
1030-1100	Sponsored Plenary by Zoll		*Grand Ballroom*
1030-1200	SYMPOSIUM 1A – RESUSCITATION TRACK Theme: "All About Oxygenation and Perfusion" *Grand Ballroom* Systems Approach to Out of Hospital Arrest Response – Marcus Ong Advanced Airway Protocol in Pre Hospital Resuscitation – Tatsuya Nishiuchi What should I bring in Critical Care Emergency Response? – Ghulam Yasin Naroo Mechanical CPR Devices – Nik Hisamuddin Nik Abd Rahman	SYMPOSIUM 1B – AMBULANCE SAFETY AND ERGONOMICS Theme: "Policy and Safety" *Crystal Ballroom* Quality and Safety Initiatives Programme in EMS - Jerry Overton Risk Management in EMS – Subroto Das Safety Aspects of Fleet and Vehicle Management – Chih-Hao Lin Technologies in Safety – Norlen	SYMPOSIUM 1C – MASS GATHERING COVERAGE *Rafflesia Room* Mass Gathering Coverage – Public and Sports Events Coverage – Success Stories from Japan – Hideharu Tanaka Managing Mass Gathering –Pilgrimage – Tareq Al Hamdan ABCs of VIP Medical Standby – Hafiz Syarbaini Mansor

DAY/ TIME	10TH SEPTEMBER 2012, CONFERENCE DAY 1		
1200-1300	SYMPOSIUM 2A – MEDICAL TRACK Theme: "Common Medical Scenarios" *Grand Ballroom* Responding to Breathless Patient - Non-Invasive Ventilation in Pre Hospital Care – Ismail Saiboon Diabetic Emergencies - Junaid Abdul Razzak Responding to Poisoning Case – Tips for Responders – Angel Rajan Singh Approach to Rashes in the Field – Darin Wong	SYMPOSIUM 2B – AMBULANCE SAFETY AND ERGONOMICS Theme: "Designing the Ambulance" *Crystal Ballroom* Key Safety Factors in Ground Ambulance Design and Specifications – Jerry Overton Crashworthiness Issue in Ambulance Design – Nadine Levick Visibility Factors in Ambulance Design – Kyungwon Lee Ergonomics and Safety – Interior Design of Ground Ambulance – Chris Fitzgerald	SYMPOSIUM 2C – PEDIATRIC EMERGENCY TRACK Theme: "Transporting Children" *Rafflesia Room* Child, Ambulance and Responder – preparation for pediatric response – Tham Lai Peng Responding an Ill Child – Transport First or Resuscitate Fast – Chi-Biu Lo Pitfalls in Monitoring Critically Ill Child – Wahyuni Dian Purwati The Breathless Child – Lim Chee Kean
1300-1400	*Lunch Break*		
1400-1430	PLENARY TWO (AMBULANCE SAFETY) *Grand Ballroom* Lesson Identified Lesson Learned – Ambulance Crashes of 2011 Abu Hassan Asaari Abdullah		

DAY/ TIME	10TH SEPTEMBER 2012, CONFERENCE DAY 1		
1430-1515	SPONSORED PLENARY BY ZOLL *Grand Ballroom* Achieving High Quality and Safe CPR in EMS Setting; Japanese Experience – Hideharu Tanaka The Impact of Road Safety on Clinical Care – Greg Mears The Eco-Friendly approach to Safety in EMS – Stuart Mallory		
1530-1700	SYMPOSIUM 3A – TRAUMA TRACK *Grand Ballroom* Standardization of Basic Trauma Care in Pre Hospital – Ahmad Tajuddin Time is of Essence – Managing ABCs at Scene – Hassan Al Thani Methods of Hemorrhage Control – Tareq Al Hamdan Monitoring Trauma Patients on the Move- The Senses and Sensors – Adi Osman	SYMPOSIUM 3B – AMBULANCE SAFETY AND ERGONOMICS Theme: " Safety First Culture" *Crystal Ballroom* Promoting Safety First Culture – Angel Rajan Singh Optimal Shift Hours for Responders – Nalinas Khunkhlai Training, Certification and Monitoring of Drivers – Sarah Abd Karim Data Collection and Analysis for Safety Monitoring – Nadine Levick	SYMPOSIUM 3C – CAREER ADVANCEMENT IN PARAMEDICS "I want to be a paramedic" *Rafflesia Room* Evolving Role of Paramedics Around the World – Matt Perry I have a Diploma – How do I Practice – Mohd Amir Hashim Career as Paramedic in Singapore Civil Defence – Lim Han Chee From the Field to Dispatch Center – Rozita Ajis
1700-1730	*Tea Break* End of Day One		
1730-1830	ASIA EMS Council Meeting *Dahlia Room*		
1730-1830	College of Emergency Physician Malaysia Meeting		

DAY/ TIME	11TH SEPTEMBER 2012, CONFERENCE DAY 2		
0730-1700	REGISTRATION		
0830-0830	PLENARY THREE (EMS OPERATIONS) *Grand Ballroom* Do I really need that, cutting cost to improve pre hospital care? Matthew Strethlow		
0830–0900	PLENARY FOUR (RESUSCITATION) *Grand Ballroom* Cardiopulmonary Resuscitation in the Ambulance – High Quality CPR? Marcus Ong		
0900-0930	PLENARY FIVE (MAJOR INCIDENT MANAGEMENT) *Grand Ballroom* Major Incident Management--Experiences in Taiwan Chih-Hao Lin		
0930-1000	*Morning Tea Break*		
1000-1130	SYMPOSIUM 4A – RESUSCITATION TRACK Theme: "Resuscitation in Ambulance – Quality and Safety" *Grand Ballroom* Arrest during Transport, Stop and Resuscitate? – Brian McNally Methods in Performing CPR in Ambulance – Nalinas Khunkhlai Performing CPR in Ambulance – The Safety Factor – Chih-Hao Lin Therapeutic Hypothermia – Kyungwon Lee	SYMPOSIUM 4B – MASS CASUALTY INCIDENT Theme: "Back to Basics" *Crystal Ballroom* Being Prepared for Mass Casualty Response - Lim Han Chee Mass Casualty Incident Management – The First Responder – Rosidah Ibrahim Survival Tips for Responders during Disaster Response - Ali Haedar Radiation Emergency the ABCs – Lesson from Japan – Tatsuya Nishiuchi	SYMPOSIUM 4C – EMS DEVELOPMENT AROUND THE WORLD *Rafflesia Room* EMS on the Indian Subcontinent - How we got to the Number One Assoc SV Mahadevan Training and Certification of EMS Responders in HK – Lo Chi Bio Importance of Manual Handling in Pre Hospital Care Environment - Alex Kenny Winfocus Brasil project serving the most austere and remote EMS network of the Minas Gerais State - Alberta Spearfico

DAY/ TIME	11TH SEPTEMBER 2012, CONFERENCE DAY 2		
1130-1300	SYMPOSIUM 5A – MEDICAL TRACK Theme: "Creative and Dynamic in Providing Care" *Grand Ballroom* International EMS Research – Lessons Learned –Matthew Strehlow EMS Activated Emergency Cardiac Care – Nausheen Edwin Indian Scenario of Transporting the Aggressive Altered Mental State Patient – Subroto Das Pre Hospital Care Ultrasound: Empowering life support in EMS scenarios – Luca Neri	SYMPOSIUM 5B – EMERGENCY DISPATCH AND TECHNOLOGY Theme: "Gatekeepers of the EMS" *Crystal Ballroom* Dispatch and Safety of Responders – Jerry Overton Technology Facilitated Workprocess - Ghulam Yasin Naroo 'AED Mapping' - Hideharu Tanaka Dispatch Center Activated Trauma Team - Sharing of Experience – Mohd Idzwan Zakaria	SYMPOSIUM 5C – PARAMEDICS AROUND THE WORLD Theme: "Learning from Friends" *Rafflesia Room* More than Volunteer Paramedics – Tan Teik Kean Paramedics and Community in Japan – Hiroyuki Takahashi EMS System in Singapore – Kok Leon Low Hong Kong Fire Services Department EMS – Shuk Kwok Leung
1300-1400	*Lunch Break*		
1400-1430	PLENARY SIX (EMS AND COMMUNITY) *Grand Ballroom* "Community CPR Programme – Doing It and Saving Lives" Hideharu Tanaka		
1430-1500	PLENARY SEVEN (ERGONOMICS OF PATIENT CARE) *Grand Ballroom* Ergonomics in Design and Care – What, How and Why? Chris Fitzgerald		
1500-1530	PLENARY EIGHT (PARAMEDIC TRAINING OR FUTURE) *Grand Ballroom* Cutting Edge Innovations – International EMS Education S V Mahadevan		

DAY/ TIME	11TH SEPTEMBER 2012, CONFERENCE DAY 2		
1530-1630	SYMPOSIUM 6A – TRAUMA TRACK *Grand Ballroom* Key Prehospital Interventions in Trauma – Azhar Aziz Getting the Fluids Right in Trauma – Mahathar Abd Wahab Managing Bomb Blasts – Brian McNally Basics in Managing GSW – Junaid Abdul Razzak	SYMPOSIUM 6B – PARAMEDIC TRAINING Theme: "EMT Skills Training" *Crystal Ballroom* Training Paramedic Essential Skills – Project NOVO – Matt Perry Intermediate Ambulance Care - A Course to Assist Training Needs in Developing Ambulance Service - Mike Rushby Training Skilled Paramedics - Korea Experience - Jeong-Mi Park Training Skilled Paramedics - Japan Experience - Hiroyuki Takahashi	3.00 – 4.30PM Free Paper Presentation *Rafflesia Room*
1630-1830	PAROS Exco Meeting		*Dahlia Room*

NEXT ASIAN EMS COUNCIL MEETING (2012/01)

Date: 10 September 2012

Time: 430pm

Venue: Dahlia Room (Bayview Beach Resort, Batu Ferringhi, Penang)

S/N	AGENDA	UPDATE BY/ REQUESTED BY
1	**CONSTITUTION**	
1.1	Update: Constitution of AEMSC List of all members	A/Prof Marcus Ong
2	**ELECTION OF SUBCOMMITTEE AND DISCUSSION OF TOP ISSUES IN AEMSC**	
2.1	4 breakout groups according to region will be formed for election of subcommittee and to discuss top issues: East Asia South Asia South-East Asia Middle-East	ALL
3	**SHARING OF TOP ISSUES IN AEMSC**	
3.1	A representative from each of the four regions will share the top issues discussed	ALL
4	**JOURNAL**	
4.1	Update on the setup of Asian EMS Journal	A/Prof Marcus Ong
5	**FUTURE OF ASIAN EMS COUNCIL**	ALL

Improving Outcomes for Pre-hospital and Emergency Care across the Asia-Pacific

NEXT PAN-ASIAN RESUSCITATION OUTCOMES STUDY (PAROS) EXCO (2012/01)

Date: 11 September 2012

Time: 430pm

Venue: Dahlia Room (Bayview Beach Resort, Batu Ferringhi, Penang)

