

EMS system in Thailand

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Geography



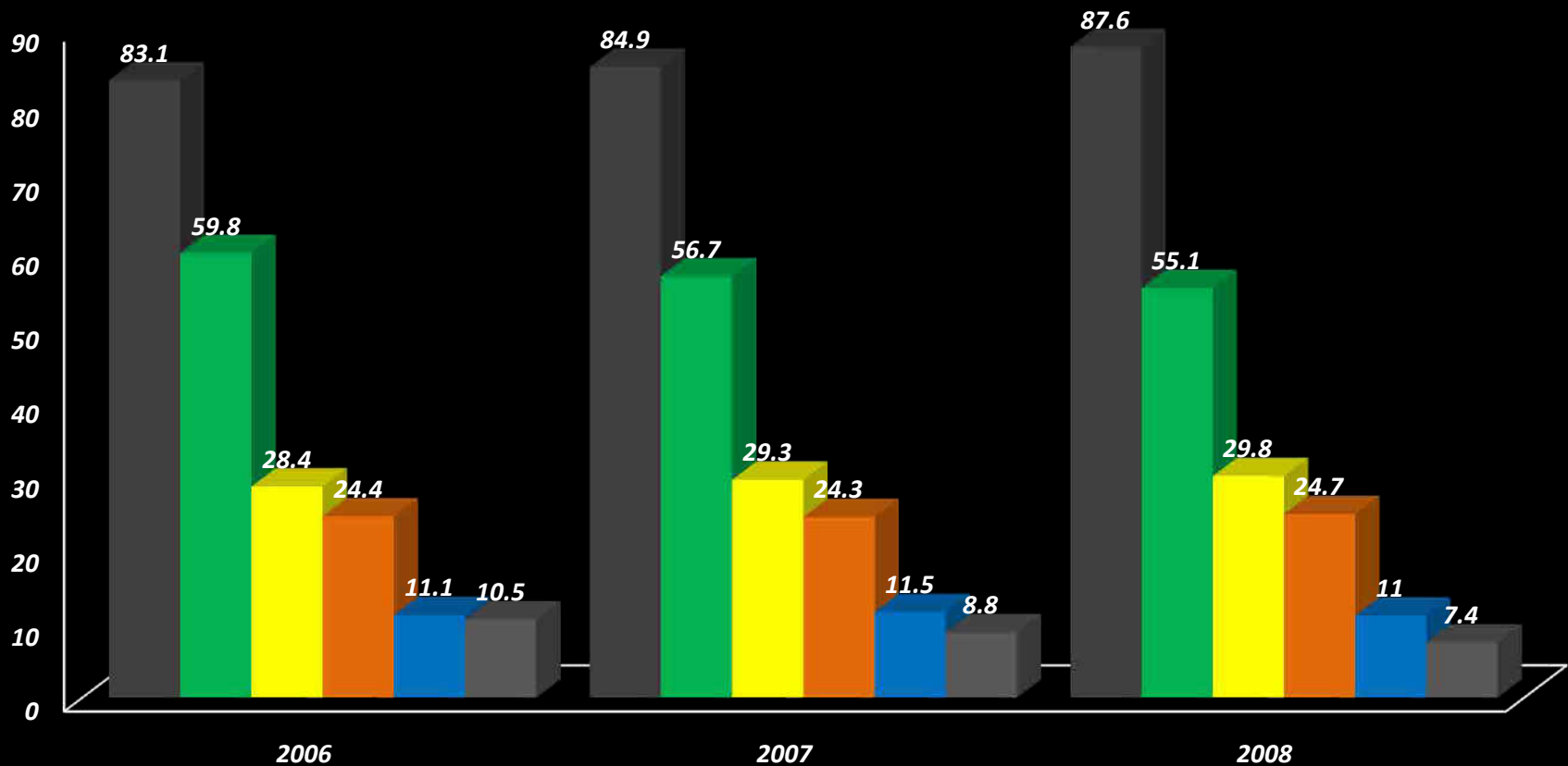
- Located in Southeast Asia
- Capital : Bangkok
- Total population : Approx 64 million
- Life expectancy at birth m/f (yr) : 69/75



