ATUDER
Acil Tip Uzmanlari Dernegi

14. ULUSAL ACİL TIP KONGRESİ
5TH INTERCONTINENTAL EMERGENCY MEDICINE CONGRESS
INTERNATIONAL CRITICAL CARE AND EMERGENCY MEDICINE CONGRESS
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EPAT
Emergency Physicians Association of Turkey

Prehospital Management Models in Europe: Tips and Tricks
« *Scoop and Run* » or « *Stay and Play* »
Pros and Cons

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EUSEM
EUROPEAN SOCIETY FOR EMERGENCY MEDICINE

Les Hôpitaux de Chartres

No conflicts of interest

What is the objective of EMS ?

1. Maximize survival Life-threatening injuries
2. Minimize impairment disabling injuries
3. Minimize pain and psychological suffering

World Health Organization

GEOGRAPHICAL

ALARM system
Communication

POPULATION

QUALITY of
Hospitals ED

RISK

FINANCIAL, POLITICAL

EMS

Prehospital Care

Varies from country to country

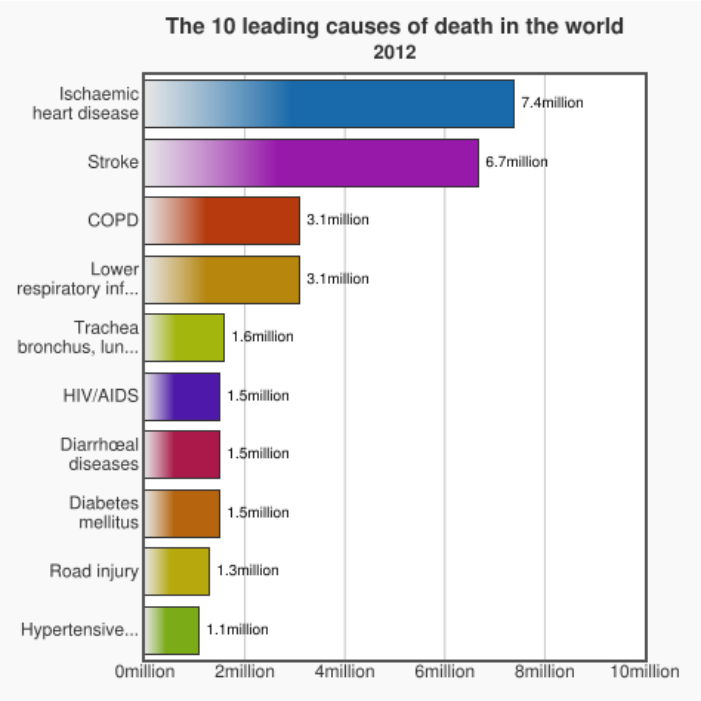
Transport

BLS : assure patient's vital functions
ALS : paramedics,nurses,physicians, EP

Emergency Department

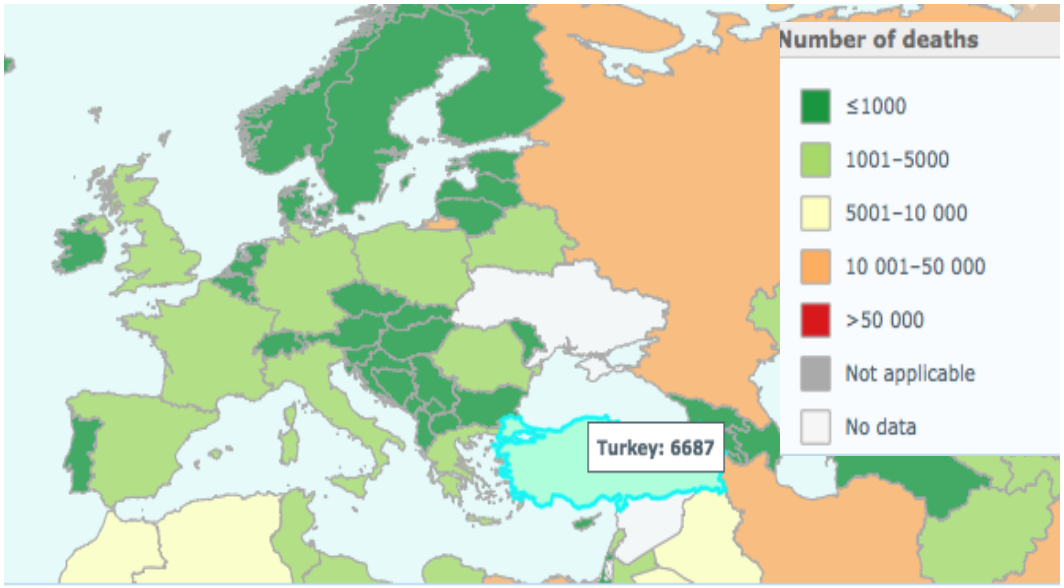
If the prehospital EMS is poor,
the quality of ED needs to be high