S/N	AGENDA	UPDATE BY/ REQUESTED BY
1	**DATA-RELATED ISSUES**	
1.1	Update on progress of data migration, clarification, and merging by country: Osaka Tokyo Korea Taiwan Dubai Thailand Malaysia	 Dr Nishiuchi Prof Tanaka Dr Won-chul Cha Dr Naroo Dr Nalinas A/Prof Nik/ Dr Sarah
2	**PUBLICATIONS COMMITTEES**	
2.1	<u>EMS Systems Publications Committee</u> a) Progress of development of EMS Systems Survey b) Progress of Dr Kuo's "Classify Urban/Suburban/Rural Sites for OHCA Research across PAROS Countries" c) Progress of Dr Shin's "Comparison of EMS systems" <u>ED Survey Publications Committee</u> Progress of Dr Ma's and Dr Ryoo's study "Factors Affecting Neurologic Outcomes of OHCA Patients with Percutaneous Coronary Intervention".	 Dr Lin Chih-Hao Dr Won-chul Cha TBA

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Singapore General Hospital
Outram Road, Singapore 169608 | Tel: (65) 6321 3590 | Fax: (65) 6226 0294 | Email address: paros.secretariat@yahoo.com |
Website: http://www.scri.edu.sg/index.php/paros-clinical-research-network

Improving Outcomes for Pre-hospital and Emergency Care across the Asia-Pacific

2.2	Translation of the paper: "PAROS: Rationale, Methodology, Implementation" Japan Progress of submission of Japanese translated version of the paper "PAROS: Rationale, Methodology, Implementation" to the Journal of Academic Emergency Medicine (JAEM) Thailand Progress on the translation of the paper "PAROS: Rationale, Methodology, Implementation" into Thai for submission to a Thai journal Dubai Progress on the translation of the paper "PAROS: Rationale, Methodology, Implementation" into Arabic for submission to the Emirates Journal	Prof Tanaka Dr Nalinas Dr Naroo
3	**CARES-PAROS RESEARCH OPPORTUNITIES**	
3.1	Update on CARES-PAROS collaboration	Dr Bryan McNally
4	**FUNDING OPPORTUNITIES**	
4.1	Update on funding applications and opportunities	A/Prof Marcus Ong
4.2	Planning and budget projection for 2013's events to facilitate sourcing of potential sponsors	A/Prof Marcus Ong
5	**UPDATES FROM NAEMSP ASIAN RELATIONS COMMITTEE**	
5.1	Updates on NAEMSP related issues	Prof Tanaka
6	**UPDATES ON UPCOMING PAROS MEETINGS**	
6.1	Kyoto Update on hosting of PAROS meeting in Kyoto, on 13 November, 2012. Singapore	Dr Nishiuchi

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Improving Outcomes for Pre-hospital and Emergency Care across the Asia-Pacific

	Discussion on the PAROS meeting in Singapore to be held in April 2013, in conjunction with Society for Emergency Medicine in Singapore Annual Scientific Meeting (SEMS ASM) 2013. <u>Korea</u> Discussion on the PAROS meeting in Korea to be held in August 2013. <u>Tokyo</u> Discussion on the PAROS meeting in Tokyo to be held in October 2013 (tentatively 25-26 October), in conjunction with Asian Conference on Emergency Medicine 2013.	A/Prof Marcus Ong Dr Won-chul Cha Prof Tanaka
7	**PROSPECTIVE PAROS PARTICIPATING COUNTRIES**	
7.1	<u>Pakistan</u> Update on progress of setting up system for data collection, etc. <u>Indonesia</u> Update on progress of setting up PAROS in Malang <u>China</u> Collaboration of Zhejiang and Shanghai	A/Prof Junaid Dr Ali Haedar Dr Cai Wenwei
8	**AOB**	

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Abstracts (Plenaries & Symposia)

DAY 1 10 SEPTEMBER 2012

KEYNOTE ADDRESS

Delivering Quality Care - Transformation of Pre Hospital Care in Malaysia

Sabariah Faizah Jamaluddin (Malaysia)

The Pre Hospital Care (PHC) system is fast growing and ever changing. Since 1998 it has undergone several developments and transformation under the Emergency Medical and Trauma Services (EMTS) direction. In the early phases of development and transformation, the EMTS focused on providing the building blocks of the service.

Some of the major milestones in the service development are implementation of a national standard in ambulance design and specification, creation of Emergency Call Center (ECC) service in all Emergency Departments and upgrading the system from a localized hospital based service to a state-based coordinated service are just but a few step in achieving the delivery of a high quality service.

With the launching of the Malaysian Emergency Response System 999 (MERS999), the service has received great public attention. Key Performance Index approach was implemented to monitor response of the service besides quality of care. Not all public attention is positive; occasionally there are also dark moments. In 2011, several ambulance crashes occurred resulting in death not only to the occupants but also the Emergency Responders.

The past 15 years have shown that not only the focus is on access to the service but there is a greater demand for safety together with quality of care. Emphasis on good governance, incorporation of technology and focus on research as a tool are now coming into play. The end of the journey in transformation is not near. It has only just begun.

PLENARY I AMBULANCE SAFETY

Life First, Safety Second? The Neglected Aspect in EMS

Nadine Levick (USA)

SYMPOSIUM 1A RESUSCITATION TRACK
"ALL ABOUT OXYGENATION AND PERFUSION"

Systems Approach to Out of Hospital Arrest Response

Marcus Ong (Singapore)

Out of Hospital Cardiac Arrests (OHCAs) are a global health concern. The Emergency Medical Services in Asia is still developing and there is an urgent need to better understand the key factors that affect OHCA survival. One of the key factors in improving OHCA survival is through prehospital interventions, such as early recognition of OHCA, activation of EMS, early cardiopulmonary resuscitation (CPR), rapid defibrillation, and effective Advanced Cardiac Life Support. Survival rates of OHCA are used internationally as a benchmark for Prehospital Emergency Care (PEC) performance.

The strategic imperatives in a PEC system involve the following: leadership and oversight, community, ambulance, and Emergency Department responsiveness, skills development, and technology. In recent years, we have also seen several changes to the EMS system that can help increase OHCA survival. These changes include the introduction of dispatcher-assisted CPR, public CPR education, public access defibrillation, motorcycle medics, mechanical CPR, prehospital advanced life support, etc.

Advanced Airway Protocol in Prehospital Resuscitation

Tatsuya Nishiuchi (Japan)

Since Dr. Peter Safar combined A (airway), B (breathing), and C (circulation) into a set of resuscitative procedures, airway management had been given priority over other procedures. However, recent studies suggest that this mnemonic is a thing of the past. Current research showed that maintaining coronary and cerebral perfusion by continuous chest compression is more important for reestablishing spontaneous circulation than airway management in the early phase of cardiopulmonary resuscitation. Aggressive ventilation aimed at improving blood oxygenation could be harmful because increased intrathoracic pressure with positive pressure ventilation prevents blood from returning to the heart, resulting in decreased cardiac output during chest compression. Furthermore, increased intrathoracic pressure can cause increased intracranial pressure, resulting in decreased cerebral blood flow. Therefore, positive pressure ventilation could adversely affect survival and neurological prognosis after a sudden cardiac arrest. Tracheal intubation, once considered the gold standard of airway management, also could be harmful because chest compression is interrupted during endotracheal intubation. As mentioned above, securing an airway is no longer a priority in protocols for cardiac arrest. Therefore, the ideal time when airway should be secured and the type of airway device that is suitable during the early resuscitation phase in cardiac arrest requires further clarification.

What should I bring in Critical Care Emergency Response?

Ghulam Yasin Naroo (Dubai)

Mechanical CPR Devices

Nik Hisamuddin Nik Abd Rahman (Malaysia)

SYMPOSIUM 1B AMBULANCE SAFETY AND ERGONOMICS "POLICY AND SAFETY"

Quality and Safety Initiatives Program in EMS

Jerry Overton (USA)

The complexities of providing advanced patient care, quicker response times, better economic efficiency, while meeting the higher expectations among different and conflicting stakeholders require today's EMS system Medical Directors, administrators, and managers to understand, evaluate, and continually improve the outputs and outcomes of the actions demanded upon an EMS system design to safely deliver quality care. To undertake these improvements requires a quality assurance program that is founded in reliable and meaningful data derived from diverse sources. Computer Aided Dispatch (CAD) systems, prehospital patient care reports (either paper or electronic), and in hospital patient care reports

are among the most common. In addition, the implementation of recent technologies provides EMS professionals the opportunity to assess specific outputs that in the past were unavailable for measurement. Driving performance is a prime example of such an output. On board computers now measure, in real time, forces placed on the vehicle during response and transport, the speed travelled, the route taken, and whether emergency equipment was activated. It then becomes the responsibility of the EMS Medical Director or administrator to decide the frequency for the reporting of any and all outputs and how best to provide proper feedback. With knowledge for advanced data interpretation, and an understanding of the successful techniques in establishing quality assurance, utilizing the results to initiate and improve the elements of a comprehensive safety program can enhance the EMS system performance without compromising the well being of the care givers.

Risk Management in EMS

Subroto Das (India)

The organization and management of EMS is largely country specific and dependent on the overall design of the delivery of medical care. No single system can be considered as the universal reference model. Risk Management in EMS follows the same logic.

So as EMS Providers develop policies and invest in their budgets for risk management initiatives and programs, they should bear in mind the lack of a standard universal model.

Since risk is a probability, risk management can reduce it but not completely eliminate it. The goal of risk management essentially, is to reduce exposure to risk and provide a safer environment – manpower and physical assets, thereby raising the financial bottom-line of the organization.

Though risk management strategies differ, guiding principles revolve around 5 steps:

Identifying the risk
Quantifying the potential
Prioritizing it
Implementing controls and
Mitigation strategies and evaluating and revising the process.

This lecture will throw light on these principles adopted globally, the resultant strategies and our experiences of delivering EMS in India.

The lecture will also address a very key issue - the absence of legal framework and regulations that result in potential anarchic situations or improper approaches.

Safety Aspects of Fleet and Vehicle Management

Chih-Hao Lin (Taiwan)

Technologies in Safety

Norlen (Malaysia)

SYMPOSIUM 1C MASS GATHERING COVERAGE

Mass Gathering Coverage – Public and Sports Events Coverage – Success Stories from Japan

Hideharu Tanaka (Japan)

Background It is well known that sudden cardiac arrest (SCA) often occurred during open space sports mass gathering event. Last 20 years, more than 80 SCA occurred during marathon race in Japan. Therefore, we organize, Quick response road race medical rescue system (QRRRS) on roadside to provide safety mass race.

Purpose Effectiveness of QRRRS on marathon race are verified.

Method QRRRT consist with a medical director, paramedic and paramedics students. QRRRT covered whole 42.195km roadside divided into the three teams as follows:

1) Mobile AED team (bicycle AED team, covered every 2 - 3km; provide quick CPR with AED, with oxygenated BVM ventilation

2) On foot BLS+AED team (paramedics students covered every 1 km; provide first aids quick shock and CPR)

3) Medical oversight team (As a head Qtr of QRRRS ;1 EMS physician and 2-3 paramedics take medical dispatch and command control under the standing medical order, And prepare field triage protocol during marathon race has been introduced. Head Qtr worked on GPS tracked medical dispatch and communication by using mobile phone or via e-mail for all staff and system. Thereafter, treatment document reviewed as a off line medical control.

Results Last 7 years, 13 cases collapsed during marathon race under our QRRRT system covered. 11 cases successfully recovered (84.6%) spontaneously circulation by quick Defibrillation and CPR (CPR start 0.4±0.3min, Shock delivered 3.2±2.3min). 2 patients who manifested Asytole and PEA on the scene were not successfully resuscitated. All recovered patients shows good neurologically outcome (CPC1) at 1 week. They recovered full time work within 2 weeks.