Bangkok data

- Area 1,568,73 km²
- Population 5.7 million
- Density 3,635.15 pp/km²

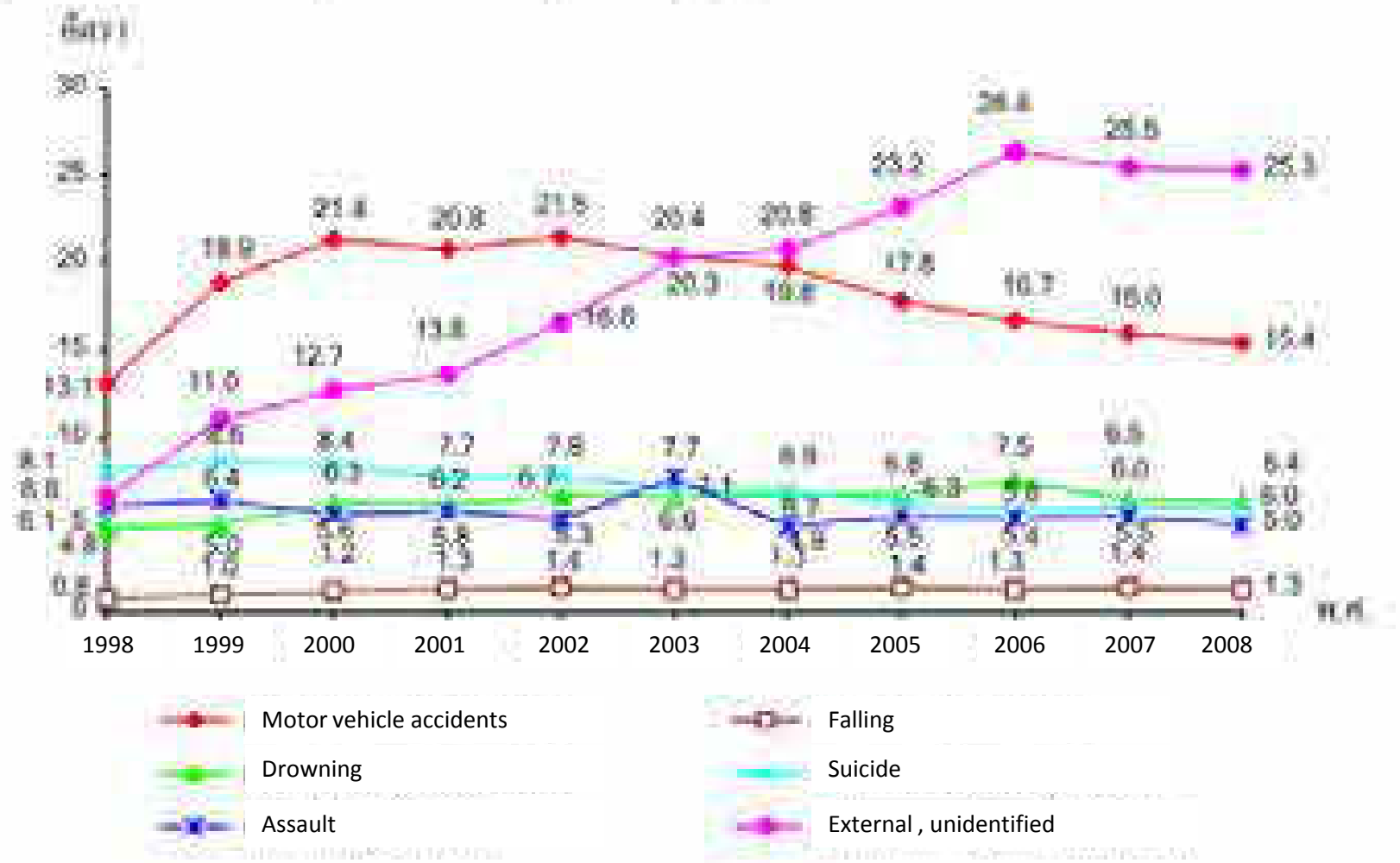
Death rates per 100,000 population by leading causes of death 2006-2008



■ Malignancy ■ Accidental and poisoning ■ Disease of Heart ■ HT and CVD ■ Suicide ■ HIV

Trauma groups

Figure 2.3 B: Death Rate per 100,000 Population Injury from External causes 1998-2008



Development of EM in some countries

Prof. Sant Hathirat, MD.

