13th International Conference on Emergency Medicine

Singapore

9-12 Jun 2010

Dr. Chew Keng Sheng
Jabatan Perubatan Kecemasan
PPSP

ICEM 2010

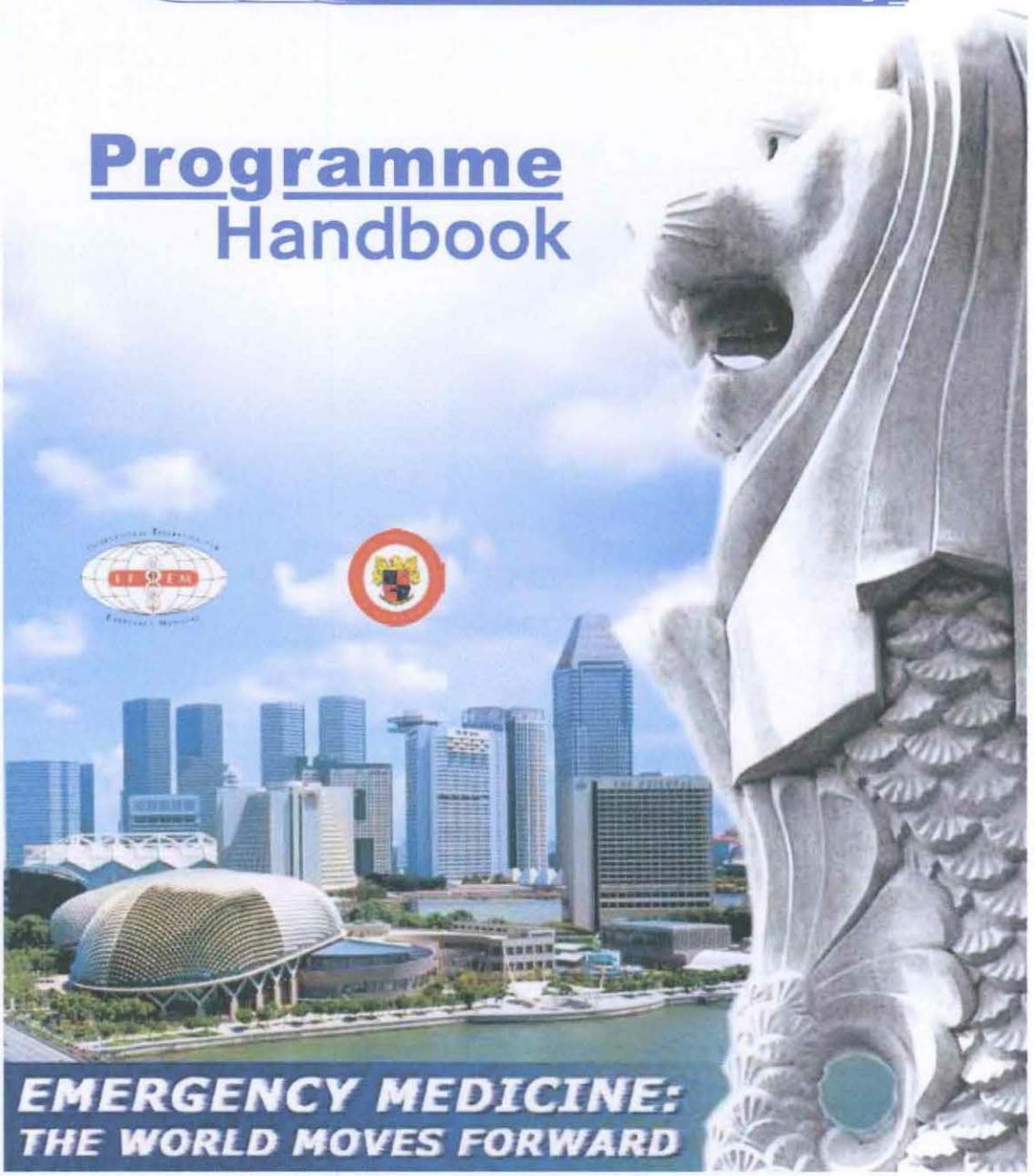
9-12 JUNE

The World Moves Forward

SINGAPORE

www.icem2010.org

Programme Handbook



EMERGENCY MEDICINE: THE WORLD MOVES FORWARD

SPEAKERS' PROFILE

LEBANON

Amin Antoine KAZZI

Amin Antoine Kazzi, MD, FAAEM, is currently an Associate Professor at the American University of Beirut where he founded the Department of Emergency Medicine, the Lebanese Society for EM President and the American Academy of EM Past President.
His leadership awards include the AAEM David Wagner Award for "service and impact on the specialty" and the "International Leadership Award" for his exceptional role in the Mediterranean EM Congresses.

LITHUANIA

Dinas VAITKAITIS

Moderator, Lithuanian Society for Emergency Medicine,
Head, Assoc. Prof. Department of Disaster Medicine, Kaunas University of Medicine
Director, Crises Research Centre
Graduated Kaunas Medical Academy in 1990
General Surgery Residency in 1991
Master of Science in Public Heath, Kaunas University of Medicine in 1999
PhD in Quality of Prehospital Emergency Medical Services in Lithuania in 2002.

MALAYSIA

Kamarul Aryffin BAHARUDDIN

Dr Kamarul Aryffin Baharuddin is a Senior Lecturer/Emergency Physician at the Universiti Sains Malaysia (USM), Kelantan, Malaysia. His interests are in the area of neurology emergencies, pain management in Emergency Medicine and toxicolgy. He is an horonary treasurer for Malaysian Association of Emergency Medicine (MAEM) and a member of Malaysian Society of Neurosciences.

CHEW Keng Sheng

Completed his postgraduate training in emergency medicine in 2007, he is currently a senior lecturer and emergency physician in Universiti Sains Malaysia. He has published in a number of journals including International Journal of Emergency Medicine, Singapore Medical Journal and Medical Journal of Malaysia. His current research areas include training and education in cardiopulmonary emergencies within the Malaysian socio-cultural framework.

Nik Hisamuddin RAHMAN

Dr Nik H Rahman is a consultant and associate professor in Emergency Medicine at the School of Medical Sciences, Universiti Sains Malaysia. He obtained his basic medical degree from the University of Glasgow Scotland in 1994 and further obtained his specialty qualification in Emergency Medicine in 2002. His filed of interest include Trauma & Injury Prevention, Prehospital Care and Acute pain management.

MAIN SCIENTIFIC PROGRAMME

1045 – 1245 Hours

INTERNATIONAL EMERGENCY MEDICINE (IEM9) — Room 305, Level 3

International Perspectives on Airway Management and Toxicology

Moderators: Dr Adeline NGO (Singapore),
Dr T V RAMAKRISHNAN (India)

- **Implementing a Non-Invasive Ventilation Program in the ED** — IEM9 – 1
  Dr Roberta PETRINO (Italy)
- **An Update on Paralytic Agents for Emergency Airway Management** — IEM9 – 3
  Prof Dr Fritz PUEHRINGER (Germany)
- **Emergency Airway Training - The Way Forward for Emergency Department in India** — IEM9 – 4
  Prof Suresh DAVID (India)
- **Toxic Alcohols: Emerging Challenge Unveiled** — IEM9 – 5
  Dr Mohammed ALHELAIL (Saudi Arabia)
- **Mushroom Poisoning** — IEM9 – 6
  Dr CHEW Keng Sheng (Malaysia)
- **Snake on a Plane: Managing Snake Envenomation Anywhere** — IEM9 – 7
  Dr Mohammed ALHELAIL (Saudi Arabia)
- **Organophosphorus Poisoning In Rural India – Treatment Still a Challenge** — IEM9 – 8
  Dr Devendra RICHHARIYA (India)

1045 – 1245 Hours

PRACTICAL AIRWAY MANAGEMENT LABORATORY (AIR 3)# — Room 306, Level 3

 # This laboratory is sponsored by Karl Storz Endoscopy Asia Marketing Pte Ltd

1500 - 1600 Hours

IFEM General Assembly — Ballroom 2, Level 2

(All delegates to attend)

MAIN SCIENTIFIC PROGRAMME

1015 – 1215 Hours

CARDIOLOGY (CAR 4) — **Room 306**
International Experiences in Cardiology — **Level 3**

Moderators: Dr Philip D ANDERSON (USA),
Prof Sung Oh HWANG (South Korea)

- **Troponin assays are not all Born Equal - Essential Knowledge for ED Physicians** — **CAR4 – 1**
  Dr Louise CULLEN (Australia)
- **Challenging ECGs for Diagnosis of Acute Coronary Syndrome** — **CAR4 – 2**
  Prof William BRADY (USA)
- **Cooling During Cardiac Arrest - An Update after 2005** — **CAR4 – 3**
  Prof Maaret CASTRÉN (Sweden)
- **Atrial Fibrillation in the Emergency Department, from Rate Control to Electrical Cardioversion** — **CAR4 – 4**
  Dr Darawsha AZIZ (Israel)
- **Handing Cardiovascular Emergencies in a Malaysian Hospital** — **CAR4 – 5**
  Dr CHEW Keng Sheng (Malaysia)
- **The Taiwan Experience in Thrombolytic Therapy in the ED for Acute Stroke** — **CAR4 – 6**
  Dr LIN Hung-Jung (Taiwan)
- **Integrating the ED Stroke Pathway with Overall Hospital Stroke Management System** — **CAR4 – 7**
  Dr Kamarul Aryffin BAHARUDDIN (Malaysia)
- **Cultural Issues in Resuscitation in Out of Hospital Cardiac Arrest** — **CAR4 – 8**
  Dr Mahmood AL-FARDAN (Bahrain)