Conclusion We found that the QRRRT system on effectively prevent sudden cardiac death on the mass gathering sport event. EMS paramedic has played an important role in this systems. Future studies must be warranted for developed safety systems.

Managing Mass Gathering –Pilgrimage

Tareq Al Hamdan (Saudi Arabia)

Mecca annually receives millions of pilgrims who would come for Hajj, an event that Saudi look to with pride to help and mitigates pilgrims visit.

This influx of pilgrims certainly does compromise any health care system and it does take more than a year to plan for the next one. Disasters within mass gathering is something we infrequently see, how would you prepare your self for a disaster, hazard and vulnerability analysis and how would you recover from the disaster.

ABCs of VIP Medical Coverage: On-Site Emergency Medical Prepadredness for the 55th Merdeka Day Parade at Dataran Merdeka

Hafiz Syarbaini Mansor (Malaysia)

Medical coverage for the VIPs, in particular during a mass gathering event involves extensive, detailed and pre-emptive planning and preparation executed by a coordinated multi-agency medical teams under the command and control of the chief medical commander.

Using the 55th Merdeka Day Parade as an example, this topic will highlight the key aspects of medical preparedness for VIPs at Ground Zero.

SYMPOSIUM 2A MEDICAL TRACK "COMMON MEDICAL SCENARIOS"

Responding to Breathless Patient - Non-Invasive Ventilation in Pre Hospital Care

Ismail Saiboon (Malaysia)

Non-invasive ventilation (NIV) is a method of ventilatory support without need to intubate or putting invasive airway such as endotracheal intubation or tracheostomy. It is very useful technique especially if we know that the patient whom we are intubating is going to have difficulty to be weaned-off like chronic obstructive pulmonary disease (COPD). There are a lot of strong evidences that points to the beneficial effect of this methods in the emergency department (ED) practice. In fact some ED has even incorporate NIV as part of its standard operation procedure (SOP) or protocol in managing acute exacerbation of COPD or acute cardiogenic pulmonary edema (ACPE). Unlike of its used in the ED, the used of NIV in pre-hospital practice are still at its initial stage. There are still a lot of obstacles in using NIV as part of a standard treatment in PHC in which some of the reasons are quite unjustifiable like their response time is too short therefore there is no need in using it; difficult to learn to use it; paramedic are not well train to used it etc.

We acknowledge that the practice in the pre-hospital is very different compared to in-hospital especially with the lack of resources and expertise but with careful selection and training, we are very sure the used of NIV is very safe, feasible and effective. There are recent evidences that show the feasibility and usefulness of NIV in the prehospital setting.

Diabetic Emergencies

Junaid Abdul Razzak (Pakistan)

Responding to Poisoning Case – Tips for Responders

Angel Rajan Singh (India)

Approach to Rashes in the Field

Darin Wong (Malaysia)

Almost everyone has had some sort of rash sometime or other in their life and fortunately, the majority of most skin disorders that present to emergency personnel are not life or limb threatening and usually represent infections, irritants and allergies. However, it is important to be aware of signs and symptoms of categories of skin conditions that are associated with life threatening disease so as to be able to intervene in a timely and effective manner. This session hopes to challenge one to look at rashes in a different light and explore the management approach to be taken in the prehospital care setting.

SYMPOSIUM 2B AMBULANCE SAFETY AND ERGONOMICS "DESIGNING THE AMBULANCE"

Key Safety Factors in Ground Ambulance Design and Specifications

Jerry Overton (USA)

The time of ignoring safety in ground ambulance design and construction has long past. The increased demand for services, whether emergency, nonemergency, or critical care, combined with the desire to increase unit hour utilization has created an environment that requires the ambulance of today, and of the future, to be designed to minimize failure and maximize safety. The progressive EMS agency must completely understand the specific factors of its service as it initiates the vehicle procurement process and no longer can an ambulance manufacturer take the approach that one ambulance design will meet the needs of its entire customer base. Tantamount to design and specification is the setting in which the ambulance will be used. Urban requirements differ from rural, emergency requirements differ from critical care, the two person crew requirements differ from a crew of three. Equally tantamount is the integral involvement of those most affected the EMS crew and maintenance. What they may lack in structural and engineering knowledge is more than compensated by their experience, past and present, of the stressors daily placed on the vehicle. Further consideration must be given on how ancillary technological devices, current and future, can safely be integrated in the vehicle without compromising the integrity of the vehicle design and its subsequent final construction. The EMS Medical Director and administrator must understand that they have the final accountability for both the patient and the care providers, and the decisions made during the specification and design decision making process must ensure their well being.

Crashworthiness Issue in Ambulance Design

Nadine Levick (USA)

Visibility Factors in Ambulance Design

Dr KyungWon Lee (Korea)

An ambulance is a self-propelled vehicle specifically designed to transport critically sick or injured people to a medical facility. Most ambulances are motor vehicles, although helicopters, airplanes, and boats are also used. The ground ambulance is susceptible for traffic accident. The ambulance crash is not rare in the world.

In Korea, we have fire department based EMS of universal call number of 119, 184 cases of 119 ambulance crash occurred in 2009. Additionally, during 5 recent years, the increasing rate of 119

ambulance crash is 15.9%. A 119 ambulance crew was dead by ambulance crash in 2010. The design of ambulance is regulated by legislation in Korea; white basis color, 10cm width red cross in more than 2 sides, 5~10cm width red band in 4 sides, red letters of “emergency” in Korean character in more than 2 sides, the name and telephone number of EMS agency in a side.

The National Fire Protection Association USA will publish Standard for Automotive Ambulances 2013 edition; In the part of ambulance visibility part, they recommend that chevrons, underbody lighting establishes “lighting zones” in which all areas of the truck must display certain warning light. Additional emergency lights on the sides of the vehicle, at the rear wheels and the rear side quarter panels.

The National Patient Safety Agency UK reported design for patient safety, future ambulances to promote discussion and innovative decision making by NHS ambulance trusts in England and Wales, and to provide the NHS Purchasing and Supply Agency with safety criteria for the purchasing of ambulances; Primary consideration of visibility is to ensure vehicle conspicuous in all orientations and conditions.

Until now, we, Asian EMS physician neglected the visibility factor in ambulance, but it is one of the most important factors for safety of EMS personnel, patients and people. We should start to study it and share the knowledge and experiences.

Ergonomics and Safety – Interior Design of Ground Ambulance

Chris Fitzgerald (Australia)

The interior design of ground ambulances represents a unique problem. Treating personnel need to be able to see and reach the patient, equipment and other resources while remaining restrained and in a safe orientation. Treating and monitoring the patient, who may have a time critical condition, within this restricted space while the vehicle is moving, often at higher speeds, requires creative solutions to manage this complexity.

A risk management approach can be effectively applied to ambulance design. A hierarchy of risk control can be applied to not only define the design priorities but communicate the basis of these priorities to service providers, ambulance manufacturers and other stakeholders to engage them in the design process.

Once a vehicle is selected to optimise the inherent safety features of the original equipment manufacturer (OEM), design rules to seat occupants in forward or rearward facing positions only and to restrain items and equipment must be applied to provide the foundation for further design considerations. From this basis the design process should reflect the nature of the service providers’ interaction within and around the ambulance as well as the physical attributes of the providers, in particular their body size. Ergonomics approaches, such as task analysis can be effective in defining not only the obvious activities that are to be undertaken and designed for, but the subtle nature of tasks that occur to prepare and pack away items before and after use. Ideally this process engages and involves service providers to ensure their input is considered.

This ergonomics approach can be taken beyond general purpose ground ambulances to a range of specialist ambulances to treat and retrieve neonatal, complex or high acuity and bariatric patients to achieve the effective and safe design and operation of ambulances.

SYMPOSIUM 2C PEDIATRIC EMERGENCY TRACK "TRANSPORTING CHILDREN"

Child, Ambulance and Responder – preparation for pediatric response

Tham Lai Peng (Singapore)

Responding an Ill Child – Transport First or Resuscitate Fast

Chi-Biu Lo (Hong Kong)

For children, the dilemma between 'scoop and run' and 'stay and play' is not as simple as in adults. The increased complexity and higher skill requirement in responding to an ill child demand us to consider other parameters when formulating a practice. I propose to consider five parameters: 1) urgency of the treatment, 2) equipment required, 3) skill required, 4) risk of carrying out the treatment, and .) risk of not performing it. I wish to use the scenarios of AED application, termination of convulsion, use of oxygen and SpO2 monitor in newborn resuscitation, and intravenous access for children as examples to elaborate my points.

Pitfalls in Monitoring Critically Ill Child

Wahyuni Dian Purwati (Indonesia)

The Breathless Child

Lim Chee Kean (Malaysia)

The breathless child is a very common presentation amongst patients presenting via the emergency medical service. As severe respiratory illness may rapidly deteriorate to respiratory failure, the ability to identify and start early treatment for children presenting with breathlessness.

There is a wide range of problems that may cause apparent difficulties in breathing in children. Breathlessness will most likely be due to disease of the upper or the lower respiratory tract in children. However, other disorders may present with breathlessness in children. These include cardiac, metabolic and neurologic disorders.These are the commonest causes of acute benign conditions in children but are also the most likely causes of life-threatening illness, especially in the very young. Exogenous drugs and toxins may also induce breathlessness in children.

PLENARY II AMBULANCE SAFETY

Lesson Identified Lesson Learned – Ambulance Crashes of 2011

Abu Hassan Asaari Abdullah (Malaysia)

SYMPOSIUM 3A TRAUMA TRACK

Standardization of Basic Trauma Care in Pre Hospital
Ahmad Tajuddin (Malaysia)

Time is of Essence – Managing ABCs at Scene
Hassan Al-Thani (Qatar)

The “Golden hour” has been promulgated, taught, and practiced for more than 3 decades. The principle of trauma care must be initiated within this first 60-minute window immediate after injury when resuscitation and stabilization will be most beneficial to the patient; the belief that injury outcomes improve with a reduction in time to definitive care is a basic principle of trauma systems and emergency medical services (EMS) systems. The means by which the ABC delivers at the scene to the trauma patients been much debated whether to use advanced life support (ALS) or basic life support (BLS) as well as the relationship between duration of on-scene time and outcomes in trauma also remains unclear. Although it is likely that time do affect outcome for certain severely injured individuals, demonstrating this relationship across a field-defined population of injured persons using EMS intervals has generally produced inconclusive results. In this presentation we are going to illustrate with three cases some of the factors affecting outcome and review the current literature on the impact of times on outcomes in trauma.

Methods of Hemorrhage Control
Tareq Al-Hamdan (Saudi Arabia)

Stay-and-play versus scoop-and-run, in pre hospital sector we evaluated various approaches on what will be the best to save patients, in this talk audience will have a fifteen minutes overview for current methods of hemorrhage control, up-to-date evidence of new methods of pre hospital bleeding control and in tactile environment. At the end; a concise view on where the evidence will be going.

Monitoring Trauma Patients on the Move- The Senses and Sensors
Adi Osman (Malaysia)

SYMPOSIUM 3B AMBULANCE SAFETY AND ERGONOMICS "SAFETY FIRST CULTURE"

Promoting Safety First Culture

Angel Rajan Singh (India)

Optimal Shift Hours for Responders

Nalinas Khunkhlai (Thailand)

EMS Responder is one of the most dedicate profession , who are sleeping less and attempting to accomplish more for the immediate care 24/7. With the limitation of human abilities, Sleep deprivation and Prolonged Shift works are linked with increasing not only errors in tasks requiring alertness, vigilance and decision-making but also the fatigue-relate accidents.

