

## Efforts to help develop emergency medicine in rural Sichuan: a brief report

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Emergency Medicine (EM) as a specialty discipline in China is gradually progressing to a mature status. However, emergency medical care development in large cities and in rural areas may have wide disparity. Rural hospitals need the same kind of support and development as hospitals in major cities. Assistance has come from many EM providers and faculties from western systems. The needs of a rural hospital in Sichuan, and the efforts of help provided from Hong Kong, is described. (*Hong Kong j.emerg.med.* 2002;9:110-112)

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International Emergency Medicine is a subspecialty of Emergency Medicine (EM) concerned with the development of emergency medical care systems throughout the world, and with the education and training involved. In this article, the author, a EM specialist in Hong Kong, shares his personal experience in helping to develop and improve emergency care in a rural part of Sichuan.

The relative stages in the development of EM may be broadly defined as underdeveloped, developed, and mature.<sup>1</sup> Several articles have described the state of development of EM in China.<sup>2-6</sup> Like Hong Kong, mainland China is considered to have a "developing" emergency care system.<sup>1</sup> The Chinese Journal of Emergency Medicine was first published in 1980. The Chinese Association of Emergency Medicine (CAEM) was founded in 1983, and EM granted specialty status by the Chinese Medical Association in 1986. CAEM has a current membership of 800 and the CAEM Journal of Emergency Medicine began publishing in Hangzhou in 1990.<sup>6</sup>

The source of funds for the development of EM facilities is mainly from the Chinese government. Assistance is also derived from foreign non-governmental organizations, foreign governments, United Nations programmes, and corporate and individual charitable organizations.<sup>6</sup> Countries with mature emergency care systems have assisted the development of EM in China.<sup>3,6</sup> This has involved the participation of EM physicians and nurses attached to hospitals in China, providing training and education.<sup>3</sup> There have also been plans regarding the establishment of a central EM training base in China with the ongoing participation of US Emergency Physicians.<sup>6</sup> At present, however, high-level academic training and research in EM is present only in the large cities in China. Emergency Departments (ED) in China vary widely from the large cities to rural areas. This gap between urban and rural EM development is present even in the mature American system, where the practice of EM in rural areas is commonly found to be uniquely different from urban practice models.<sup>7</sup> In the large cities in China, EDs may have world standard facilities, with modern triage system, observation unit, even separate inpatient floors, intensive care unit and operating rooms. By contrast, rural EDs may be very poorly equipped, and sometimes non-existent even in an acute care hospital. Since assistance in the development of EM is mainly directed at urban areas, rural hospitals depend on the large cities for the popularization and dissemination

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of emergency medical skills and knowledge.<sup>6</sup> The author has therefore been involved with education and training in EM for doctors and nurses of a rural hospital in Sichuan.

E'bian (峨邊) is a rural district located in the southwest of Sichuan, some 3 hours' drive by car from Chengdu. It is situated at the foothills of the famous E'mei Shan (峨嵋山). It has a population of 140,000, of which 35% are from ethnic minorities. The main ethnic minority group is the Yi (彝族). Farmers constitute 82% of the total population. Delivery of health care is through village health station outposts for primary care, and hospitals in the town for major illnesses. The E'bian Yi District Hospital is a 100-bed acute care hospital, with separate medical, surgical, obstetrics and gynaecological wards and an operation theatre. It has a 24-hour outpatient department to attend to walk-in patients. However, at present, there is no Emergency Department, and no resuscitation facilities at the outpatient department. Acutely or critically ill patients are directly admitted to the hospital wards or the operating room for initial management or, if required, resuscitation. Investigations are limited to blood tests for renal, liver functions, complete blood counts, glucose and cholesterol. The hospital has an ultrasound scanner, and a 12-lead electrocardiography (ECG) machine, but lacks CT scan. Resuscitation and cardiac drugs include adrenaline, lignocaine, atropine and adenosine. There are 2 laryngoscopes shared among all the wards and the operating room. The doctors and nurses are mainly graduates from "health schools". These health schools are like vocational high schools, with a 4-year western medicine programme for doctors. Entrants usually have completed junior high school, equivalent to "Form 3" level in Hong Kong.

A team of Christian doctors and nurses from Hong Kong has made several trips to E'bian. Needs in EM development has been identified. During the first trip in September 2000, an introductory lecture in modern trauma management concepts was given to hospital staff. Basic Life Support (BLS) practical training was given to 15 doctors and nurses, and a BLS manikin with bag-valve-mask resuscitator was donated to the

hospital for further staff training. A session in ECG interpretation was given. Amongst members of this visiting team was an Associate Professor from an academic EM unit in Hong Kong. We were faced with the difficulties and challenges of introducing basic trauma care adapted to a facility with minimal resources.<sup>8</sup>

During the trip in October 2001, further airway adjuncts were donated, together with demonstrations of their proper use. These equipments included oropharyngeal airways, nasopharyngeal airways, another adult bag-valve-mask resuscitator, and endotracheal tubes. A small group of doctors and nurses were taken through the essentials of initial trauma care, including cervical spine protection and the technique of log-roll. Trauma management principles were reiterated by involving the group in scenario case discussions. Adjustable-size semi-rigid cervical collars were also supplied for the local hospital's use, after instructions in their application. A small-group session on the essentials of Advanced Cardiac Life Support for cardiac arrest scenarios was conducted, together with demonstrations on the use of a newly purchased defibrillator.

Future trips will provide support and training in the following specific areas:

1. The use of large-bore intravenous cannulae for the management of hypovolaemic shock.
2. Endotracheal intubation skills for every doctor of the hospital.
3. Advanced Paediatric Life Support
4. Neonatal resuscitation, and supply of a neonatal bag-valve-mask resuscitator
5. More scenarios for training in acute cardiac and trauma care.

With the growth of EM as a specialty in large cities in China eventually reaching mature status, efforts should increasingly be devoted to similar development in rural areas. Large cities can certainly play more active roles towards this end. Emergency doctors and nurses from Hong Kong are in a position to contribute in many ways. The advantage, in comparison to

training provided by foreign countries, is that the language and culture barriers are much reduced. Some initial efforts have been described here as a model, and this model will definitely need to be improved as more experience is gained. There are certainly many more sites with similar needs and similar potential for expansion in EM. It is hoped that this article will raise awareness of the existing needs, and be an inspiration for more manpower from our field to be involved with the development of EM in remote places, not too faraway from us, within our own country.

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Figure 1. Students and instructors of Basic Life Support practical training.



Figure 2. Trauma scenarios – interactive session.



Figure 3. Hospital-based ambulance and local Yi villager.