

IEMSIG

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Tanzania

Megan Cox describes the beginnings of emergency medicine teaching at Kilimanjaro Christian Medical Centre (KCMC), Moshi, Tanzania. She provides an in depth insight into the challenges of health care delivery in a poor African country, and the rewards of making a difference.

India

Mark Fitzgerald et al describe the massive burden of road trauma and the challenges of trauma management in India. They make recommendations for the development of state trauma systems.

PNG

Primary Trauma Care courses are now well established. Four M.Med EM trainees from PNG and one from the Solomon Islands have recently taken the Instructors course.

A Diploma of Emergency Medicine for Health Extension Officers (HEOs) and nurses is being launched in June at Divine Word University in Madang. Sandra Rennie, ACEM trainee, is leading this development. She is assisted by Chris Kruk, director of clinical training at Fremantle Hospital.

Tonga

Bhavani Peddinti describes several years of development with New Zealand's neighbour.

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Emergency Medicine in Tanzania

Megan Cox

I have recently returned from working as an emergency physician at Kilimanjaro Christian Medical Centre (KCMC) at Moshi in Tanzania for 3 months, December 2005 to February 2006.

Tanzania

Tanzania is a republic, having gained independence from the UK in 1961. It is one of the East African nations, the others being Uganda and Kenya. It is one of the poorest countries in the world, with a population of 36 million and a life expectancy of only 46 years. Although there has never been war in Tanzania, it has endemic corruption, extreme poverty and a huge potentially reversible disease burden of HIV, TB, malaria, and schistosomiasis. The rates of HIV in the population vary between 7% and 12%. Due to continued drought famine is a current major problem across the country. Most of Tanzania's geographical neighbours are potentially even more unstable. These include Congo, Mozambique, Burundi, Rwanda and Zambia.

Kilimanjaro Christian Medical Centre (KCMC)

www.kcmc.ac.tz

KCMC is the 2nd largest hospital in Tanzania, second to a hospital in the largest city, Dar es Salaam. It is a government hospital but has a charity organization, the Good Samaritan Foundation, associated with it. It has numerous connections with various hospitals all over the world. Some of these are permanent longstanding connections with local and expatriate staff. Harvard University has a radiology project, Duke University has malaria projects and an HIV project. There are multiple organizations involved in the ophthalmology school, dermatology unit and limb prosthesis production and training unit called "TATCOT". There are frequent temporary visits from other doctors, students and interested people from Europe, UK and USA. Almost all of the local KCMC specialists have had some training or work experience in European, UK or American hospitals. KCMC is the tertiary referral hospital for all North-Western Tanzania and patients are supposed to present only if they have a referral letter from their regional hospital, wherever they live and whatever condition they have. Moshi is a town of over 200,000 people and the local Mawenzi Hospital was one of the major referring hospitals to KCMC. Regional centres have variable facilities- most have

basic X-rays, sometimes ultrasound and microbiology facilities.

KCMC, having large international contacts and funding, is the only hospital in the North West (and often Tanzania) with many facilities. These include a blood bank, laboratory investigations beyond basic microbiology and haematology, CT scanning, ECG machine. There are also ophthalmologists, a neurologist, diabetes care, an endoscopy centre with sclerotherapy facilities. There are surgeons for general surgery, orthopaedics, plastics, urology and basic neurosurgery. There is an 8 bed surgical ICU and separate medical ICU with infrequent access to a small number of ventilators attached to portable oxygen cylinders. Last year the first ever cardiac surgery in Tanzania was performed at KCMC by a group from the UK.

The hospital is a large 3 storey concrete building with open windows, big rooms, operating theatres and offices. Almost every patient looks out at Mt Kilimanjaro from their bed. The description I give sounds quite "western", however due to the chronic maintenance and repair problems there were innumerable difficulties. The wards had suction and oxygen outlets behind each bed, but these had stopped working years ago. Portable oxygen and foot operated suction machines needed to be found for patients requiring these. Theatres frequently ran out of halothane, gloves and sterilized equipment. The laboratories ran out of reagents constantly. The blood bank was in disarray and many patients died for lack of blood. Patients could be seen overcrowding all corridors and wards. There was a diesel powered generator for the electricity but no reliable water source. There had been a national strike of the doctors before I arrived and the government response was to sack them. This left a few doctors, the medical assistants and medical students running the hospital.

The beginning of Emergency Medicine at KCMC In 2004 the Director of KCMC expressed an interest in starting a Casualty, the first in Tanzania. A senior doctor was sent to two NSW hospitals, generously funded by St Vincent's Hospital in Sydney. I was holidaying in East Africa at the time and I met up with Dr Russell Clark, a retired geriatrician working at

KCMC. I had worked with him as a junior medical officer in St Vincent's Sydney. Russell showed me the KCMC and the Casualty and encouraged me to return. Back in Australia, I met up with Dr Eli Masawe, the senior Tanzanian doctor who was at Gosford Hospital, and offered my services at KCMC. He was very enthusiastic and on his return the Director of the hospital officially invited me to come to KCMC. I was asked to start up teaching Emergency Medicine to final year medical students in their Medicine term and to provide support to the local staff in improving their Casualty. The work permit, medical registration and working visa were arranged and I took 3 months leave from my position as Staff Specialist at Wollongong Emergency Department, NSW.