Factors related to fatigue classify as

1.Shift work / Night shift / Poor sleep quality / Sleep deprivation

2.Overwork / Prolonged shift work

Both of them result in Medical error/Adverse events , and Non-medical error (i.e. traffic accident)

Performing nights shifts create sleep deprivation. EMS responders are at risk for the decrements in mental and physical performance , especially among the working long hours and night shift group. Decreasing sleep time by 1 hour a night for 7 consecutive nights is equal to staying up for 24 hours straight once a week.

Fatigue results in slowed reactions, poor judgement, reduced cognitive and inability to perform tasks. When a person has a full night's sleep, alertness is restored to near-normal levels upon awakening.

Shift work sleep disorder , is characterized by fatigue , functional impairment , difficulties initiating and maintaining sleep. Most occur in 8 to 24 percent of night or rotating shift workers Shift workers are more likely to suffer from insomnia and excessive daytime sleepiness.

Prolonged shift work effect on fatigue causes long work hours and sleep deprivation may result in performance-related slowed reaction times and less alertness. Lead to a constant feeing of fatigue, irritability and a reduced sense of well being. Fatigue-related fatal crash is greater than 15-fold increase in the risk at 13 hours awake compare to the first hour.

Long work hours (shift lasting more than 10 to 18 hours) have been clearly linked to time dependent errors in tasks requiring vigilance and focused alertness as increasing in motor vehicle crashes. The incidence of circadian rhythm disturbance was relatively lower in shift workers with discontinuous 8-h shift system compare to 24-h shift system. Working condition that allow ambulance crews to nap when not called for emergency (for > 4h) might contribute to a stabilization of circadian rhythms.

Training, Certification and Monitoring of Drivers

Sarah Abd Karim (Malaysia)

Ambulance drivers have a high responsibility towards safety and efficiency of a response. They are expected to have the knowledge on streets and routes to arrive at incident location, medical knowledge to treat patients or assist Emergency Medical Technicians and driving skills to ensure that the responders and patient arrive safely at their destination.

The impact of an ambulance accident in terms of loss of equipment and assets, injuries of death and liabilities makes the training, certification and supervision of ambulance drivers an important safety standard in all Emergency Medical Service.

Training of ambulance driver begins with proper pre-employment screening criteria. The training would have to address several components such as responsibilities and service standards, vehicle safety technologies, risk-taking behaviors, cognitive skills and also post-crash protocols. However training and certification itself is inadequate. Despite having standards in training, ambulance crashes still occur and most of the time due to human error by the driver. Thus supervision of the driving techniques becomes important either directly or indirectly using monitoring tools.

Data Collection and Analysis for Safety Monitoring

Nadine Levick (USA)

SYMPOSIUM 3C CAREER ADVANCEMENT IN PARAMEDICS "I WANT TO BE A PARAMEDIC"

Evolving Role of Paramedics Around the World - - A personal perspective from South Australia.

Matt Perry (Australia)

Since the formation of true Paramedic practice in post Vietnam War America, the move from 'Ambulance Driver' to health care professional has not been easy. In many countries, our host country included, Ambulance practitioners are not recognised or respected as professionals or even experts in their own field. Medical practitioners still largely control what occurs in the pre-hospital setting.

This has been true within the South Australian Ambulance Service (S.A. Ambulance) up until the last few years. My experience as a Paramedic within this service has changed as our role has changed. The focus of my work has shifted from assessment and transport to treatment. I now treat, or arrange for treatment for approximately half of my patients within their own home, thus reducing stress on an overcrowded hospital system.

This shift in practice has come with a shift in what constitutes pre hospital care. S.A. Ambulance paramedics work within a Health Care Network, which of course includes Emergency Consultants, but it is not directed by them. Within my practice I operate under guidelines which enable me to administer medications to manage most conditions I encounter. If I need to consult, I call an Extended Care Paramedic and discuss stepping outside of my guidelines.

S.A. Ambulance Extended Care Paramedics exist to attend to consults from Paramedic and Intensive Care Paramedic staff. They also attend patients who can be managed at home and have specialist skills and knowledge to treat U.T.I's, simple sutures, catheter replacement and can prescribe antibiotics, pain relief medications and anti emetics as well as other treatments.

As paramedic practice develops, research driven by paramedic practitioners becomes more important. For a number of years the basic qualification in Australia has been an undergraduate degree. Over the next decade the expectation is that the Paramedic profession will undertake and direct our own research. This means Paramedic research by Paramedics answering the important questions we need to answer to advance our profession.

I have a Degree – How do I Practice

Mohd Amir Hashim (Malaysia)

Prehospital care partitioner have varying skills and knowledge levels in different parts of the world. They run ambulance services and to improve this service, a diploma-level education is paramount. Without higher education, they are only able to provide basic first aid and provide limited care to patients. Some can only provide scoop-and-run services.

Pursuing knowledge via higher education is therefore a dream for many prehospital care practitioner. Some hope to gain a diploma whilst others prefer degrees.

Primary survey and life saving interventions such as opening airway and basic procedures are important for paramedics irregardless of their education level. However knowledge is crucial if they are to migrate to higher levels of care in ABCs. Experience may count in certain situations, but without knowledge, a paramedic may be helpless.

Supervision and training is one of the components for higher qualified paramedics. With the extra knowledge and skill they can supervise and manage training program nationwide. This will play an important role in recruiting new staff and maintain competency of current ones.

Diploma and degree can improve a care practitioner's clinical skill and ability to perform advanced emergency procedures.

Career as Paramedic in Singapore Civil Defence

Lim Han Chee (Singapore)

From the Field to Dispatch Center

Rozita Ajis (Malaysia)

DAY 2 11 September 2012

PLENARY III EMS OPERATIONS

Do I really need that, cutting cost to improve pre hospital care?

Matthew Strethlow (USA)

Emergency Medical Services (EMS) have achieved tremendous success in improving access to and the timeliness of medical care for patients suffering emergent conditions. Correspondingly, there is constant pressure to incorporate the "latest and greatest" medical interventions and devices into prehospital practice. Despite the fact that scant evidence exists for the use of many of these devices and drugs in the prehospital arena, they are rapidly being adopted in multiple locations. Novel devices and interventions unfortunately, not only carry a significant cost but also may distract care providers from focusing on what has been proven beneficial. A review of which interventions are evidence based in the prehospital environment can assist EMS agencies in prioritizing limited resources (equipment, staffing, training) to focus on the care critical to optimizing patient outcomes.

PLENARY IV RESUSCITATION

Cardiopulmonary Resuscitation in the Ambulance – High Quality CPR?

Marcus Ong (Singapore)

Out-of-hospital Cardiac Arrest (OHCA) is a major cause of death in Asia. Early and effective cardiopulmonary resuscitation (CPR) is an important factor in affecting survival outcomes. In advanced life support (ALS) Emergency Medical Services (EMS) systems, e.g. North American and European models, resuscitation for OHCA is usually "on-site". In basic life support (BLS) EMS, e.g. Asian countries, active CPR is often on-going while the patient is being transported to the Emergency Department (ED). This is also known as ambulance CPR.

Questions have arisen regarding the effectiveness of ambulance CPR and whether it poses a threat to the safety of the EMS crew. The International Liaison Committee on Resuscitation (ILCOR), American Heart Association (AHA) and European Resuscitation (ERC) have remained silent regarding the best policies for ambulance CPR.

The "Delphi Consensus Recommendations on Cardio-Pulmonary Resuscitation during Ambulance Transport for Basic Life Support Systems" was set up to make recommendations on CPR during ambulance transport in BLS systems, to avoid unsafe practices, improve CPR quality and OHCA outcomes. The recommendations were given by internationally/ nationally renowned EMS researchers or medical directors from the Asian Emergency Medical Services Council (AEMSC) executive committee and the National Association of EMS Physicians (NAEMSP) of North America. Several critical issues were agreed for safe transport and performing CPR during ambulance transport; the recommendations should be validated in clinical settings.

PLENARY V MAJOR INCIDENT MANAGEMENT

Major Incident Management--Experiences in Taiwan

Chih-Hao Lin (Taiwan)

SYMPOSIUM 4A RESUSCITATION TRACK "RESUSCITATION IN AMBULANCE – QUALITY AND SAFETY"

Arrest during Transport, Stop and Resuscitate?

Brian McNally (USA)

Methods in Performing CPR in Ambulance

Nalinas Khunkhlai (Thailand)

Effective chest compression is known to be one of the predictor for survival Out-of-hospital Cardiac arrest victims. However, within confined space running ambulance, the technique to help maintain quality of chest compression should apply.

Basic Life support in running ambulance

For manual chest compression techniques : Besides the conventional CPR, there are many alternative techniques discuss widely.

1. Over-the-head CPR: The provider kneel down at the head of the victims and compress the chest facing towards the legs. With this technique, chest compression and ventilation can be done from over the head using only one rescuer. Standard CPR led to a significantly shorter hands-off-time over a 2-min interval than over-the head CPR and more correct chest compressions, inflation. In the case of 2-rescuer scenario, standard CPR enables a quantitatively better than over-the-head CPR. But over-the-head CPR is easier to perform in a confined space and require only 1 rescuer.

2. Straddle CPR: The provider kneel at the thigh of the victim for straddling, compress the chest facing the head of victims.

3. One-hand CPR: The provider compress the chest with one hand and support themselves with the other hand at the same time, to prevent falling in running ambulance.

Study in Korea: Using manikin with Upper diagonal position (UDP) and Lower diagonal position (LDP), compare to standard position. The results showed equally effective. No statistically significant differences for the total number of compression, average depth of each compression and for the number of incorrect hand position except the UDP technique.

Using Chest compression Devices in Ambulance

1) Active chest compression-decompression cardiopulmonary resuscitation (ACDR CPR)
2) Load-distributing band (LDB)
3) Lund University Cardiac Arrest System (LUCAS)

Systematic review : Insufficient evidence to support or refute the use of mechanical CPR devices in setting of out-of-hospital cardiac arrest and during ambulance transport.

The moving ambulance is not the safe work place for prehospital providers. Factors such as road conditions, speed and vehicle type are not only effect to the quality of CPR but also the safety of providers.