Country	National society	Residency training	Specialty	
			Journal	Board
USA	1968	1970	1972	1980
Canada	1978	1972	1983	1982
Australia	1984	1984	1988	1986
Hong Kong	1985	1994	1994	1997
China	1987	1996	1990	-
Philippines	1988	1988	-	1991
South Korea	1988	1989	1990	1996
Singapore	1993	1984		

Thailand

2003

2004

2009

2007

History of EMS system in Thailand



1989 : Beginning of EMS system

1995 : Beginning of EMS transportation

1995 : Beginning of EMT training

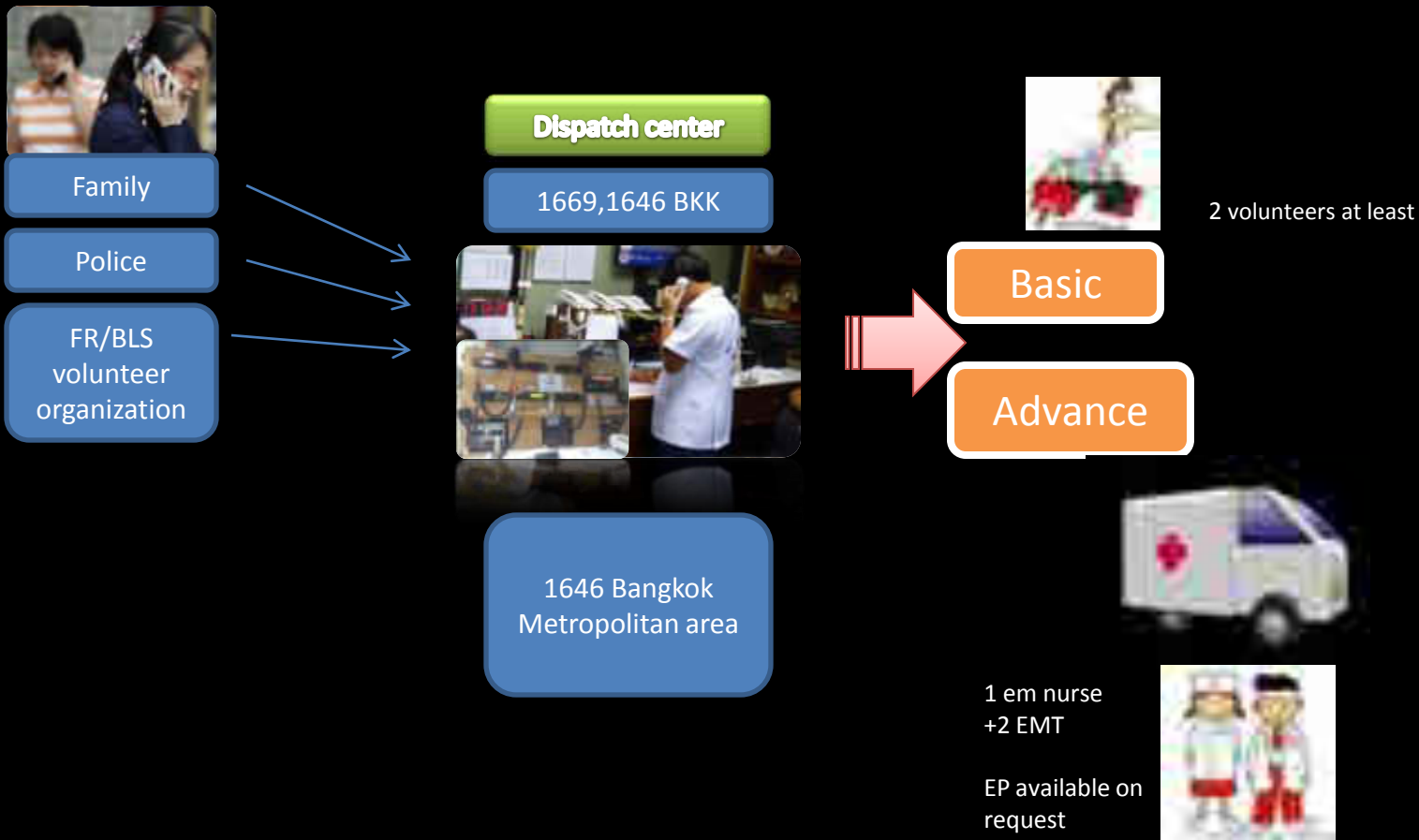
2003 : Beginning of emergency medicine as a specialty

