

PRE-HOSPITAL EMERGENCY CARE ("PEC") IN THE CZECH REPUBLIC, CHANGES IN THE PEC ORGANIZATION – PERSONNEL AND ECONOMIC CONNECTIONS

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Abstract

In past 25 years PEC in the Czech Republic has gone through the development when the common denominator was a lack of funds and a lack of doctors. We describe the changes in the organization of these services that are based on the reduction of so called urgent care service and strengthening of the emergency medical service ("EMS") with even increasing availability of the quality medical first aid in the pre-hospital phase without a need of a step increase of the funds. It was succeeded in solving a lack of doctors and funds by means of involving so called Rendez-Vous system. EMS in the Kralovehradecký Region succeeded in satisfying the limits for overtime work of doctors according to opinions of the EU. We present particular figures on the development of the number of patients treated and basic economic parameters in the Královéhradecký Region, one of 14 regions in the Czech Republic, comparing the years 2003-2013.

Key words: emergency medical service, pre-hospital emergency care

Pre-hospital emergency care in the Czech Republic is based on the model of the cooperation of the general practitioners, specialists in accident and emergency departments, urgent care services and emergency medical service ("EMS"). The model has its roots in the First Republic general practitioners and specialists in the emergency departments and in the post-war integration of the health service into the system of district and regional national health institutes with the backbone created of general practitioners. Just the period of so called socialist development of the health service in former Czechoslovakia between the 50's and 90's of the last century substantially influenced the expectations of the population in the field of the health care as well as the decision making of the political officials and organizers in the health service after the change of the social organization in the Czech Republic in the time after the year of 1990. In the 90's the PEC was based on the general practitioners, specialists in accident and emergency departments, and especially during the off-duty hours on country-wide ensured and "all-embracing" although not very quality first aid medical service (FAMS; in Czech LSPP). At the same time the emergency medical service started to develop dynamically; in that time it was organized in the framework of hospital teams, most often as a flying team of medical emergency service with a doctor (EMS-D; in Czech: RLP) who went out from the anaesthesiological-resuscitation ward of hospital. After 1990 these teams were taken out of the hospitals and district emergency medical services and ten Territorial Centres of EMS established by the Ministry of Health of the Czech Republic came into existence. The activity of the helicopter emergency medical service (HEMS) was connected to the mentioned EMS centres. Such gaining of independence by EMS have brought a fast development, personnel, material and organizational stability, an origination of the operational control for the areas of the size ranging from 100 to 200 thousand inhabitants, i.e. the former districts. The further development has shown a need of the organization in larger units and the PEC organizers have made use of originating of the regional arrangement in 2004 for transformation of EMS to the regional organizations including the origination of the Regional Medical Operational Centres (RMOC; in Czech KZOS) – areas of the size ranging from 0.5 – 1.5 million inhabitants. However, these organizational changes were ahead of the necessary legislation and there was the situation that FAMS (LSPP) gradually ceased to exist for the reasons personnel (unwillingness of the general practitioners to engage in the services), special (insufficient equipment of surgeries and ambulance cars) and economical (unsustainable increase of costs for this service). After 2011 it has been succeeded in stabilizing the situation in connection with the force of EMS Act No. 374/2011 Sb.

that determines clear limits for establishing, dimensioning of the activity as well as financing of EMS as the Regional institutions receiving contributions from the State Budget.

The authors show the comparison of the PEC model:

- 1) from the turn of the millennium with the considerable participation of FAMS (LSPP)
- 2) influenced by the FAMS (LSPP) reduction with the blanket participation of a doctor in the EMS teams from the period between 2004 – 2010
- 3) with the minimum participation of FAMS (LSPP) and reduction of a number of EMS teams with a doctor using so called Rande- vous system (RV system).

