



MEDICAL PROVISION OF CRISES SITUATIONS SOLVING

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Summary:

Logistic activities in resolving crisis situations caused by occurrence of the emergency event create an effectively operating system of tasks and measures with the goal of protecting life, health and property. Fulfilment of individual logistic activities and the rate of their fulfilment depends on the extent of crisis situation, its nature and on the time it occurred. This contribution deals with medical provision of crises situations solving as an important part of crisis management in Slovak Republic.

Keywords:

Medical provision, evacuation, veterinary provision, professional medical assistance

1 Logistic support of resolving crisis situations

Logistics, as a management method in market economy environment is focused on satisfaction of customer's requirements, creating logistic chains in order to achieve the required goal based on synchronization, coordination and optimization of material, informational and spatial exchanges.

In the environment of resolving crisis situations, where saving of human lives, animals and property is often the case, logistics plays a vital role. The subject is formed by principal logistic processes related to material flows (transport, handling, storage) and to the flow of information (planning, dispositions, management, supervision). (Novák & al., 2010) The goal is in optimization of information and material flows aiming at the fulfilment of logistic requirements – to provide for the disposition of the right material, of services and information at the right place and in the right time, in the right quantity and in the

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right state, to the right person and with appropriate costs. However, this goal is being achieved in conditions of crisis situation:

- unforeseen and permanently changing conditions as time and space is concerned, during formation of logistic chains which are necessary to secure emergency operations and activities relieving the negative effects of crisis situations.
- priority of humanitarian aspect above others (financial, time, spatial, organizational) in resolving crisis situation,
- limited possibilities of application of certain methods and procedures commonly used in logistics,
- specific requirements on readiness of human and technical resources for complex resolution of logistic support.

There are certain specific aspects of logistic support in crisis situations (Seidl, 2005):

- **Performance aspect**, which defines the performance of services for the customer on the required level. Crisis situations change the priority and difficulty level of the criteria generally used with regard to the quality of logistic performance. In crisis situation, a significant part of the customer's needs is defined regardless of his real desires. His material requirements and services are taken care of in a directive manner and the customer has to comply with the "majority" viewpoint. This means lower customer service quality in all of its aspects – as time, reliability, quality and flexibility of delivery is concerned.
- **Economic aspect**, which defines the efficiency of services for the customer while spending only the minimum level of costs with respect to the given level of service. The strict economic limitation of material and informational flow in resolving crisis situations is not always possible. Time priorities, capacity possibilities, spatial availability and the whole sequence of other factors compel to choose the technologies and resources to provide logistic processes (procurement, transport, storage, handling, distribution, information exchange and other) in crisis situations regardless of excessive costs of the said processes. Operational nature of

decision-making and mainly the lack of time may lead also to the wrong choice of more expensive solution alternative. Generally speaking, the customer could not influence disproportional costs of the service provided and because of this he neither has to take part in their reimbursement.

- **Ecologic aspect**, which defines the minimization of the effect logistic processes exert on the environment. The generally contradictory nature of economic and ecologic logistic objectives comes forward also in the activities of crisis situations resolution. The aspects of time, capacity and space already mentioned above usually temporarily outweigh the environmental aspects. Crisis situations themselves nearly always have a negative influence and damage the environment.

Logistics as a management method has its meaning not only within the issues of economic prosperity of subjects but also in the area of crisis situations resolution. The main task of **crisis management** is to perform preventive measures, to create conditions enabling resolution of crisis situations and operation readiness. Organization structure of crisis management is based on three fundamental logistic principles:

- centralization – elimination of duplicity, making system more efficient,
- coordination – streamlining the activities of all participants taking part at resolving crisis situation,
- optimization – the choice of suitable solution in order to achieve maximum effect.

Crisis management deals with issues of prevention against occurrences of crisis phenomena and creates conditions for successful solution of crisis situations caused by emergency event. (Act No 256/2006 Coll.)

Logistic support of resolving crisis situations is a specific execution of logistic measures:

- directly on behalf of persons, animals, objects affected by emergency events,
- on behalf of forces and measures deployed in order to resolve the crisis situation.

One of the unique features of the logistics support system of resolving crisis situations is the fact that the subjects of the system flow mostly comprise

also services, i.e. the flow of intangible processes in the form of medical relief, rescue, relocation, accommodation, protection and etc. (Fig. 1). Even though these intangible processes could be connected with using certain material, the

corresponding flow of material doesn't have to be a pre-condition of their existence (utilization of local resources and conditions to provide the mentioned services).