Performing CPR in Ambulance – The Safety Factor

Chih-Hao Lin (Taiwan)

Therapeutic Hypothermia

Kyungwon Lee (Korea)

The comatose adult patients with ROSC (Return of spontaneous circulation) after out-of-hospital VF cardiac arrest should be cooled to 32°C to 34°C (89.6°F to 93.2°F) for 12 to 24 hours. Induced hypothermia also may be considered for comatose adult patients with ROSC after in-hospital cardiac arrest of any initial rhythm or after out-of-hospital cardiac arrest with an initial rhythm of pulseless electric activity or asystole. Therapeutic hypothermia (TH) is recommended for the treatment of neurological injury of cardiac arrest victims. We cool the brain because it suffers from a combination of anoxic and re-perfusion injury. Laboratory studies suggest that earlier cooling may improve neurological outcomes. In the prehospital setting, various trials were tried. In the RINSE trial (the Rapid Infusion of cold Normal Saline by paramedics during CPR), definitive multi-center, randomized, controlled trial of paramedic cooling during CPR compared with standard treatment. Paramedic cooling during CPR was achieved using a rapid infusion of large volume (20-40 mL/kg to a maximum of 2 litres) ice-cold (4°C) normal saline. This trial will test the effect of the administration of ice cold saline during CPR on survival outcomes. The PRINCE trial (Pre-ROSC IntraNasal Cooling Effectiveness) was also a randomized, prehospital, multicenter study using intra-arrest transnasal evaporative cooling. It was safe and feasible and was associated with a significant improvement in the time intervals required to cool patients. However, in a randomized controlled trial of induction of TH by paramedics after resuscitation from out-of-hospital ventricular fibrillation cardiac arrest in Australia, has not shown to improve outcome at hospital discharge compared with cooling commenced

in the hospital. Whether you should move the cooling into ambulances or the homes of cardiac arrest victims is another discussion not yet settled. In order to decide what your future treatment strategy should be, a very good starting point is now. In Korea, 'KORHN' (Korean Hypothermia Network) was built in 2011 by 40 hospitals in Korea, and started the data collection of TH in hospital but until now, we don't have any prehospital TH strategy in Korea.

SYMPOSIUM 4B MASS CASUALTY INCIDENT "BACK TO BASICS"

Being Prepared for Mass Casualty Response

Lim Han Chee (Singapore)

Mass Casualty Incident Management – The First Responder

Rosidah Ibrahim (Malaysia)

Mass casualty incident is an emergency event in which multiple casualties need care and the available resources are overwhelmed by the medical needs causing a disruption to the normal course of healthcare services. The sudden surge of a huge number of casualties at one particular time results in a very stressful situation and puts a strain upon the healthcare resources.

The "Golden hour" or the first 60 minutes of the incident are the most critical.

First Responders are those who in the early stages of the incident are responsible for the protection and preservation of life, property, evidence and environment. They have a mission first i.e. Life is always first as life is everything.

Competent and capable responders must be highly-trained and possess the self-discipline to function effectively in physically and psychologically stressful environments for extended periods of time. As the first rescuer at the site, the first medical responder must be able to start triage, initiate medical care as dictated by the number of casualties and types of injuries with limited available resources, at the same time able to pass the required information to the appropriate personnel. Accurate and timely information of the injured victims, the provision of care and patient disposition are critical to the success of the response.

Incident Command system is designed for first responders and is the framework required to manage resources, personnel and equipment that can be used in incidences. It provides the flexibility needed to rapidly activate and establish an organizational team for a well coordinated response to the incident.

As the response to mass casualties is by many agencies, there is need for a strong professional relationship and trust among the responders so that everyone can work together for a better coordinated effort in managing the event. This can be accomplished by the development of standardized regular Interagency training.

Adaptation of the incident command system and Integrated regional approach is the way forward for a successful response of a mass casualty incident.

Survival Tips for Responders during Disaster Response

Ali Haedar (Indonesia)

A disaster represents an untoward event, natural or human made, which overwhelm existing resources. Due to the unpredictable nature of disasters, emergency medical team must be ready for all hazards. Preparedness is essential to set up our mission during the disaster. The concept of emergency medical assistance is not only to safe mass victims, but also for the internally displaced people and to revitalize the medical system in the damaged health facilities. But what happened on the disaster affected area? Many responders come, but no good coordination among them. Sometime disaster is used as the best media for political parties' promotion. Responder teams only provide basic health care, yet no advance health facilities. And these responders become a burden for the affected people. We need to ensure that trained responder can respond rapidly in providing immediate, identifiable emergency services to those affected by disaster. A thorough coordination among the team members and the authorities, equipment and tools preparation, standardized systematic system, and facilities arrangement are the 4 basic pillars of being survived as responder to provide good assistance. Empowering local capacities is also essential to carry on the established system and to ensure sustainability of the system. We have applied this concept during earthquake in West Sumatra (2009), flash flood in West Papua (2010), and volcano eruption in Central Java (2010).

Keywords: disaster response, survival tips, disaster medicine, emergency medical assistance

The ABCs of Management of Radiation Emergencies: Lessons from Fukushima

Tatsuya Nishiuchi (Japan)

The earthquake measuring 9.0 on the Richter scale that hit the northern part of Japan on March 11, 2011 caused catastrophic damage. The devastating earthquake and tsunami claimed nearly 16,000 lives, and more than 130,000 houses were completely destroyed. To make matters worse, the quake and tsunami destroyed the cooling system at the Fukushima I Nuclear Power Plant, which finally caused a meltdown and hydrogen explosions. Radioactive materials that leaked from the damaged nuclear power plant caused environmental contamination across the northern part of Japan and gave rise to anxiety regarding health hazards. After the critical accident at the JCO uranium conversion plant in 1999, some emergency response systems for nuclear accidents were established. However, the nuclear accident at Fukushima was an "unexpected worst case scenario." Internet services were down and essential utilities such as electricity, gas, water, telephone services were damaged, preventing the execution of the rescue team actions based on prepared manuals. In addition, hospitals in the devastated areas were severely affected. Therefore, prepared manuals based on the presumption that essential public utilities and other resources would be available were less useful in this large-scale nuclear disaster. "A natural disaster strikes when people lose their memory of the previous one" is a common saying in Japan. The lesson learned from the Great Hanshin Earthquake in 1995 led to the establishment of the Disaster Medical Assistance Team, a rapid response team dispatched to affected areas to rescue, treat, and transport injured individuals. The tragic disaster we experienced last year threw another challenge at the protocols in radiation emergency medicine.

SYMPOSIUM 4C EMS DEVELOPMENT AROUND THE WORLD

EMS on the Indian Subcontinent - How they got to Number One

S V Mahadevan (USA)

In the city of Hyderabad, India, on August 15th 2005, the GVK Emergency Management and Research Institute (GVK EMRI) launched India's first centralized Emergency Medical Services (EMS). By dialing "1-0-8" toll-free from any telephone (24 hours a day, 7 days a week), any individual could now call for police, fire or medical service, just like the 9-1-1 systems in the United States. Not only was the phone call free, but also the ambulance care and the first 24 hours of emergency stabilization at receiving hospitals. GVK EMRI was conceived as a non-profit professional organization and funded through Public Private Partnerships (PPPs) with various state governments. Employing a "sense-reach-care" paradigm, GVK EMRI leveraged the newest technology, innovative leadership and state-of-the-art ambulances to create a vast emergency network across the country. In a short period of time, GVK EMRI built emergency response (call) centers in each state and accumulated the largest cadre of prehospital care professionals and ambulances in the country. Through a partnership with Stanford University School of Medicine, GVK EMRI has developed India's first international EMT-Paramedic course (2007-2009), first prehospital care research institute (2008-2011), first Emergency Medicine District Hospital Course (2010) and first EMS Protocol Manual (2011). As of today, GVK EMRI provides emergency care to the majority of Indian states and union territories. At the end of 2012, GVK EMRI will provide care to over 600 million people, making it the largest prehospital care provider in the world. GVK EMRI's eventual goal is to respond to 30 million emergencies annually and save 1 million lives a year.

Training and Certification of EMS Responders in HK

Lo Chi Biu (Hong Kong)

In Hong Kong paramedic training is provided by local instructors. We have a strong relationship with the Justice Institute of British Columbia (JIBC). Based on their model we started the mid level paramedic service in the 90's. Since then we started to build up and modify out own protocols, but instructors continue to be certified by JIBC and the training programme undergoes an accreditation process every five years. The course consists of a number of weeks of self-study, then a 2-week skill workshop before the 6-week core course, followed by the 2-week emergency department attachment and on-car training.

The protocol-based service requires creation of protocols and teaching of personnel to execute them. A protocol consists of a number of yes / no gates to get passed or denied by criteria. It is relative simple in administration as the general idea is to create a box and teach personnel to select the correct items into the box. Teachings are mainly carried out at Ambulance School on manikins, with instructors providing information from scenarios to students and assess their responses. The drawbacks of such model are 1.) a protocol cannot cover all situations, there are often grey areas personnel need to exercise their interpretation of the situation and make a decision, 2.) it can easily lead to stereotyping, when decisions are made repeatedly by pattern recognitions, 3.) low fidelity.

Perhaps even more important is to keep the qualified person 'qualified' to the standard he is qualified for. This is an immense task for the QA team in the Command, which centralizes learning points and disseminates them to all units via a number of channels. The electronic journey record system allows the QA team to screen for non-compliance cases and rectify problems at the earliest possible opportunity.

Hong Kong is still lacking a medical priority dispatch system (MPDS). Performance pledge with respect to response time is a sensitive issue, but if we could disregard consideration of time for a moment, the matching of patient need to personnel's skill is still important. For more advance skills if we can limit

the training to a smaller group of persons it not only saves resource in training and QA, it also aids to speed up experience consolidation in performers.

Importance of Manual Handling in Pre Hospital Care Environment

Alex Kenny (Australia)

The manual handling workshop is designed to educate all health care workers regarding the importance of handling patients correctly to help reduce injury to both workers and patients. Studies have proven to show not only is it one big sudden movement that causes permanent damage but the repetitive lifting day in day out (cumulative damage) which can consequently decrease your work life as a healthcare worker. The topics delivered throughout this session will be designed to ensure everyone walks away with how they think about treating and moving their next patient. Ambulance Services around the world that have introduced manual handling into practise have seen a dramatic reduction of work related injuries. The practise we teach we hope not only be used when staff are at work but also in their everyday lives. Simple postures, principles and communication is all you need to ensure you have a prolonged and injury free career.

Winfocus Brasil project serving the most austere and remote EMS network of the Minas Gerais State

Alberta Spearfico (WINFOCUS Int)

SYMPOSIUM 5A MEDICAL TRACK
"CREATIVE AND DYNAMIC IN PROVIDING CARE"

International EMS Research – Lessons Learned

Matthew Strehlow (USA)

Over the past decades healthcare has shifted towards the practice of evidence based medicine. During this shift Emergency Medical Services (EMS) has lagged behind. Due to the unique challenges of the out-of-hospital setting, a paucity of research existed to guide regulatory agencies, medical directors, and out-of-hospital care providers when designing EMS systems or caring for patients. As a result of multiple factors (lessons learned from past research successes and failures, focus on cost-effective care, development of national EMS research agendas), there has been an increase in quality research being conducted in the out-of-hospital setting. Critical knowledge gaps remain in both clinical (e.g. airway management, seizures, shock) and system (e.g. effectiveness of out-of-hospital interventions, knowledge and skill deterioration, training effectiveness) areas of EMS. This provides a unique opportunity for international EMS research going forward to evaluate both clinical care and system design using measures more appropriate to the out-of-hospital setting. Armed with evidence gleamed from quality EMS research, out-of-hospital care systems can find guidance in translating research into cost-effective, evidence based medical care.

EMS Activated Emergency Cardiac Care - Reducing Door-to-Balloon Times for Acute STEMI

Nausheen Edwin (Singapore)

Reducing door-to-balloon (D2B) times for acute ST elevation myocardial infarction (STEMI) patients has been shown to improve long-term survival. We aimed to reduce D2B time for STEMI patients requiring primary percutaneous coronary intervention (PCI), by adoption of pre-hospital 12-lead electrocardiogram (ECG) transmission by Singapore's national ambulance service.

This was a nationwide, prospective, before-after study of STEMI patients who presented to the Emergency Departments (ED), requiring PCI. In "Before" phase, chest pain patients received 12-lead ECGs at ED. In "After" phase, 12-lead ECGs were performed by ambulance crews and transmitted from field to ED.