2004 : Beginning of residency program

2005 : Full Establishment of Countrywide Provincial EMS Services

2007 : Graduate the first gen. of board certification emergency physicians

Diagram of EMS system



Private hospitals' ambulance service also available on call

Type of Ambulance

1. BLS : volunteer organization , hospital-based
2. ALS : hospital-based
 - Nurse 1 , EMT 2
 - Add Emergency Physician (criteria applied)





Northern Thailand (1) : ChiangMai University Hospital

NorthEastern Thailand (2/1) :
Khonkaen Provincial hospital and Srinagarhind university hospital

Bangkok Metropolitan area (9 training inst./4 has amb. services) :
Ramathibodi , Rajavithi , Bhumibol , Lerdsin-Nopparat

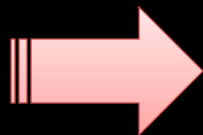
Eastern Thailand (1) : Chonburi Provincial hospital

Southern Thailand (2 training inst) :
Prince Songkla University hospital , Hadyai center hospital

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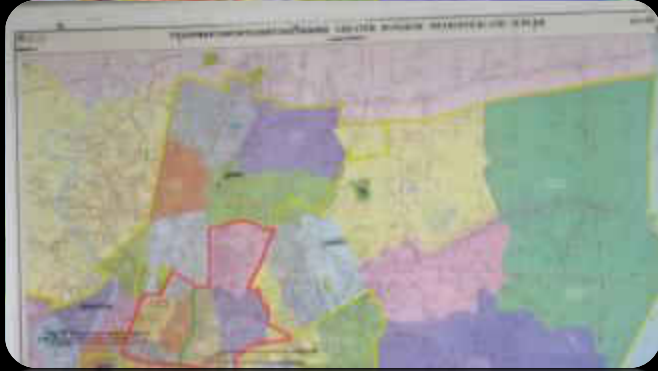
Application on EMS system with EP available



After 3 yrs , Approximately 120 board certified emergency physicians went back to work in rural area as the contract they've made before get into the residency. Most are provincial hospital all over Thailand.

Due to shortage of personnel , come up with variety of solutions to improve EMS system in their own area.

Application on EMS system with EP available



1. Have emergency physician on board for specified schedule.
2. Have emergency physician on board when criteria was met. (ex. Patient with chief complaint of “loss of consciousness” or else that suspect cardiovascular collapse)
3. Develop offline medical direction and criteria on specific circumstance.



Training for providers in EMSS ,Thailand

1. Residency :
2. Nurse
3. EMT-Intermediate
4. EM dispatcher
5. First responder



Prehospital Advance Life Support :

Supported by Department of Emergency medicine and Narenthorn EMS center, Rajavithi hospital.
3 days core lecture with scenario and skill training.

1 mo rotation at Narenthorn EMS Rajavithi with academic activity

- weekly case review
- Topic review
- Journal club

Training for providers in EMSS ,Thailand

1. Residency :
2. **Nurse**
3. EMT-Intermediate
4. EM dispatcher
5. First responder

Emergency Nurse specialty training :
Supported by many nursing colleges
And late 2009 , start using simulation center cooperate in
skill learning experience.

