**Vietnam**  
**2004–2008**  
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**History of PTC in Vietnam**

In 1998 Dr Lena Dohlman began teaching the principles of trauma management to doctors at the Center for Traumatology and Orthopaedics (CTO) in Ho Chi Minh City after staff at CTO expressed a need for such teaching. Dr Dohlman was introduced to PTC at the World Congress of Anaesthesiology in Montreal in 2000, and subsequently attended a PTC instructor’s symposium in Melbourne hosted by Dr Rob McDougall. Later that year Dr Nguyen Hong Thu, Director of CTO and Dr Nguyen Ngoc Chung, Chief of Department of Anaesthesia and Intensive Care, CTO, requested assistance in establishing a PTC course in Ho Chi Minh with Dr Chung and Dr Huynh Manh Nhi (paediatric orthopaedic surgeon) as local coordinators. The PTC teaching materials were translated into Vietnamese by Dr John Candy, and his colleagues at Viet Duc Hospital, in Hanoi.

The PTC team formally received an invitation from Viet Duc University Trauma Hospital to undertake PTC courses in Hanoi following the initial approaches undertaken in 2002 in Ho Chi Minh city. The Team worked in conjunction with local medical and health educational systems to establish PTC initially in Hanoi and then provincially.

Vietnam is a country of nearly 80 million with approximately 4 million in Hanoi. It remains one of the least affluent of the Asian countries with an estimated per capita income of $300US per year. Official statistics on trauma mortality and morbidity have only recently been gathered through Viet Duc University Hospital in Hanoi.

**Viet Duc University Hospital**

Viet Duc University Hospital was built in 1906 by the French near the centre of Hanoi and is now the largest and most modern centre for surgery and clinical teaching facility for the Medical College of Hanoi in North Vietnam with over 850 staff serving 500 beds and it provides 135,000 consultations, receives 25,000 admissions and performs 20,000 operations per year.

For the period 2000–2004 bed occupancy averaged 117%. With a peak of 133% in 2004.

The first pilot study of injury surveillance was undertaken in 2005 and this year Viet Duc reported injury surveillance data over 7 months. A large amount of work has been undertaken to evolve preventative strategies on road safety health in Vietnam with evolution of Road Safety awareness and the need for Helmet protection.
There is a need and desire by the clinicians involved with initial trauma management in Vietnam to improve trauma management, particularly in the pre-hospital and provincial medical environment. We observed a “hunger” for knowledge and improvement in trauma management.

**Trauma in Hanoi**

Recent Trauma data made available to our team from Viet Duc again defines the epidemic of Trauma, particularly neuro-trauma that is occurring in Hanoi.

83% of trauma patients arrive to Viet Duc from outside the Hanoi metropolitan area with little or no pre-hospital emergency trauma care.

From the data available motor traffic accidents currently account for 58% of all presentations. In 2003 over 12,000 people died in Vietnam from motor vehicle related injury and over 20,000 were injured permanently. These statistics did not include the “incurable” who were discharged and died at home. In 2003-2004 there were some 52,000 presentations to Emergency at Viet Duc Hospital of which 36,000 were trauma and 23,000 (two thirds) of these were road trauma.

The total emergency admissions to Viet Duc between 1999 and 2004 showed a significant trending increase in road trauma patient numbers.

The percentage of severe neuro-trauma is considerably higher than in Australia.

Head trauma accounted for 13,000 (over half) thoraco- abdominal 1800, orthopaedic 5000 and those with major multiple trauma accounted for 7600,. In the fist 10 months of 2004 1041 died in hospital compared with 482 in 2003. In the first 6 months of 2004 Viet Duc had 787 major motor vehicle related trauma admissions with 262 deaths.

From 2004, with the implementation of Road Safety preventative principles their has been a fatality reduction in 2004 by 3.7%.

An epidemic of motor vehicle/motor cycle trauma exists in Hanoi and observed practice suggests:

+ Trauma increased at a rate in excess of 25% from 1999 to 2004
+ Major emergency operative procedures are on the increase. In a similar time frame these have risen 35%.
+ 80% of multiple trauma requiring major procedures are motor bike related with a very high incidence of these neuro trauma.
+ Helmet wearing is not compulsory and very few do so
+ The anaesthesia and critical care services staffing and equipment are of high standard

The major cause of road trauma in Vietnam includes:
The rapid economic growth with a concomitant growth 4.5 times in passenger vehicle numbers in the last 12 years.

Non use of helmets for the very high proportion of motor cycles. 44% of all mechanism of injury are from motor cycles in hanoi.

Virtually non existent pre-hospital management and ambulance transfer services.