My role at KCMC

I was warmly welcomed by everyone and encouraged to critique the department, educate freely, and make suggestions on anything. I cannot highlight enough how friendly everyone in the executive and the Casualty was to me. This was a daunting but exciting opportunity and I found it hard to know how and where to start! I could not speak Kiswahili so my contact with patients was limited without staff translating for me. The other doctors did not wish to be involved in teaching Emergency Medicine so I decided to initially concentrate on education and be frequently available to all casualty personnel for advice. After I had been there one week I established twice weekly morning education sessions with all the nursing staff and taught basic life support, airway manoeuvres, triage principles and answered many questions.

KCMC Casualty

KCMC Casualty Department is an extension of the Outpatient Department (OPD) and has been a work in progress for at least 2 years. An emergency physician and a nurse educator from St Vincent's Sydney had visited for a few weeks in 2004 and helped establish some basic protocols. There is a small 3 room treatment area and a larger resuscitation room across the corridor. The 3 room area had basic office equipment and a supply of bandages, basic drugs and venesection equipment. There were 2 sinks with soap and paper towels. The department looked clean and all the staff was extremely friendly and proud of their work environment.

The resuscitation room had 2 oxygen cylinders, an electronic BP machine, a glucometer and a large glass cabinet with rudimentary resuscitation equipment. There was little educational material of any kind; no pulse oximetry or cardiac monitor. There were laryngoscopes but no paediatric airways or ET tubes. There was one glucometer machine and one cervical collar for the entire department. The latest



Megan Cox and Dr Masawe in Casualty KCMC

piece of equipment was a defibrillator ("Cardio life") which had been donated by a Japanese Hospital. No one knew how to use it, and it had never been used.

The Casualty was run by two senior local doctors, Dr Kimaro and Dr Masawe. There were two doctors who had graduated in the last three years who were working as "registrars", one working part time. One of these has expressed a genuine interest in doing post graduate training in Emergency Medicine (particularly in Australia!). A variable number of interns would work in the Casualty every day, the majority doing a 4 week rotation as part of their training. Once a doctor had decided that the patient required admission, the patient went up to the ward (no access block!) and waited up there for the team to see the patient. Notes were written on paper and once a decision to order tests were made; the nursing staff was responsible for taking the blood, sending patients to X-ray or setting up IV fluids and applying plasters. All these procedures waited until the patient's relatives had paid for them at Medical Records.

Triage

It did not take long to discover that due to the chronic nature of the Tanzanian medical problems and the referral system that was in place, triage was not understood or being performed at all at KCMC. Patients make their own way to the hospital (no public ambulance system in the country), convince the security guard of their intent (producing a letter or money usually worked- especially at night) and then must pay for a medical record to be created (about 2 US dollars). Patients were seen initially by a nurse and



Megan Cox and medical students. photo Megan Cox

if the nurse felt they were not too unwell observations were taken and they were placed in the waiting room. If the nurse felt the patient “looked sick” they were placed in one of the treatment cubicles. Patients weren’t sent to the resuscitation room unless they were unconscious or required oxygen. Doctors were harassed to see the patients that the nurses felt were sicker ones, but I often saw well dressed patients or relatives of hospital staff being attended to first.

Resuscitation

There was no real resuscitation as most of the patients who needed life saving therapy in the “golden hour” died due to the absence of any pre-hospital services. An 18yr old English student on his “gap” year was accidentally hit by a four wheel drive vehicle after getting off a local bus. The accident occurred 30 km away but he died from massive haemorrhage in the “taxi” that agreed to take him to KCMC but ran out of petrol. A mother brought her 6 month child on a local bus (about 30 minutes) after she started to choke on porridge. The child had fixed dilated pupils and asystole on arrival to the Casualty. A truck driver fell asleep whilst driving, crashed, and was assessed at a local hospital. They had difficulty obtaining a blood pressure so referred him for “hypotension”. He was dead on arrival to KCMC.

Once a patient had made it to the Casualty most staff had no confidence or experience in using the equipment and there were no trauma team, cardiac

arrest protocol or urgent consults with specialty doctors.

Major medical conditions in Casualty

I was given the admission books for KCMC Casualty and catalogued data on diagnoses recorded for the last 6 months (July 2005 - Jan 2006). The top 5 presentations to KCMC were malaria, hypertension, fracture or dislocation, cardiac disease and abdominal pain. In six months 7856 patients were seen, of whom 1458 were paediatric (less than 15 years). Most admissions to the wards for that period were medical (1615), surgical (1066) and then paediatric (617). The figures don’t include outpatient clinics Monday to Friday from where smaller numbers were admitted. There is a continuing burden from HIV and malaria but also a growing burden of “western” type illnesses including hypertension, CVA, diabetes and trauma from road crashes. Common referrals from local hospitals were haematemesis from schistosomiasis induced portal hypertension, head injuries, septic abortions, CVA and fractured femurs. KCMC is near Mt Kilimanjaro and so mountain sickness and injuries in Westerners were also seen.

Education in Emergency Medicine

Tumaini University is alongside KCMC. It has many undergraduate and postgraduate courses. These include medicine, medical assistants, nursing, optometry, orthotists, medical records, physiotherapy and occupational therapy. Kiswahili is the

official language of Tanzania but there are no medical textbooks in Kiswahili so all teaching, ward rounds and medical notes are in English. The students are from all over Africa, so they must be fluent not only in English but also Kiswahili so they can speak with the patients.

