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CRISIS (UN)PREPAREDNESS IN THE HEALTHCARE SECTOR IN THE CZECH REPUBLIC

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ABSTRACT *This article deals with crisis (un)preparedness in health care in the Czech Republic. In the descriptive part we can find the current state of knowledge of crisis preparedness in the Czech Republic, including a description of individual institutions working in this field. Emphasis is also placed on the connection with the current legislation describing crisis preparedness in health care, i.e. the role of the Ministry of Health, health stations, ambulance services or hospitals. The descriptive part concludes that the currently set system has its loopholes. Therefore the article also suggests possible improvements in chapter 2. It focuses on conducting a thorough risk analysis, crisis planning and its prompt updating, and, last but not least, it also points out the method of verification of the set rules, i.e. exercises. The present article is a communication.*

KEYWORDS: *crisis preparedness, healthcare sector, crisis planning, risk assessment*

INTRODUCTION

The term "*crisis management*" will be 60 years old this year (2022). J.F. Kennedy first used it during the Caribbean crisis when he named his emergency team of experts to avert a possible confrontation with the Soviet Union. Subsequently, North Atlantic Treaty Organisation also adopted it in its terminology, thus beginning to transform the field of crisis management from a military domain to one not exclusively linked to the external defence of the state.

Even in the Czech legislation, this concept has been known for more than 20 years since the restructuring of civil protection, under several ministries since the end of the Second World War (first the Ministry of the Interior, then the Ministry of Defence), began to take shape in the protection of the population. Since January 1, 2000, the whole issue of population protection and crisis management has been managed by the Ministry of the Interior, which created the General Directorate of the Fire Rescue Corps Czech Republic. In the millennium, the Czech Republic adopted the so-called package of crisis laws, i.e. a complex of legal issues concerning population protection *(adopted from the original concept under Additional Protocol No. 1 of the Geneva Conventions*) and crisis management.

It might be supposed that in those twenty-two years, the Czech Republic and all its entities must be perfectly prepared, trained and financially secure for various types of emergencies, but the opposite is frequently true. The covid-19 pandemic, in particular, has demonstrated how crucial crisis preparedness is in the health sector.

Therefore, this paper aims **to describe the current state of knowledge of crisis preparedness in the** healthcare sector in the Czech Republic and **to suggest possible improvements in this area.**

1. INSTITUTE OF CRISIS MANAGEMENT IN HEALTHCARE IN THE CZECH REPUBLIC

According to Šín (2017), crisis preparedness in the health sector can be understood as "*the ability of the territorial competent state and local government authorities and health service providers to provide the necessary health care to the population in times of crisis and emergencies*." Another definition, enshrined in the Concept of Crisis Preparedness of the Czech Healthcare System, states that crisis preparedness in the healthcare system is "*the state of the system's ability to provide necessary health care to the population in emergency situations according to prepared scenarios and approved procedures by professionally qualified personnel, with internal and external operability of the system*" (MZČR 2007). However, the two definitions coincide in substance; to provide expert care even under non-standard conditions, as all health facilities **play a key role during an emergency or crisis situation**, both in saving lives and in providing health services to the affected population. As a result, it is these facilities that are expected to remain fully operational during any emergency (Lestari et al. 2022).

Therefore, it is very important to know and analyze the risks that threaten these facilities and mitigate or eliminate the impact on healthcare facilities through preventive or punitive interventions. Here, however, we come up against the imaginary „*Achilles heel*“ of the Czech healthcare system from the perspective of crisis management. Crisis preparedness in healthcare is often misunderstood only from the perspective of emergency medicine or disaster medicine. Even though both of these areas have their irreplaceable place, it is necessary to look at preparedness in a much more complex way, i.e. to perceive internal threats and risks (emergencies that are connected with the organisation's operation) as carefully as external threats and risks (e.g. the aforementioned area of emergency medicine and disaster medicine).

The structure of crisis preparedness management in the health sector itself is then fundamentally based on the government as the supreme crisis management authority up to the municipalities. (Šín 2017) A simpler model of crisis management then presents the following hierarchy for the health sector:

- Ministry of Health
- Public health authorities
- health emergency service providers
- health service providers
- regional authority

1.1 MINISTRY OF HEALTH

The Ministry of Health can be understood as the central administrative body of the state administration for health services and public health protection. (Šín 2017) From the perspective of crisis management, the obligations are unified in Section 9 of Act No 240/2000 Coll., on Crisis Management, according to which the Ministry of Health is obliged to ensure preparedness for dealing with crisis situations in its area of competence, to establish a crisis management unit, to draw up a crisis plan and to establish a crisis staff. Within the Ministry of Health, there may also be several specialised working groups or advisory bodies that may be involved in ensuring crisis preparedness (e.g. the Central Epidemiological Commission).