Patients whose ECG showed $\geq$ 2mm ST elevation (STE) in anterior or >/= 1mm STE in inferior leads for two or more contiguous leads and symptom onset < 12 hours were eligible for PCI activation before arrival.

2653 ECGs were transmitted by the ambulance service; 12% were suspected STEMI. 127 patients from “Before” and 156 from “After” phase met inclusion criteria for analysis. Median D2B time was 75 minutes in “Before” and 51 minutes in “After” phase ($p<0.0001$). Median D2B times were significantly reduced regardless of presentation hours.

Hospitals with direct PCI activation by Emergency Physicians had best improvements in D2B times.

No significant difference was found pertaining to adverse events.

This is the first study to show nationwide implementation of pre-hospital ECG transmission resulting in reduced D2B times, regardless of presentation hours. Pre-hospital ECG transmission should be adopted as “standard of care” for management of chest pain.

Indian Scenario of Transporting the Aggressive Altered Mental State Patient

Subroto Das (India)

Altered Mental Status (AMS), though frequently encountered, has various definitions in medical literature. Its causative factors however, are well documented by the mnemonic, A-E-I-O-U-T-I-P-S.

Aggression in AMS patients is not uncommon, varying from verbal abuse to physical acts of violence, threatening self and attendants.

Despite the frequency of such cases needing transportation both, private and public EMS providers, partnering state health departments do not have accurate statistics in India.

Unfortunately, India lacks specific laws regulating transportation of such patients. Ambulance services dither from addressing such retrievals since Paramedic Laws are non-existent; Indian paramedics lack expertise, skill sets and safeguards while transporting aggressive patients. Laws prohibit paramedics from using chemical restraints. Therefore, physical restraint becomes the cornerstone of transportation, that too by police, though Mental Health Act 1987 (India) and international conventions discourage it since it impacts human dignity.

This lecture discusses issues faced by EMS providers while transporting aggressive patients, lack of legislation in India and consequent challenges, dependency on police, its colonial legacy and innovative approaches undertaken by providers to protect paramedics against physical and legal abuse while safeguarding the patients’ legal and human rights.

Pre Hospital Care Ultrasound: Empowering life support in EMS scenarios

Luca Neri (WINFOCUS Int)

SYMPOSIUM 5B EMERGENCY DISPATCH AND TECHNOLOGY "GATEKEEPERS OF THE EMS"

Dispatch and Safety of Responders

Jerry Overton (USA)

The influence of dispatch on the safety of responders has only recently come to the fore, and even today the importance of that influence continues to be underestimated. Proper triage of the caller using structured protocols to assess the patient's conditions can eliminate a high percentage of unnecessary emergency responses, minimizing the risk both to the responders and to the public during the most dangerous interval of the response. As early as 1935, it was known that not all incidents require a lights and siren response, yet there has been reticence to change. Recent peer review evidence shows that the EMS has the highest fatality rate among occupations and a majority of those fatalities are the result of preventable vehicle collisions. The use of proper dispatch protocols is a preventive measure to ensure responder safety. Further, providing the responder with accurate patient information allows that responder to focus on care of that patient prior to arrival. The approach to care of the cardiac arrest patient is far different from the approach to the triage of a multi-patient vehicle collision and the potential hazards that might be involved in that scene. Advance knowledge can provide the mindset for a faster care pathway. Finally, the information gathered by the call taker during the initial interaction with the calling party, done properly, establishes the dynamics of the scene to which the responder will arrive. In today's environment of violent patients, terrorist events, and hazards materials incidents, scene safety and security requires advance knowledge prior to the arrival of the responders with constant communication during the response. The relationship of dispatch to the safety of responders is inextricably intertwined and all facets must be understood and implemented to maximize protection of the responder.

Technology Facilitated Workprocess

Ghulam Yasin Naroo (Dubai)

Effectiveness of nationwide registration and e-AED map in Japan

Hideharu Tanaka (Japan)

Background: In Asian country, sudden cardiac arrest concerned a major cause of death. Early defibrillation becomes an important role on the chain of survival. In Japan, AED disseminated more than 350000 in nationwide. For improving of survival rate of SCA patients, effective AED installation in public space is important; also, exact location of AED should be known. Therefore, Nationwide registration of AED emphasized and "e-AED map" has been conducted last 6 years.

Objective: The effectiveness of "AED registration and effective installation with AED map" has been evaluated.

Method: Three studies conducted as follows

Study 1: Evaluation of AED Installation System in suburban Tokyo.

Study 2: Matching of OHCA occurrence rate and AED availability in last 3 years.

Study 3: Effectiveness of the E-map by the Laypersons.

Result: Number of installed AED in suburban Tokyo was 87 per 100,000 people. 85% of AED had been installed in public space; on the other hand, over 70% of OHCA occurred at home. Mismatch of AED Installation was found, because AED installation at home was only 2%. In addition, 70% of citizen involved in this survey knew AED 66% of them, however, they didn't know an exact location of the closest AED to

their home. 93% of them answered by "AED MAP" are helpful to know the location of AED. There few prefectures have been installed e-AED map with FD dispatch. In this prefecture indicates high survival rate compared with without e-AED map.

Conclusion: In conclusion, it strongly recommends that cooperation with registration with layperson and AED map installed FD dispatch in near future.

Dispatch Center Activated Trauma Team - Sharing of Experience

Mohd Idzwan Zakaria (Malaysia)

SYMPOSIUM 5C PARAMEDICS AROUND THE WORLD "LEARNING FROM FRIENDS"

More than Volunteer Paramedics

Tan Teik Kean (Malaysia)

Paramedics and Community in Japan

Hiroyuki Takahashi (Japan)

As most of you know Emergency Medical System (EMS) are defined as "a comprehensive system which provides the arrangements of personnel, facilities and equipment for the effective, coordinated and timely delivery of health and safety services to victims of sudden illness or injury" and not only medical personnel but public people are involved to manage this system effectively. Emergency medicine are divided into two phases of in-hospital and pre-hospital. Now, we recognize that first aid by bystander who are often public people before arriving EMS personnel is important factor especially in OHCA cases and we can learn public education, improving pre-ambulance care, would contribute the outcome of emergency patient as well. It is the task to train public people for EMTs as a key pre-hospital care provider so that they can perform first aid rightly in every emergency incident. In Japanese situation, fire department, private EMT school and various organization provide first aid courses to public people. 42.7% of OHCA cases has bystander CPR in 2010 and 1 month survival rate also has been increasing. My presentation focus on CPR training for public especially in school education.

EMS System in Singapore

Kok Leon Low (Singapore)

Hong Kong Fire Services Department EMS

Shuk Kwok-leung (Hong Kong)

Hong Kong, a vibrant international city with only 1 104 square kilometers of land, is home to some seven million people. The Hong Kong Fire Services Department is the statutory provider of emergency ambulance service in Hong Kong. In 2011, Ambulance Command of the department responded to 690 114 ambulance calls, representing an average of 1 891 calls a day. The speaker will introduce to you this brilliant Asian paramedic team including its organization, structure, service scope, skill level, training, quality assurance as well as its community service.

PLENARY VI EMS AND COMMUNITY

Community CPR Programme – Doing It and Saving Lives

Hideharu Tanaka (Japan)

Background Since 2004, more than 350,000 automated external defibrillators (AED) has installed community public space. And now, at least one AED has placed in 38,634 schools. Also, train station, Airport, Police box, hotel elsewhere. Therefore, only 0.7% of bystanders used the AEDs (By-AED) in all OHCA cases, it led to significantly high ROSC rate (48%) and good neurological outcome.

In recent years, elementary and junior high school student has been introduced in CPR and AED. Nevertheless, CPR education has not disseminated over the Japan yet, and the promotion of AEDs and CPR education on a nationwide scale remains an urgent issue. Therefore, we investigated the status of CPR education in schools teachers.

Results We conducted a simple surveys targeting for 187 school teachers in Tokyo metropolitan.

Q1 : "What age do you think suitable for CPR training?"

A 1 : 67 % of teachers answered “Suitable age for start CPR education from upper grades of elementary school to a junior high school.” Reason is follows, in the upper grades of elementally school students could performed continuous high quality chest compression, However, `Importance of life` could teach from lower grade of elementally school because of child have a good long time memory. In this reason, CPR education is extremely important.

Q 2 : What is difficulty of CPR education ?

A 2 : 17% answered No time to learn BLS education`, 25% `No curriculum for CPR education was exist` and 33%`No CPR mannequin tool for teaching was exist ` The solution for teacher`s request, we prepared follows. A 90 minute easy CPR education tool for should be introduced to elementally school CPR for introduction level of CPR education. CPR+AED education should be started in lower grade of elementally school with AED trainer. Personal mannequins are suitable for CPR education in school, it’s allowed to shorting time CPR education with high quality chest compression.

Conclusion Community CPR programs are extremely important for awareness both in skill and knowledge of CPR among the entire school. Future research is warranted to improve the resuscitation rate by school CPR program.

PLENARY VII ERGONOMICS OF PATIENT CARE

Ergonomics in Design and Care – What, How and Why?

Chris Fitzgerald (Australia)

The inclusion of ergonomics considerations in the design and care for emergency medical services (EMS) is gaining momentum globally. Ergonomics provides an opportunity to understand and anticipate human behaviour relative to the design of emergency vehicles, equipment and clinical work practices. It can provide an objective platform to assist services determine methods of effective care while accommodating the safety and comfort of patients, service providers and the general public.

The primary focus of ergonomics in EMS has been on the design of ambulances and response equipment such as stretchers, heart monitors, drug, oxygen and CPR therapy equipment and patient handling devices.

For ambulance design, the effectiveness of a well designed ambulance compartment layout is dependent on the occupants being oriented in inherently safe positions and items being restrained. Other emerging ergonomics influences on ambulance design include vehicle visibility and conspicuity and the

management of driver behaviour using smart vehicle systems to monitor and provide feedback on performance.

Another key area of ergonomics in design and care for EMS has been on the accommodation, transfer and transportation of the patient. While patient comfort and safety is a paramount consideration, a focus of this area of development has been on the safety and effective operation for the service providers. This has led to revolutionary changes in stretcher design, how stretchers are configured at the scene to receive the patient and, in particular, how they are handled into and out of the vehicle. New equipment and methods of treatment and patient handling have also been developed on the basis of ergonomics criteria and, because of the complexity and diversity of patient treatment and retrieval scenarios, this area of development within EMS is ongoing.

Ergonomics is a late comer to EMS but is being used to anticipate the needs of good design to achieve effective, safe and consistent design outcomes for the patient, service provider and members of the public.