Medical students at Tumaini University undergo a 5 year degree course (fee based- many students have sponsors). In their last 3 years they spend many hours working on the wards similar to interns and have much more responsibility given to them than Australian medical students. The undergraduate curriculum has no teaching on acute medicine almost all teaching was on problems of chronic disease, particularly HIV, TB, malaria, malnutrition and schistosomiasis.

Tumaini University had organized the 28 final year medical students into groups of 4 and had allotted 2 weeks to each group in their medicine term to rotate in the emergency department. Each of the first mornings of the medical students' rotation I gave informal presentations, sometimes using mannequins, on the ABC approach to emergency patients, Basic and Advanced Life Support (including practical demonstrations of CPR and defibrillation), and management of severe trauma.

The students presented topics to me on the other mornings. These included the emergency approach to paediatrics, cardiology, respiratory medicine, gastroenterology, neurology and obstetrics and gynaecology. The rest of their time they saw patients and presented them to myself, Dr Masawe, Dr Kimaro or one of the registrars in the Casualty.

I gave the following formal lectures to all the final year medical students twice a week over 8 weeks:



Hospital photos Megan Cox

1. Initial stabilization of the seriously ill patient- the ABC approach
2. The emergency approach to a patient with shock, including a review of Basic and Advanced Life Support
3. Respiratory emergencies and the approach to assessing the chest X-ray
4. Cardiological emergencies, including AMI, hypertension and vascular emergencies
5. ECG basics and approach to reading the ECG
6. Acid base balance and common abnormalities of pH
7. Endocrinological and electrolyte emergencies
8. Environmental emergencies including high altitude medical emergencies, electrocution, anaphylaxis, burns, wounds and snake bites
9. Toxicological problems in the casualty-including organophosphates, kerosene and the use of decontamination and antidotes.
10. Gastrointestinal emergencies
11. Neurological and neurosurgical emergencies, including an approach to spinal injuries, reading the head CT and spine X-rays
12. The emergency approach to the serious trauma patient in Casualty
13. Acute orthopaedic emergencies and a basic approach to reading limb X-rays
14. Paediatric emergencies, including Basic and Advanced Life Support
15. Obstetric and gynaecological emergencies
16. ENT and urological emergencies

Education of Medical Assistants

Medical assistants are really the backbone of health care in Tanzania. The number of medical students (and so soon doctors) is increasing each year but most regional hospitals are managed by medical assistants. Tumaini offers a 3 year degree course to these assistants. I was given the opportunity to teach them and really enjoyed their enthusiasm and practical questions. Most of them had been working in the rural areas for many years as nurses and they often asked very difficult questions and tricky scenarios! I lectured once a week over 6 weeks, using slightly adapted versions of the medical student lectures.

I found myself being asked by other groups to give informal lectures - word spreads around fast when teaching is being given - and gave informal lectures to the nursing students and also to the residents, especially on ECGs.

Writing a protocol book

At the end of all my lectures someone would always ask me for the piece of paper that I had been teaching from. Lack of electricity and teaching aids

led me to write and draw diagrams on a notepad whilst I was talking. I decided to write a protocol book. This was based on the popular lectures I had been asked to give and also on my collection of the statistics from the Casualty showing the commonest presenting diseases to KCMC. After working there for only a short time seeing the presentations of road trauma, comatose patients, diabetes, and heart disease, I felt strongly for emergency medicine to continue to be taught and understood. I liaised with Dr Kimaro and Dr Masawe to ask their permission and advice. I also approached senior local specialists in medicine, orthopaedics and surgery and met with them, obtaining their advice and approval. After many drafts and meetings with these KCMC leaders I approached the local store and had 70 copies photocopied and bound. I presented one to each OPD/Casualty staff member and student in my last week. Handing over these "Protocols on working

in KCMC Casualty" books was one of the highlights of my time there. The staff promised to use them and make corrections and additions to them. I plan to return in December this year for another 3 months of teaching and work, so I will certainly keep them to their word!

The Future

The experience I have just had at KCMC included some of the hardest days but also most rewarding days in my working life. I remember teaching the registrars how to use the defibrillator and them looking at me in bewilderment when they realized you were supposed to use it on dead people. I remember the Head Nurse proudly telling the Director of the hospital she was no longer afraid of the cardiac monitor. The problems are innumerable but the people are so friendly and so thankful. I am already planning my next trip this December!

Footnote: anyone interested in contributing three months to KCMC can contact Megan Cox or the Editor. Emails drmegancox@yahoo.com.au chriscurry1@compuserve.com

India and the Management of Road Crashes – Towards a National Trauma System

**Mark Fitzgerald, Yashbir Dewan, Gerard O'Reilly,
Joseph Mathew, Carmel McKenna**

Introduction: the size of the problem

Accidental injury is one of the leading causes of mortality and morbidity in India. India has 1% of vehicles in the world and 6% of road crashes. There are approximately 400,000 road crashes causing injury each year, resulting in 85,000 dead and 1.2 million seriously injured. The crash rate of 35 per 1000 vehicles is one of the highest in the world, the death rate of 29 per 100,000 people is six times that of Victoria, Australia. Road trauma is the commonest cause of death for people under the age of 35.

In Delhi 41% of road injured are pedestrians, 27% are motorcyclists and 14% are pedal cyclists. In Kerala 56% of road crashes involve riders of 2-wheeled vehicles. In Mumbai head trauma was present in 76% of injured patients, and 47% of these had severe head injuries. For most of India wearing of helmets by motorcyclists is not mandatory or not enforced.