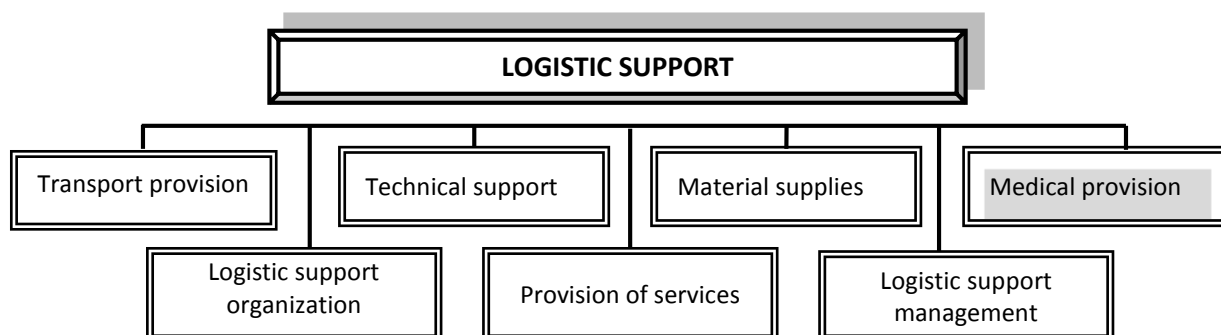


Fig. 1 Structure of logistic support elements to resolve crisis situations
(Sventeková, 2009)

Organization of logistic support comprises specification and preparation of organizational units of logistic support (groups, forces, their structure and resources), type of their activation, their deployment, definition and type of utilization of stationary resources for logistic support, division of personnel and material resources in functional units, protection of logistic elements and areas of their activities.

Transportation support means finding solutions of how to transport forces and resources into the area of activity, providing transport of material and equipment, loading/unloading of transported material, transport of material to be relocated including waste resulting from rescue works performance, providing drivability of communications including security and control services.

Technical support requires the renewal of deployed forces and resources with equipment, spare parts, keeping the equipment in permanent state of readiness, performing maintenance to secure operational reliability of the equipment and its efficient utilization, forming locations of technical aid using mobile resources and local facilities, rapid renewal of operational ability of transport vehicles and equipment by appropriate means and appropriate extent of repairs.

Material support includes receiving, preparation, distribution and material stock formation, organization of acceptance, temporary improvised storage and handling of used material, distribution of material from selected storage locations and defined local sources, complex provision of food supplies, medical supplies, water, personal consumer material, fuel, special material to eliminate consequences of the emergency event (chemical agents, protective equipment).

Provision of services comprises organization of alternative accommodation including facilities and complete energy supplies, preparation and distribution of food for the affected persons and for the rescue teams, providing the people have sufficient water intake and rest, providing social services (personal hygiene, washing, cleaning and changing clothes), educational and socio-psychological support, spiritual services and cultural possibilities. A specific type of service in crisis situations is searching, concentration, identification and burial (removal) of human casualties.

Medical provision means providing the appropriate level of medical aid (self-help, mutual help, pre-medical and medical help) in case of injuries and diseases of persons, searching, concentration and removal of the injured and ill persons, blood supplies, distribution of

medication and medical supplies, taking part in elimination of consequences of chemical and nuclear accidents, performing surveys and supervision in the areas of hygiene and epidemiology and performance of complex hygienic and counter-epidemiologic measures. Veterinary measures are also the part of medical care.

Logistic support management presumes the activity of competent officials who are able to solve all mentioned logistic support elements in a complex manner. Logistic planning must be coordinated with rescue operations planning. Managing requires processing of the necessary documents (plans, orders, requirements, notifications), providing relocations and transportation, manage and provide catering, resolve accommodation requirements, searching for and enabling utilization of material resources. Management has to perform integration of logistic support system of deployed forces and resources with material and technical provisions of the affected objects and those in the region, optimization of quantity of logistic support material resources. Optimum functioning of logistic support system necessitates collection, transfer, processing and utilization of the required information.