POSTER COMMUNICATIONS

WEDNESDAY, 9 JUNE 2010 - Level 3 Concourse

W-POS018/EDM	Multisystem Approach To Facilitate Patient Flow And Treatment In The New York Presbyterian Weill Cornell Emergency Department	Ms Kyoko YAMAUCHI
W-POS019/CARE	Critical Care Interventions In Emergency Medicine	Dr Kevin ENRIGHT
W-POS020/EDU	Piloting An E-Learning Package In Acute Paediatric Orthopaedics In A Mixed Emergency Department.	Dr David KRIESER
W-POS021/SUS	Code Blue – A Prospective Evaluation Of Effectiveness Of CPR Of Inhospital Cardiac Arrests In A Tertiary Care University Hospital, S.India	Dr Srihari CATTAMANCHI
W-POS022/IMA	The Whirlpool Sign In Diagnosing Adult Intestinal Volvulus	Mr William Lengsu CHIN
W-POS023/SUS	A Multi-Center Study On The Attitudes Of Malaysian Emergency Healthcare Staffs Towards Allowing Family Presence During Resuscitation Of Adult Patients	Dr Keng Sheng CHEW
W-POS024/IEM	The Challenges Of Translating Basic Life Support Knowledge To Attitude Within The Malaysian Socio-Cultural Context	Dr Keng Sheng CHEW
W-POS025/IEM	A Survey On The Influence Of Chinese Cultural Health Beliefs Among Malaysian Chinese In A Suburban Population	Dr Keng Sheng CHEW
W-POS026/IEM	Factors That Influence The Reliability Of Diagnoses In Emergency Medicine	Dr Muhammad SHAHID
W-POS027/CAR	Acs In Dextrocardia	Dr Sunil Kumar CHOUDHARY
W-POS028/EDU	Canadian Pediatric Simulation Programs: A National Survey And Needs Assessment	Dr Adam CHENG
W-POS029/QUA	Emergency Department Based Management Of Acute Aggression In A Tertiary Paediatric Hospital	Mr Jia Wei WOO
W-POS030/TRA	Emergency Management Of Unstable Pelvic Fracture : Place Of External Fixation	Dr Sophie ABRASSART
W-POS031/IMA	Ultrasound Use In Australian Emergency Departments	Dr Guruprasad NAGARAJ
W-POS032/EDU	Curriculum Development For An International Emergency Medicine Rotation	Dr Elizabeth DEVOS
W-POS033/EMS	Epidemiology Of Emergency Medical Services Transports To An Academic Emergency Department In Puerto Rico	Dr Luis M PEREZALONSO
W-POS034/EMS	Gaza Strip Emergency Medical Services Training Program.	Dr José Félix Hoyo JIMÉNEZ

CAR4-4
Atrial Fibrillation In The Emergency Department, From Rate Control To Electrical Cardioversion

DR DARAWSHA AZIZ
Haemek Medical Center, Israel

CAR4-5
Handling Cardiovascular Emergencies In A Malaysian Hospital

DR CHEW KENG SHENG
University Sains Malaysia, Malaysia

Using acute coronary syndrome as a model for discussion, this talk will explore some of the pertinent issues and challenges of managing cardiovascular emergencies within the Malaysian socio-cultural framework. Reflecting from the lens of an emergency physician, the speaker will first paint a panoramic view of the healthcare status in Malaysia as well as the current doctor : population ratio in Malaysia before delving into the main part of the talk. He divides his talk into three domains, namely:

From symptom recognition to activation of the emergency medical services (EMS)

Issues and challenges within this domain:

1. Factors significantly associated with a diagnosis of acute myocardial infarction in a Malaysian population
2. The problem of prank calls: the abuse and misuse of 999 in Malaysia
3. The role of bystander cardiopulmonary resuscitation (CPR)
4. The dire need for more public accessed automated external defibrillators (AED)
5. The willingness of Malaysian public members to perform bystander CPR in the event of cardiac arrest

From activation of the EMS to arrival in emergency department

Issues and challenges within this domain

1. Response time of the EMS: how good are we?
2. The illusion of a "one size fits all" EMS set-up in Malaysia due to its geographical and logistic difficulties

From initial management in emergency department to decision making of a definitive coronary care plan

Issues and challenges within this domain:

1. What's the number? Fibrinolytics versus Percutaneous Coronary Intervention (PCI)
2. Door-to-needle time in a Malaysian population
3. The issue of streptokinase failure

This talk will not delve in details aspects of care conventionally under the jurisdiction of the cardiologists including the technicalities of PCI.

IEM9-6
Mushroom Poisoning

CHEW KENG SHENG
Malaysia

Conventionally, when we think of mushroom poisoning, we often think of Amanita sp. poisoning, where its phallotoxin causes irreversible polymerization of G-actin to F-actin and results in disruption of cell membrane and cell death, particularly in the liver.

In this talk, however, the speaker will share on a real series of five cases of mushroom poisoning that presented with muscarinic manifestations typical of organophosphate poisoning. Using this case series that the speaker has personally managed, he will highlight on the difficulties he faced with the exact species and toxin identification and the importance and usefulness of a syndromic classification of mushroom poisoning first described by Diaz JH. The common symptoms in the case series that the speaker will share are blurred vision, diarrhea, vomiting and abdominal cramp.

IEM9-7
Snake On A Plane: Managing Snake Envenomation Anywhere

DR MOHAMMED ALHELAIL
King Abdulaziz Medical City, Saudi Arabia

IEM9-8
Organophosphorus Poisoning In Rural India – Treatment Still A Challenge

DR DEVENDRA RICHHARIYA
India

EDU1-1
Carpe Diem: How To Identify And Transform The Teaching Moment Into A Golden Opportunity On A Busy ED Shop Floor

DR DARREN KILROY
Senior Lecturer in Emergency Care, Stockport NHS Foundation Trust, UK

The best learning often occurs when you least expect it. Hidden within the layers of planned teaching events and daily service pressures are windows of real educational opportunity not to be missed. In this session, we will explore how best to identify and exploit them. The learning environment in emergency medicine is a complex one which demands imaginative approaches to knowledge and skill acquisition. Reliance upon planned educational events fails to equip emergency clinicians with the necessary 'responsive knowledge' required to function autonomously.

Identification of high value teaching moments relies upon a keen self-awareness of the educational environment of the shop floor. Developing this awareness to an effective level for in-the-moment teaching requires concentrated effort for most people.

This session will outline a simple technique to develop these skills based upon the concept of local noticing. Delegates will be given the opportunity to practise this skill within the session in order to demonstrate how simply it can be applied!

The session will then use examples from the shop floor in order to illustrate how the principles of local noticing translate into an enjoyable and rewarding method for enhancing the teaching and learning environment of routine clinical practice. The principles are equally applicable to all international territories, independent of language and local practice, and hold the key to transformation of teaching moments into those golden opportunities we all strive to find!

Discussion : The e-Learning package, when embraced by the JMS, improved their overall orthopaedic knowledge, radiological assessment of paediatric fractures and management of lower limb fractures in particular. JMS felt their training in paediatric orthopaedics was deficient. Reasons for poor uptake of the e-learning package and gender discrepancies after intervention, point to differences in adult learning that must be further elucidated.

Abstract No: W-POS021/SUS
CODE BLUE – A PROSPECTIVE EVALUATION OF EFFECTIVENESS OF CPR OF INHOSPITAL CARDIAC ARRESTS IN A TERTIARY CARE UNIVERSITY HOSPITAL, S.INDIA

DR SRIHARI CATTAMANCHI[1], DR NISHANTH HIREMATH[1], DR TRICHUR V RAMAKRISHNAN[1], DR SRINIVAS REDDY BANALA[2]
Sri Ramachandra Medical College & research Institute, Chennai, India[1], Star Health Hospital, Hyderabad, India[2]

Introduction :
To determine demographic data and survival for in - hospital cardiac arrests.

To examine effects of age, sex, and initial cardiac rhythm on circadian variability in sudden cardiac death.

Methods : A prospective observational study of adult patients in S.India from January to December 2009. Patients admitted with non-traumatic cause, undergoing cardiac arrest and attempted resuscitation were included in study. Entry criteria, time intervals, nodal events and arrest factors related to resuscitation outcome were recorded. Single target endpoint was neurologically intact survival at hospital discharge.

Results : One hundred ninety patients underwent cardiac resuscitation, with 69 (36.3%) surviving for 1 hour, 25 (5.1%) survived to discharge. The 190 patients had the following data: mean age 63.9 years; male 78.0%; witnessed arrest 25.6%; duty doctor cardiopulmonary resuscitation 32.1%; initial rhythm ventricular fibrillation/ventricular tachycardia 86.9%. Overall, neurologically intact survival was 1.4% (99% confidence interval [CI] 0.8% to 2.4%) Three patients were lost to follow-up. A circadian variation in the occurrence of sudden cardiac death was demonstrated, with a tow occurrence rate between midnight and 6 AM and a 2.4-fold increase between the rate at 6 AM and the rate at noon. The same circadian pattern was noted among both men and women, among both patients aged 18 to 70 and those older than 70 years, and among patients with various initial cardiac arrest rhythms (ventricular tachycardia or fibrillation, asystole, and electromechanical dissociation). However, the outcome of resuscitation in these patients (ie, the rate of successful resuscitation and the rate of survival) did not demonstrate circadian variation.

Discussion : In-hospital sudden cardiac death demonstrated circadian variation, and this variability was observed regardless of the patient's age, sex, or initial cardiac arrest rhythm. The outcome of resuscitation did not show circadian variability. These results suggest a common pathophysiologic mechanism leading to sudden cardiac death.

Abstract No: W-POS022/IMA
THE WHIRLPOOL SIGN IN DIAGNOSING ADULT INTESTINAL VOLVULUS

MR WILLIAM LENGSU CHIN[1], MR PO HSIU WANG[2]
National Taiwan University/Da chien hospital, Taipei/Miaoli, Taiwan[1], National Taiwan University, Tapei, Taiwan[2]

Introduction : The aim of this study is to evaluate the importance of ultrasonographic and computed axial tomographic whirlpool sign for the diagnosis of intestinal volvulus in adult.

Methods : There were thirty-two patients with surgical proven intestinal volvulus and their radiographic and ultrasonographic records were retrospectively reviewed. Eleven of them are female patients and twenty-one of them are male patients, their ages were ranged from fifty-five to eighty-five years old with mean age of sixty-four years old. All of them had been examined by abdominal computed axial tomography and abdominal ultrasonography before their surgery. The McNemar's test was used to detect the difference between ultrasonographic and computed axial tomographic whirlpool sign in the diagnosis of adult intestinal volvulus.

Results : Thirty-two patients underwent surgical intervention were intestinal volvulus. All of them had preoperative whirlpool sign, thirty-one patients with computed axial tomographic whirlpool sign and thirty patients with ultrasonographic whirlpool sign. The importance of ultrasonography in detecting whirlpool sign in adult intestinal volvulus was demonstrated by McNemar test ($p=1$). There was no statistically significant difference between the ultrasonographic and computed axial tomographic whirlpool sign in the diagnosis of adult intestinal volvulus.

Discussion : The ultrasonographic whirlpool sign is as good as computed axial tomographic whirlpool sign in the diagnosis of adult intestinal volvulus. The whirlpool sign is specific in diagnosing intestinal volvulus and mandate prompt surgical consultation once it is detect. Therefore, ultrasonography can be used as a screening or diagnostic tool in the diagnosis of intestinal volvulus in adult patients. For those patients with poor echo window, inconclusive study result or need for further investigation, computed axial tomography could be the choice for further evaluation.

Abstract No: W-POS023/SUS
A MULTI-CENTER STUDY ON THE ATTITUDES OF MALAYSIAN EMERGENCY HEALTHCARE STAFFS TOWARDS ALLOWING FAMILY PRESENCE DURING RESUSCITATION OF ADULT PATIENTS

DR KENG SHENG CHEW[1]
School of Medical Sciences, Universiti Sains Malaysia, , Malaysia[1]

Introduction : The practice of allowing family members to witness on-going active resuscitation has been gaining grounds in many developed countries since it was first introduced in the early 1990s. In many Asian countries, the acceptability of such practice has not been well studied.We conducted a multi-center questionnaire study to find out the attitudes of healthcare professionals in Malaysia towards family presence to witness ongoing medical procedures during resuscitation.