**Pre-Hospital Care Services Hanoi**

Until 2004 their was essentially no coordinated (Pre-hospital / Hospital) response system for trauma victims as exists in Australia, UK, Europe and North America. The health care budget is small and medical facilities, communications and transport systems for the sick and injured are poorly developed.

Concepts of pre-hospital care are evolving through the excellent work of Dr Chinh with the establishment of the **114 ONE NUMBER** call for ambulance services in the pre-hospital area. Across Vietnam the one number 115 system has been instituted.

**Provincial Services**

The statistics collated in Dr Chinh’s report from 51 provinces in 2004 shows that mortality from traffic accidents dominated again with an 26.7 / 100,000 population. Still 3 times that of Australia. The rural facilities are overburdened with injured patients.

**Comparison data**

In 1990 Road Traffic accidents world wide were 9th on the leading cause of all mortality worldwide. It is projected that by 2020 road traffic accidents will be number 3 on that list.

Since record keeping in 1925, there have been over 169,000 road fatalities in Australia. **EACH YEAR IN HANOI** there are approximately 12,000 road fatalities and 30,000 injured.

In Australia from 1970 until 2002 the motor vehicle fatality rate dropped from 30.4 to 8.8 deaths per 100,000 pop. This reduction has been achieved in spite of a huge increase in motor vehicle use.

The road trauma fatality rate in Vietnam Hanoi in 2002 was 26.7 deaths per 100,000 pop and data from the National Traffic Safety Committee showed that in the 12 years ending 2002 road injuries went up 4 times compared to the previous decade.

Fortunately implementation of preventative measures are stemming this rise. From “Health service in vietnam today”.

In Australia from 1970 to 2002, the motor vehicle fatality rate per 10,000 reg/vehicles has dropped from 8.0 to 1.4. This compares with the fatality rate in Hanoi in 2002 of 11.8 deaths per 10,000 vehicles. With the statistics showing 53% are young people between the ages of 15 and 44 years.
Road traffic injuries in men aged 15-44 years constitute the second highest cause of ill health and premature death worldwide currently second only to HIV/AIDS.

Worldwide, the WHO reports that 38,848,625 injuries were received by people involved in MVA’s in 1998. 80 per cent of those deaths and injuries take place in the developing countries and 90 per cent of the child casualties belong to these countries. This is the pattern that is seen in the statistics in Hanoi. Head injury alone accounts for 45% of all injuries.

It is exciting and interesting to see that even with modest implementation of public awareness safety measure the mortality rate has been contained.

**PTC in Vietnam 2004-2007**

We have now conducted PTC in Vietnam for 4 years with approximately 700 doctors now attended the course. The PTC team received a request at the end of the PTC courses in 2007 to return and provide further courses and to evolve PTC to rural / provincial areas over the next 5 years. The average funded costs to provide these course is averaged to $120 AUS per person attending the course.

Integration of PTC into Vietnam in Binh Dinh continues with PTC courses undertaken by New Zealand colleague Mr Allan Panting (Orthopaedic surgeon) through funding from the New Zealand-Vietnam Health Trust.

We conducted the first provincial course in Ha Long 2006 and in Thanh Hoa in 2007 with projection to undertake further courses in danang in 2008.

Discussions have been held between PTC, Viet Duc and Injury and Disease Prevention Ministry of Health and Director General International Cooperation Department Ministry of Health of Vietnam who provided endorsement for the PTC programme through Viet Duc Hospital and to utilize PTC in its integration of the pre-hospital prevention and hospital care trauma programmes.

**HOC MAI Programme ( www.hocmai.org ) and PTC**

PTC Australia has established links with HOC MAI and through this have coordinated medical students to attend Viet Duc and have doctors from VietDuc come to Australia.

Dr Nguyen Huu Tu was selected as the HOC MAI fellow in 2006 and Dr Nguyen Duc Chinh in to attend as a fellow for 3 months in Australia.
Funding for PTC in Vietnam
The PTC programme in Vietnam is grateful to St Lukes Health Tasmania and Colleen McCann for this support over the last 2 years. The Australian Society of Anaesthetists has provided ongoing support and funding.

Current funding agreements are being discussed with HOC MAI foundation and the Kadoori Foundation.

Key Personnel involved in PTC Vietnam 2004-2008

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Dr Nguyen Tien Quan Anaesthetist Viet Duc Hospital

Dr Pham Quang Minh Anaesthetist Viet Duc Hospital &
Lecturer Hanoi Medical University

TC Courses
All course materials including manuals in Vietnamese and certificates, amenities and facilities were all arranged by Dr Tu. Administrative support was required to assist in contacting and organizing the attendees.