2 The tasks of medical provision

Professional medical assistance is provided by medical rescue service. Its basic objective in crisis situations is to provide basic medical assistance and medical care not only for persons affected by the emergency event but also for the rescue units and other forces deployed in order to resolve the crisis situation and to determine basic hygienic and epidemiologic measures. The tasks connected with medical provision of crisis situations resolution are fulfilled by the Ministry of Health of the Slovak Republic.

Besides providing medical help, its basic tasks include:

- definition of stationary medical assistance post,
- definition of the location for providing medical assistance,
- medical accompaniment in transport vehicle.

The higher the numbers of the affected persons, the more complicated to get timely medical care

and the requirements are increasing. The situation gets more complicated due to the necessity of providing medical care for a wide range of affected population – from new-borns, through hospital patients after the surgery up to the persons providing help to those affected by emergency situation.

In Slovakia, professional medical assistance is provided by terrestrial medical rescue service and helicopter medical rescue service.

Helicopter rescue service is focused on improving complex rescue system quality, for providing rapid help for in-between hospital transports and anywhere, where its rapidity and availability may decrease the risk of transport-related trauma or of later medical complications. It is allocated for:

- the rescue operations in woods and other, hardly accessible terrain,
- operations in case of transport accidents and collective disasters,
- transports of patients in critical state,
- urgent pre-hospital care in remote areas,
- transports for transplantation programme, transports of blood and of medication.

Helicopter rescue service is in the state of alert 24 hours a day in the centres listed in the following overview (Fig. 2).



Fig.2 Centres of professional medical assistance

The types of flights performed by helicopter rescue service:

- primary (in order to provide first aid to the injured),
- search,
- ambulance (transport of patients or medical supplies between hospitals),
- repatriation (cross-border transport),
- to save property,
- to provide medical care.

Medical provision is one of the basic elements of any rescue system. Medical first aid service is an institution with the objective of providing uninterrupted medical care of the patient, even outside normal working hours, in the days of rest and on holidays.

Medical rescue service is intended for out of hospital treatment of serious conditions, it is intended not only for patients but also to operate in the areas of traffic accidents and other emergency situations with a threat to human life. For this kind of operation the medical rescue service is equipped with the required equipment, technical means and material.

In case of emergency call in Slovakia, medical services in the framework of integrated rescue system are provided by:

- terrestrial medical rescue service,
- helicopter medical rescue service.

Medical rescue service providers are the fundamental rescue element of the integrated rescue system which carries out emergency rescue service in the intervention area in accordance with the instructions of integrated rescue system coordination centre and operation centre of medical rescue service. They undergo periodic professional training every 12 months, including:

- principles of management, coordination and evaluation of medical rescue service activities,
- fundraising, assessment of emergency calls and management of response,
- the way of providing voice and data information transfer,
- principles of coordinating activities with rescue units of integrated rescue system,
- principles of crisis intervention and principles of psychological and social first aid.

Medical rescue providers are obliged (Act No 129/2002 Coll):

- to establish and staff the system of continuous supervision, control and coordination of forces and resources of medical rescue service so as to be able to provide a continuous and steady performance of immediate medical assistance based on the orders from operation centre of rescue and medical service or of the coordination centre,
- to provide operating conditions of medical rescue service station and medical rescue service ambulance in such a way, that the ambulance is ready for operation within one minute after receiving the order from the coordination centre and the flight of the helicopter rescue medical service ambulance is performed immediately when the weather conditions enable to do so.

We may recognize three stages of medical activities of terrestrial medical rescue service:

- basic – performed directly in the field, in the area affected by crisis situation,
- specialized – provided in hospitals,
- restoring – includes after-treatment, rehabilitations.

3 Basic medical provision

The basic stage of medical provision logistics support is performed from the acceptance of the emergency request by medical rescue service (ZZS) regional operating centre (KOS) until handover of the last patient to the medical facility. Duration of this stage depends on various factors:

- local conditions (accessibility of the area, time of the day, etc.),
- weather conditions,
- the availability of integrated rescue system units,
- the number of affected persons,
- the number of deployed persons and technical resources,
- the capacity of transport vehicles intended for the transport,
- the possibilities and types of transport,
- medical care organization,
- the activities of crisis committees, disaster commissions,

The basic stage is performed by providing immediate pre-hospital treatment, which is provided by medical rescue service action groups. Action groups set off to the emergency event location immediately after it was reported and constitute the first sequence of professional medical treatment. After obtaining more detailed information and based on the number of injured and the extent of the emergency event, further sources and resources are being activated, in accordance with the trauma plan, which constitute the second sequence. (Sventeková & Dvořák, Information provision of logistics support in civil protection, 2012) Their formation and set off must happen in the fastest possible manner.