People with life-threatening but potentially treatable injuries are up to six times more likely to die in a country with no organised trauma system than in one with an organised, resourced trauma system. The World Health Organization (WHO) has projected that by the year 2020 road crashes in India will account for 546,000 deaths and 15.3 million disability adjusted life years lost.

Prehospital Care

Prehospital emergency care in India is only beginning to develop. Thirty per cent of emergency patients in India die before they reach a hospital. Over 80% of crash victims do not get access to medical care within one hour of the incident. In Mumbai the time between injury and hospital admission averages 6 hours for the severely injured.

Prehospital care at road crash sites in India is inconsistent and unreliable, with minimal if any medical intervention. Persons who shift the casualties are lay public and not trained. There are no state organised emergency ambulance services. Many patients are transported on the rear seats of taxis, reliant on friends to provide care en route. They are often taken to the nearest hospital, regardless of the hospital's capabilities.

Hospital Reception and Resuscitation

The establishment of Emergency Medicine as a recognised specialty has not yet occurred in India. Organised trauma reception and resuscitation is difficult. There is often no warning of a pending arrival and therefore no preparation. Attendance is often delayed. Triage can be ineffectual or performed by non-clinical staff. In most hospitals there is no trauma team or call-out, and no interdisciplinary approach to trauma reception. There is a single system approach to care, which is problematic when dealing with severely injured patients with multi-system injuries.

Few hospitals have dedicated equipped space for major trauma assessment and resuscitation. Senior surgical, emergency or anaesthetic presence is uncommon.

Autopsy data of road traffic fatalities in South Delhi in 1989 demonstrated that 64% of the deaths were preventable or potentially preventable. The majority resulted from a failure to diagnose or treat a life-threatening injury following arrival at hospital. Adherence to established principles in the hospital management of haemorrhage could have saved 70% of preventable deaths.

Hospital In-patient Care

The post resuscitation trauma care received in hospital is usually coordinated by anaesthetists and surgical staff. Organised State Trauma Registries or data collection systems do not exist, making objective assessment difficult. A major hospital in Lucknow used TRISS analysis to review trauma mortality. Comparing predicted survival to actual survival they determined that 76% of trauma deaths were unexpected. The reasons were septicaemia, mannitol nephrotoxicity, aspiration and a direct result of the injury - especially for patients with burns. In Mumbai the vast majority of severely injured patients received no pre-hospital care and there was an observed mortality of 21% compared to a predicted mortality of 11% using TRISS analysis.

Developing Trauma Systems

The evolving burden of injury in India has prompted the call for the development of organised Trauma Systems. A 'Trauma System' comprises an integrated protocol driven system of care which monitors and addresses prevention, notification, prehospital care, hospital reception and resuscitation, surgical care, in-hospital care and rehabilitation. Although there is no national lead agency to co-ordinate various components of a trauma system, individual States have the opportunity to correct the almost complete lack of organised trauma care and to address the lack of appropriate health infrastructure. The strategic principle of "the right patient to the right hospital in the shortest time" provides the basis for a system.

Locally managed attempts to improve pre-hospital care have begun within the large population centres. However, medical care – specifically airway management, haemorrhage control and splinting – is provided at no more than a basic first aid level. Rapid access to crash sites using strategically located emergency ambulance vehicles could be achievable on national and state highways. A recent proposal in Kerala noted that if major emergency facilities were located at 80-100 km intervals along major roads, 95-98% of the population would have access to emergency care within one hour. In cities and villages where there are narrow and congested roads, motorcycle paramedics could provide a rapid response. In the Punjab there are already motorcycle paramedics based in built up areas. Ambulance services need ongoing development. The public need to be informed of their responsibilities and how to render a basic level of first aid. Public first aid posters could be displayed prominently on buses, along with public prevention campaign posters targeting, for example, helmet wearing and safer driving. Commercial vehicles and bus operators could be encouraged to carry a comprehensive first aid kit to provide an immediate response pending professional assistance. A goal could be that a current first-aid certificate is a requirement for licensing.

For the hospital phase of care there is a need to establish Tertiary Trauma Centres. This would involve increasing staff strength, training staff in trauma reception and resuscitation, supplying adequate equipment and drugs, and developing computerised data collection and record keeping. The major teaching hospitals need to be developed to form the hub of an integrated system providing 24-hour reception teams, on-site neurosurgery, cardiothoracic surgery, intensive care and other specialist resources to deliver definitive care to the majority of the major trauma caseload. This would be through primary triage from the scene or following secondary inter-hospital transfer. Caseload concentration facilitates the development of a core group of surgeons, anaesthetists and nurses who consistently manage large trauma volumes. Level 1 Centres would be required to develop the resources and expertise to deliver leadership and support to the system as a whole.

Funding for Trauma Systems

The key requirement for the establishment of Regional and State Trauma Systems is funding. An ongoing, guaranteed funding stream is crucial. Trauma care is expensive. The authors recommend the establishment of no fault, compulsory, third party insurance schemes linked to vehicle registration or alternatively as part of an annual 'road tax'. The scheme would cover the pre-hospital and initial hospital and medical costs of all persons injured by a registered vehicle in a transport accident on a no fault basis (drivers, passengers and pedestrians). A pre-paid scheme guarantees prompt payment of hospital and medical costs, funding of infrastructure that can then be used for all trauma and emergency cases, the development of trauma registries for data collection, improved staffing and careers in trauma care – and improved patient outcomes. For example, in Kerala there are an estimated 50,000 injured on roads each year, at a health care cost of Rs 800 million (US\$ 20 million) per annum. In 2003 there were 2.5 million registered vehicles, so a vehicle surcharge could be of the order of Rs 450 (US\$ 11) per annum.