PLENARY VIII PARAMEDIC TRAINING OR FUTURE

Cutting Edge Innovations in EMS Education: The Stanford-GVK EMRI

S V Mahadevan (USA)

In 2007, Stanford University School of Medicine and GVK Emergency Management and Research Institute (GVK EMRI) developed India's first international collaborative two-year paramedic program and incorporated numerous educational innovations. This novel program aimed to educate paramedic students while simultaneously training paramedic instructors. The curriculum was based on the United States EMT-Paramedic (EMT-P) National Standard Curriculum; however, it included diseases, conditions and cultural issues relevant to the practice of prehospital care in India. The final curriculum incorporated classroom-based, hospital-based and prehospital-based components. US-based faculty provided on-site lectures to both students and instructor-trainees using original PowerPoint presentations and conducted training-of-the-trainer sessions for paramedic instructor-trainees. In addition to classroom-based lectures and hands-on skills workshops, the students also participated in interactive case-based studies, medical simulation, distance learning, and standardized international training courses (such as ACLS, PALS and ITLS). All students took part in an innovative two-week curriculum focusing on leadership, communication, team-building and personal confidence. The Stanford GVK EMRI paramedic curriculum also included hospital-based rotations in emergency medicine, intensive care, coronary care, obstetrics and gynecology, pediatrics and burns. Prehospital field training was provided through direct observation, supervised practice via on-line medical direction, and case-based review. Students and paramedic instructor-trainees were continually assessed with written, oral and hands-on-skills testing. From 2007-2009, GVK EMRI and Stanford established a novel, comprehensive paramedic training program that simultaneously trained its inaugural class of paramedic students and instructors, thereby ensuring future viability. The program incorporated numerous educational innovations to bridge the cultural, language and educational gaps between India and the United States. It is our sincere hope that the program will serve as a replicable paradigm for the development of sustainable EMS educational courses elsewhere in the world.

SYMPOSIUM 6A TRAUMA TRACK

Key Prehospital Interventions in Trauma
Azhar Aziz (Malaysia)

Getting the Fluids Right in Trauma
Mahathar Abd Wahab (Malaysia)

Managing Bomb Blasts
Brian McNally (USA)

Basics in Managing GSW
Junaid Abdul Razzak (Pakistan)

SYMPOSIUM 6B PARAMEDIC TRAINING "EMT SKILLS TRAINING"

Training Paramedic Essential Skills – Project NOVO
Matt Perry (Australia)

Project Novo was created in January 2011 as a response to the need for improved pre-hospital care standards in Penang. Matt Perry, a Paramedic with the South Australian Ambulance Service and Dr. Teo Aik Howe, Consultant Head of Emergency at Penang General Hospital developed a collaborative approach to improve the level of training of ambulance staff in Penang.

Preceding Project Novo (novo meaning to refresh or change) there were several trips to Adelaide, South Australia by St. John Ambulance Malaysia (SJAM) Penang staff. This was aimed at developing a model for improved practice, however due to the vast differences little progress was being made. Under Project Novo Mr. Perry and Dr. Teo embarked on a 2 year collaboration to develop a training course and set up guidelines for practice. At the peak of the work there were 12 people from Australia and Malaysia working on the the project.

Project Novo took the South Australian Certificate IV course, used to train volunteers in the use of common life saving pre hospital medications and modified it for use in Penang. In doing so it was necessary to set up clinical governance systems as non government ambulance providers had not used medications in the pre hospital setting before.

In order to safely cross the cultural and practice divide between Australia and Malaysia it was necessary to include two practicing Ambulance Officers in the development. Mr. Tan Teik Kean and Mr. Oi Siou Hean (SJAM staff) were sent to Adelaide for this purpose. Dr. Tan Kean Chye became the Penang based co-ordinator and Mr. Mike Rushby joined the project in Adelaide.

The model of training that was developed allows the two vastly different systems of pre hospital care to meet at a common point and the Intermediate Ambulance Care course was developed to meet the needs in Penang. The course sets up a basic standard that can be easily replicated throughout Malaysia and is currently being used as a basis for a similar project starting in Bali, Indonesia.

Intermediate Ambulance Care - A Course to Assist Training Needs in Developing Ambulance Service

Mike Rushby (Australia)

As a result of a two year project led by Mr Matt Perry (a Paramedic with the South Australian Ambulance Service) and Dr. Teo Aik Howe (Consultant Emergency Physician and Ministry of Health Advisor) the Intermediate Ambulance Care (IAC) course was developed to allow the use of common life saving medication in the pre hospital setting in Penang, Malaysia.

The Project Novo team, including the above as well as Dr. Tan Kean Chye, Mr. Oi Siou Hean and Mr. Tan Teik Kean developed the course to teach ambulance staff who are already trained to the St. John Ambulance of Malaysia (SJAM) Basic Ambulance Care level, in a practice based adult learning environment.

Mr. Perry utilised the resources and knowledge of the S.A. Ambulance Service in order to modify an existing, well proven training package to make it relevant to Penang under Project Novo. The course consists of a cardiac module, respiratory module and medical conditions module. It is practice based and has scenario based exams.

Over ten days, participants are taught to safely use medications for commonly encountered pre hospital medical emergencies. Practice at this level has not been possible in Penang or elsewhere in Malaysia by non government ambulance providers. Mr. Perry and Mr. Mike Rushby (who assisted in developing the course) were brought in by SJAM Penang to facilitate the course. Mr. Tan and Mr. Oi were co-facilitators to ensure that the course was locally relevant.

The IAC Course is easily transferable to anywhere in Malaysia as long as the clinical governance systems and prerequisite training have been established. The course can easily be used to set training standards throughout Malaysia.

Training Skilled Paramedics - Korea Experience

Jeong-Mi Park (Korea)

We have 2 levels of Emergency Medical Technician (EMT) in Korea; class 1 EMT and class 2 EMT. EMT training courses have two way system. The former course held in the University or College and the latter course provided by Fire station public services.

Dept. of Emergency Medical Technology, Universities, has 3~4 year curriculum and provides the students with the field training at hospital and ambulance (14~16 credits), which is similar with paramedics in the USA. After completing the whole required course, graduates of the department take the national examination and acquire the Class 1 EMT license, which is issued by the Ministry of Health, Welfare and Family Affairs. The Class 2 EMT course can be acquired through Fire station public services, which provide 8~10 week programs. Another 2 weeks are added to provide the students with field training at hospital. The applicants also need to take the national exam to get the license. It is similar to EMT-B in the USA.

Certified medical technicians serve at various emergency medical service areas such as fire stations (119 emergency team), emergency medical centers, emergency medical organizations, emergency medical information centers, public health agencies, public rehabilitation agencies, police offices, marine police offices, emergency transport teams, and other medical organizations.

Fire station public services, which are the most typical work places for EMTs, have their own special educational program. Some promising EMTs obtain opportunities to trained abroad in the USA for 4 months. As a result, would-be EMTs can be nurtured to be highly skilled at emergency situations.

Now the Class EMT 1, 2 applicants are trained through simulation based training. Furthermore we try to make a standardized protocol supervised by emergency physician association. Our government directed policy is being developed in order to improve the quality of EMTs.

Training Skilled Paramedics - Japan Experience

Hiroyuki Takahashi (Japan)

It has been 21 years since Emergency Life Saving Technician (ELST) which is same level as EMT-Intermediate in USA program was introduce to improve the outcomes of emergency patient especially in Out-of-Hospital Cardiac Arrest (OHCA). In this process, defibrillation with standing order in 2003, endotracheal intubation in 2004 and drug administration of epinephrine in 2006 are newly authorized as primary care by ELST in pre-hospital setting. As a result, 1 month survival rate from OHCA has been increasing by 4.4% from 1994. It means that the more procedure or treatment are advanced, the more quality management of skill training is important. In Japan, skill training and simulation, scenario training become a part of the curriculum based on national standard in ELST education entry level and regarding assessment of their skill, we adopt Objective Structured Clinical Examination (OSCE) by evaluator who are often senior ELST. Japan EMT School Association (JESA) which all of private ELST school participate certify an evaluator to standardize the quality of them. Today, I would like to introduce our method of skill training for ELST.

Abstracts - Free Papers

Ambulance for the Deceased?

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With the advances of medical technology, there are an ever- increasing number of patients on prostheses in Malaysia. It is not uncommon for pre-hospital care (PHC) response to confirm death to encounter a deceased with prosthesis in situ. The issue arises when the family members request to transport the deceased to the hospital's mortuary for prosthesis removal; as the current policy only allows for ambulance to transport the patient and not the deceased. While there is currently no official standard operating procedure of prosthetic removal by the PHC in Malaysia, there can be a few considerations. External prostheses such as the percutaneous endoscopic gastrostomy (PEG) tube, Ryle's tube and tracheostomy tube can be removed or cut on scene. Internal prostheses such as the artificial cardiac pacemaker, orthopedic and dental orthoses should be left in place and only be removed at the hospital's mortuary based on the nature of the prosthesis and the method of burial. Cultural and religious factors do not usually pose a large predicament provided that adequate education prior to prosthetic insertion, bereft counseling after death and relative consent are provided. In conclusion, there should be some exclusion criteria for transportation the deceased with the ambulance under the medical directive.

The Assessment of Response and Transport Intervals of Emergency Ambulance by Using GPS Navigation Device at Universiti Kebangsaan Malaysia Medical Centre

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Introduction This experimental study determines the effectiveness of GPS navigation device in reducing the response and transport intervals of UKMMC emergency ambulance service.

Objectives This study aimed 1) To determine the time difference of response and transport intervals between conventional (MAP) and GPS navigation device (GPS) assisted response; 2) To determine the differences between the ETA obtained from ambulance team and the CTA from GPS navigation device to the ATA documented by the trained data collector and 3) To determine the opinion of the ambulance drivers and paramedics whether the application of GPS navigation device in emergency ambulance service was helpful.

Methodology Study was conducted over two month period. A total of 40 simulation cycles were enrolled in this study. Response intervals, transport intervals, ETA, CTA and ATA were collected from each run. And questionnaire answered by all ambulance drivers and paramedics were analyzed using SPSS and Microsoft Office Excel 2007.

Result The median for actual response interval using MAP was 12:93 minutes, while median for actual response interval using GPS was 11:78 minutes. The median for actual transport interval using MAP or GPS were the same, 11:33 minutes. There was no significant time difference for both response and transport intervals using MAP or GPS. For difference between ETA and CTA to ATA for response and transport interval using MAP or GPS, only CTA for transport interval using GPS=8:80 minutes and ATA for transport interval using GPS=11:33 minutes is statistically significant with $p=0.047$ ($p<0.05$). Twelve respondents agreed that the GPS navigation device may improve the response time and 13 respondents agreed that GPS navigation device may improve the transport times.

Conclusion These results showed the GPS navigation devices effectiveness in reducing the response intervals for UKMMC ambulance service. Further study is required to determine the effectiveness of the GPS navigation device in reducing the response intervals for other urban areas in Malaysia. The development of an integrated tracking and navigating system may further improve the overall times interval.

Comparison of effective CPR training on layperson

Takahiro Hara, Hideharu Tanaka, Ami Nakao, Hiroyuki Takahashi, Tomoya Kinoshi, Toru Shirakawa.
EMS system, Graduate School of Kokushikan

Introduction In Japan, CPR training has widely introduced in elsewhere. Therefore, new school CPR education has started from 10-year old children to have more bystander. But effective CPR training for school environment by 90 min has not evaluated. The aim of this study is to investigate effective CPR training in school environment by 90 min.

Object and method Two hundred fifty six university students who must be trained CPR within 90 minutes were subjected in this study. The students randomly divided into four groups as follows. The group A (n=64) received conventional CPR and AED training. The group B (n=72) received 90 minutes self-learning at home. The group C (n=60) received 90 minutes CPR and AED training by using mini-Ann kits with video instruction. The group D (n=60) received 90 minutes CPR and AED training by using mini-Ann kits with one instructor in the big classroom.