The following activities are performed during the first stage:

- ZZS (medical rescue service) regional headquarters sends the first available terrestrial ZZS ambulance,
- communication of ZZS regional operation centre with the first action group,
- reconnaissance of emergency event area and definition of medical requirements,
- recalling other required action groups,
- providing professional medical help within the designated area of emergency event (selection of the injured, professional medical first aid, organization of transport to the defined medical facilities),
- ZZS regional operation centre requirements to free beds in medical facilities in accordance with the situation reported from emergency event location,
- performance of trauma plan measures in say in healthcare facilities (alertness of acceptance clinics, providing sufficient number of doctors, nurses and assistance personnel, providing the necessary medical supplies including blood derivatives, state of alert for all operation theatres, preparation of hospital beds for resuscitation or intensive care at the appropriate acute care departments, providing sufficient number of beds for the injured),
- primary or secondary transport to medical facilities,
- commissioning of back-up hospitals,
- assessment of appropriateness of choice between reinforcement of secondary

transports to other hospitals and between establishing of military type improvised field hospital,

- providing medical rescue service in the area without coverage.

Available number of ZZS ambulances sets off in action in accordance with the reported extent. Until arrival of the appointed head doctor of the terrestrial ZZS medical action, the command of medical activities is the responsibility of the first medic of rapid medical rescue ambulance or medical employee from the ambulance of rapid medical assistance, which arrived first on the event location. The appointed head doctor doesn't have to substitute the first medic on the scene in case he carries out his responsibilities well.

Medical action commander performs the estimation of the emergency event extent and provides information on the development of situation to ZZS regional operating centre. Continuous information updates enable the preparation of further required forces, resources and medical equipment. Each ZZS crew gets involved into action in accordance with the instructions of medical action commander.

In cooperation with the commander of Fire and rescue corps and with the members of the police, the medical action commander specifies:

- the location of assembly point for the injured,
- location of the collection point for corpses,
- evacuation site location,
- parking area for ZZS ambulances and other necessary vehicles,
- evacuation direction.

Assembly point for the injured is established in the safe distance from emergency event location. It should be distinctly marked and bordered, with single entry and single exit. The space presumed for one lying patient is 1 metre wide and 3 metres long. The logistics at the assembly point is in the responsibility of the commander of the assembly point for the injured, whose task is to divide the assembly point into three distinctly coloured sectors (Fig. 3).

red	yellow	green
Serious injury of vital organs	Serious injury not threatening vital functions	Light injuries with no long-term

Fig. 3 Division in sector at the assembly point for the injured

There is a commander appointed in each sector who oversees the injured and the order. Medical personnel in the assembly point for the injured provide immediate medical treatment. In this place, it is also necessary to assemble the necessary material, such as medicaments, bandages, tools, equipment, devices and stock.

Medical action commander defines the selection team, which makes classification of the affected in accordance with the extent of the injury. The team performs short investigation, assessment of vital functions, anamnesis of the injuries or illnesses and of the mental state. The injured are classified in groups in accordance with the seriousness and the nature of the injury bearing in mind all the circumstances and conditions enabling provision of the effective medical assistance. Each injured will be provided with a visibly placed card, which accompanies him until the acceptance into medical facility. The card contains consecutive records on:

- the state of the injured person,
- exact time data in the respective stages.

In case the commander pronounces the emergency event location to be a safe place (neither the threat of explosion, nor leakage of hazardous substances nor other negative effects), the classification procedure of the injured could be performed directly in the location where the injured are situated.

In case the area of emergency event area is pronounced to be hazardous, ZZS members cannot enter the area without protective equipment. ZZS provides medical help only after securing and demarcation of the crisis situation activity area by Fire and rescue corps members. In such a case the Fire and rescue corps members bring the affected in front of assembly point of the injured, where the medical personnel provide professional medical help.

In case of unfavourable weather conditions, inflatable rescue tents may be used. These facilitate the work of rescue workers and also create better conditions for the persons affected by the emergency event until they are prepared for medical facility.