In terms of crisis planning, the Ministry of Health has authored and co-authored several important documents. It is the elaborator of the **type plan Epidemic**[1] - **mass infections of persons**, the national pandemic plan and an important partner of the General Directorate of the Fire Rescue Corps in the elaboration of the **STČ**[2] 16A **Extraordinary event with a suspected occurrence of a highly contagious disease in a health care facility or in other premises** as well as the STČ 16B Extraordinary event with a suspected occurrence of a highly contagious disease on board an aircraft landing at Prague/Ruzyně airport. However, the documentation described above does not fully reflect the current state of knowledge, in particular:

- despite the fact that the type plan deals with mass outbreaks of diseases, it is not adapted to mass outbreaks of diseases and even at the time of the covid-19 pandemic it was not updated to its needs. The type plan also refers to the possibility of introducing measures beyond the established anti-epidemic measures, but does not specify these measures. Similarly, the individual measure cards do not well specify who is actually responsible for implementation, how a particular measure will be implemented. Since the model plan is part of the regional crisis plan, i.e. a state of emergency is foreseen, all responsibility should be assumed by the Ministry of Health, whose role (or the role of the epidemiological commission) is not described in this document at all,

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[1] *In accordance with Section 15 of Government Regulation No.462/2000 Coll., a type plan is a document by which the relevant ministry or other central administrative authority establishes recommended type procedures, principles and measures for dealing with a specific type of crisis situation. The type plans are subsequently elaborated in the operational part of the crisis plans into procedures for dealing with specific types of threatening crisis situations identified by the crisis plan preparer in the threat analysis.* (Šindlerová a Koleňák 2017)

[2] *Typical activities of emergency rescue system components during joint intervention are prepared according to § 18 of Decree No.328/2001 Coll., on some details of emergency rescue system security, as amended by Decree No.429/2003 Coll. The standard activity contains the procedure of the emergency rescue system components during rescue and liquidation works with regard to the type and nature of the emergency. (Agh 2022)*

- loopholes can also be found in the national pandemic plan, which was last updated in 2011 and, although it does not target only the influenza virus, which is the reason for the pandemic plans, has a number of shortcomings that have not been corrected by the Ministry of Health over the past 11 years, i.e. it does not adopt any anti-epidemic measures, it does not include the status of risk groups, it is not linked to relevant legislation (i.e. to current legislation in the area of health and crisis management), it does not define the roles of crisis management authorities, it does not deal with the declaration of a state of emergency, and it does not address the status of critical infrastructure.

Pursuant to Article 9(3)(a) of Act 240/2000 Coll., on Crisis Management, the Ministry of Health proposes sectoral criteria for the protection of critical infrastructure, i.e. it sets a limit on the number of acute beds of a given healthcare provider at which a given hospital premises can be considered critical infrastructure.

Government Regulation No 432/2010 Coll., on criteria for determining a critical infrastructure element, sets a sectoral criterion for the healthcare sector, i.e. that a healthcare facility can be considered a critical infrastructure element if its total number of acute beds is at least 2,500. **No healthcare facility in the Czech Republic meets this threshold**. In emergencies that do not escalate into the need to declare a state of emergency, therefore, no priority supply can be counted on for any healthcare facilities, which we now refer to as *'soft targets'* rather than *'critical infrastructure'*. Bernátek (2020), among others, operates with these conclusions.

1.2 PUBLIC HEALTH AUTHORITIES

An equally important institute of crisis management in health care are the public health authorities, which usually carry out state health surveillance, but according to Klementová (2021) also have a strong position in the field of crisis management. In particular, the regional health stations ensure crisis preparedness in their area of competence according to Section 24 c) of Act No. 240/2000 Coll., on crisis management, i.e. they prepare a crisis preparedness plan and according to Section 82 of Act No. 258/2000 Coll., on the protection of public health they participate in the tasks of the emergency rescue system, which include, for example, the preparation of a pandemic plan for the region. According to Act No. 239/2000 Coll., on the Emergency Rescue System in the Czech Republic, the regional health station is another component of the Integrated Rescue System.

Although Act No. 258/2000 Coll., on the protection of public health codifies the obligation to prepare a pandemic plan for the region (regional pandemic plan), it does not specify its details. Therefore, it is not clear whether the line of preparation of the regional pandemic plan should be based on the national pandemic plan or whether it is a separate document. At the same time, it is not specified who should approve the regional pandemic plan or whether it is subject to the approval process at all (as for example the national pandemic plan, which is approved by a resolution of the Government of the Czech Republic).