Dr Tu arranged for his PTC instructors to conduct a number of lectures in the programme. Australian instructors have been involved with the didactic lecture programme as well as the skills stations.
The Future of PTC in Vietnam
The evolution of PTC has taken a new step with the completion of the second Provincial course at Thanh Hao Provincial Hospital. In addition the meetings with the Vietnam Ministry of Health has strengthened the role of PTC through the support of Viet Duc and Health Ministry endorsement.

Viet Duc Hospital is one of the major teaching hospitals in Vietnam and therefore is the major referral centre for trauma in the north of Vietnam. It has within its staff a cadre of highly trained and experienced staff who are keen to evolve PTC. Many provincial centres do not have this level of specialist support and such Vietnamese instructors will need to travel with the course.

Future success depends on a number of factors, both logistical and financial.

Further sourcing of funding is clearly necessary. Dr Tu and Dr Chinh have achieved funding for the Vietnamese instructors for the 2007-2008 programme through UNICEF.

PTC 2008 and beyond:
The challenge in spreading trauma management training to all health workers in Vietnam has been made. We have defined a five year programme to implement the course in designated “provincial” areas and attempting to attract funding for this. The strategic plans further defines this process.

The publication “Health Service in Vietnam Today” issued by the Socialist Republic of Vietnam Ministry Health and provided by Dr Huong Deputy Director General International Cooperation was an excellent source of health sector information in Vietnam with a clear outline of the structure and function of health resources. From this document they quote the ideal of HO CHI MINH with three ideals that are as relevant today and to introduction of PTC as they were in 1955 and in light of the cultural needs cannot be ignored. They are:

- Unite in health
- Devote to patients
- Build a Vietnamese medicine based on the scientific

Spread of PTC throughout Vietnam
PTC faces a challenging task in spreading trauma management training to all health workers in Vietnam. In addition to this there is the whole field of teaching the pre-hospital primary carers in trauma management.

At present we are on course for further PTC course in provincial Vietnam. Their resources are limited. These hospitals can probably provide the majority of instructor manpower to run the number of courses required. To spread trauma education more widely, some
involvement at a government or university level is needed and is being promoted. This may be possible through Viet Duc Hospital and Dr Tus excellent work in this area.

Without the excellent assistance of Dr Tu and Dr Chinh such course would not be undertaken.

VIETNAM STATISTICS

Data from The world fact Book AND Vietnamese Health Ministry

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>84,402,966 (July 2006 est.)</td>
</tr>
<tr>
<td>Age structure</td>
<td></td>
</tr>
<tr>
<td>0-14 years</td>
<td>27% (male 11,826,457/female 10,983,069)</td>
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<tr>
<td>15-64 years</td>
<td>67.1% (male 28,055,941/female 28,614,553)</td>
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<tr>
<td>65 years and over</td>
<td>5.8% (male /female ) (2006 est.)</td>
</tr>
<tr>
<td>Median age</td>
<td>total: 25.9 years male: 24.8 years female: 27.1 years (2006 est.)</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>1.02% (2006 est.)</td>
</tr>
<tr>
<td>Birth rate</td>
<td>16.86 births/1,000 population (2006 est.)</td>
</tr>
<tr>
<td>Maternal Mortality rate</td>
<td>85 per 100,000 live births</td>
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<tr>
<td>Infant mortality rate</td>
<td>18 per 1,000 live births</td>
</tr>
<tr>
<td>Life expectancy at birth</td>
<td>total population: 70.85 years</td>
</tr>
<tr>
<td></td>
<td>male: 68.05 years</td>
</tr>
<tr>
<td></td>
<td>female: 73.85 years (2006 est.)</td>
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<tr>
<td>Road Trauma Fatality rate</td>
<td>26.7 per 100,000 population</td>
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<tr>
<td>HIV/AIDS - adult prevalence rate:</td>
<td></td>
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<tr>
<td>Number of Doctors per 10,000 population:</td>
<td>5.88</td>
</tr>
<tr>
<td>Number of Pharmacists per 10,000 population:</td>
<td>0.77</td>
</tr>
<tr>
<td>Major infectious diseases</td>
<td>degree of risk: high food or waterborne diseases: bacterial diarrhea, hepatitis A, and typhoid fever vectorborne diseases: dengue fever, malaria, Japanese encephalitis, and plague are high risks in some locations animal contact disease: rabies water contact disease: leptospirosis note: at present, H5N1 avian influenza poses a minimal risk; during outbreaks among birds, rare cases could occur among US personnel who have close contact with infected birds or poultry (2005)</td>
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Intensive Care Viet Duc 2007
A/Prof Skinner A/Prof Griggs Dr Tu, Prof Bell and Dr Earles outside ICU Viet Duc Hospital

Typical Street scene Hanoi

PTC Course – April 2007
Viet Duc University Hospital
Hanoi Vietnam.