Methods : Using a bilingual questionnaire (in Malay and English language), we asked our respondents regarding their attitudes towards allowing family presence (FP) as well as their actual experience of requests from family to be allowed to witness the resuscitation. Multiple logistic regression was used to analyze the association between the many variables and a positive attitude towards FP.

Results : Generally only 15.8% of our respondents agreed to allow relatives to witness resuscitation although more than twice the number (38.5%) agreed that relatives do have a right to be around during resuscitation. Healthcare providers are significantly more likely to allow FP if the procedures are perceived likely to successful (e.g. intravenous cannulation

and blood taking) as compared to chest tube insertion. Doctors were more than twice as likely than paramedics to agree to FP (p-value = 0.002). This is most probably due to the Malaysian work culture in our healthcare systems where the paramedics will usually adopt a 'follow-the-leader' attitude in their daily practice.

Discussion : The concept of allowing FP is not much accepted among our Malaysian healthcare providers.

Abstract No: W-POS024/IEM

THE CHALLENGES OF TRANSLATING BASIC LIFE SUPPORT KNOWLEDGE TO ATTITUDE WITHIN THE MALAYSIAN SOCIO-CULTURAL CONTEXT

DR KENG SHENG CHEW[1], DR MOHD NOR ABU YAZID[1]
School of Medical Sciences, Universiti Sains Malaysia, , Malaysia[1]

Introduction : The ultimate aim of any BLS training course is not just about equipping participants with the knowledge and skills to perform CPR, but also to cultivate a strong conviction among them so that they are willing to offer swift and timely help should such an actual dire need arises. Unfortunately, there are major barriers to effective BLS within the framework of the socio-cultural context of a multi-ethnic Malaysia.

Review : Besides the problem of improper use of the Malaysian emergency response number, 999 and the problem of a relatively long ambulance response time, another problem which is seldom highlighted is the problem of the unspoken barriers to performing bystander CPR among our Malaysian public. In two recent studies done to look into the attitude of a group of final year medical and dental students as well as a group of school teachers, it was found out that only 16.4% of the teachers surveyed, 45.5% of the dental students and 51.4% of the medical students said that they would perform bystander conventional CPR (which include mouth-to-mouth breathing) under any circumstances. The wilingness of the medical and dental students improved significantly when given the hypothetical scenario that pocket masks are available to them, and scenario of performing Hands-only (or Compression-only) CPR.

Discussion : Many of our public are hesitant to perform mouth-to-mouth breathing on a victim who is a total stranger, especially so on someone of a different gender. Therefore, the scientific statement by the American Heart Association in April 2008 on the alternative technique of Hands-only CPR especially for non-traumatic, sudden onset cardiac arrest in an adult victim, is certainly a welcomed move for our Malaysian public.

Conclusion : Our Malaysian public should be taught that every minute counts in CPR, and there should be no delay in initiation of chest compression particularly when responding to a non-traumatic, sudden onset cardiac arrest in an adult victim.

Abstract No: W-POS025/IEM

A SURVEY ON THE INFLUENCE OF CHINESE CULTURAL HEALTH BELIEFS AMONG MALAYSIAN CHINESE IN A SUBURBAN POPULATION

DR KENG SHENG CHEW[1], MR TAI WEI TAN[1], MS YEW TIE OOI[1]
School of Medical Sciences, Universiti Sains Malaysia, , Malaysia[1]

Introduction : Being a multi-ethnic nation, it is not uncommon for encounters between doctors and patients of different cultural backgrounds be it in emergency department or in the outpatient clinics.Often, these cultural beliefs influence a patient's perception on health and illnesses, as well as his or her treatment option. Many of the Chinese cultural beliefs are influenced by the Taoistic concept of Yin-Yang balance.

Methods : We interviewed 50 Malaysian Chinese from the general public of a suburban population to unravel the impact of some of the Chinese cultural health beliefs on their decision-making and this is matched with the opinions of 50 Chinese medical students from year two to final year. Convenience sampling applied.

Results : From our survey, 78% of the general public members believed that "too much heat" or "too much coldness" in the body could cause diseases. Compared to the medical students, there is a significantly higher number of general public members who uphold many other beliefs and this include the belief that abdominal colic is due to excessive "wind" in the abdomen, consuming certain food can dispel wind from the body and the importance of observing taboos during the confinement period post-delivery. Majority of both groups also believed that it is acceptable to combine both traditional Chinese medicine and modern medicine together for consumption.

Discussion : There is discrepancy in the extent these beliefs influence the perception of health and illnesses among the general public and medical students. Healthcare providers need to be aware of such beliefs and practices of traditional Chinese medicine among their patients.

Abstract No: W-POS026/IEM

FACTORS THAT INFLUENCE THE RELIABILITY OF DIAGNOSES IN EMERGENCY MEDICINE

DR MUHAMMAD SHAHID[1], DR KAMRAN HAMEED[1], DR JUNAID RAZZAK[1], DR OSAMA AFZAL[2]
Aga Khan University, Karachi, Pakistan[1], Aga Khan University, Karachi, Pakistan[2]

Introduction : Emergency Medicine is a specialty which is gaining recognition as a separate specialty only over the recent past. Many of the developing countries have yet to establish the specialty in their countries. There is also a background concern that introduction of trainees in such high stake areas may compromise patient care.

Methods : One of the indicators for Emergency Room performance is the ability to establish the correct diagnoses within the Emergency Room. The authors chose to examine the non congruence of Emergency Room diagnoses to that established after hospital stay for three selected years including one before the introduction of training program in Emergency Medicine and one seven years down the line at Aga Khan University Hospital Pakistan. A total of 8488 records were reviewed and all disparate diagnoses were recorded and categorized.

Results : A significant reduction in the percentage of disparate diagnoses was seen over the years from 41% in the initial year to 14% in the last year evaluated. The authors examined the change and the areas of major differences. It also discussed the possible factors that might have influenced the change to be taken to ensure delivery of quality care to Emergency Room patients.

Discussion : Over the years there has been a significant improvement in the reliability of Emergency Room diagnoses in our hospital. The reasons for these are development of services, educational component (core curriculum), recruitment of faculty, introduction of monitoring mechanisms and rotations of Residents in different disciplines.

Handling Cardiovascular Emergencies In A Malaysian Hospital

(A Personal Reflection on Issues and Challenges Ahead)

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Emergency Medicine Department
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan, Malaysia

MALAYSIA HEALTH FACTS	2006	2007	2008
Life Expectancy: Male	71.8 years	71.7 years	71.7 years
Life Expectancy: Female	76.3 years	76.5 years	76.5 years
No of MOH Hospitals (no of beds)	128 (30,969)	130 (32,149)	130 (33,004)
No of Private Hospitals (no of beds)	NA	195 (11,291)	209 (11,689)
No of MOH Clinics	807	806	802
No of MOH Community Clinics	1,919	1,927	1,927
Total no of Public Doctors	13,335	14,298	15,096
Total no of Private Doctors	8,602	9,440	10,006
Doctor : Population Ratio	1:1,214	1 : 1,145	1 : 1,105

Reference: Health Facts 2006, 2007 and 2008. Ministry of Health, Malaysia Official Website. URL: www.moh.gov.my

Disclaimer:

The views presented here are of my own personal reflection and is not representing any official statement/opinion from the Ministry of Heath Malaysia

Top Ten Causes of Hospitalization in Malaysian Ministry of Health Hospitals 2008

1	Normal Deliveries	13.99%
2	Complications of Pregnancy, Childbirth and the Puerperium	12.77%
3	Accidents	8.40%
4	Diseases of the Respiratory System	8.05%
5	Diseases of the Circulatory System	6.99%
6	Conditions Originating in the Perinatal Period	6.78%
7	Diseases of the Digestive System	5.37%
8	Ill-defined Conditions	3.63%
9	Diseases of the Urinary System	3.49%
10	Malignant Neoplasms	3.16%

Reference: Health Facts 2008. Ministry of Health, Malaysia Official Website. URL: www.moh.gov.my

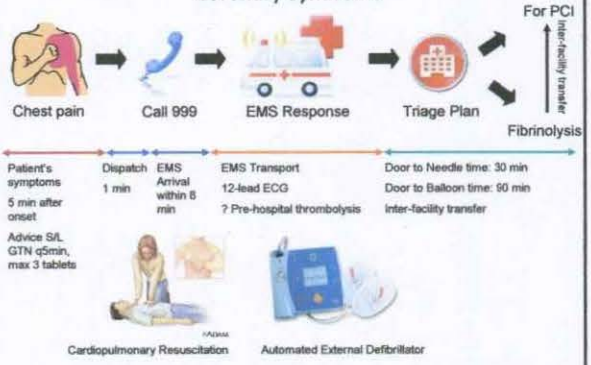
Malaysia
multi-ethnic, multi-religion country consisting of 13 states and three federal territories. Majority of the Malaysian population of about 27 million people consists of the Malays (50.4%), Chinese (23.7%), the indigenous groups (11%) and the Indians (7.1%)

Top Ten Causes of Deaths in Malaysian Ministry of Health Hospitals 2008

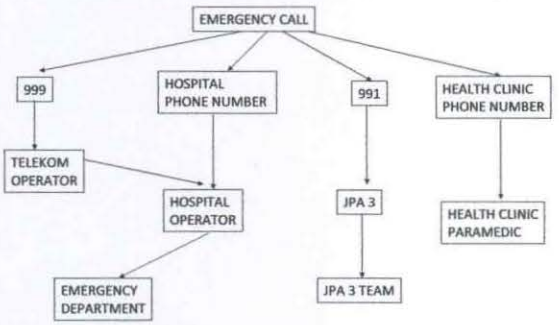
1	Heart and Pulmonary Circulation Diseases	16.54%
2	Septicaemia	13.18%
3	Malignant Neoplasms	11.21%
4	Pneumonia	9.28%
5	Cerebrovascular Diseases	8.65%
6	Diseases of the Digestive System	5.18%
7	Accidents	5.00%
8	Conditions Originating in the Perinatal Period	3.97%
9	Nephritis, Nephrotic Syndrome and Nephrosis	3.76%
10	Ill- defined Conditions	2.63%

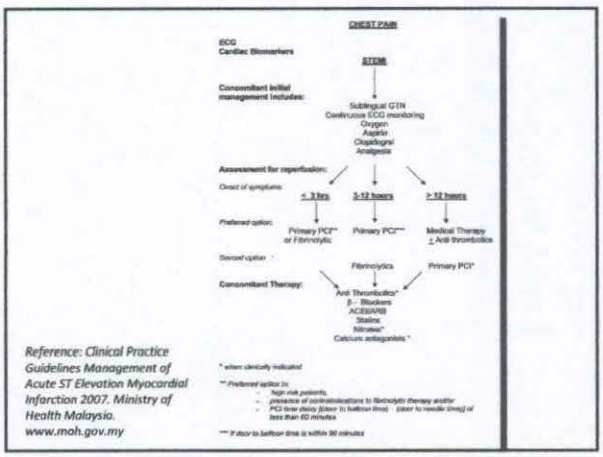
Reference: Health Facts 2008. Ministry of Health, Malaysia Official Website. URL: www.moh.gov.my