Results The Group D shows significantly shorter time to start chest compression an re-start of chest compression after AED use than that of the other groups ($P<0.05$). All the Group shows favorable CPR performance about chest compression indicates right recoil , rhythm, and right depth. However, in the group B, and C shows longer time of ventilation than that of the Group D. The group B,C and D shows incorrect open airway procedure than that of group A ($P<0.05$). Overall CPR performance points shows significantly higher in the group D than that of in the group C ($P<0.05$).

Conclusion We found that 90 minutes CPR training using mini-Ann successfully performed by one instructor and their voice feedback.

CPR on The Beach: Encounters With The “Jellies” In North Borneo

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Jellyfish envenomation is the commonest marine fauna envenomation. The highly venomous box jellyfish lurks in the waters of Borneo, and is responsible for the majority of cases encountered by the local hospitals. Though most patients present with dermatological manifestations of the envenomation without significant systemic involvement, numerous deaths have been reported worldwide. We report an incident of jellyfish envenomation involving 6 tourists while swimming in waist-deep waters off the coast of Kota Kinabalu. Among the victims, an 8 year old boy required bystander CPR at the scene. He developed *status epilepticus* after ROSC and had to be intubated on arrival to Emergency Department. We will compare these cases and explore the likely factors that influenced the severity of the envenomation on our patients, as well as review and identify the first aid and preventive measures for jellyfish stings. We will also emphasise on the importance of high-quality CPR, and the need of the public, especially lifeguards to equip themselves with such skill to ensure resuscitation is started as early as possible in the event of cardiac arrest.

Keywords Jellyfish, Marine Envenomation, Bystander CPR.

EMS System in Indonesia; Our Problems and Solutions to Implement

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Introduction Emergency Medical services (EMS) is required will certainly reduce the rate of death and disability that caused by mishandling by the common people and delays in medical treatment. Currently there is no internationally standardized EMS system, but every country has its own policies.

Review Indonesian Ministry of Health has implemented an EMS system namely Integrated Emergency Management System (IEMS). IEMS is covering pre-hospital, inter-hospital, and and intra-hospital care, in a state of disaster and daily service. This rapid response service base emphasizes on time saving, life & limb saving. It mainly involves lay persons, medical personnel, and communication systems, supported by multi-disciplines and multi professions. Despite of no universal similar system due to government policies, geography, and demography, EMS has grown rapidly.

Discussion IEMS has two targets, daily pre-hospital care and disaster management. Despite being drafted by the government, the implementation of the EMS is still very far from the expected. Level of education, a sense of indifference, poor governmental supports, natural conditions, budget constraints, do affect these systems. We have performed a tailor made system to improve IEMS by mainly conducting training to public and medical personnel in areas of pre-hospital and emergency care, including transportation system. We are confident that it will reduce morbidity and mortality. Somehow, we require a multi-centre collaboration in an effort to improve the quality of the EMS.

Conclusion Training to the public are very helpful and should be a standard procedure in the implementation of EMS. A good pre-hospital care can be accomplished if only supported by sufficient trained personnel in order to ensure right decisions for the good and safety of patients.

Keywords EMS system, pre-hospital care, public training

Evaluation of the chest compressions quality during ambulance transportation.

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Background A new 2010 JRC guidelines recommend high-quality chest compressions. However, it is well known that difficult to perform chest compressions during out of hospital settings with a limited crew number.

Objective The aim of this study was to evaluate the various factors interfered high-quality chest compressions while ambulance transportation.

Methods 2 minutes Chest compression depth and the moving ambulance acceleration gravity were continuously recorded. Four different direct acceleration during ambulance transportation was classify as follows, stand still (0km/h), straight (30km/h), right curve (30km/h) and left curve (30km/h).

Result Chest compression depth were identical in the stand still group (57.6±2.9mm), straight group (59.2±3.0mm), and the left curve group (56.2±3.0mm), respectively. Significant reduction was found in the right curves (47.2±6.6mm) group ($P<0.01$).

Discussion An acceleration force with right curve may cause of interference with high quality chest compressions due to difficult of maintaining the CPR position.

Inadequacies in First-Aid Training (FAT) In Schools –3 Year Study

Shukanto Das

Introduction Most Indians are ignorant about scientific responses to emergencies. Concept of FAT is not (yet) structured into academic curricula. Indian Health Ministry's websites do not even mention "First-Aid", despite National Disaster Management Authority institutionalizing it in schools.

Methodology 450 students (average age - 12 years), exposed to FAT were surveyed in Vadodara (population - 2 million). Written question/answers were discouraged; there was risk of wrong/incomplete responses given their limited articulation skills; responses to questions (closed-end) were solicited by hand-counting followed by feedback for improvement.

Results We evaluated efficacy and content of training and inadequacies to be addressed from the students' angle. Poor comprehension, dismal retention levels, low perception of trainer involvement and in- acceptability of hands-on-training were some disturbing findings.

Discussion The aim was to, for first time in India, evaluate FAT in schools from students' viewpoint; this is significant since policy framers need to consider students' views while designing modules for better acceptability. We need to address issues of target age group, inadequacies in content and delivery, necessity of refresher courses and parent-teacher group involvement.

Conclusion School curriculum needs to institutionalize FAT that is relevant, interesting and acceptable from the students' point of view.

Nationwide Improvement of Door-to-Balloon Times In Patients With Acute ST Elevation Myocardial Infarction Requiring Primary Percutaneous Coronary Intervention Using Pre-hospital 12-Lead ECG Recording and Transmission

Marcus Eng Hock Ong, Aaron Sung Lung Wong, Chong Meng Seet, Swee Guan Teo, Beng Leong Lim, Paul Jau Lueng Ong, Shieh Mei Lai, Sea Hing Ong, Francis Chun Yue Lee, Kim Poh Chan, V. Anantharaman, Terrance Siang Jin Chua, Pin Pin Pek, Huihua Li.

Objective Reducing door-to-balloon (D2B) times for acute ST elevation myocardial infarction (STEMI) patients has been shown to improve long-term survival. We aimed to reduce D2B time for STEMI patients requiring primary percutaneous coronary intervention (PCI) using pre-hospital 12-lead electrocardiogram (ECG) transmission.

Methods This was a nationwide, before-and-after study of STEMI patients who presented to the Emergency Departments (ED), requiring PCI. In "Before" phase, chest pain patients received 12-lead ECGs at ED. In "After" phase, 12-lead ECGs were performed by ambulance crews and transmitted to ED.

Results 2653 ECGs were transmitted by the ambulance service; 127 patients from "Before" and 156 from "After" phase met inclusion criteria for analysis. Median D2B time was 75 minutes in "Before" and 51 minutes in "After" phase ($p<0.0001$). Median D2B times were significantly reduced regardless of presentation hours.

Discussion Pre-hospital ECG recording and transmission should be adopted as "best practice" for management of chest pain.

Standardized Pediatric Patient Transfer by Emergency Physician Ensures Good Interhospital Transport

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Background Critically ill children require high level of intensive care supports, and should not be transported for non-urgent interventions nor investigations. Risk-benefit assessment should be taken into account on conducting inter-hospital transport. Otherwise it may lead patients at risk of clinical deterioration and adverse event.

Case A 3 y.o. girl, with history of fever since 1 day before and VP-Shunt instrumentation due to Dandy-Walker malformation, was presented to emergency department in a rural hospital with altered mental state and twice clonic seizure. Examination revealed gurgling, 30 tpm tachypnoic, warm-dry acral with rapid strong radial pulse, O2 saturation 91% on room air, bedside glucose 160 mg/dL, axillary temperature 40°C, blood pressure 90/52 mmHg, GCS E3V2M4, pupil equal but slow response to light, lungs and heart unremarkable, patent VP-Shunt chamber and no sign of presume lateralisation. Airway management, fluid resuscitation, anti-seizure, antipyretic, tight glucose monitor, endotracheal intubation were performed. Head CT showed SDH. We decided to transport the patient to a 250KM away hospital with neurosurgery with ground ambulance supported by 1 physician and 1 senior nurse. Manual ventilation was continued. Vital signs, ECG pattern, random blood sugar, SaO2 and fluid balance were documented and reviewed. Patient had been in stable haemodynamically.

Discussion Transporting critically ill patient between hospitals invariably adds to the risks of illness or injury because of the hazards associated with the transport environment, particularly for pediatric patients. Prehospital and EMS system in Indonesia has not developed as yet. Thus unstandardised inter-hospital transfer making high incidence of morbidity and mortality. We are confidence that an established Emergency Medical System will ensure potential adverse events are minimised during inter-hospital transport.

Lessons Learnt Professional assessment is required when considering critically ill patient transport. Risk can be minimised by applying standardized patient transfer, clinical and logistic supports, and proper communication with receiving hospitals.

Keywords Inter-hospital transport, critically ill patient transport, Emergency Medical Service

The Cost of Running a community based Emergency Ambulance Service

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More communities and townships are developing in sub-urban areas, with longer distances and greater travel times from city centers. The need to provide emergency response services to these communities and townships within a reasonable response time frame is often difficult. Cost remains a key limiting factor in decentralizing ambulance stations to these communities especially for EMS systems in developing countries. One potential solution lies in the development of community based ambulance services, linked to the emergency response mechanism.

Emergency Medical Assistance Service (EMAS) Penang is a community based emergency ambulance service, linked to the 999 emergency response mechanism, for the community of Bayan Baru and Bayan Lepas in Penang. Serving a community population of approximately 200,000 people, EMAS Penang is

solely funded by community donations. In the last 7 years, EMAS Penang has provided more than 10,000 emergency ambulance runs. This emergency ambulance service runs for 15 hour per day with 24 hour coverage on weekends and holidays with trained, paid staff and St John Ambulance volunteers, equipped with life-saving equipment and monitoring capabilities. EMAS Penang has consistently achieved international comparable standards in response times and ROSC rates.

We will present the costing of such a service, demonstrating the feasibility of such a model in improving the emergency response to sub-urban communities in a developing EMS system.

Role of SJAM in emergency medical system in Malaysia

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SJAM is a Malaysian-based self-funding, non-for-profit voluntary organisation, dedicated to the works of humanity and charity, has been rendering First Aid and Home Nursing services to the needy for the relief of persons in sickness, distress, suffering or danger without any distinction of race, class, colour or creed. SJAM is a leader in the provision of first aid, home nursing, humanitarian services, ambulance service, emergency medical assistance service and a public first aid training provider.

SJAM provides support to the MOH's statutory ambulance services in metropolitan areas, responding to 999 calls and assisting during times of major incidents. Through EMAS (Emergency Medical Assistance Service), SJAM has now extended emergency ambulance services to all of Wilayah Persekutuan, Selangor and Penang, and in Gurun, Kedah, Telok Intan & Taiping, Perak, Batu Pahat, Johor and Kota Kinabalu, Sabah. SJAM was the first in Malaysia to introduce the use of AED in 2001 by Wilayah Persekutuan EMS. We looked into our ambulance response time according to cases in the above state tracking the response time of our service, effectiveness of CPR and use of AED. Two states and a city participated in this study. Total number of cases was 16172 from 2007 till 2011. Majority of the cases responded to were due to medical conditions. The response time , effectiveness of CPR and use of AED with ROSC results were key indicators tabulated. These results will be presented for discussion.

The data shows that majority of cases from both urban (KL and Penang) and rural areas (Gurun) were medical problems followed by MVA and trauma. The number of cases where CPR was used is 15%-20%. The efficacy of AED ranges from 1-7% through 5 years from 2007-2011 presented in this study.

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