Globalization need for EMS



Deaths /year

17.5 M /CV diseases
7.4 M / heart failure
6.7 M /stroke.



Deaths / Road traffic injuries/year

China > 261,000
India 207,000
Nigeria 35,000
US 34,000
Russia 27,000
Turkey 6687

The 2 General Types of EMS Systems

"Anglo-American" system	"Franco-German" system
"Scoop and Run"	*"Stay and Play"*
paramedics	physicians
BLS ambulances	MICU ambulances HEMS
Patients delivered to hospital-based	Patients delivered directly to inpatient services
"*Bring the patient to the doctor*"	"*Bring the doctor to the patient*"
May just transfer problems to the nearest hospital ?	May take more time on–the-scene ? Cost +++

The worse situation :
« *Stay and Pray* »

”*Scoop and Run*" EMS System

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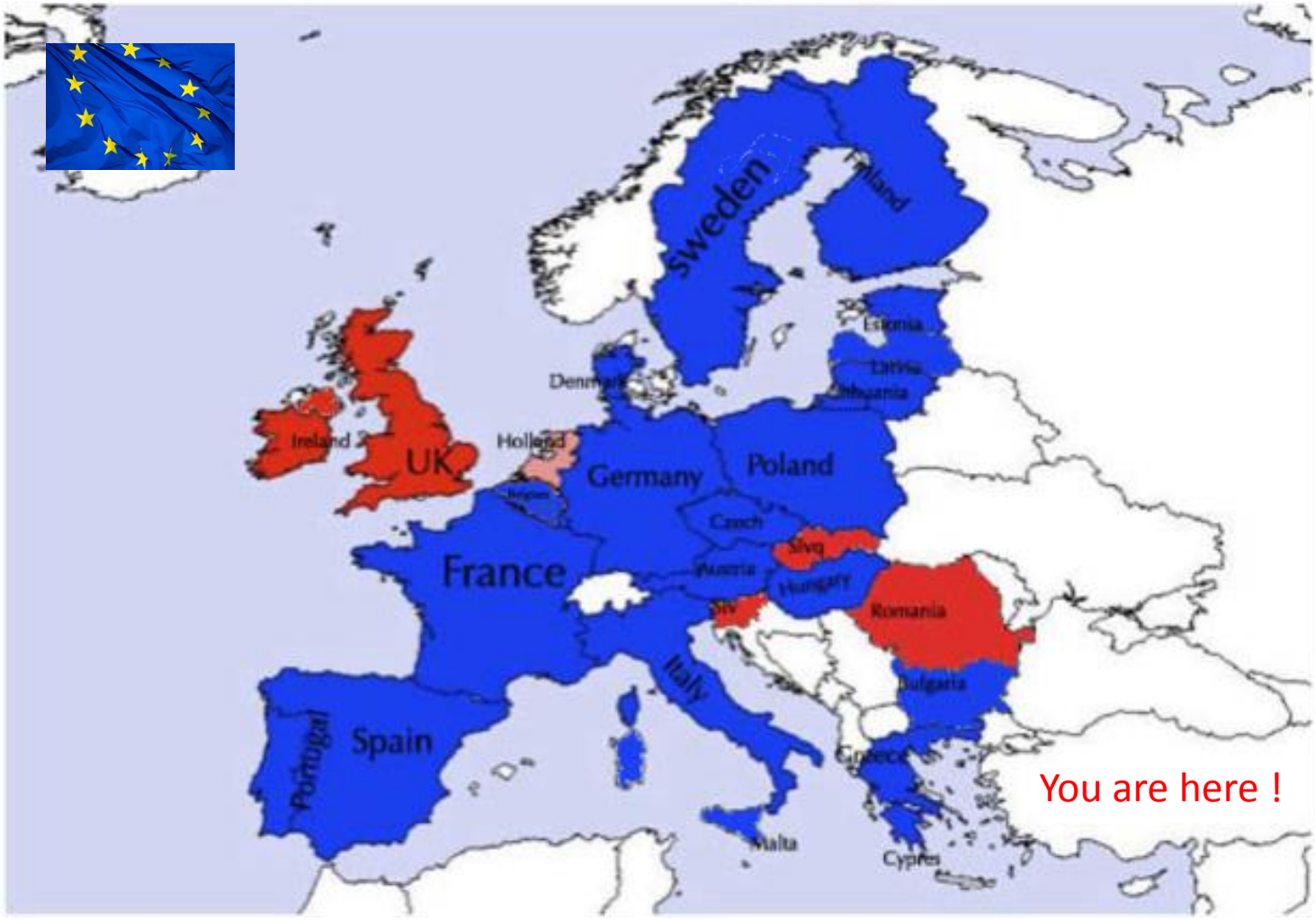
Prehospital Care "*stay and play*"