1.3 MEDICAL RESCUE SERVICE AND HOSPITALS

Of course, medical rescue service (like an ambulace) and hospitals cannot be excluded from the whole system. As part of crisis preparedness of medical rescue service, they establish crisis management workplaces and, pursuant to Section 7 of Act No. 374/2001 Coll., on the Medical Rescue Service, they prepare a trauma plan. The Act on the Medical Rescue Service defines a trauma plan as „*a plan setting out the measures and procedures applied by the medical emergency service provider in the provision and delivery of pre-hospital emergency care in the event of mass casualties*“.

However, a major problem in the health sector is the position of hospitals in the emergency preparedness system. Here the size of the hospital in question is very crucial. While large (university, some regional) hospitals are obliged to prepare their crisis plans according to Article 29 of Act No. 240/2000 Coll., on Crisis Management, other providers of overnight or inpatient care have no legal obligation and therefore do not deal with crisis preparedness. There are also no crisis managers who assess the threats and risks of the hospital premises.

2. WHAT CRISIS PREPAREDNESS IN HEALTHCARE SECTOR SHOULD INCLUDE

According to Urbánek (2012), crisis preparedness in healthcare is expected to handle and resolve medical emergencies occurring **outside** the hospital premises, i.e. to handle mass admission of the affected. For this purpose, trauma plans are developed by hospitals in accordance with Act 372/2011 on Health Services. Its main contribution is the so-called coordination and efficiency of the work of pre-hospital emergency care with subsequent hospital emergency care. It is both an effective linking of the activities of the hospital and the emergency medical service, but also a kind of restructuring of the hospital complex, i.e. the subduing of those departments that do not mitigate the impact of the emergency and, on the other hand, the strengthening of those departments that are key to mitigating the emergency. The trauma plan must be updated at least once every two years by the provider of overnight and inpatient care, and the proposal must be consulted in advance with the founder (regional authority or Ministry of Health).

In addition, however, Urbánek (2012) also notes that at the same time, it is necessary to adequately manage accidents and emergencies occurring **within** the hospital and to develop plans (scenarios) for these emergencies, including dealing with outages and disruptions in normal operations. Here, according to the author, the critical point is that the crisis preparedness of many hospitals does not reach the necessary quality and in some places it is also possible to talk about its complete absence. If hospitals already prepare crisis documentation, it is often only textual material (i.e. there are no specific procedures for dealing with it) and a major criticism is also the absence of exercises that cannot reveal the reality or unreality of the measures taken.

It follows from the above that the means by which crisis preparedness would be fulfilled are not sufficient. The need to update the legal regulation is also regularly pointed out in the conceptual material prepared by the General Directorate of the Czech Fire Rescue Corps (pursuant to Section 7 of Act No. 239/2000 Coll., on the Emergency Rescue System), the Concept of Population Protection, which in its latest version from 2021 (Concept of Population Protection until 2025 with a view to 2030) also clearly points to the need to incorporate into the legal regulation the knowledge of the solution and intervention of individual components of the emergency rescue system in crisis situations that have already arisen in the Czech Republic. (Ministerstvo vnitra, Generální ředitelství HZS 2021)

Crisis situations that have already taken place in the Czech Republic have also led to the obligation to increase staffing capacities in the health sector, not only among doctors, but also among a number of non-medical personnel in the field of security and crisis management. The lack of satisfactory attention to threats and risks can be explained both for financial reasons, where hospitals invest in more modern hospital equipment rather than in security, and for staffing reasons, where hospitals often lack specialist functions.

3. PROPOSED IMPROVEMENTS TO THE STATUS QUO

1. Healthcare risk assessment

A properly conducted healthcare risk assessment **is the initial step** towards ensuring an institution's crisis preparedness. The entire risk assessment process involves several important points in a continuous sequence:

- identification of threats
- risk analysis
- risk assessment

Today, risk analysis is carried out using simple methods to more sophisticated ones. However, the simplest ones, namely the *risk matrix* or the *PNH method*, are still the most used in the field of crisis management.

The risk matrix is a method that evaluates risk using 2 variables; probability and impact. That is, what is the probability that a given emergency will occur in a given institution and how much impact will this emergency have on the operation of the institution. "*It is not always the case that a crisis situation is known from the past or from statistics, as such a situation may not yet have occurred in a given*

institution. It is therefore impossible to determine the likelihood of such a situation occurring. The probability of occurrence must therefore be estimated. The resulting value is based on a combination of the probability of the risk and the impact. The matrix produces a scale of risks according to the severity and priority according to which the risks will be addressed. When assessing risks, it is important to look at risks objectively" (Pekárková 2019).

The PNH method is a more sophisticated method of risk matrix because it adds an additional variable. Thus, the method multiplies the probability of a given event, its impact on the operation of the institution and additionally the opinion of their assessors. Thus, the PNH method is enriched with the subjective view of the investigators.

