POLICY AND SERVICE DELIVERY

Prehospital emergency care in South East Asia: Three cities

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In light of recent disasters which have occurred in Asia over the past five years, notably those which have occurred more recently in Myanmar and China, this paper explores existing standards and accessibility to prehospital care in the main cities of three South-East Asian countries.

The cities were chosen because of their increasing popularity as tourist, retirement or business destinations, and include, Singapore (a major business hub of South East Asia); Hua Hin (a major tourist destination in Thailand which is an increasingly popular retirement draw card for foreigners), and Siem Reap (the second largest population centre in Cambodia). The paper will also explore the impact of government health policy and economic capability on the provision and structure of prehospital care systems in these cities.

Singapore

A highly sophisticated metropolis with a population of some 4,608,167¹, Singapore is an island state with an economy built upon trade and finance without the aid of natural resources

Image 1: The latest addition to the Singapore Ambulance fleet

or industry. Highly regarded as one of the cleanest and most modern cities in the world, the city has an integrated emergency response system, the Singapore Civil Defence Force (SCDF), comprising Police, Fire, Ambulance and Disaster and Rescue Teams (DART). Co-location of emergency response organisations is an economic and geographic necessity to ensure that valuable space is utilised well.

Paramedic services consist of a three person crew comprising a driver, a medic first aider, and a paramedic. The Singapore ambulance crews responded to 88,663

cases in the year 2005, of which 90% constituted emergency ambulance attendances of which some 50,659 represented emergency medical calls, 26,227 were trauma calls, and 3262 represented "other" incidents.²

Discussions with paramedics at the City Central station of the SCDF revealed that paramedic education and training involves a two year commitment to diploma level with components of theoretic and on-road phases.²

The training is somewhat aligned with the US EMT model, and is reflective of the earlier training course (Diploma of Ambulance and Paramedic Studies) which was undertaken by Ambulance Victoria paramedics prior to the introduction of the pre-employment (Bachelor of Emergency Health Degree course) at Monash University in 2004.

Image 2: The author (far right) with a senior paramedic and SCDF ambulance crew

Ambulance vehicles consist of Mercedes-Benz Sprinters of a single stretcher variety, but have the capacity to transport up to four patients (albeit with the paramedic managing all four en route). Motorcycle response units are also a feature of the SCDF system, with police, fire and ambulance motorcycles available to combat response in the often heavy traffic. Computer-aided dispatch is a feature of the service, and in-vehicle cameras record each response to a case. This is a risk control measure, and has the side effect of providing an ability to fine those drivers who fail to give way to the emergency vehicle. Basic pharmacology is utilised, including adrenaline, GTN and aspirin, however S8 drugs such as Morphine for analgesia are not included as part of the paramedic pharmacological regime.

A Lifepack monitor/defibrillator with inbuilt SPO2 capability provides 3-lead ECG capabilities, however arrhythmia management is limited to cardiac arrest defibrillation of VF and VT. According to paramedics and medic first-aiders at Singapore's Central City station, there is an increasing risk of assault on ambulance staff within their operational field, presenting the greatest hazard to paramedics in Singapore at this time. This is said to occur during treatment, and is anecdotally related to altered behaviour resulting from specific medical conditions, mental health issues, drugs and/or alcohol.

Image 3: The Lifepack monitor and SPO2 probe of the Singapore SCDF ambulance

This risk has also been identified as a growing concern among many other prehospital care services across the developed world, as is certainly well publicized by the Australian media.

Hua Hin

Hua Hin is a resort town on the coast of the gulf of Thailand with a population of 48,700 (3). Its significance as a holiday destination for the Thai people is enhanced by the presence of a summer palace for His Majesty King Bhumibol Adulyadej, who has ruled Thailand since 1950. The area is experiencing rapid growth in the form of condominium development for retirees, both locally and from other countries, which is evident from the substantial building work that is going on.