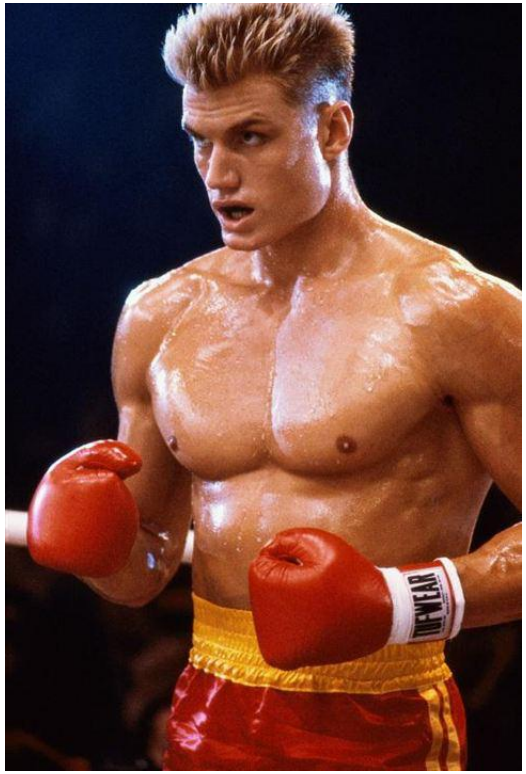
models in Europe : Franco-German (60 %) vs Anglo American (30 %)

BLS

- non-invasive life-saving procedures
- CPR + AED
- bleeding control
- splinting broken bones
- basic airway management
- administration of medications

ALS

- invasive life-saving procedures
- All BLS procedures +
- advanced airway management
- IV infusions and medications
- synchronized cardioversion
- ECG interpretation
- High quality hospital level procedures
- provided by physicians, paramedics or specially trained professionals



PRO

CON

« scoop and run »

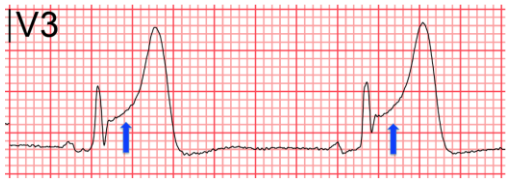
patient transported to a high level hospital ASAP

“stay and play”

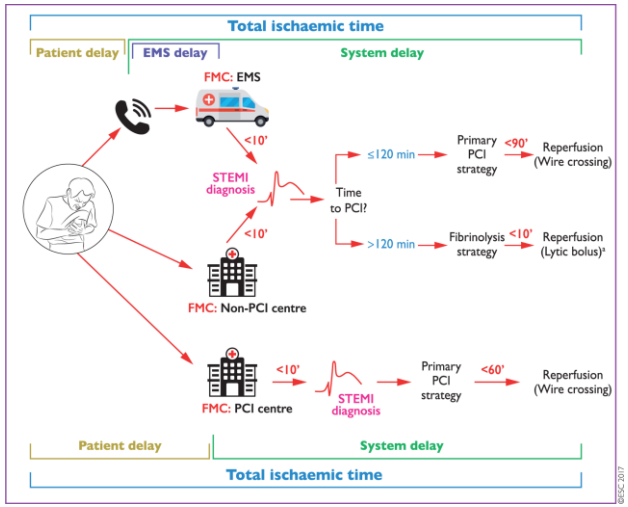
the patient stabilized on site before transportation

Prehospital thrombolysis for myocardial infarction

BLS



ALS



Mellado Vergel et al. 2005 Spain	retrospective cardiac infarct, PHT PHT n = 152 (ALS), hospital trombolysis (BLS) n = 829	ALS-PARAMEDIC BLS-EMT ALS GA, BLS GA	30 days mortality ALS 5,9%, BLS 26,6% (p = 0,066)	ALS (PHT) showed a trend to lower mortality
Björklund et al. Sweden, 2006	prospective prehospital trombolysis ALS n = 1690 BLS n = 3685 comparison between PHT entered in ambulance and thrombolysis in hospital	ALS-PARAMEDIC BLS-EMT, GA in both groups	mortality: ALS 5,4%, BLS 8,3 p < 0,001. ALS 0,71 (0,55-0,92) (1 year mortality); ALS 0,79 (0,61-1,03) 30 day mortality	ALS showed lower mortality