Conclusion

Road trauma in India is a significant societal burden which requires urgent attention. A reduction of the road toll is dependent on State authorities introducing systems that fund prevention and the organised care of the injured.

Emergency and trauma care should not be considered a luxury for rich countries or rich individuals in poor countries. The goal of an effective Trauma System should be to provide universal emergency care with equity of access. The misconception that trauma care cannot be cost effective in low-income settings needs to be debunked. Injuries occur everywhere and consume resources regardless of whether there are systems capable of achieving good outcomes. Better planning will result in cost-effective improvements in patient outcomes. Without the development of inviolate funding schemes Trauma System development in India will fail.

Footnote.

This brief article has been edited by Chris Curry. A full journal version of this subject by the named authors is 'In Press' with the Indian Journal of Surgery.



Primary Trauma Care (PTC) courses in Papua New Guinea

Chris Curry

Primary Trauma Care (PTC) courses were launched in Papua New Guinea (PNG) in 2002, during the first year of the emergency medicine program there. Since then there have been increasing numbers of courses and sites hosting them. There has been increasing local input by the Master of Medicine Emergency Medicine (M.Med EM) trainees as they have undertaken the Early Management of Severe Trauma (EMST) course in Port Moresby, progressed in their training program and developed as PTC instructors.

• Primary Trauma Care courses in 2005:

February	Mt Hagen	Simon Jensen (NZ), Moses Lester, Sonny Kibob.
March	Madang	Chris Curry (WA), Vincent Atua, Gertrude Didei
May	Goroka	David Symmons (QLD), Moses Lester, Sonny Kibob, Nick Dala
May	Lae	David Symmons (QLD), Yongoe Kambue
June	Mt Hagen	Jack Hodge (WA), Moses Lester, Sonny Kibob
June	Rabaul	Ric Todhunter QLD), Julius Plinduo
July	Madang	Naren Gunja NSW), Vincent Atua, Gertrude Didei
July	Kimbe	Yongoe Kambue
August	Port Moresby	Sandy Inglis (NZ), Sandra Rennie (WA), Sam Yockopua, Alfred Raka, Desmond Aisi, Wala Marjen
September	Goroka	Sandra Rennie (WA), Yongoe Kambue, Sam Yockopua, Vincent Atua, Moses Lester, Sonny Kibob
November	Lae	Antony Chenhall (VIC), Yongoe Kambue
November	Rabaul	Antony Chenhall (VIC), Julius Plinduo

PTC Instructors Course, Melbourne in May 2006

Four PNG trainees on the M.Med EM and one from the Solomon Islands attended an Instructors Course at the Royal Childrens Hospital in Melbourne in May 2006. They were Sam Yockopua and Marcella Seve from Townsville, Yongoe Kambue from Port Moresby, Vincent Atua from Madang and Kenton Sade from Honiara. Those attending from their rotation in Townsville were funded and supported by the PTC Foundation and the Australian Society of Anaesthetists. Thanks to Rob McDougall from the Royal Childrens Hospital.

Those attending from PNG and Honiara were funded and supported by the Australasian College for Emergency Medicine (ACEM) and St Vincents Hospital in Melbourne. Thanks to Georgina Phillips and Antony Chenhall from St Vincents Hospital.

The Instructors Course was facilitated by

- Diane Wilkinson from the UK,
- Stephen Swallow and Wayne Morriss from New Zealand,
- Marcus Skinner from Tasmania,
- Tim Gray FACEM and Rob McDougall from Melbourne.

About the PTC course

(Derived from the PTC Instructor's Manual)

Mission statement

The PTC team works in conjunction with local medical and health educational systems to train doctors, nurses and health care providers to treat the severely injured patient quickly and systematically using what equipment is available to improve the early management of trauma at the district hospital.

Objectives

1. Understand the priorities of trauma management
2. Be able to rapidly and accurately assess trauma patient needs

3. Be able to resuscitate and stabilise trauma patients.
4. Know how to organise basic trauma care in your hospital

The PTC is intended to provide basic knowledge and skills necessary to identify and treat those traumatised patients who require rapid assessment, resuscitation, and stabilisation of their injuries. This course will particularly highlight the need for early recognition and timely intervention in specific life-threatening conditions.

The course is intended to provide material by lectures and practical skill stations that represents an acceptable method of management for trauma. It provides a very basic foundation on which doctors and health workers can build the necessary knowledge and skills for trauma management with minimal equipment and without sophisticated technological requirements.

The ATLS/EMST course is directed to medical personnel in well equipped hospitals with oxygen, communication and transport, etc. and offers a comprehensive syllabus. The PTC course is not a substitute for this and other courses, but uses similar basic principles and emphasises basic trauma care with minimal resources."

Origins of the PTC course

Primary Trauma Care arose in 1996 initially out of the activities of three individuals:

Douglas Wilkinson, a South African anaesthetist/intensivist working in Oxford UK, made a submission to the World Health Organisation that he would like to develop a World Federation of Societies of Anaesthetists (WFSA) backed initiative to reduce morbidity and mortality from trauma worldwide. This would be done by organising courses at which doctors, nurses and health officers in developing countries could be trained in the practice of good trauma management.