Supported by Department of emergency medicine , Rajavithi
hospital





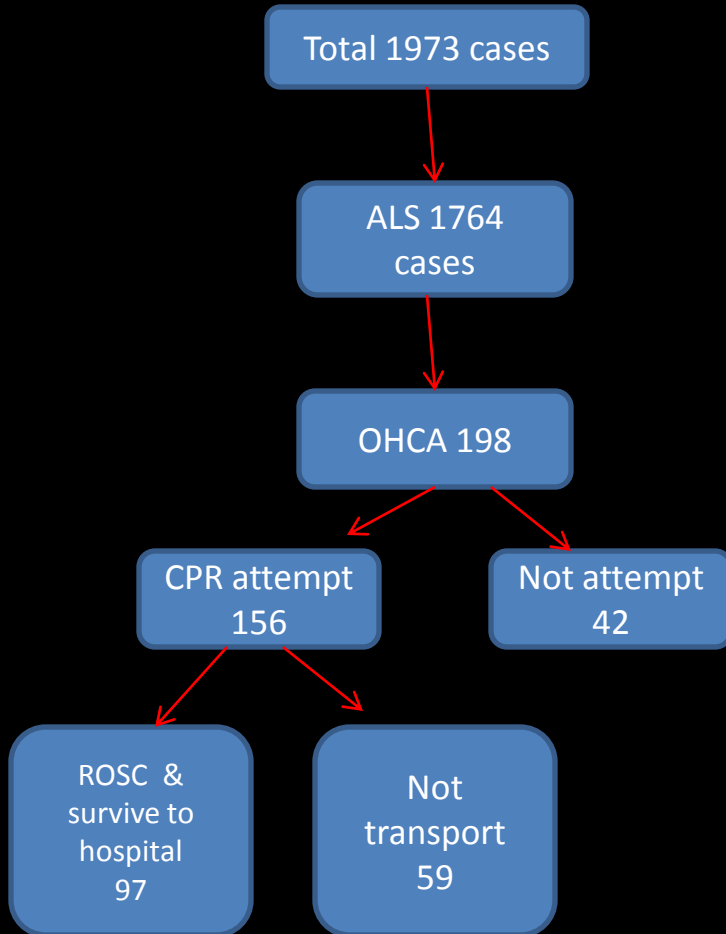
Department of Emergency medicine and Narenthorn EMS center, Rajavithi hospital

- 1100 beds
- 1,000,000 population area coverage
- Tertiary care center, Affiliate medical school
- Level 1 trauma center
- Emergency medicine residency training

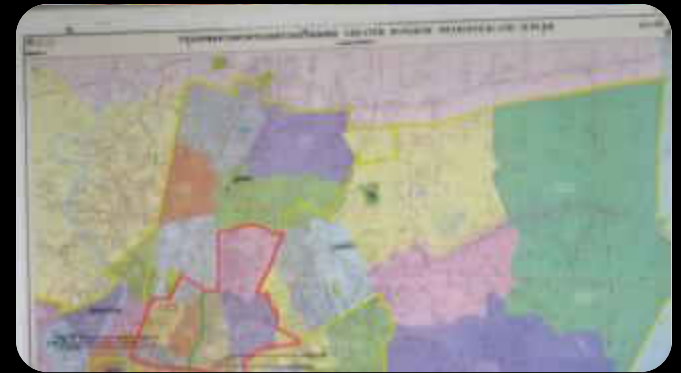




Narenthorn EMS center, Rajavithi hospital



- Start using Electronic Prehospital database since September 2008
- Service area :
- Approx . 1300 cases per year (110/mo.)
- ALS 89%
- OHCA 11.22%
- 21% no resuscitation attempt
- For those who receipt resuscitation , 62% survive to hospital admission