Respiratory distress

BLS

ALS

Stiell et al. 2007 Canada	prospective before-after dyspnoea, ALS n = 4218, BLS n = 3920	BLS-EMT, ALS-PARAMEDIC ALS GA, BLS GA	ALS 11,3% BLS 13,1% (p = 0,01)	lower mortality in ALS
Bjerre et al. 2002 Danmark	chronic pulmonary disease ALS n = 67, BLS n = 72	ALS-PHYSICIAN, BLS-EMT ALS GA, BLS GA	mortality: ALS 15%, BLS 24%	ALS-PHYSICIAN better survival than BLS-EMT

Status Epilepticus

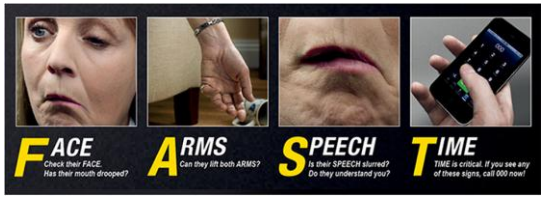
BLS

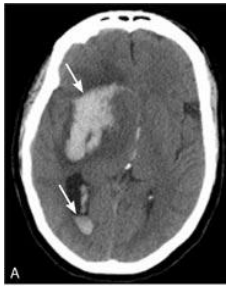
ALS

Alldredge et al., California, U.S.A., 1995	retrospective chart review. children with status epilepticus, ALS n = 19 (treatment on site) BLS n = 26 (treatment in a hospital)	ALS-PARAMEDIC, GA BLS-EMT, GA prehospital diazepam therapy (given rectally or intravenously)	duration of status epilepticus ALS 32 min, BLS 60 min (p = 0,007) repeated cramps ALS 56%, BLS 85% (p = 0,045), mortality 0%	favours ALS.
Adams et al.1996 Illinois, U.S.A.	retrospective study. declined level of (epilepsy, hypoglycaemia, stroke). ALS n = 113, BLS n = 90	ALS-paramedic, GA BLS-EMT, GA	mortality ALS 6%, n = 7 BLS 2%, n = 2	no difference between the groups

Prehospital Stroke Management

Figure 1 Telemedical equipment on the ambulance. Peeq-Box: mobile data and audio transmission unit.





Call F.A.S.T

911 Dispatch

90 sec

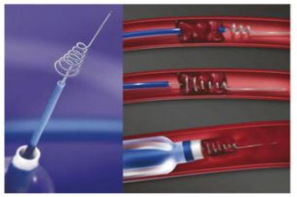
< 8 mn

EMS transport to Stroke Unit

Triage

15%

85 %



Golden Hour : 3 h

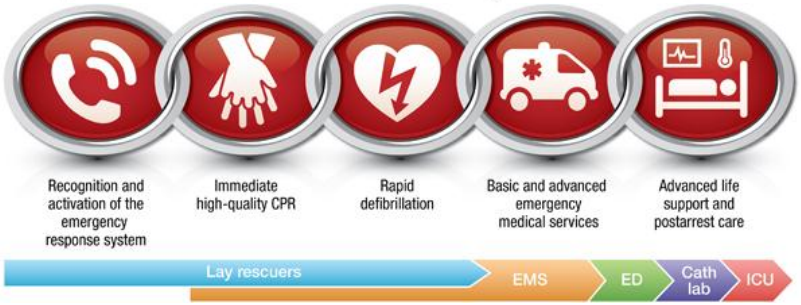
Travel time is equivalent to STEMI

Cardiac arrest

BLS

ALS

out-of hospital
ECMO



Stiell et al. 2004 Canada	before-after -design cardiac arrest ALS n = 4247 BLS n = 1391	ALS-PARAMEDIC BLS-EMT ALS GA, BLS GA	mortality ALS 95,0% BLS 94,9% (p = 0,83) no adjustment No difference in QoL or cerebral performance	No difference in mortality.
Woodall et al. 2007 Australia	retrospective cardiac arrest ALS n = 1687 BLS n = 1288	ALS-PARAMEDIC BLS-EMT ALS GA, BLS GA	mortality: ALS 93,3%, BLS 95,3%; probablility for survival in all patients BLS = 1, ALS = 1,43 (1,02-1,99)	lower mortality ALS