Flow Chart of The Emergency Management of Acute Coronary Syndrome

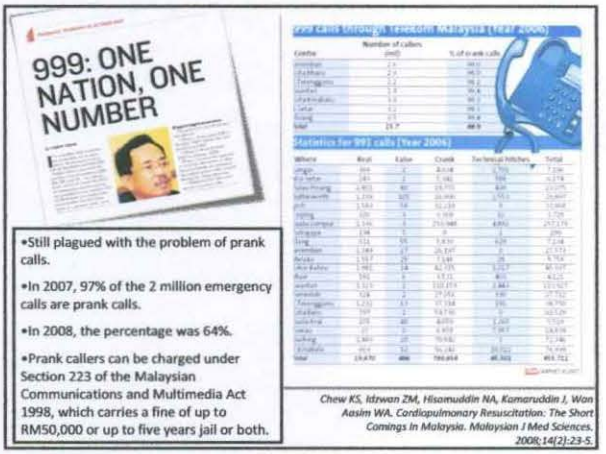


PREVIOUS EMERGENCY AMBULANCE CALL SYSTEM PRIOR TO 2007 (LACK OF AN INTEGRATED RESPONSE SYSTEM)





Reference: Clinical Practice Guidelines Management of Acute ST Elevation Myocardial Infarction 2007. Ministry of Health Malaysia. www.moh.gov.my



- Still plagued with the problem of prank calls.
- In 2007, 97% of the 2 million emergency calls are prank calls.
- In 2008, the percentage was 64%.
- Prank callers can be charged under Section 223 of the Malaysian Communications and Multimedia Act 1998, which carries a fine of up to RM50,000 or up to five years jail or both.

Chew KS, Idzwan ZM, Hisamuddin NA, Kamaruddin J, Wan Aasim WA. Cardiopulmonary Resuscitation: The Short Comings In Malaysia. Malaysian J Med Sciences. 2008;14(2):23-5.

Issues Related To EMS Activation

Issues Related To EMS Response

Ambulance Response Time

Cities	Mean Ambulance Response Time (min)
Kota Bharu	15.2
Kuala Lumpur	21.1
United Kingdom	7.0 – 14.0
Australia	7.0 – 11.0
Singapore	± 15.0
Ankara (Turkey)	± 9
New York	± 11.4
Chicago	± 11.3

Shah CH, Ismail IM, Mohsin SS. Ambulance response time and emergency medical dispatcher program: a study in Kelantan, Malaysia. Southeast Asian J Trop Med Public Health 2008; 39 (6):1150-4.

Chew KS, Idzwan ZM, Hisamuddin NA, Kamaruddin J, Wan Aasim WA. Cardiopulmonary Resuscitation: The Short Comings in Malaysia. Malaysian J Med Sciences. 2008;14(2):23-5.

Motorcycle Squad

- Area covers 100 –150 km sq
- 'Response Time' less than 15 min
- Distance less than 10km or travel time less 15 min
- The Advanced Life Support Unit type complete equipments including: AED, Airway Management Set, Medications, Oxygen Tank, Communication Set

Klinik Desa Bario - Sarawak

"One Size Fit All" in Formulating An Emergency Medical Service System In Malaysia???

KK Pa Dalih – Up To Ten Hours' Journey On Foot

Willingness of Final Year Medical and Dental Students To Perform Bystander CPR

If the victim is	CC + MMV	CC + PMV	*P* value
A family member	201 (99.0%)	202 (99.5%)	1.0
A close friend	186 (91.6%)	202 (99.5%)	<0.001
A stranger of different gender	91 (44.8%)	189 (93.1%)	<0.001
A stranger of different race	104 (51.2%)	187 (92.1%)	<0.001
A stranger of different gender and race	76 (37.4%)	177 (87.2%)	<0.001
A stranger sustaining facial trauma	34 (16.7%)	141 (69.5%)	<0.001
A stranger who is a child	149 (73.4%)	195 (98.1%)	<0.001
A stranger who is elderly	108 (53.2%)	183 (90.1%)	<0.001
An unkempt stranger	13 (6.4%)	103 (50.7%)	<0.001
A person with whom you have a personal dispute	108 (53.2%)	167 (82.3%)	<0.001

[a]Positive responses are recoded from the variables "definitely yes" and "probably yes"
[b]The McNemar test was used for the analysis of these two dependent categorical variables
CC + MMV chest compressions and mouth-to-mouth ventilation, *CC + PMV* chest compressions and mask-to-mouth ventilation

Chew KS, Yazid MNA. The willingness of final year medical and dental students to perform bystander cardiopulmonary resuscitation in an Asian community Int J Emerg Med. 2008;1(4):301-09.

Issues Related To Resuscitation

Willingness of Final Year Medical and Dental Students To Perform Bystander CPR

If the victim is	CC + MMV	CC	*P* value
A family member	201 (99.0%)	202 (99.5%)	1.0
A close friend	186 (91.6%)	201 (99.0%)	<0.001
A stranger of different gender	91 (44.8%)	193 (95.1%)	<0.001
A stranger of different race	104 (51.2%)	192 (94.6%)	<0.001
A stranger of different gender and race	76 (37.4%)	192 (94.6%)	<0.001
A stranger sustaining facial trauma	34 (16.7%)	181 (89.2%)	<0.001
A stranger who is a child	149 (73.4%)	196 (96.6%)	<0.001
A stranger who is elderly	108 (53.2%)	190 (93.6%)	<0.001
An unkempt stranger	13 (6.4%)	162 (79.8%)	<0.001
A person with whom you have a personal dispute	108 (53.2%)	187 (92.1%)	<0.001

[a]Positive responses are recoded from the variables "definitely yes" and "probably yes"
[b]The McNemar test was used for the analysis of these two dependent categorical variables
CC + MMV chest compressions and mouth-to-mouth ventilation, *CC* chest compressions only

Chew KS, Yazid MNA. The willingness of final year medical and dental students to perform bystander cardiopulmonary resuscitation in an Asian community Int J Emerg Med. 2008;1(4):301-09.

Cardiopulmonary Resuscitation

- Bystander CPR is performed in 9% of out of hospital cardiac arrest in a local study in 2006.

  - *Chew KS, Mohd Idzwan Z, Nik Hishamudin NA, Wan Aasim WA, Kamaruddin J. How frequent is bystander cardiopulmonary resuscitation performed in the community of Kota Bharu, Malaysia? Singapore Med J. 2008 Aug;49(8):636-9.*

Unspoken socio-cultural barriers to perform bystander CPR with mouth-to-mouth ventilation among our multi-ethnic, multi-religious community

Gender difference is probably one of these, especially among the female respondents (performing bystander CPR on a male victim)

Chew KS, Yazid MNA. The willingness of final year medical and dental students to perform bystander cardiopulmonary resuscitation in an Asian community Int J Emerg Med. 2008;1(4):301-09.

Issues Related To Automated External Defibrillator in Malaysia

Issues Related To Definitive Coronary Care Plan

Malaysian National Cardiovascular Disease (NCVD) Database

- In 2006, there are 73 coronary care units (CCU) in Malaysia
- The incidence of ACS admission was therefore 47.1 per 100,000 population in 2006
- The estimate of the incidence of coronary heart disease (CHD) in Malaysia is 141 per 100,000 population
- Over 4000 ACS being denied admission into its CCU in 2006. It has 30% shortfall in CCU beds

Chin SP, Jeyaindran S, Azhari R, Wan Azman WA, Omar I, Robaayah Z, Sim KH. Acute coronary syndrome (ACS) registry--leading the charge for National Cardiovascular Disease (NCVD) Database. Med J Malaysia. 2006 Sep;63 Suppl C:29-36.

EXTRA SLIDES

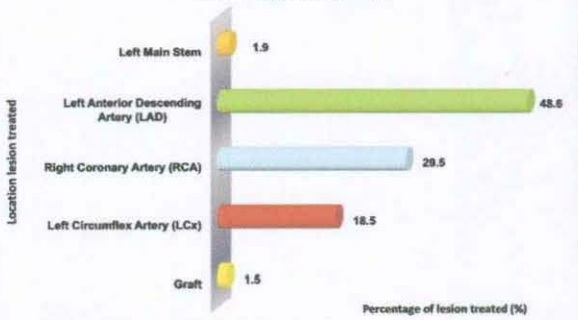
Acute Coronary/ Cardiac Care Services and Admissions in Malaysia 2006

	CCU	Cardiologist	CCU nurses	Cath. Lab	Cardiac surgical service	ACS admission
	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
Malaysia	73(100)	163(100)	559(100)	36(100)	27(100)	12,534 (100)
By Sector						
Private	32(44)	81(50)	176(31)	28(78)	20(74)	3,398(27)
MOH	37(51)	37(23)	305(55)	4(11)	4(15)	7,580(60)
IJN	1(1)	27(17)	13(2)	1(3)	1(4)	335(3)
University	3(4)	17(10)	65(12)	3(8)	2(7)	1,221(10)

MOH Hospitals received 60% of ACS while Private Hospitals account for 27% of ACS patients.

Annual Report of the Acute Coronary Syndrome (ACS) Registry, Malaysia 2006

Summary Of Location Lesion Treated, NCVD-PCI Registry As Of 9th April 2009 (N=11,168)



**There is missing information for 340 lesions treated*
*** Based on real-time data in NCVD-PCI Registry*

Streptokinase Failure

- Streptokinase works by binding with plasminogen. Eventually it causes plasminogen depletion (plasminogen steal)
- Streptokinase may also cause thrombolytic paradox due to the plasmin-mediated activation of coagulation pathway through Factor VII
- GUSTO-I : Streptokinase has 54% patency rate after 90 min
  - *Lee YY, Tee MH, Zurkurnai Y et al. Thrombolytic failure with streptokinase in acute myocardial infarction using electrocardiogram criteria. Singapore Med J 2008; 49 (4):304-10*
  - *Hoffmeister HM, Szabo S, Helber U, Seipel L. The thrombolytic paradox. Thromb Res. 2001 Sep 30;103 Suppl 1:S51-5.*

Note: Streptokinase failure in this study is based solely on ECG criteria of failure of STE of ≥ 50% and not on angiographic confirmation

Willingness of Final Year Medical and Dental Students To Perform Bystander CPR

If the victim is	CC + PMV	CC	*P* value
A family member	202 (99.5%)	202 (99.5%)	1.0
A close friend	202 (99.5%)	203 (99.0%)	>0.95
A stranger of different gender	189 (93.1%)	193 (95.1%)	0.424
A stranger of different race	187 (92.1%)	192 (94.6%)	0.359
A stranger of different gender and race	177 (87.2%)	192 (94.6%)	0.004
A stranger sustaining facial trauma	141 (69.5%)	181 (89.2%)	<0.001
A stranger who is a child	195 (96.1%)	196 (96.6%)	>0.95
A stranger who is elderly	183 (90.1%)	190 (93.6%)	0.143
An unkempt stranger	103 (50.7%)	162 (79.8%)	<0.001
A person with whom you have a personal dispute	167 (82.3%)	187 (92.1%)	<0.001

**Positive responses are recoded from the variables "definitely yes" and "probably yes"*
**The McNemar test was used for the analysis of these two dependent categorical variables*
CC + PMV chest compressions and mouth-to-mouth ventilation, *CC* chest compressions only

Chew KS, Yazid MNA. The willingness of final year medical and dental students to perform bystander cardiopulmonary resuscitation in an Asian community Int J Emerg Med. 2008;1(4):301-09.