Marcus Skinner is an anaesthetist previously at Fremantle and now in Tasmania. Once with the Royal Australian Air Force, he has a strong interest in trauma and retrieval medicine. As a senior instructor on the RACS Early Management of Severe Trauma (EMST) program, he encouraged the EMST Committee to expand its program in neighbouring developing countries, but with little success.

Haydn Perndt, an anaesthetist in Hobart Tasmania, has a long and dedicated history of work in developing countries. In 1996 as Chairman of the Education Committee of WFSA, Haydn knew both Douglas Wilkinson and Marcus Skinner. Realising that they both had common aims to teach trauma care in developing countries, he introduced them to each other."

These three formed the core group to establish, write and promote the PTC course. It is now presented in developing countries worldwide.

- In 2005, courses were presented in Samoa, Pakistan, India, Iran, Lesotho and Rwanda. Consultations commenced in Mozambique.
- In 2006 (to May), courses have been run in:
PNG: Port Moresby, Mt Hagen, Goroka, Rabaul, Alotau
Pakistan: Peshawar, Sindh, Jacobad
India, Malawi, Mozambique, Chile, Melbourne

PTC in the Australasian, SE Asian and Pacific regions

Rob McDougall is the Australian Director, and is on the PTC Executive Committee. He is a paediatric anaesthetist at the Royal Children's Hospital, Melbourne Victoria. Involved with PTC since 1999, he has taught in the Pacific, Indonesia and Vietnam and is currently working towards the introduction of PTC to Mongolia. He has been on the Education Committee of WFSA since 2000.

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Diploma of Emergency Medicine

Faculty of Health Sciences and Faculty of Flexible Learning

Divine Word University, Madang, Papua New Guinea

Background

Initial contact with Divine Word University (DWU) was made by Chris Hall in early 2005. Billy Selve, Dean of the Faculty of Health Sciences, expressed an interest in developing a Diploma in Emergency Medicine for the postgraduate Health Extension Officers (HEOs) who had been trained at DWU. Once graduated there were very limited opportunities for further development. Discussions were taken further by Chris Curry. Sandra Rennie, an advanced trainee from Fremantle Hospital in Western Australia, then spent three months at DWU in the second part of 2005 working with Billy Selve to develop the structure and curriculum for the programme. Brady Tassicker, another advanced trainee at Fremantle Hospital, contributed further work in April 2006.

The Diploma will be launched in June 2006 with assistance from Sandra Rennie and Chris Kruk, who is Director of Clinical Training for junior doctors at Fremantle Hospital.

Introduction to the Diploma

The Emergency Medicine Diploma is a program to be offered in Partnership between the Faculty of Health Sciences and the Faculty of Flexible Learning at Divine Word University and the Modilon Hospital Campus. It will address the specific needs of health care workers in Papua New Guinea, who often face issues of extreme isolation and remoteness, together with a high rate of emergency situations accompanying illness, injury, reproduction and childhood. Sources of injury include motor vehicle crashes, domestic violence, falling from trees, natural disasters (volcano's, tsunamis), and clan violence.

This program has been designed to enhance established skills and develop new skills in the management of medical, surgical, obstetric, paediatric and psychiatric emergencies. Topics will include personal protection in emergency situations, adequate preparation for emergencies, triage in large-scale emergencies and natural disasters, and appropriate evacuation of patients to centres of definitive care. Students will gain confidence in their

ability to anticipate, assess and manage emergency situations, improve individual patient outcomes and community wellbeing. In order to be effective, the training offered by the diploma will need to address issues of resources and transportation, which often contribute to poor outcomes in emergency situations.

The course will be offered to HEOs, nurses and doctors. The knowledge and skills are relevant to all of these disciplines as they represent the front line of health care provision in many areas, often in isolation.

Needs analysis

The Health Services Support Program (HSSP) of AusAID has produced a paper entitled "Madang Province Situational Analysis 2005". This has identified major issues in health care provision in the region, and has been sourced to ensure that the emergency diploma focuses on relevant local issues. While primary health care is the major focus for long term improvement in the health of the region, improvements in essential and basic emergency care will aim to reduce the morbidity and mortality from the common acute conditions specified in the report.

HEOs and nurses have identified their own needs in response to a questionnaire.



FACULTY OF FLEXIBLE LEARNING DIPLOMA OF EMERGENCY MEDICINE

DIPLOMA OF EMERGENCY MEDICINE

This program is offered by Divine Word University's Tertiary Distance Education Centre (TDEC) in liaison with the Faculty of Health Sciences.

It is a flexible learning program comprising of residential sessions that comprise of residential learning with directed workplace study and application.

The program is designed for people working in government and private sectors who wish to enrich their working knowledge and skills in order to become highly successful Health workers in the service of their country in the diagnosis stabilization, treatments and or referral of patients.



Program:

The Diploma program consists of four semesters with four major residential Units that include practical sessions. Students are required to gain do all to gain competency.

Students will discuss with the course facilitator and choose a workplace directed study that is appropriate to the student's occupation.

Christian principles underpin all programs offered at Divine Word University

Structure

The program will be conducted through a flexible-learning mode using well-established principles of adult learning applied to our Papua New Guinea context.