Penetrating trauma,TBI, Multiple Blunt Trauma

BLS

ALS

Owen et al. 1999 Texas, U.S.A.	retrospective TRISS trauma patients, comparison between helicopter and GA, ALS-PARAMEDIC (GA) n = 687 ALS-PARAMEDIC (helicopter) n = 105	ALS-PARAMEDIC (GA) ALS-PARAMEDIC, ALS-N (helicopter) ALS-PARAMEDIC (GA) ALS-PARAMEDIC, ALS-N (helicopter)	mortality: 14,3%, 6,0% TRISS: GA predicted 39 deaths, actually 41, helicopter: predicted 16 deaths, actually 15	no difference between groups
Davis et al. 2005 California, U.S. A.	retrospective epidemiological study brain injury ALS-helicopter n = 3017 ALS- GA n = 7295	Helicopter manned by paramedic, physician or nurse, ambulances manned by paramedics ALS helicopter, ALS GA	mortality: ALS helicopter 25,2% ALS ground ambulance 25,3% Adjusted OR 1,90 (1,60-2,25) mortality of patients intubated on site: ALS-helicopter 42,5% ALS-GA 43,1%, OR 1,42 (1,13-1,78)	ALS + helicopter + intubation on site better than ALS +GA + intubation in hospital
Di Bartolomeo et al. 2005 Italy	prospective traumatic cardiac arrest (blunt trauma) ALS n = 56, BLS n = 73	ALS-PHYSICIAN BLS-EMT+BLS-nurse ALS helicopter, BLS GA	ALS 96,5% only two patients survived BLS 100%, NS	no difference between ALS and BLS groups. prognosis still very poor

Damage Control Ground Zero

- Compression / clamp / tourniquet / hemostatic dressings
- 1 peripheral IV access or IO
- Fluid loading First
- Catecholamine if BP < 60 mmHg
- Tranexamic acid 1g IVL
- Chest decompression
- Tracheal RSI
- Prevention of hypothermia

Hospital admission < 30 minutes

Thanks Pr B. Vivien (SAMU of Paris)

Distances ?

CON

- For short distances (10-km) + injuries, no evidence favouring ALS
- ALS associated with a 1% increase mortality.

PRO

- For longer distance, ALS HEMS seems to be effective, but expensive

Cons

- No evidence supporting ALS early CPR + defibrillation essential
- evidence does not support ALS for all injuries
- ALS is **not** > BLS for all injuries
- ALS treatment by a paramedic can even be harmful

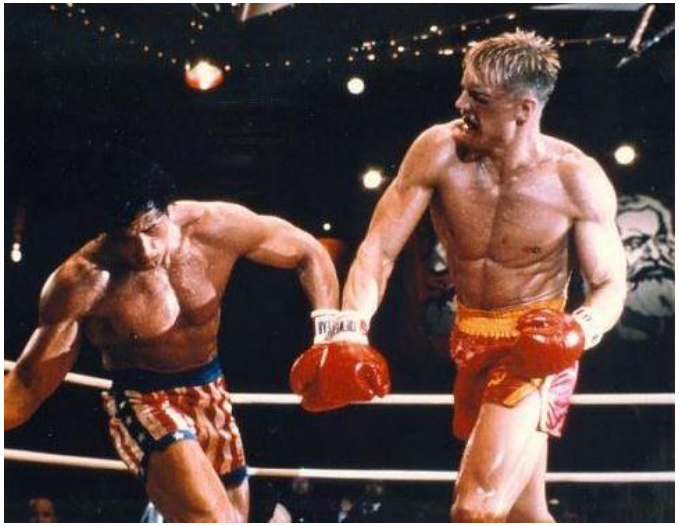
Review

Pro/con debate: Is the scoop and run approach the best approach to trauma services organization?

Barbara Haas and Avery B Nathens

Pros ALS (*Stay and Play*)

- Life threatening injuries
- endotracheal intubation, prehospital thrombolysis STEMI, cardioversion
- Long transport time
- Clinical decision
- Damage control resuscitation



Review

Pro/con debate: Is the scoop and run approach the best approach to trauma services organization?

Barbara Haas and Avery B Nathens

Summarize

PRO

CON

- ALS and BLS units provide the same levels of care
- Strategy depends on
  - nature of the emergency
  - available services
  - possibilities for starting the treatment
- All hospitals can not give all treatments 24h/day
- Treatment delays are caused by
  - distances
  - Hospital's care level

"scoop and run" or *"stay and play"*

It's not the problem…

- Reflect the tactics and strategy of EMS
- Depends on many parameters
- No place for improvisation
- ALS-level *scoop and run* tactics if out-of-hospital treatment is not possible

« *stay and play* » +« *scoop and run* »

« ***stay load and go*** »

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