Evacuation site location is a place where the authorized person, evacuation commander, organizes transfer of the affected in accordance with the urgency. Evacuation is performed by ambulances equipped with necessary equipment and medical personnel. The choice of evacuation site location should consider the easiest possible arrival and smooth departure of vehicles. Possibility of the whole evacuation route is provided by the police.

Parking area is defined for the necessary number of ambulances which are used to transport the injured to medical facilities. In case of weather conditions suitable for rapid transport of seriously wounded persons, also the ambulances of helicopter ZZS may be used. Thus, in determining parking places it is necessary to define helicopter landing area with sufficiently large safe distance.

4 Specialized medical provision

Specialized medical logistic provision of crisis situations resolution is performed in hospitals and medical facilities. Average time duration of this stage ranges from 24 to 30 hours after emergency event is reported. It is performed in accordance with trauma plan. The responsible person is the medical facility director or a representative authorized by him, who has to be able to execute all instructions of the crisis committee with respect to the current situation.

5 Rehabilitation medical provision

Rehabilitation medical provision includes finalization of treatment and rehabilitation. It is generally performed in spas and at the rehabilitation facilities. This type of medical treatment is not necessary in case of specialized medical care provision in crisis situations; it is possible to postpone its execution. It is not possible to define exactly the time duration; it depends on type and seriousness of the injury.

6 The medical provision of the evacuation

Medical provision and treatment of the ill and injured, but also of the evacuation facilities staff and of the persons participating on the performance of evacuation is an inherent part of the logistics support of resolving crisis situations of the significant extent. Medical provision of the evacuation includes mainly providing basic care for the affected persons, deployed units, other forces in the evacuation centres, on control posts and in the places of accommodation and provision of medical care in evacuation facilities by the doctors appointed on territorial principle

based on the circuit area as defined for the state circuit doctor (Tomek & Seidl, 2011).

The task of medical provision of the evacuation is providing medical assistance for the citizens and the definition of basic hygienic and counter-epidemiology measures:

- in the evacuation facilities (evacuation collection points),
- on transfer routes,
- in places of accommodation of the evacuated persons.

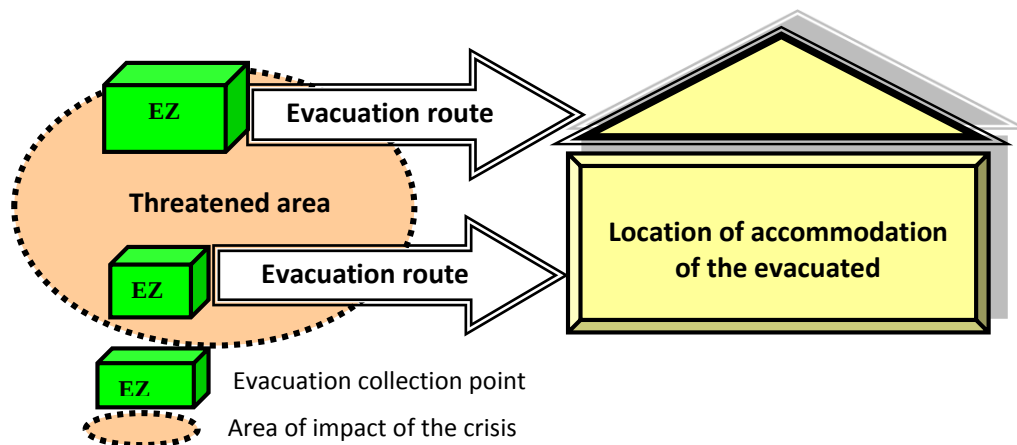


Fig. 4 Elements of medical provision of the evacuation

Medical Provision in the Evacuation Collection Point

There are following activities provided at the evacuation collection point: basic medical assistance, preparation of the acutely ill or the injured into the defined facility to be accepted for hospital treatment, definition of basic hygienic and counter-epidemiology measures. One location for medical assistance provision is established per each 2,000 evacuated.

Personnel and material provision:

- ambulance including crew,
- doctor, nurse with basic medical equipment,
- two Slovak Red Cross volunteers with medical assistance bag.

Medical Provision on the Evacuation Routes

Basic medical assistance during the course of evacuation transport is provided by means of the

transport vehicle crew or at the established stationary medical assistance post along the route.