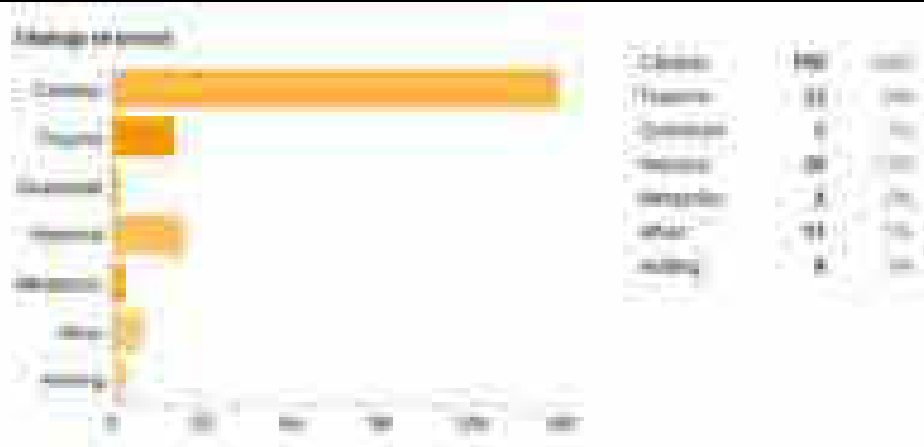


Narenthorn EMS center, Rajavithi hospital

EMS Data

Form fields include:

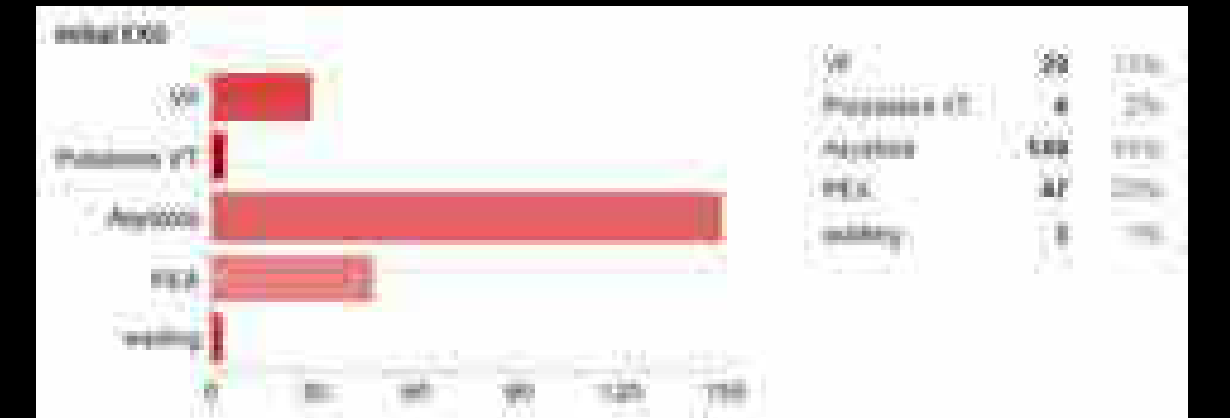
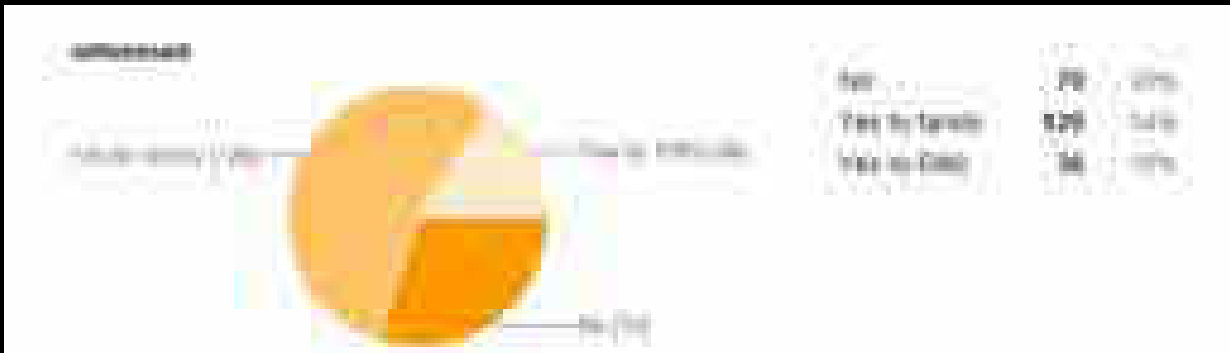
- Name: _____
- Age: _____
- Sex: _____
- Medical History: _____
- Address: _____
- Phone Number: _____
- Emergency Contact: _____
- Notes: _____



**OHCA
Self – Transport
ED resuscitation
In Rajavithi hospital**

**232 cases .
Jun 2006-Dec 2009**







Survival to 1mo outcome = 48/232 (20.6%)

Thank you for your attention





สถาบันการแพทย์ฉุกเฉินแห่งชาติ (สพจ.)
Emergency Medical Institute Of Thailand

- Founded after EMS master plan 2010-2012
- Strategic support the development in EMS system in all levels.