Through a thorough risk analysis, unacceptable risks emerge, i.e. risks that the organisation must address and mitigate the impact of a given emergency or crisis situation through measures and tools. Risk analysis as an initial step towards crisis preparedness in healthcare must be addressed by every healthcare facility to eliminate or at least reduce the impact of an emergency or crisis situation that may affect its premises or its work performance.

2. Crisis planning in healthcare sector

The purpose of crisis planning is to prepare crisis managers for crisis situations, summarizing the needs, requirements, forces and resources necessary to cope with the situation. Exactly these aspects should be included in crisis plans. The elements of a crisis preparedness plan are now codified in Government Decree No 462/2000 Coll., implementing Article 27(8) and Article 28(5) of Act No 240/2000 Coll., on Crisis Management and on Amendments to Certain Acts. As the Government Regulation does not specify the specific implementation of the plan, in 2016 General Directorate of the Fire Rescue Corps issued a Methodology for the elaboration of the Crisis Preparedness Plan, which describes the content of the plan in more detail.

In order to fulfill the purpose of crisis planning in the healthcare sector, it is necessary that the obligation to prepare a plan, i.e. to deal with crisis preparedness, is mandatory and enacted for healthcare facilities. In the same way, the monitoring of crisis planning must be carried out. This is currently carried out by the Ministry of Health as the founder of teaching hospitals under Act No 240/2000 Coll., on crisis management, but this control is not carried out for hospitals established by a region or municipality with extended competence.

The crisis preparedness plans of a given hospital must also include sub-emergency plans, which deal with a specific emergency that may or may not escalate into a crisis situation but negatively affects the operation of the hospital, such as interruption of drinking water supply, interruption of electricity supply, high morbidity at the workplace, interruption of the supply of medical supplies, etc. These are risks that completely paralyse the operation of the hospital, where without regular supplies the hospital cannot perform its function. One of these risks, namely the risks arising from long-term interruption of drinking water supply, was also addressed in their study by Klementová and Kožíšek (2022).

Similarly, I call for the need to update the legislation, as well as the associated documentation (e.g. the aforementioned methodology for the preparation of emergency plans and the emergency preparedness plan). The need to update the legal environment is also highlighted by the Concept in its Strategic Task 1. In addition, the newly adopted 2021 Concept, in contrast to the previous ones, sets deadlines for individual tasks and assigns the responsible ministry to them, which is certainly a step in the right direction to fulfil these tasks (Ministerstvo vnitra, Generální ředitelství HZS 2021).

At the same time, a similar methodology for the preparation of crisis plans and emergency preparedness plans should also be developed for the area of pandemic planning, as its structure and updating are not precisely defined. The elaboration of a national pandemic plan is based only on the recommendations of the World Health Organization, but it is not enacted in the Czech legal environment and today the area of pandemic planning is not considered as documentation of the emergency rescue system according to Article 14 of Decree No. 328/2001 Coll. of 5 September 2001 on certain details of emergency rescue system security, as amended by Decree No. 429/2003 Coll.

3.Exercise as the most effective method of verifying set rules
A very important point that could lead to an improvement of the current situation is the need to verify the crisis documentation, the rules set and the measures taken through exercises. These are not carried out regularly in health care facilities, and often not all stakeholders (e.g. water infrastructure operators, distribution system operator, other units of emergeny rescue system, etc.) participate. The organisation of the exercise together with its execution is often a management burden for hospital premises, but otherwise the set measures cannot be evaluated. However, the aim of the exercise is not to "just do the duty", but *„to identify first and foremost the deficiencies, those then analyse and incorporate them into the training“* (Vidunová et al. 2020).

The proposal for the exercise is usually submitted to the Regional Safety Council by the Fire and Rescue Service, however, the initiative for the exercise may also come from an inpatient care provider or another institution. The need for drills and greater involvement of the emergency services is also highlighted in the Concept of Population Protection until 2025 with a view to 2030. (Ministerstvo vnitra, Generální ředitelství HZS 2021)

Exercises in a healthcare facility **must address both internal and external risks**, generally focusing on those risks that may negatively affect the operation of the hospital environment.

CONCLUSION

The significance of crisis management in institutions has never been fully appreciated in the Czech Republic. Areas have not received enough attention, and preparedness has often stagnated. However, a series of widespread crises over the last two years have highlighted the absolute necessity to address crisis preparedness at all levels of the state. The alpha and omega is also crisis preparedness in the health sector, which we consider a safe place, a place where we can be helped without realising that even this infrastructure can be fatally disrupted. Crisis preparedness in the health sector in the Czech Republic is not sufficiently addressed and has its *Achilles' heel*. The present article describes the loopholes and takes possible measures to improve the current state of crisis preparedness in the healthcare sector in the Czech Republic.

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