Personnel and material provision:

- **evacuation by busses:** for each 10 busses, there is one medical companion in the transport vehicle (a nurse or Slovak Red Cross volunteer),
- **evacuation by train:** medical personnel is composed of a GP and a nurse, in the locations where the train stops, an ambulance with the crew is appointed to perform transport of the acutely ill or injured into a medical facility.
- **Stationary post of medical assistance along the route:** each 25 km of the route, there is one stationary post of medical assistance planned, composed of the ambulance with a crew, GP for adult patients

and a nurse to support the transport of the ill or injured into medical facility.

Medical Provision in the Place of Accomodation

Primary medical care is provided in place of accommodation of the evacuated persons, basic hygienic and counter-epidemiologic measures are defined and the preparation of transport of the ill or injured into medical facility is performed.

Personnel and material provision:

- GP for adult patients,
- GP nurse or Slovak Red Cross volunteer,
- ambulance with crew available until the end of transport of evacuated persons,
- material provision of basic hygienic and counter-epidemiologic measures which are defined by an appropriate expert in accordance with specific conditions.

Documentation of Medical Provision of Evacuation

As personal and material capacities are concerned, “**Plan of medical provision of evacuation**” is processed, which includes:

- locations of providing basic medical care in evacuation collection points and on transfer routes,
- overview of medical provisions in evacuation centres, evacuation routes and accommodation locations, data on allocated medical transport vehicles,
- type of connection with the crews of the allocated medical vehicles,
- overview of the means of transport participating on the medical provision of evacuation in the municipality, circuit and region,
- data on medical companions equipped with first aid medical bag in transport vehicles to provide medical assistance to the evacuated persons during evacuation transfers.

Besides the Plan of medical provision of evacuation, also the documentation on coordination of logistic control of medical provision of evacuation is kept. This documentation consists of textual part and graphics and contains:

- boundaries of the area under threat,

- evacuation equipment and evacuation routes,
- medical equipment which, during evacuation perform the acceptance of the injured and ill from the locations of accommodation of the evacuated,
- pharmacies which stock has to be have to be used and new locations of medicaments storage,
- areas to perform hygienic cleansing and decontamination of persons,
- areas for contaminated waste storage and disposal.

The crews, from the point of view of medical rescue vehicles have to be equipped with a map which includes:

- evacuation routes and locations of accommodation of the evacuated,
- the list of medical facilities,
- contacts to medical facilities which accept the ill and the injured in the time of evacuation.

7 Social and psychological provision

In case of practical resolution of crisis situations, it is also necessary to consider the occurrence and the impact of various types of psychological stress. The events with collective impact on population and emergency events are the sources of elevated stress for all participants, however mainly for the affected participants of the event. Natural psychological reaction to this kind of stress has its specific features and the negative effect of the emergency event consequences may lead to the development of psychological trauma and the subsequent post-traumatic defect.

The impact of emergency events on the mental state of the affected, on events witnesses, relatives, bereaved, rescue workers, medical staff and crisis managers is a logical consequence of emergency events of different nature. A widespread psychological reaction during and also immediately after the emergency event happened is panic, which is manifested above all by the regression of thought process, distorted perception of the situation, aggressiveness, decreased resistance to manipulation, but also abnormal escape reactions are common. Modern crisis intervention methods help to alleviate the psychological impacts of the emergency event.

Crisis intervention is an effective tool of psychosocial support. It is a method of professional intervention into the life of a person affected by a sudden event with traumatizing potential, whereas this person, due to the extent, intensity or unpredictable nature of this event, doesn't have enough strength and abilities to overcome it. Crisis intervention is a short-term intervention in the acute stage after the event occurrence aiming to support the reinstating of the ability to act, it is focused on providing immediate practical and emotional assistance. It is only a temporary measure in time when full psychological treatment is not yet possible because of various reasons. The services of crisis intervention in emergency events are provided to the affected persons by social workers.

In case of resolving crisis situations with extremely serious consequences (aviation disasters, terrorist attacks, industrial accidents with large numbers of casualties), it is also necessary to provide psychosocial assistance for the members of intervening teams themselves. Even though members of rescue units are specifically trained to cope with stress and elevated emotional strain as a part of their job-related training, there are certain cases when it is necessary, in order to decrease the negative impact on the rescuer's mental health, to provide professional help by the expert. The intervening teams (Fire Corps, Slovak Police Corps, Slovak Armed Forces) have their own specialists – psychologists, who provide psychosocial help and if necessary they are invited directly on the scene of the accident in order to provide acute psychological support. (Hlivák & Svetlík, 2006)

The population affected by the emergency event often occurs in a situation when its health or its lives are under threat. Its survival, besides elemental issues (oxygen, water, food, protection from external influence – cold, heat), also depends on social needs with the possibility to communicate with people, need to be informed, the sense of security and the will to survive.