NCVD-PCI Registry Results

As of **9th April 2009:**

Total PCI Procedures done	8,236
Total Lesions treated	11,508
Total Stents Used for procedures	13,150
Follow Up	
Total **30 Days** Follow Up done	3,470
Total **6 Months** Follow Up done	1,700

Malaysian National Cardiovascular Disease Database (NCVD)

Overall Outcomes For Patients With STEMI By Fibrinolytic Therapy, Malaysia 2006

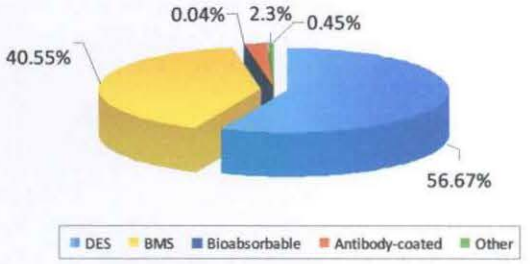
Outcome	In-hospital				30-day*			
	Fibrinolytic therapy				Fibrinolytic therapy			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
Discharged / Alive	940	92	372	87	686	67	253	59
Died	74	7	55	13	90	9	68	16
Lost to follow-up	NA	NA	NA	NA	242	24	106	25
Missing	4	0	0	0	0	0	0	0

**Including patients who died in-hospital.*

Note: Percentage is to the nearest decimal point.

Annual Report of the Acute Coronary Syndrome (ACS) Registry, Malaysia 2006

Percentage Of Stent Type By Total Number Of Stents Used (N=13,150)



*'Other' refers to stent other than listed in the *Reference Stent List*

National Cardiovascular Disease Database (NCVD)

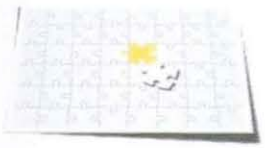
Streptokinase Failure

- In a local study in 2008, streptokinase failure rate is 56.8%
- Mean door-to-needle time is 104.9 min
- Other factors shown to significantly associated with streptokinase failure include
  - Anterior location infarction
  - History of Diabetes
  - Hypertension
  - High total white cell counts

– *Lee YY, Tee MH, Zurkurnai Y et al. Thrombolytic failure with streptokinase in acute myocardial infarction using electrocardiogram criteria. Singapore Med J 2008; 49 (4):304-10.*

Note: Streptokinase failure in this study is based solely on ECG criteria of failure of STE of ≥ 50% and not on angiographic confirmation

Conclusion



NCVD-PCI Registry Results

PCI Status Baseline (n=8,236)

Elective (n=7,439)	90.32 %
Staged PCI	*22.06 %*
Urgent (NSTEMI/UA)	4.66 %
Rescue	2.09 %
Primary	2.48 %
Missing	0.45 %
Cath/ PCI in same setting (ad hoc)	84.12 %

National Cardiovascular Disease Database (NCVD)

Thank You

Mushroom Poisoning

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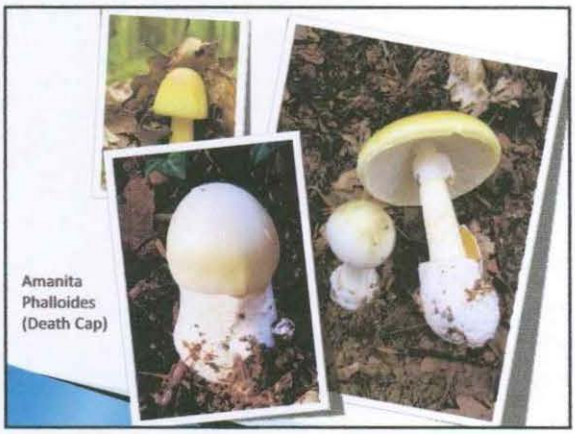
Department of Emergency Medicine
School of Medical Sciences
Universiti Sains Malaysia

Chew KS, Mohidin MA, Ahmad MZ, Tuan Kamaruzaman THN, Mohamad N. Early onset muscarinic manifestations after wild mushroom ingestion. Int J Emerg Med. 2008;1(3):205-08.



Amanita Phalloides (Death Cap)

Amanita species Poisoning

- Amanita species contain the highly toxic amatoxins that inhibits RNA polymerase B activity, interrupting protein synthesis and resulting in subsequent cytolysis of hepatocytes.

Case Discussion

Patient A

- A 24-year-old farmer, found some wild mushroom growing in his orchard
- Plucked for consumption, thinking that they appeared similar to some he had eaten before
- Two hours later, he developed
  - blurred vision
  - giddiness
  - vomited twice
- Came to the Emergency Medicine Department, Hospital Universiti Sains Malaysia.

On arrival

- When he arrived, he was
  - Drenching sweats
  - Copious salivation and lacrimation
  - Crampy abdominal pain
- Vomited twice in the emergency department and had one episode of loose stools

Physical Examination

Otherwise

- vital signs - stable
- Pupils 3 mm bilaterally, reactive
- Lungs: Coarse crackles up to the mid lung bilaterally
- With his muscarinic syndromic presentation, iv atropine infusion (0.02 - 0.08mg/kg/hour) and activated charcoal started.

In ward

- Admitted to the general medical ward.
- Few hours later, his secretions and his general condition improved.
- His liver transaminases tests were within normal range [AST 31 U/l, ALT 15 U/l, and ALP 36 U/l]
- He was discharged after 2 days in the wards.

Patient B

- A 32-year-old Malay female, was the spouse of Patient A.
- Like her husband, she also had
  - Profuse sweating
  - Lacrimation
  - Episodes of crampy abdominal pain with loose stools
  - Vomiting
  - Blurred vision 2 h after consumption
  - Lung crepitus on examination

Patient B

- Like her husband, she was also given intravenous atropine infusion besides activated charcoal.
- She was admitted to the general medical ward and discharged at about the same time with her husband. Her liver function tests remained normal.

Patient C

- A 32-year old Malay female, the elder sister of Patient A.
- She cooked the sliced mushrooms plucked by her brother by sautéing them.
- She developed
  - blurring of vision
  - three episodes of diarrhea
  - vomiting
  - mild sweating but no lacrimation
  - lungs were clear on auscultation

Patient C

- She was given activated charcoal but not intravenous atropine.
- She was monitored in the observation ward in ED and was discharged after six hours of observation.

Patient D

- Patient D is the younger sister of Patient C.
- Like her elder sister, this 13-year old Malay female also presented with two episodes of vomiting and diarrhea as well as mild sweating.
- She was given activated charcoal, but not iv atropine

Patient E

- Patient E is the father of Patient A, C and D. He had blurring vision.
- Other than that, he had no other symptom.
- He was monitored in observation ward in emergency department; following which, he was discharged home well.

Symptoms Presentation

	Patient A	Patient B	Patient C	Patient D	Patient E
Blurred vision	x	x	x	x	x
Diarrhea	x	x	X	X	-
Vomiting	x	x	x	x	-
Abdominal Cramp	x	x	x	x	-
Lacrimation	x	x	-	-	-
Salivation	x	-	-	-	-

Sample Identification

- One of the family members brought some left-over sliced raw mushroom pieces to us
- We sent them for identification in the National Poison Centre in Penang, Malaysia.
- Unfortunately, the National Poison Centre can only test for a limited numbers of toxin assay using gas chromatography with mass spectrometry.

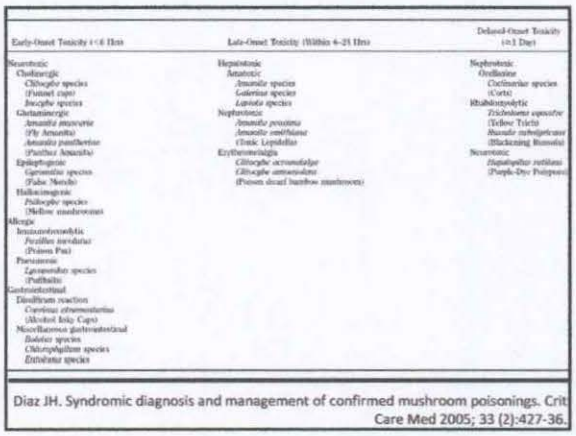
Mushroom Poisoning Classification

- Because of these factors, a recent classification of mushroom poisoning based on syndrome recognition rather than exact species recognition has been developed to facilitate direct, earlier diagnosis and to permit prompt interventions with specific therapies.

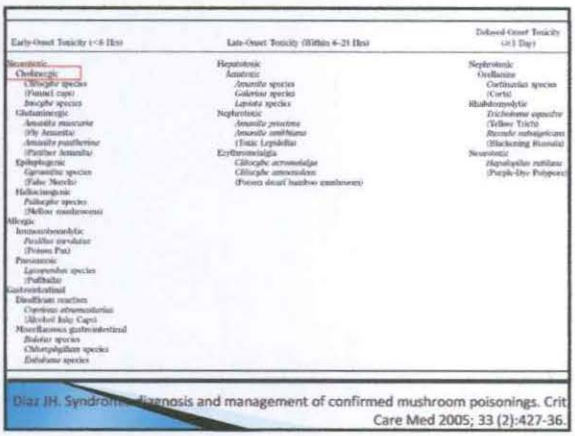
Diaz JH. Syndromic diagnosis and management of confirmed mushroom poisonings. Crit Care Med 2005; 33 (2):427-36.

Syndromic Classification

- Divided into 3 categories
- Early Onset (<6 hours)
  - 8 syndromes
- Late Onset (6 – 24 hours)
  - 3 syndromes
- Delayed Onset (more than 1 day)
  - 3 syndromes



Diaz JH. Syndromic diagnosis and management of confirmed mushroom poisonings. Crit Care Med 2005; 33 (2):427-36.



Diaz JH. Syndromic diagnosis and management of confirmed mushroom poisonings. Crit Care Med 2005; 33 (2):427-36.