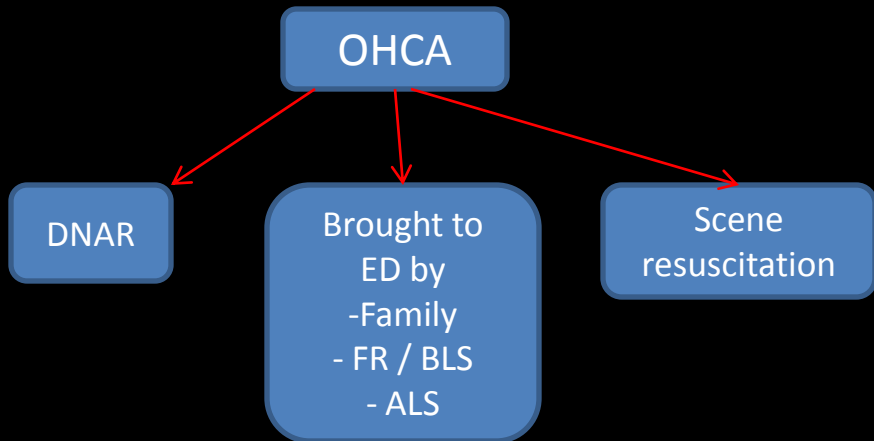
Recent study on EMS from Annual scientific meeting 2009-2010

- Buranasakda M , Khonkaen hospital ; Survival outcome of out-of-hospital cardiac arrest in physician staffed emergency medical service.
- Hengrasmee C, Vajira hospital ; A comparison in duration and ventilating volume in single rescuer CPR between two ventilator devices including intubating LMA and BVM in mannikin study by EMS nurses
- Sarathap P , Ramathibodi hospital ; Survey of emergency medical service system in Thailand from the perspective of the emergency medical service provider.
- Ponglorpisit C , Rajavithi hospital ; Retrospective study of prehospital triage in emergency case, Narenthorn EMS center Rajavithi hospital.
- Thamwatwimol S, Rajavithi hospital ; Alteration in prehospital drug concentration after stored in EMS ambulance and drug storage at room temperature at Narenthorn EMS center ,Rajavithi hospital.
- Chamchun R, Rajavithi hospital ; Accuracy of patients with loss of consciousness information by EMD
- Jingjit P , Rajavithi hospital ; Precision of triage in trauma patients after introducing trauma team activation guidelines
- Saeheng K , Songklanagarhind hospital ; Outcome and predictors of Pediatric cardiopulmonary resuscitation at the emergency department Songklanagarind hospital.
- Dhearapanya T , Nopparat Rajathanee hospital ; Out-of-hospital cardiac arrest outcome report at Nopparat Rajathanee hospital.

Recent study on EMS from Annual scientific meeting 2009-2010

- Chuamuangphan T , Phramongkutklao hospital ; Survival rate of Advanced cardiopulmonary resuscitated patients at emergency department in Phramongkutklao hospital.
- Puttichote K , Bhumibol Adulyadej hospital ; The study of COR in cardiac arrested and/ or respiratory arrested in emergency department at Bhumibol Adulyadej hospital.
- Prapaspong V , Khon kaen hospital ; Factors influencing the outcome after resuscitation in emergency department Khon Kaen hospital.

OHCA in Thailand



- Majority : brought to ED by family and friends
- No bystander CPR
- No standard “termination of resuscitation attempt at scene” → , more likely to bring patient back - CPR on moving ambulance.

Start using Utstein template for data recording OHCA in emergency department resuscitation: 2008

Organization in Thailand on cardiac arrest data

- Thai resuscitation council : (the heart association of Thailand under the royal patronage)
 - Majority of board members comprised of cardiologist , anesthesiologist , intensivist
 - Only IHCA data
- TAEM : Thai association for emergency medicine
 - PAROS