Students are required to attend an intensive two-week residential component in Madang during each semester. Initially in 2006, it being a new program, it will commence with a one week in June and another week in November for the residential component.

Directed and practical assignments relating to workplace applications must then be completed in the student's own time.

The introduction of a Learning Contract will facilitate sound support structures between the student, the workplace and the University.

Facilities

Divine Word University offers modern excellent residential and teaching facilities in a secure and peaceful environment.

Admission Requirements

Students will be required to have completed a minimum of a Diploma in General nursing or Health Extension and must be recommended by sponsoring organization.

contact:

Ms Leah Usurup
 Enrolment Officer, Tertiary Distance Education Centre
 Divine Word University
 P.O. Box 483, Madang, Papua New Guinea.
 Ph: (675) 854-1871, Fax (675) 852-1312
 Email: lusurup@dwu.ac.pg

Check our Website www.dwu.ac.pg

UNITS IN THE PROGRAM

a) Unit 1: Management of Trauma

This unit covers the following subjects; Initial Assessment and Management of Trauma Patients, Airways and Ventilatory Management, shock, Thoracic Trauma, Abdominal Trauma, Head Trauma, spine and Spinal Chord Trauma, Musculoskeletal Trauma, Burns, Paediatric Trauma, Trauma in Women, Transfer to definitive care, and injury prevention. Psychiatric emergencies taken as a specific second week block.

b) Unit 2: Management of Medical and Surgical Emergencies This unit covers the following subjects; Medical Conditions affecting the airway, Acute Medical Conditions affecting breathing, Medical conditions affecting circulation, Gastrointestinal Emergencies, Renal Failure, medical conditions affecting neurological status, musculoskeletal emergencies, Endocrine emergencies, Toxicology, ocular Emergencies, and ENT emergencies

c) Unit 3: Management of Paediatric Emergencies This unit covers the following subjects; Why children are treated differently, Structural approach to emergency paediatrics, basic life support of a collapsed child, Structured approach to the seriously ill child – IMCI 10 step protocol, Advanced support of the airway and ventilation, Causes of airways and difficult breathing, Shock, Management of Shock, Primary assessment of disability, Management of the semiconscious, the seriously injured, triage, prevention of injury, Fluid management, use of drugs and When a child dies.

d) Unit 4: Management of Reproductive Emergencies This unit covers the following subjects; Emergencies in Early Pregnancy, Infectious Diseases in Pregnancy, Emergencies in mild – late pregnancy, Premature labour, premature rupture of membrane, complications of the first and Second stages of Labour, Specific Identification and management of labour related problems, complication of the third stages of labour, puerperal psychosis, neonatal resuscitation, when a baby dies, gynaecology, Severe pelvic inflammatory disease, and rape.

Note: These units initially in 2006 are offered as a one-week residential learning in commencing on the 12th of June. It is very likely that units are adjusted from time to time to fit in with the availability of facilitators, and the teaching and learning resources.

Check our web site www.dwu.ac.pg and follow the prompts from Faculties to Flexible learning where you will find the Unit descriptors.

Last updated 050506



Developing Emergency Medicine in Tonga

Bhavani Peddinti

In the year 2000 I was asked by the Tongan Medical Association to give lectures on a variety of topics in Emergency Medicine at their annual meeting. During this time I delivered at least 25 hours of lectures over a period of 5 days. The preparation included written material, power point presentations and case scenarios.

During this time I established contact with the Tongan medical community, administrators and AusAID via the First Secretary of the Australian High Commission.

In the year 2003 I was asked to work for AusAID to develop Emergency Medicine and did so for a period of 3 months. This included the following activities:

- * Provision of clinical support in ED
- * Re-organisation of the physical structure in ED
- * At least 5 hours of teaching per week for the ED and hospital medical staff
- * Development of clinical guidelines and policies - at the end of the term 2 volumes of comprehensive guidelines and other material pertaining to arrhythmia recognition and treatment was presented to the Clinical Leader of ED
- * ACLS education using University of Auckland mannequins and simulators
- * Introduction of computer based learning in ED
- * Emergency Medicine updates for doctors and nurses in other islands of Tonga
- * Presentations to the rest of the medical staff at the weekly medical meetings
- * Introduction of team approach to the management of trauma
- * Thrombolysis in ED
- * Introduction of quality activities in ED
- * Beginning of implementation of Australasian Triage standards
- * Development of a comprehensive pre-hospital plan for Tonga Tapu. This was done with the assistance of Mr Billy Doyle, University of Auckland.

At the end of the project, medical books worth nearly \$2500 were donated by AusAID to the Emergency Department.

In 2006 I was then asked to work in ED by WHO for a

period of 4 weeks to undertake the following:

- * Continue implementation of the clinical guidelines commenced in 2003
- * Provide ACLS training to the medical and nursing staff in ED
- * Develop clinical pathways and assist in development of clinical documentation
- * Provide advice on the development of the new model of care with the impending commission of the new ED financed by the World Bank and the Government of Japan.

A clinician from ED has been appointed as a WHO Fellow to work at Middlemore Hospital ED for 6 months to gain experience and transfer these skills to Tonga. It is hoped that WHO will be able to fund ongoing training of Fellows at Middlemore. I completed 1 week of work in February 2006 and will be returning to Tonga in October to finish the project.

Developments in Fiji

James Taylor

Sandringham Hospital in Melbourne is supporting a program to develop triage in Fiji. The project has been developed by James Taylor and Peter Wirth.