Muscarinic Manifestations

- Muscarinic manifestations are usually due to mushroom ingestions of the Inocybe or Clitocybe species group.
- Common muscarinic manifestations are diaphoresis, salivation, bladder cramping, diarrhea, and difficulty with visual accommodation

Symptoms Presentation

	Patient A	Patient B	Patient C	Patient D	Patient E
Blurred vision	x	x	x	x	x
Diarrhea	x	x	X	X	–
Vomiting	x	x	x	x	–
Abdominal Cramp	x	x	x	x	–
Lacrimation	x	x	–	–	–
Salivation	x	–	–	–	–

Sample Identification and Follow-up

- The toxins tested were muscimol, bufotenine, psilocybin and gyromitrin - all of which were tested negative in the sample provided to us.
- We attempted to take a second sample from the family's house; however, no more similar mushrooms grew in the vicinity.
- A week after patients A and B discharged, we conducted a follow-up telephone interview to check their general conditions. All were well without any residual symptoms.

USM

Discussion

Objectives of Discussion

- Mushroom Poisoning present with a myriad of toxidromes due to the diverse species varieties
- These cases illustrate the difficulties of
  - exact species and toxin identification and
  - the importance of the recent introduction of syndromic classification for mushroom poisoning.

Mushroom Poisoning Classification

Blackman in 1994 recommended a cut-off point of 6 h after ingestion to classify the severity of illness

	Symptom Onset Within SIX Hours Post Ingestion	Symptom Onset More Than SIX Hours Post Ingestion
Severity of Poisoning	A less serious poisoning	A more serious poisoning
Fatality	Rare	Common
Examples	Clitocybe species, Psilocybe species, etc	Gyromitrin and Amanitin containing species; e.g. Amanita Phalloides

Blackman JR. Clinical approach to toxic mushroom ingestion. J Am Board Fam Pract 1994; 7 (1):31-7.

Mushroom Poisoning Classification

- One of the main problems in mushroom poisoning is species and toxin identification.
- As shown by the American Association of Poison Control Center's (AAPCC) data, problems remain because the exact species and toxins go unidentified in more than 95% and 90% of the cases, respectively.

Diaz JH. Evolving global epidemiology, syndromic classification, general management, and prevention of unknown mushroom poisonings. Crit Care Med 2005; 33 (2):419-26.

Another Problem

- The 6-hr classification scheme did not emphasize that some poisoning onsets could be delayed by days rather than hours, such as delayed acute renal failure following ingestion of orellanine-containing Cortinarius (Corts) mushrooms or delayed central nervous system failure following ingestion of the polyporic acidcontaining Hapalopilus rutilans (Purple-Dye Polypore)

Clitocybe species

Conclusion

- In conclusion, we believe one should not be too pre-occupied with the exact species and toxins identification before initiating treatment for mushroom poisoning, which would only lead to a delay in treatment.
- The number of species and toxins are too numerous; and in many countries, the number of species and toxins that can be identified are limited.

Chew KS, Mohidin MA, Ahmad MZ, Tuan Kamauzaman THN, Mohamad N. Early onset muscarinic manifestations after wild mushroom ingestion. Int J Emerg Med. 2008;1(3):205-08.

Int J Emerg Med (2008) 1:205–208
DOI 10.1007/s12245-008-0054-y

BRIEF RESEARCH REPORT

Early onset muscarinic manifestations after wild mushroom ingestion

Keng Sheng Chew · Mohd Amin Mohidin · Mohd Zikri Ahmad · Tuan Hairul Nizam Tuan Kamauzaman · Nasir Mohamad

Received: 18 April 2008 / Accepted: 21 July 2008 / Published online: 4 September 2008

Abstract Despite being a favorite delicacy, only 200–300 of the 5,000 known mushroom species have been clearly established to be safe for consumption. Cases of mushroom poisoning have been reported with diverse clinical syndromes. A syndromic classification of mushroom poisoning has recently been developed to facilitate early interventions. We present a series of five cases of mushroom poisoning with muscarinic manifestations to highlight the difficulties

foraged varieties for their psychedelic effects [1]. Although there are as many as 5,000 mushroom species, only 200–300 varieties have clearly been established to be safe for consumption, whereas approximately 50–100 types are known to be poisonous [2]. For the majority of the other mushroom species, whether they are edible or poisonous has not been established [2]. In this article, we report a series of five cases of mushroom poisoning that occurred in

References

- Berger KJ, Guss DA. Mycotoxins revisited: Part I. J Emerg Med 2005; 28 (1):53-62.
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Brief Report On
Lessons Learned From Selected Talks In International Conference on Emergency Medicine 2010 in Suntec Convention Centre, Singapore

By

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Emergency Physician/Senior Lecturer DU52
School of Medical Sciences
Universiti Sains Malaysia

Chapter One
Lessons learned from:
World Economic Recession: Impact On Emergency Care by Prof Arthur Kellermann

Professor Arthur Kellermann started off his plenary talk by alluding to the fact that although the world economic recession affects many countries, disparity exists in the way this recession affects the high-income countries as compared to middle and low-income countries.

For high-income countries, the mortality rate (particularly for traumatic deaths) in emergency departments (ED) may paradoxically decrease due to the fact that fewer people will have the luxury for over-indulgence. This leads to a slower pace and a more prudent way of life, a more prudent way of driving to save fuel, etc. On the other hand, morbidity may increase as more people will have less income to spend on medications, especially for chronic illnesses requiring long-term medications. As a result, many patients may default treatment. Therefore, we may see a resurgence of acute decompensation of chronic illnesses presenting to the EDs.

Conversely, for many low-income countries, where up to 60% of the people's income may actually be spent on basic needs such as food, mortality rate may increase due to malnutrition, starvation, infective diseases, etc. In fact, for some of these countries, the healthcare system is heavily depended on external aid and sponsor, and therefore, the current crisis may result in a significantly reduced budget when people have less to donate. Child mortality, logically, would be increased as well. The number of motor vehicle crash cases would also be increased, and this increase usually involves pedestrians and bicycle riders.

During the audience feedback session, Assoc Prof Goh Siang Hiong's sharing of continuing IV antibiotics in patient's home is certainly a very creative and interesting idea of shifting the trend from a paternalistic healthcare model to a shared care model, where the community is empowered to a form of partnership in healthcare delivery system.

It would be interesting to see how this current economic recession actually impacts or changes the health seeking behavior of our Malaysian patients. The Malaysian government heavily subsidizes the public healthcare system. But one of the major problems of public healthcare system is the long queuing time. Many patients who can afford it will therefore go to a private healthcare center. As such the economic recession may actually cause a significant increase in patient load to the public healthcare centers, including EDs of public hospitals. Many patients who previously had the luxury to seek private medical treatment, may in this current economic crisis, "migrate" to the public healthcare centers, choosing to wait and pay RM 1 – RM 5 for treatment rather than paying an exorbitant fee in the private sector for the same types of medications. Hence, we may actually expect to see an increase in terms of the number of green zone cases presenting to our EDs. Unfortunately, while this economic recession results in an increase of patient load, it disproportionately results in shrinkage in terms of budgets and allocations, as experienced in many public hospitals in this year. Such studies can be carried out in collaboration with researchers in the field of business and economics. Certainly a research in this area is worth doing.

Chapter Two
Lessons learned from:
International Emergency Medicine Curriculum by Dr. Mike Clancy

In this session, the speaker shared on the current curriculum development for emergency medicine, specifically from the UK College of Emergency Medicine curriculum development. One of the things he mentioned that interest me is this: the development of the non-technical skills. According to the speaker, more and more colleges and academic organizations are recognizing the importance of non-technical skills. Non-technical skills (also better known as "soft skills" in the Malaysian context) include:

- Team working
- Communication
- Time management
- Management of patients' flow
- Leadership skills, both within and outside, of emergency medicine

I feel that these non-technical skills are not tested enough in our local postgraduate emergency medicine training system. Our challenge is: how we can incorporate the teaching and the testing of these skills in emergency medicine curriculum development?

Another keyword that the speaker mentioned caught my attention: sustainability. The speaker said that in the process of curriculum development for emergency medicine, one should ensure sustainability, and not to be burnt out immediately after starting the program. The question that comes to my mind is: how? How can we ensure sustainability of our emergency medicine curriculum development? Or rather, putting it in another more challenging way: what are the factors that hinder sustainability of our program?

Chapter Three
Lessons learned from:
The George Podgorny Lecture - Healthcare Reform, Professionalism and Emergency Medicine by Prof V. Anantharaman

Using the metaphor of a "safety net" to describe the current status of the many emergency departments around the globe, Prof Anantharaman addressed the limitations and ills of such system pattern. In his own words, he said that although we often regard ED as the safety net, but the question is: "Who are we a safety net to?"

He then posed the many challenges and the increasing burdens an ED has to bear in becoming a safety net. This includes the role of being a hospital gate keeper in ensuring and improving patients' flow. He gave the impression that due to an increasingly heavier load an ED has to bear, up to a point, the safety net will give way and begin to break. An ED cannot afford to be a community safety net forever, often treating the patients at the terminal end of their diseases progression.

So, what are the solutions proposed in the way forward?

1. Emergency physicians should adopt a new paradigm shift. We should truncate disease progression and sequelae through early care and interventions. Primary prevention and health education should become increasingly more important in emergency medicine. This indeed is one area of healthcare reforms that an emergency physician can participate in - becoming a leader in primary care and preventive medicine. Emergency care should start at the patient's site, or as what Prof Anantharaman called it, the community-based emergency care. The question is, will we be seeing a merging of primary health care and emergency medicine as one form of hybridization of the new emergency medicine? I personally would not brush aside such possibility.

2. Know your community. Closely related to the above first point, is the great need to know our communities. Many researchers have undertaken the challenge to look into pertinent issues such as bystander CPR in their communities. But Prof Anantharaman posed another related challenge - i.e., how many of us know the bystander first aid performed by our communities before bringing the patients to the EDs? We should also get to know our patient's perspective and expectation on our emergency medical services. Why do they come? What do they expect?

Prof Anantharaman also touched on the issue of professionalism in emergency medicine, re-iterating a well-known dictum in emergency medicine: "an emergency doctor is first and foremost a patient's advocate". Do we place our patients' interest above all else?

He also debunked the myth that developing a good emergency care must grow in tandem with having more and more sophisticated hi-tech equipments. This is an echo of what Prof Kellermann said in his talk that technology is not necessary the answer for healthcare reform during an economic recession.

My research ideas drawn from this talk: This lecture is loaded with lots of research suggestions. For one, we can begin to look at the rate of bystander first aid. We can narrow down into specific first aid intervention that can make a difference between life and death - for example, first aid measures to stop a bleeding wound. Out of the many cases of bleeding wound cases that arrive in the EDs, how many have received first aid measure of proper direct compression and elevation prior to arrival? How effective is

this measured applied? Has the bleeding stopped prior to arrival? There are also many health education and preventive medicine that we can embark on in collaboration with our colleagues from primary care medicine and public health medicine.