8 Veterinary provision

Conditions of providing professional veterinary activities and veterinary services are regulated by NR SR Act No. 337/1998 Coll. on veterinary care.

In accordance with this act, veterinary provision in the time of crisis is understood as:

- assessment animals' fitness to undergo evacuation,
- measures preventing the occurrence of epidemics and infections.

The central authority of state administration in the area of veterinary care is the Ministry of Agriculture and Rural Development of the Slovak Republic, which coordinates the cooperation with other subjects of state administration in the area of veterinary provision. It declares veterinary measures by means of the central anti-infection committee.

The emergency veterinary measures in the time of crisis situation include (Act No 337/1998 Coll):

- specification of the focal point of the infection, of the protective zone and of the observation zone, their warning marking and guarding, if necessary,
- veterinary examination and protective vaccination of animals,
- separate housing, isolation, urgent slaughtering of animals,
- elimination or confinement of the sources of occurrence of animal infections,
- confinement of animal transports and movement,
- evacuation of animals,
- prohibition of pasturing, using water sources and feed in the area under threat,
- restrictions of production, processing or putting into circulation of animal products harmful to health.

In case the circumstances of the specific crisis situation require it, other measures might be declared as well, corresponding to the veterinary, sanitary and hygienic requirements and to the current status of knowledge of the veterinary science.

In case the reasons terminate, local veterinary care authority cancels the declared emergency veterinary measures.

CONCLUSIONS

In the time of crisis situation, the standard conditions of system functioning change dramatically. Crisis situations features include

sudden and unexpected occurrence, collective presence of the affected persons without shelter and vital needs, shocked, injured or dead, impact on large amounts of animals, destruction or disruption of infrastructure, disruption of mains supply networks and devices, flooding of large areas with water, mud deposits, wood or other material, occurrence of fires, destruction or disruption of buildings, industrial objects, bridges, transport suspension, damaged terrestrial communications, destruction of cultural monuments and protected natural formations, lack of time for decisions on rescue work management and control, panic and emotional stress, the danger of epidemics occurrence, deterioration of hygienic conditions, overall disruption of the living standards, environment and slowing down the manufacture.

The changes of these conditions often happen suddenly and with impacts which are not always possible to predict precisely. To resolve these situations, there are forces and resources deployed which main objective - rescue of lives and property, localization and subsequent elimination of their consequences – also requires a number of supporting activities of material, transport and medical nature and further necessary services. These are necessary on one hand to support the deployed forces and resources, but on the other hand they have to be used on behalf of people, animals and objects affected by the incident. Logistic support of resolving crisis situation encompasses complex measures of preparation, prevention, response and resolution in the areas of human resources, as material, technical, medical, transport activities and selected services are concerned.

Various rescue units – police, armed forces, and volunteers are called to the crisis location - in accordance with the extent and possible consequences of crisis situations. The role of logistic support organization is to match the activities of all participants of the response, because complications and slowdown of the whole course of rescue works is often encountered from untrained volunteers in their effort to help, mainly in case of their disproportionate ratio to the professional rescue workers and trained volunteers. Also the ignorance of organizational structure may cause unwillingness of the acceptance of operation commander's orders and/or partly uncoordinated participation in rescue works. In case of lacking coordination, synchronization and overall organization of logistic support of crisis situation resolution, the system's own dynamic might lead to the formation of unmanageable situation. A thorough organization of logistic support of crisis situation resolution between all rescue units and other participants on one hand and the operation command and rescue teams and other units and individuals on the other hand from the very start of the operation plays a vital role in saving human lives, animals and property. Medical provision means providing the appropriate level of medical aid (self-help, mutual help, pre-medical and medical help) in case of injuries and diseases of persons, searching, concentration and removal of the injured and ill persons, blood supplies, distribution of medication and medical supplies, taking part in elimination of consequences of chemical and nuclear accidents, performing surveys and supervision in the areas of hygiene and epidemiology and performance of complex hygienic and counter-epidemiologic measures. Veterinary measures are also the part of medical provision.

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