On the background of description of efficiency of the individual models of providing PEC the authors quantify the personnel and economic demands of the individual models and assess the RV system applied at the present time to be optimum from the point of view of COST-BENEFIT. The Czech Republic – 10.5 mil. inhabitants – 78,900 km² and monitored territory – Královéhradecký Region - 560 thousand inhabitants – 4,800 km²

	2003	2013
In PEC teams	14	10
In FAMS surgeries	17	2
In FAMS ambulance cars	10	0
TOTAL	31	12

Table 1. Doctors on duty – PEC (Kralovehradecky region)

	2003	2013
FAMS	108,000*	51,000*
PEC	26,000	40,000
TOTAL	134,000	91,000

Table 2. Number of patients treated in PEC (Kralovehradecky region), * patients treated in the afternoon GP surgeries and IES wards are not included

	2003	2013
€/hour	5	14

Table 3. Average hourly earnings of a doctor in PEC (Kralovehradecky region)

	2003	2013
mil. €	12	15

Table 4. Total costs for PEC (Kralovehradecky region)

	Population	Area – km2
Czech Republic	10.5 mil.	78,000
Královéhradecký Region	0.56 mil.	4,800

Table 5. Demographic figures



Fig. 1 Czech Republic – 14 Regional EMS

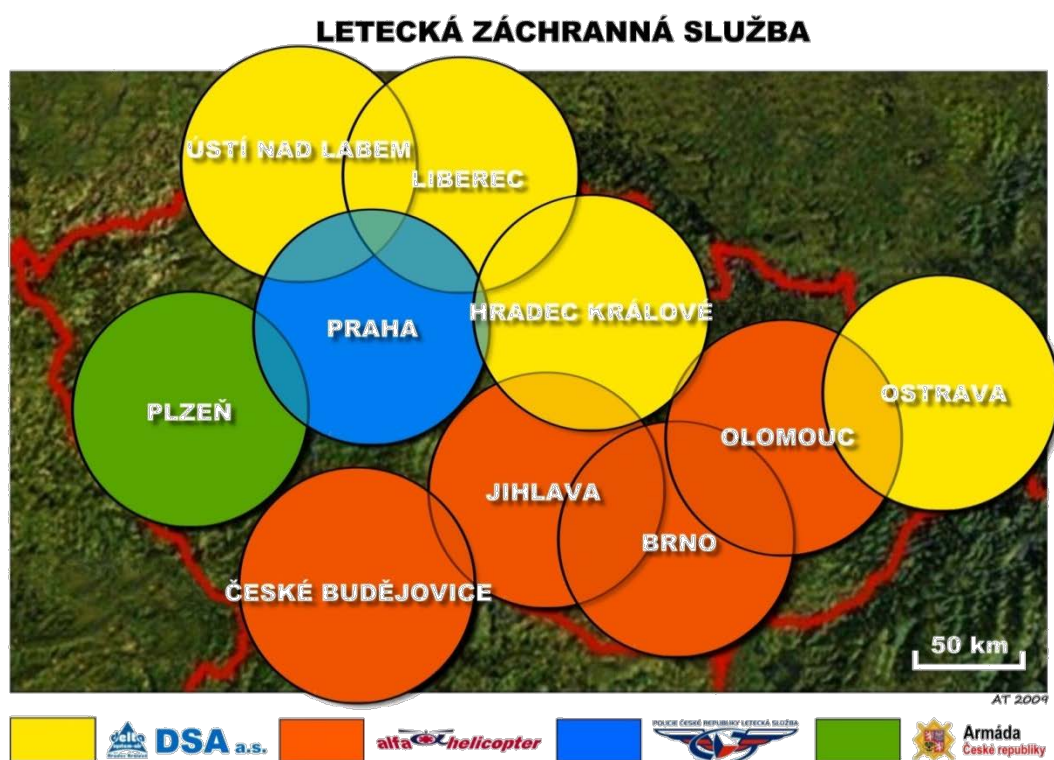


Fig. 2 Czech Republic – 10 HEMS stations

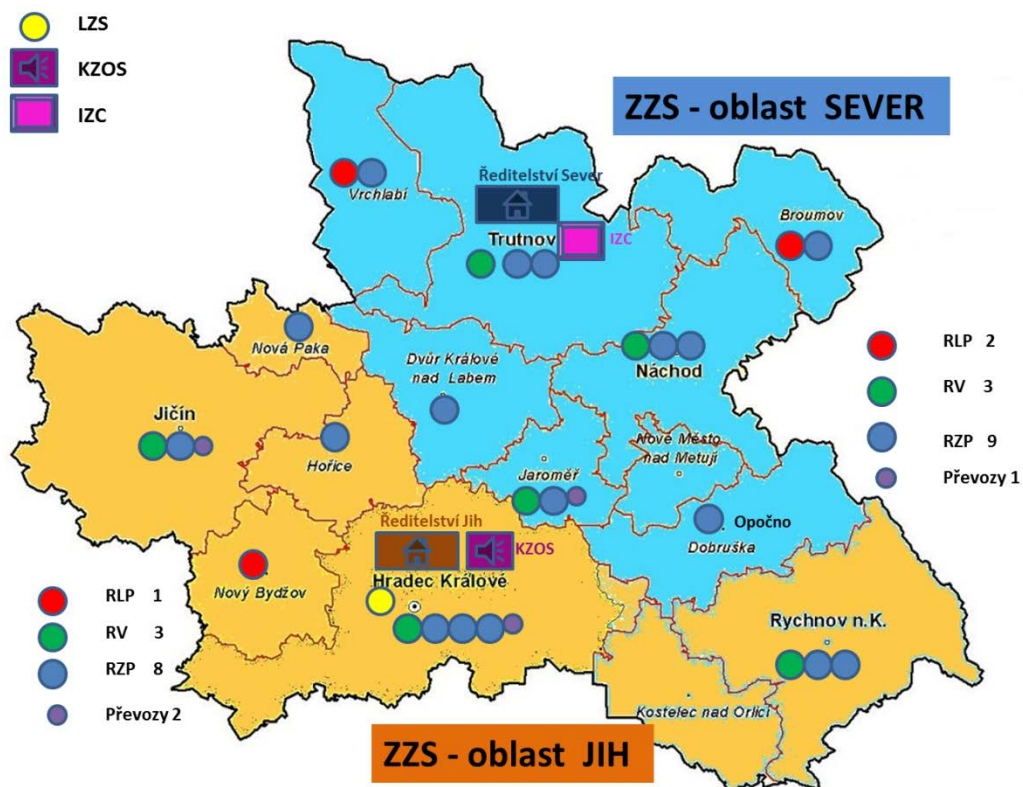


Fig. 3 EMS stations in Kralovehradecký region

CONCLUSION

The model of the Regional EMS proves to be optimum from the point of view of the operational control of the activity of EMS teams by one control centre in each region which operates the emergency lines for the catchment area of the size ranging from 0.4 to 1.5 mil. inhabitants and the territory of the size ranging from 4 to 10 thousand km² according to the size and population density of the particular region. The EMS teams replaced the activity of so called visiting emergency service with a doctor together with using the afternoon GP surgeries and increased involvement of the medical urgent care in case of urgent admissions and in emergency departments of healthcare facility wards. The RV system that has made the reduction of participation of doctors in PEC possible proved its viability and from the point of the economic and personnel dimensioning of PEC it shows to be optimum as well as from the point of view of COST-BENEFIT. For the patients who really need the urgent health care within the off-duty hours this system provides the service of superior quality with the facilities for necessary examination methods in hospitals. Establishing low limen emergency departments from the level of the district hospitals (with the catchment area about 120 thousand inhabitants) a part of which are the surgeries of general practitioners on duty proves to be optimum. This system is supported by the Ministry of Health of the Czech Republic as well as by the managements of the single regions and the horizon of the global coverage is supposed till 2025. Meanwhile EMS in the Kralovehradecký region succeeded in not only maintaining but even increasing availability of the quality medical first aid in the pre-hospital phase of care for patients without a need of a step increase of the funds satisfying the limits for overtime work of doctors according to Labour Code and binding opinions of the EU.

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