

## Do We Need a Physician in Prehospital EMS?- Poster

V Dobias<sup>1,2,3\*</sup> and T Bulikova<sup>1,3</sup>

<sup>1</sup>Slovak Medical University Bratislava, Slovakia

<sup>2</sup>Centre for Education in EM Olomouc, Slovakia

<sup>3</sup>Life Star Emergency - Prehospital EMS Llc. Limbach, Slovakia

**\*Corresponding Author:** V Dobias, Slovak Medical University Bratislava, Slovakia.

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### Abstract

Number of patients, diagnosis, appearance of dangerous symptoms and number of patients transported to hospital or left home by Pre-hospital Emergency Services (PEMS) after treatment are not a matter of frequent evaluation. The most frequent reason for emergency call is hypertension, next are neurological symptoms and vertigo, small psychiatry diagnoses, acute coronary syndrome, respiratory diseases, psychiatric diseases, stroke, arrhythmias, diabetes mellitus complications, alcohol, medicament and chemical intoxication. When sorted by diagnosis, most frequent transport after primary treatment at home is by stroke, intoxications medicament and alcohol, arrhythmias, acute coronary syndrome, respiratory diseases, psychiatric diseases (psychosis, biphasic disorder and suicidal tendencies), neurological diseases, small psychiatry and diabetes mellitus complications. At the end of the list is hypertension.

**Keywords:** Physician; Prehospital EMS

### Demographic

Slovakia has 5,4 million citizens in 8 regions and 79 districts. There are 270 PEMS crews 24/7/365, half with paramedics and half with physician. To one PEMS crew belong 20 000 inhabitants, one crew with physician cares about 40 000 inhabitants. Average call-address time is 10,5 min, there is yearly about 476 000 drives by PEMS (2011).

### Material and Methods

We analyzed 297 cases of emergency call during November 2011 in two different districts of Slovakia by 2 crews with physician. In our group of patients were 159 women with average age 64 (range 2 - 92 years) and 138 men - average age 50 (1 - 94 yrs). Transported after treatment were 143 patients (48%). From 154 left home 23 deceased before the arrival of crew (7,7%). To evaluate objective signs after first examination we divided them into 3 groups:

- 1. First group - critical:** ECG changeovers, heart failure, new headache, chest pain, cyanosis, bronchospasms, dysarthria, TIA, epilepsy - 1. seizure, neurological lateralisation.
- 2. Second group - potentially dangerous:** Palpitations, short stenocardia, dizziness, nausea, disorientation, high temperature of old people, repeated syncope.

- 3. **Third group - chronic:** Difficulties lasting few days, dizziness, tingling of fingers and face, insomnia, tremor or difficulties that disappeared after self medication.

**Conclusion**

The most frequent diagnose is hypertension related symptoms and signs.

All patients with hypertension were divided into 3 groups: 1. left home after treatment, 2. transported to health facility and 3. group with other serious diagnosis beside hypertension (myocardial infarction, cerebral stroke, respiratory insufficiency). Highest values of blood pressure were found by group of left at home, the group with other serious diagnosis has the lowest values of BP (w/o statistical significance).

Blood pressure measurements		
Group	N	BP mm Hg
All patients - first value	65	182/98
Left home after treatment	48	184/99
Transported to hospital	17	177/96
Hypertension + strokes	12	174/98

*Table 1*

From 154 patients left home by PEMS after treatment 23 deceased before the arrival of crew. The most frequent reason for emergency call is hypertension (20% of calls), next are neurological symptoms and vertigo, small psychiatry diagnoses (neurosis, phobia), acute coronary syndrome, respiratory diseases, large psychiatric diseases, stroke, arrhythmias, diabetes mellitus complications (mostly hypoglycaemia), alcohol intoxication, medicament and chemical intoxication.

Order of diagnoses according to appearance and type of care				
Diagnose	Transport to H	Treatment home	Total No.	Hospital. in %
Hypertension	9	48	57	2
Neurology+Vertigo	12	19	31	39
Small Psychiatry	9	18	27	33
CAD	19	8	27	70
Exitus Letalis	-	-	23	0
Respiratory	15	7	22	68
Psychiatry	14	8	22	64
Arhythmias	10	3	13	77
Intoxication Ethanol	10	2	12	83
Diabetes Mellitus	2	10	12	17
Intoxications Medicaments	8	1	9	89
Cerebral Stroke	8	0	8	100
Collapse	3	4	7	43

**Explanation:** CAD - coronary artery disease, large psychiatry - psychotic patients small psychiatry - neurosis, phobias, anxiose.

When sorted by diagnosis, most frequent transport after primary treatment at home is by stroke, medicament intoxications, alcohol intoxication, arrhythmias, acute coronary syndrome, respiratory diseases, psychiatric diseases (psychosis, biphasic disorder and suicidal tendencies), neurological diseases, small psychiatry and diabetes mellitus complications (mostly hyperglycaemia). At the end of the list is hypertension, only 2% of patients were transported with this diagnosis.

Order of diagnoses according to hospitalization				
Diagnose	Transport to H	Treatment home	Total No.	Hospital. in %
Cerebral stroke	8	0	8	100
Intoxications medicaments	8	1	9	89
Intoxication ethanol	10	2	12	83
Arhythmias	10	3	13	77
CAD	19	8	27	70
Respiratory	15	7	22	68
Psychiatry	14	8	22	64
Collapse	3	4	7	43
Neurology+vertigo	12	19	31	39
Small psychiatry	9	18	27	33
Diabetes mellitus	2	10	12	17
Hypertension	9	48	57	2
Exitus letalis	-	-	23	0

Table 3

Highest number of critical symptoms is by stroke emergency calls, intoxications, followed by neurological diseases, cardiovascular diseases, alcohol intoxication, respiratory diseases, psychiatry and hypertension.

Categorization of signs according to severity			
Diagnose	Critical Signs	Potentially Dangerous	Chronical
Intoxications medicaments	83	17	0
Neurology	67	27	7
CAD	67	25	8
Intoxication ethanol	50	50	0
Respiratory	46	39	15
Psychiatry large	24	33	33
Hypertension	4	46	50
Psychiatry small	0	33	67

Table 4

Problems to discussion are for example high number of ride-outs to hypertension with minimal need of hospitalisation, relatively high number of transports by neurosis and phobia without critical symptomatology and disproportion between high number of alcohol intoxication transports with only a few serious signs endangering life of the patient (grey fields).

Comparison - transport to hospital versus critical signs in %		
+Diagnose	Transport to hospital in %	Critical signs in %
Cerebral stroke	100	100
Intoxications medicaments	92	91
Intoxications ethanol	78	22
CAD	74	57
Respiratory diseases	69	53
Psychiatry (psychotic)	65	40
Neurology + vertigo	41	69
Psychiatry (neurosis, fobias)	17	0
Hypertension	16	17

Table 5

Most of the diseases transported to hospital are simple to diagnose and need just basic treatment which does not need presence of physician within the PEMS crew (green fields). The treatment is ever symptomatic (neurologic, respiratory) or international guideline based (e.g. STEMI).

Literature

Statistical data archive of LSE Llc.

viliam.dobias@dobiasovci.sk.

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