Chapter Four
Lessons learned from:
The Most Successful Public Access Defibrillation Program in Japan by Prof Tetsuya Sakamoto

I must say that I am personally very impressed with this Public Access Defibrillation program in Japan. They are placing AED in many public areas such as halls, museums, schools, offices, railroads, shopping centers, nursing homes, hotels, etc. AEDs are placed next to vending machines, with 1.38 AED per every 1000 population in Japan.

The speaker specifically discussed on the article recently published in New England Journal of Medicine, *viz.*,

> *Kitamura T et al. Nationwide public-access defibrillation in Japan. N Engl J Med 2010 Mar 18; 362:994.*

From that article, I learned that a total of 25% of public-access AEDs in Japan are located in schools, 19% in medical or nursing facilities, 16% in workplaces, 4% in sports facilities, 3% in cultural facilities, and 3% in public transportation facilities.

It is extrapolated that if the number of public-access AEDs increased from 1 per square kilometer (i.e., a unit placed every 1000 linear meters) to more than 4 per square kilometer (i.e., a unit placed every 500 linear meters), the rate of survival with minimal neurologic impairment in the area could increase about four times.

This Japanese study supports the recommendation that public-access AEDs be made available within a 1.0-minute to 1.5-minute brisk walk from any public place.

It would mark a significant milestone of emergency medicine achievement if we could one day successfully implement a nationwide public access defibrillator program in Malaysia. For this to be successful, it would require a strong political will, a major commitment and undying passion among the major stakeholders in emergency medical services in Malaysia to improve the quality of resuscitation medicine in Malaysia. Another major obstacle to overcome is the mentality of our Malaysian public. Unscrupulous public member in Malaysia is notorious for vandalizing and stealing public properties for their own gains.

Chapter Five
Lessons learned from:
Resuscitation in Asia by Prof Hwang-Sung Oh

This talk is relevant to those working within the Asian setting, and it is certainly a wake-up call to me that there is much to be done to improve the outcome of resuscitation, particularly for out-of-hospital cardiac arrest cases.

As highlighted in Prof Oh from the Republic of Korea, only few Asian countries have their own national resuscitation guideline, and national data registry.

In terms of ambulance response time, for example, in Malaysia it is about 17 minutes, and we are only slightly better than Vietnam, which records a 30 minutes response time. Even China which is such a big, populous country, is better than us, at 13 minutes and Singapore records a 11 minutes' response time.

Public access AEDs are almost non-existent and Prof Oh reported that the number of AEDs available in Malaysia is 0 until I told him in a smaller scientific track later that we have at least public access AEDs in KLIA and LCCT Sepang. The challenge for us is to play our different parts, abeit small roles, and together, we hope we can develop and construct a registry system as well as strengthening our chain of survival.

Chapter Six
Lessons learned from:
Evolution and Hybridization of Emergency Medicine by Prof Gunnar Ohlen

Re-iterating what Prof Anatharaman has said, emergency medicine department cannot continue to become the safety net forever. There is a need for a paradigm shift. In some countries, for example, in China, traditional medicine or complementary medicine has been incorporated into Western medicine. As the speaker shared, one of the problems of modern medicine that has evolved over the years is the fragmentation of medicine – specialties within the specialty (subspecialties). There may come a time where there is need to tear down the ivory towers of clinical departments in order to offer a more wholistic, intergrated medicine to the patients. We must also arrest waste and over-production – for example, ordering tests that do not change the patient management. Ultimately, at the end of the day, the speaker shared that in the beginning, we shape the buildings we want to build, but afterwards, our buildings shape us. Therefore, it is better not to build when the building is going to be is sub-optimal; it is better to build on something small but optimal.

"We must not look back in hopes of recreating what once was. We must look forward and create what has never been."

Chapter Seven
Lessons learned from:
The Three Things That Improve Outcome in Hospital Arrest by Dr. Michael Parr

The speaker shared these three interventions:

A. Treating the underlying causes of the arrest. For cases of ACS, for example, he shared of performing emergency PCI even while CPR is being carried out (e.g. using mechanical device)

B. Therapeutic hypothermia Therapeutic hypothermia seems to be the "in-thing" for the new resuscitation guidelines. More and more papers have been published regarding the use of mild therapeutic hypothermia, among which:

1. Bernard SA et al. Treatment of comatose survivors of out-of-hospital cardiac arrest with induced hypothermia. N Engl J Med 2002 Feb 21; 346:557-63.

2. The Hypothermia after Cardiac Arrest Study Group. Mild therapeutic hypothermia to improve the neurologic outcome after cardiac arrest. N Engl J Med 2002 Feb 21; 346:549-56.

3. Cheung KW et al. Systematic review of randomized controlled trials of therapeutic hypothermia as a neuroprotectant in post cardiac arrest patients. Can J Emerg Med 2006 Sep; 8:329-37.

In fact, the International Liaison Committee on Resuscitation (ILCOR) has issued two rather very specific recommendations for use of hypothermia in selected cardiac-arrest patients:

1. Unconscious adults with spontaneous out-of-hospital cardiac arrest and an initial rhythm of ventricular fibrillation (VF) should be cooled to 32°-34°C for 12 to 24 hours

2. Such cooling also may be beneficial for other rhythms or for in-hospital cardiac arrest.

According to ILCOR advisory statement, therapeutic hypothermia should not be used for patients with severe cardiogenic shock or life-threatening arrhythmias, pregnant patients, or patients with primary coagulopathy.

Various cooling methods are discussed in that advisory statement too.

Reference: *Nolan JP et al. Therapeutic hypothermia after cardiac arrest: An advisory statement by the Advanced Life Support Task Force of the International Liaison Committee on Resuscitation. Circulation 2003 Jul 8; 108:118-21.*

C. Bundle of ICU interventions (much similar to those bundles of care in Surviving Sepsis Campaign)

Here, the speaker shared on the bundle of ICU interventions, known as "FAST HUG". FAST HUG is a mnemonic proposed five years ago by Jean-Louis Vincent as a way of assisting healthcare workers looking after critically ill patients.

The mnemonic stands for:

- **F** = Feeding
- **A** = Analgesia
- **S** = Sedation
- **T** = Thromboembolic prophylaxis
- **H** = Head-of-bed elevation
- **U** = stress Ulcer prophylaxis, and
- **G** = Glucose/glycemic control.

All the components are evidence-based and have been used in many parts of the world.

Reference: Vincent JL. Give your patient a fast hug (at least) once a day. Crit Care Med. 2005 Jun;33(6):1225-9.

endix:

her literature search showed that ever since the original FAST HUG has been ribed by Vincent JL; many other subsequent variants and additions to the original been proposed and published by many other authors, for example,

T HUG+S (S = Skin care, prevention of pressure ulcer)

T HUG(S) + BID OVER (S = Spontaneous breathing trial; B = bowel care; I= welling catheter removal; D= deescalation of antibiotics)

T HUG + EACH HOUR (E = Electrolytes; A = Airway; C = Catheters; H = natology; H = Hemodynamics; O = Oral care; U = Urine analysis; R = Relatives)

act, the variations can go on and on, but to quote the author of the original FAST G, Jean-Louis Vincent, who said it succintly:

> *".....we could continue expanding the mnemonic almost indefinitely, creating long phrases, even poems (!), but this would defeat the original concept underlying the FAST HUG, which was to provide a short and simple mental checklist that can be easily remembered by all staff members, but that includes most important aspects of patient management to be checked whenever attending an intensive care unit patient. A longer mnemonic is less likely to be remembered and hence less likely to be applied"*

t of original FAST HUG components are relevant to an emergency medicine setting, pt for feeding as feeding is usually not started in emergency department ward itself. "F" for feeding can be substituted to "Fluid resuscitation and management", which uch more relevant to emergency medicine.

ifically for glycemic control, the speaker shared on findings from NICE-SUGAR y, published in NJEM. In this multicenter trial, investigators randomized more than) critically ill patients (63% medical; 37% surgical) to either intensive glucose control et glucose level, 81–108 mg/dL) or conventional glucose control (target glucose , 144–180 mg/dL). Control of blood glucose was achieved with intravenous insulin sions. Participants were randomized within 24 hours after admission to intensive care s and were expected to require ICU treatment for 3 or more consecutive days.

primary endpoint — death by 90 days after randomization — occurred significantly e often in the intensive-control group than in the conventional-control group (27.5% 4.9%). When data were analyzed separately for medical and surgical patients, results similar to those for the whole cohort. Not surprisingly, severe hypoglycemia (blood ose level, ≤40 mg/dL) was significantly more common in the intensive-control p than in the conventional-control group (6.8% vs. 0.5%). No differences between groups were observed in median number of ICU or hospital days or median days of hanical ventilation or renal replacement therapy. This study therefore, suggests that a , intensive glucose control could actually harm rather do good to critically ill patients rms of death and complications of severe hypoglycemia.

apeutic hypothermia, although may be difficult to implement, but not entirely ossible. What is certain is that ILCOR has already come out with a clinical advisory ment for therapeutic hypothermia for a very strict selection criteria and exclusion ria. So, benefits of therapeutic hypothermia for selected cases, is not really the issue. issue is how acceptable such practice is in Malaysia (or is it that the very thought of ling" under our tropical climate already conjure up an unpleasant impression)?

Chapter Eight
Lessons learned from:
Overcoming the Barriers to Undertaking Research in Emergency Medicine and Creative Ways of Sustaining Your Academic Research Funding – A/Prof Kevin Ward

To create a sustainable research platform in emergency medicine within our local setting, the speaker repeatedly mentioned three basic ingredients:

Educate

Collaborate

Innovate

One discipline that emergency medicine can collaborate with would be biomedical engineering. Experts in biomedical engineering would probably be interested in our projects. Ask them: "What can you do to help me save more lives?" Use "we", not "I" or "you". Some examples cited include microcirculation and oxygen transport, biomathematics and physics, tissue injury and repair, etc. He also shared on the need to protect our ideas early in the process of the research. Bottom line is to be creative, as no idea is just too crazy for innovation.

Chapter Nine
Lessons learned from:
How To Formulate a Good Research Question and Choose A Suitable Study Design – Dr. Henry Guly

I must say that this is the talk that I benefited the most from. Dr. Henry Guly stated that the very basic step in formulating a research question is to have the idea. And in order to generate an idea, one should always an inquisitive mind. One should always ask "Why?" "Why not?" For example, "why should treatment X better than treatment Y?" There are many areas or domains of research one can embark on:

- Cellular level
- Organs and system
- Disease process
- Patients
  Family
- Organization
- Staffs
- Treatment
  - Drugs
  - Surgery, etc.
- Diagnosis
- Prognosis – for example, management by ED doctor vs management by hand surgeon?
- Prevention
- Screening
- Communication
- Attitude

Other tips in formulating research questions:

1. Translate research done in one area into another area related to emergency medicine
2. Do validation studies of newly formulated clinical prediction rules, scoring systems, etc
3. If a drug or a mode of treatment works in one group, try postulating and ask whether the mode of treatment will work well in another group or not
   3.1. Adult population vs pediatric population (for example, if drug A works in children, can it be work in pediatrics as well?)
   3.2. Prehospital vs hospital care
   3.3. Developed countries vs developing countries
4. What is the incidence for misdiagnosis?
5. Why do these errors occur?
   5.1. Clinical?
   5.2. Misleading X-ray findings? Missed radiological findings?
   5.3. Subtle ECG abnormality, etc, etc.