After some considerable negotiating with the Fiji Ministry of Health and the Colonial War Memorial Hospital (CWMH) in Suva, up to four trips per year are planned over 3 years.

The plan is to develop a capacity for triage at the Emergency Department of the CWMH in Suva and to train primary health care staff in rural areas.

The initial researching was supported by AusAID through the Fiji Health Initiative program managed by JTAI in Brisbane. The Fiji Ministry of Health has undertaken to meet the ground costs of visits. An Australian philanthropic organisation is being sought to meet travel and logistics expenses.

Each visit is likely to include a doctor and three nurses. While drawn mainly from Sandringham emergency staff, James Taylor would be pleased to hear from others interested in the project.

Emergency Medicine in Germany, Austria, Switzerland and Sweden

Gordian Fulde

Germany

There is a long history of separate domains of the specialties, basically medical and surgical. Even the newer sub-specialties have their own “house” resources e.g. urgent new admissions, ICU, diagnostics etc.

There are several pre-hospital tiers of ambulance expertise. This is where “Notfall Medizin” (emergency medicine) is mainly practiced, i.e. doctors are rostered to be called out by the dispatcher. Often they do this in separate sedan vehicles. Also there are ICU and trauma ambulances dispatched from hospitals with mainly surgical and anaesthetic staff.

Emergency departments and emergency medicine as in Australia do not exist. The ambulances deliver to the specialty – medical, surgical, gynaecology etc. With their rotating in-house staff, even if a central “Notaufnahme” (emergency department) exists, it is often physically segregated and staffed by the specialties.

Austria

Historically the system is the same as in Germany. However, especially in Vienna there are developed emergency departments with their own staff and academic head, mainly from internal medicine.

Here also “Unfall Chirurgie” (trauma surgery), like in neighbouring countries, is strong. In Austria this is trying to break away from very powerful orthopaedics services but remains a purely surgical specialty. Interestingly one direction is towards the general trauma surgeon, who does all – head, chest, bones etc, - total patient care throughout the patients journey, even with those specialties available in house.

Switzerland

Once again the common systems history provides a similar approach to emergency medicine patients

as in Germany and Austria. The “Notaufnahme” departments of the major hospitals are well marked and situated with easy access to good resources. There are some permanent senior staff but the larger departments follow the separation of major disciplines i.e. patients are sorted at the door to medicine, surgery etc. Other departments have “Notmedizin” (emergency doctors) – who do emergency medicine but have trained in another discipline because emergency medicine does not exist as a specialty. Here the modus operandi is often resuscitation, diagnostics and a quick referral to the appropriate specialty.

Sweden

(Gordian Fulde and Carolyn Annerud)

Emergency medicine in Sweden is still in the very rudimentary stages. Although the socialized medical system approved emergency medicine as a subspecialty of medicine or surgery in late 2005, there is no clear pathway for specialty emergency medicine training as yet.

Most Emergency Departments are staffed by junior doctors with little supervision. Alternatives at some hospitals include nursing triage and long patient waits where various specialists are called to attend to specific complaints.

Ambulance personnel are trained in basic CPR and the use of defibrillators. Unlike the European models, physicians do not attend to patients in the pre-hospital setting.

The Swedish Society for Emergency Medicine was established in 1998 with yearly meetings in the fall (www.swesem.org).

The Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine is available at <http://www.akuttjournalen.com/index.html>

Symposia for EM Development

Annual Symposium, Medical Society of Papua New Guinea.

4-8 September 2006

At Divine Word University, Madang.

Themes include Emergency Medicine and Disaster Management

www.medsymp.org.pg

General enquiries and abstracts to:

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Dr Mathias Sapuri, President Medical Society of PNG

Email: sapuri@daltron.com.pg

Mathias Sapuri writes: the Organising Committee wishes to encourage emergency physicians with PNG or developing country experience to attend.

See the Madang Resort for accommodation, excellent diving opportunities and ancillary travel and activities while in this fascinating "Land of the Unexpected".

<http://www.meltours.com/>

ACEM participants are likely to include Chris Curry, Simon Jensen, Paul Spillane.

Emergency Medicine Symposium, Ceylon College of Physicians, Sri Lanka

28 September 2006

At Cinnamon Grand Hotel, Colombo

An Invitation to launch Emergency Medicine in Sri Lanka:-

Dr M.I.Ragunathan MD FRCP PCCP, President of the Ceylon College of Physicians, extends an invitation to FACEMs to contribute to an inaugural Emergency Medicine Symposium.

Emergency Medicine is a new concept in Sri Lanka. Dr Ragu wishes to alert the Ceylon College of Physicians to the need to develop the specialty. The EM Symposium will precede the Annual Congress of the Ceylon College of Physicians.

The College membership comprises of general physicians, cardiologists, neurologists, rheumatologist, chest physicians, nephrologists and so on. The attendance will be around 300, including postgraduate trainees (both pre and post MD). The Annual Congress will be held in Colombo, 28-30 September 2006, and will be followed by a post congress Satellite Symposium in Galle, 125 km south of Colombo.

If you might be interested in this opportunity, please contact Peter Cameron at

Email peter.cameron@med.monash.org.au

Mobile 0405 500 397

ACEM participants are likely to include Peter Cameron, Gerard O'Reilly, Gim Tan, Shane Curran, Jonathan Knott.

Editor Chris Curry chriscurry1@compuserve.com

May 2006