There are several major hospitals servicing the coastal area; the San Paulo Hospital, the Hua Hin hospital, the Hua Hin International polyclinic, the Hua Hin Red Cross, the Petcharat Hospital, the Pranburi hospital and the Cha-am hospital.⁴ These offer a range of services including obstetrics, general and specialist surgical, neurology and haemodialysis. An increasingly popular form of tourism within Thailand is “medical tourism”, a phrase coined to reflect foreigners travelling to the area for cosmetic surgery at significantly reduced prices compared to similar treatments in countries like Australia or the USA.

The San Paulo hospital has two ambulances, staffed by drivers. There is no prehospital care provided in the ambulances, only (rapid) transport. The ambulance is crewed by an attendant and a driver, however in discussions with staff it appeared that no significant clinical skill or training was required, coupled with very limited English language skills.

The Petcharat hospital is included here, even though it is a private institution and is some 45 minutes drive from Hua Hin, as it has the facilities to manage complex trauma including head injury.⁴ An ongoing concern within Hua Hin province is the prevalence of Dengue Fever - a haemorrhagic fever spread by mosquito, which by February 2008 had infected a rate of 3.64 per 100,000 people in the province, although community and government measures are currently underway to combat the mosquito problem.⁵

Image 4: One of two San Paulo hospital ambulances (Hua Hin)

Siem Reap

The Kingdom of Cambodia has a tumultuous history, and is still recovering from the Pol Pot era, which resulted in the systematic extermination of approximately two million of its citizens between 1974 and 1979. Cambodia remains an essentially impoverished country where education is rudimentary, and health care is supported primarily by foreign NGOs. The people of Cambodia are some of the most resilient on the planet, utilising their Buddhist faith and an indefatigable sense of humility and humanity to persevere in an inhospitable country that is still subject to allegations of corruption at all levels of bureaucracy.

Image 5: Cambodian housing at lake Ton Le Sap, Siem Reap

Siem Reap in Cambodia, most famous as the location of the temples of Angkor and home to the Khmer empire up until the 15th century, attracts almost one million visitors per year to the 150 square kilometer site.⁶ The town has a population of 798,000,⁷ and is serviced by a children's hospital (Angkor Hospital for Children), the Royal Angkor International Hospital, the Siem Reap Provincial Hospital and a number of private clinics.⁸ There is no ambulance service funded or supported by the government, and the primary services for emergency transport are those attached to hospitals and private clinics. These are rudimentary and

offer basic transport to the hospital or clinic represented. Cambodians who do require medical assessment or treatment can endure up to seven hour long rides by whatever transport they

can muster, and then a further wait of up to six hours for medical assessment. The local hospitals advertise medical assessment for international visitors and the availability of a medical retrieval helicopter to evacuate those patients requiring specialist or intensive care services to primary care facilities in Bangkok, Thailand.⁹ However, these services are well out of the reach of ordinary Cambodians.

Image 6: The COSO orphanage, with Nick Griffin (rear left)

Discussions with Nick Griffin, an unpaid Director of the NGO Cambodia Orphan Save Organisation (COSO) not only offered an interesting insight into the provision of health care to the populace, but also enabled a valuable personal experience to meet with local people outside of the tourist setting.

Due to the high cost of fuel and motor vehicles, motorcycles and scooters are a popular mode of private transport. Helmets are not compulsory, and the roads are of dubious quality, with significant ambiguity in terms of road rules and traffic management devices. As a result, road trauma represents a significant proportion of

emergency health cases in the area, next to diseases such as malaria and dengue fever. Other significant risks include injuries sustained from visiting the temples, which often involve steep climbs in the surrounds of unstable structures which can be up to 1000 years old. Few risk management procedures are evident and only the most basic signage is used to warn of hazards.

Conclusion

The focus of emergency health care in SE Asia relies heavily on the hospital system, with little emphasis on prehospital care other than rapid transport. The quality of care available at all levels appears to be directly related to the economic status of that country, and the efforts of government and health authorities to identify and support the development of prehospital services.

Countries such as Thailand and Singapore both have established prehospital care systems, although the Thai model appears to have less significance in regional areas. Siem Reap suffers greatly from the absence of a prehospital care system, which is perhaps due to Cambodia's economic standing rather than an unwillingness to develop such a model. Clearly, each city represents a community at differing levels of social and economic development, yet all are influenced by foreigners' expectations of emergency care, which can be provided at a cost.

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