6. Functional results? Think of how to measure this.
7. Return to work/schooling? Number of days absent from work/school
8. Economic cost
9. In many of these cases, it is about giving a tweak on what has been done and make it into something relevant.

Research methods

1. One should rigidly and clearly define the intention/research outcomes. Use PICO model.
2. Do thorough literatures search. What has been done? What's not?
3. Ask advice – be willing to share ideas. As the speaker said, worrying that someone else may steal your research ideas is a recipe for sure disaster.
4. Lastly, be pragmatic. For rare diseases, ask, how often do you see these cases.

Chapter Ten
Key Lessons learned from:
Researcher-Biostatistician Symbiotic Relationship – by Dr. Chan Yiong Huak

According to the speaker, the success of a research depends on the following:

Stages of research	**Percentage contribution to validity of clinical results obtained**
Stage 1 Proper study design	30 – 40%
Stage 2 Conducting the study/data integrity	50 – 60%
Stage 3 Proper database setup/statistics	Only about 10 – 20%

Therefore, as the speaker said, seek input from the biostatistician right at the very beginning of the study to ensure a good data integrity. That is more important than seeking the biostatistician help towards the end when the data collection has been completed.

In that talk, the speaker also warned against becoming a "p-value worshipper"!!! One should know the difference between statistical significance versus clinical significance. Remember that statistical significance can be manipulated by increasing the sample size, but one cannot manipulate the clinical significance anymore than a doctor can force a patient to take drug A for his hypertension.

Chapter Eleven
Key Lessons learned from:
Research Trends in Emergency Medicine – by A/Prof Andra L Blomkalns

This is another talk that I have truly learned so much from. Lots of research ideas can be gleaned from this talk.

The speaker started off by showing how emergency medicine, by itself, has grown be to be ever popular, respectable specialty by itself, and in line with that, publications in the field of emergency medicine have not only also grown substantially, but, diversify and evolve from simple anecdotal case reports historically back in the 1970s and before to high impact original research articles currently. Various consortia, collaborations, including highly specialized networking links such as PECARN (Pediatrics Emergency Care Applied Research Network) have been established to facilitate and propels vigorous research works. The speaker also partly attributed to the growing interest of the general public to emergency medicine to the popularity of TV shows such as *ER* that depicts stories and happenings pertaining to emergency medicine.

From then on, the speaker said that as emergency medicine continues to grow as a specialty, its focus would inevitably change. Its landscape changes to a more global focus. And as the types of diseases seen in developing countries may differ from developed countries, the trends in emergency medicine research will therefore, change as well. Below is the partial list of future research trends in emergency medicine that she predicted:

- Mental Health and Psychiatric disorders in emergency medicine such as unipolar depression, dementia disorder, etc (Note: this is one area that have not been studied extensively in emergency medicine but may become more important due to increasing number of such cases as the world progresses)
- Domestic Violence cases in emergency department
- Self-inflicting Injuries
- Infectious diseases such as tuberculosis, HIV, diarrheal diseases
- Combat Medicine, War medicine
- Basic sciences research

Other conventionally existing trends that will continue to grow include:

- Motor vehicle accidents
- Cardiovascular Diseases
- Neurovascular Diseases
- Critical Care Interventions

Chapter Twelve
Key Lessons learned from:
Engaging Asia in Pediatric Emergency Medicine Multicentre Research – Opportunities and Challenges – by Dr. Fu Sheng

In this talk, Dr. Fu Sheng conceded that there is need for an Asian collaboration for pediatric emergency medicine research projects. Studies from western countries are not always applicable within the Asian context.

The Asian continent, with the biggest population group, has different sets of pediatric disease threats as compared to western countries. Infectious diseases are a prevailing cause of morbidity and mortality in many Asian countries. These include dengue and malaria.

Besides, Asian children seem to manifest disease responses differently. For example, the H1N1 infection seems to have a milder progression among Asian pediatric population. Thirdly, Asian countries have different sets of environmental-related diseases. Haze from forest fire in Indonesia results in respiratory diseases and this is a major problem in the South East Asia region.

Lastly, Asian countries also have different sets of problems related to their own socio-cultural perspective. He cited renal diseases related to melamine poisoning due to milk products consumption. He said that such projects should be cost-effective and pragmatic, to aim towards diagnosis, treatment and prevention of acute illnesses involving Asian children.

Chapter Thirteen
Key Lessons learned from:
Barriers and Enablers In Chest Pain Guidelines Implementation by Dr. Peter Pang

It is often unrealistic to expect everyone to change their clinical practice in order to follow a new guidelines or clinical pathway. In every organization and in every new implementation, there will be those who are the "early adopters" (willing to change), and there will be those who resist changes. Dr. Peter Pang shared his experience during the implementation of chest pain guidelines in Hong Kong. In the very first place, one should a build a curriculum of Evidence-based medicine (EBM) culture in our local workplaces. And according to him, whenever we want to implement new guidelines, identify those "early adopters" – those that are willing to go the extra mile to support the changes. Invest in these "early adopters" with the hope that those who resist will sense the "observer effect", thus, creating a hawthorne effect among these resistant ones.

He shared that in many occasions, the implementation process fails because the leaders themselves do not lead by examples. Leaders should do it themselves first. And those who are policy makers often do not get feedback and opinion from the grassroot users before implementing any guidelines. Thirdly he also shared that to create a sense of urgency to change, the guidelines must be clinically relevant, and the end users must see the urgent need themselves. For example, if the guideline is regarding issue related to life and death matters, then more people would be willing to follow. Implementing too many guidelines including those that have no clinical consequence will result in a low compliance rate. Fourthly, is the guideline user-friendly enough, easy to be remembered or is it rather taxing, complicated and results in many constraints in terms of manpower, time and facilities?

Dr. Peter Pang then came up with his own fishbone diagram to help him identify the reasons behind the implementation issues. The four categories of issues he studied, represented by four "bones" of the fish are: the Policy makers (+ stakeholders), the End-users, the Guideline characteristics, the Environment (Physical and social). He then used a chart, akin to a Haddon Matrix chart to consolidate his findings:

	Policy Maker	Guideline characteristics	End User	Environment (Physical and social)
Pre-implementation Phase				
Implementation				
Post-implementation Phase				

My further literature search shows generic fishbone diagrams have been used to analyze cause-effects relationship. Also known as Ishikawa diagram, it was first described by Dr. Kaoru Ishikawa, a Japanese quality control statistician.

This fishbone diagram is an analysis tool that provides a systematic way of looking at effects and the causes that create or contribute to those effects.

The "head of the fish" represents the problem or issue to be studied. And each of the "bone of the fish" represent categories of causes that contribute to the problem. Typically they are remembered by the 4'M's: Methods, Machines, Materials, Manpower. Other 'M's frequently cited are: Mother Nature (Environment), Measurement (Inspection), Maintenance, Money Power, Management. Other variants include 4'S's, 4'P's, etc, etc (see Wikipedia: Ishikawa diagram. URL: http://en.wikipedia.org/wiki/Ishikawa_diagram)

Haddon matrix, on the other hand, as many are well versed with, deals with prevention of diseases or injuries, etc. It has three phases: pre-event, event and post-event; and the factors are typically divided into Host or human, agent, environmental factors.

Chapter Fourteen

22 Emergency Medicine-Related Research Ideas and Tips Drawn From ICEM 2010

1) Conduct a study to look into the influence of economic recession and inflation on Malaysian patients' preferences of medical treatment (public healthcare including emergency department facilities versus private healthcare facilities).

2) As a paradigm shift, carry out more preventive medicine in emergency medicine to truncate diseases early in the course of illness.

3) Conduct studies to look into the effectiveness of empowering patients and family or engaging them in a form of partnership in patient management. Common example: mild head injury advice on discharge – does it reduce the rate of admission without compromising on care?

4) Conduct study to look into not just bystander CPR rate of your community, but also bystander First aid rate. Pick specific life saving first aid interventions – e.g. bleeding control prior to arrival to hospital

5) Especially in times of economic recession, sophisticated technology is not always the answer to good emergency care. Conduct studies that are simple, cost-effective and yet have profound clinical benefit for your community.

6) Conduct study to look into public access AEDs in your community. How many of the public places and buildings have AEDs? Are the staffs working in that particular place with AEDs know how to use them?

7) Collaborate, collaborate, collaborate

8) Innovate, innovate, innovate..... often research methodologies can be designed by giving existence researches a "tweak" to suit them into your setting and patient population.

9) Be creative, as no idea is just too crazy for innovation.

10) In order to generate a research idea, one should always an inquisitive mind. One should always ask "Why?" "Why not?" For example, "why should treatment X better than treatment Y?"

11) There are many areas or domains of research one can embark on, among which: Cellular level, organs and system, disease process, patients, family, organization, hospital staffs, treatment modalities – drugs, surgery, etc, diagnosis, prognosis, prevention, screening, communication, attitude.

12) Translate research done in one area into another area related to emergency medicine

13) Do validation studies of newly formulated clinical prediction rules, scoring systems, etc

14) If a drug or a mode of treatment works in one group, try postulating and ask whether the mode of treatment will work well in another group or not; e.g. adults vs pediatrics, prehospital vs hospital settings, etc.

15) Do studies on incidences of clinical errors, misdiagnosis, etc.

16) Ask advice and be willing to share ideas. Worrying that someone else may steal your research ideas is a recipe for failure and disaster.

17) Be pragmatic. If you want to a study on rare diseases, first of all, ask yourself, how often do you see these cases? Can you finish the study on time?

18) Get your biostatistician involved early in the course of the research! Good, valid research depends more on getting the methodology right rather than towards the end of research completion, when the data has been collected.

19) Do not become a "p-value worshipper"! Remember that p-value can be manipulated by increasing the sample size, but the clinical significance cannot be manipulated

20) How about a study on the influences on TV medical shows and dramas such as ER, House, etc on the choices of future career?

21) As the world progresses, more and more psychiatric cases may be seen in emergency departments. Psychiatric emergencies or mental health is an evolving research area in emergency medicine. Yet, this is one area where not many researches have been done. Bear in mind that ethical issues and getting consent may be challenging in such area.

22) Studies from western countries are not always applicable within the Asian context because Asian population may have different genetic make-up, with different disease manifestation, different socio-economic background, different infectious disease patterns, etc.