

Improvement in the Field of CBRN Prevention, Preparedness and Protection in the Czech Republic

Otakar Jiří MIKA^{1,2}, Pavel OTŘÍŠAL³

¹ Department of Crisis Management, Faculty of Security Management, Police Academy of the Czech Republic, Lhotecká 559/7, CZ-143 01 Prague, Czech Republic

² Department of Radiology, Toxicology and Population Protection, Faculty of Health and Social Sciences, University of South Bohemia in České Budějovice, J. Boreckého 1167/27, České Budějovice, Czech Republic

³ Department of Adapted Physical Activities, Faculty of Physical Culture, Palacký University Olomouc, třída Míru 117, 771 11 Olomouc, Czech Republic

Correspondence: ¹ mika@polac.cz

Abstract

The expert article deals with CBRN threats in the Czech Republic and reflects on the current preparedness for handling adverse CBRN incidents, accidents and attacks. Despite the fact that attention is paid to the areas of prevention, preparedness and protection against CBRN substances and materials and so-called type plans for the Integrated Rescue System are prepared, there are still areas that need to be improved. One of the significant and important management tools is the national strategy and national action plan for the fight against CBRN terrorism. Although many developed countries have such documents ready (for example, Canada already in 2011), the Czech Republic unfortunately does not. The authors of the professional article dwell on this fundamental shortcoming and discuss various safety issues of the given issue. Last but not least, the authors present a possible solution to the given situation using verified foreign models.

KEY WORDS: *CBRN threats; prevention; preparedness; protection; population protection; national CBRN strategy; national CBRN action plan.*

Citation: MIKA, O. J., OTŘÍŠAL, P. Improvement in the Field of CBRN Prevention, Preparedness and Protection in the Czech Republic. In Proceedings of the Challenges to National Defence in Contemporary Geopolitical Situation, Brno, Czech Republic, 11-13 September 2024. ISSN 2538-8959. DOI 10.3849/cndcgs.2024.194.

1. Introduction

Science will continue to develop at high speed, even revolutionary leaps. Improvements in information technology, the benefits of nanotechnology, new innovations in biotechnology, and continued investment in science and technology will provide both opportunities and threats to infiltrate knowledge towards agents with hostile intentions. As a result, the proliferation of WMD will become a much more serious problem. In the areas of defense and protection, information technology will contribute to the acceleration of decision cycles. Space and cyber-space will be interconnected and more widespread through military applications than ever before.

Nanotechnology will enable not only the military, but also various terrorist and extremist groups to use miniaturized, remote-controlled or even robotic systems, while biotechnology will increase the level of personal protection and the accuracy of sensors for targeting biological elements. Ultra-terrorism, sometimes called super-terrorism, i.e. chemical, biological, radiological and nuclear terrorism, represents not only future, but, unfortunately, also contemporary security threats, as demonstrated by the use of super toxic lethal sarin by the Aum Shinrikyo doomsday cult in 1994 and 1995.

Incidents of chemical, biological, radiological, and nuclear (CBRN) situations are on the rise and a clear understanding of the threats, vulnerabilities, and modus operandi of the perpetrators is required for reliable prevention and rapid, effective, and reliable response. CBRN incident management, both prevention and response, is a matter of multiple government institutions and agencies striving for mutual coordination and a clear understanding of rules and jurisdictions. Although international treaties have been concluded prohibiting the use of these weapons, the misuse of chemical, biological, and bacteriological substances by terrorists in any part of the world and at any time cannot be ruled out. Therefore, the response to such events must be quick, effective, and coordinated to avoid casualties and prevent the escalation of such an adverse event.

The Czech government and the responsible Czech authorities consider security problems to be key issues of the State's internal policy. It is obvious that, at present, issues of state security are becoming a priority in the daily activities of the government, constitutional officials, and individual departments of the national economy.

The fear of an escalating conflict has proven to be justified, as stated above, and requires the Czech Republic to take measures to maintain internal security and support international efforts in dealing with all events, be they military and political, hygienic and epidemiological, or other events have a negative effect on life on our planet.

The threat of CBRN misuse is also gaining importance. In 1995, the Japanese religious sect Aum Shinrikyo attacked the Tokyo subway with sarin, causing 12 deaths and nearly 5,000 injuries. [1, 2] Places where large numbers of people gather for various reasons are known to be the target of terrorist attacks causing serious loss of life and health of the population, material damage, and causing fear and panic among the population.

Therefore, it is important that the Czech Republic also pays increased attention to prevention, preparedness and protection against chemical, biological, and radiological terrorism in vulnerable public places (for example, in the Prague Metro). However, they must also seriously deal with all possible catastrophic scenarios of attacks and assaults using CBRN.

2. Responsible body in the Czech Republic

The question of the executive, responsible and control body, which in the Czech Republic is the State Office for Nuclear Safety, is also essential (State Office for Nuclear Safety 2021). It may have escaped the uninformed that a state office that has nuclear safety in its name also includes the following three important expert areas of activity:

- *Non-proliferation of nuclear weapons,*
- *Prohibition of chemical weapons, and*
- *Prohibition of biological (bacteriological) and toxin weapons.*

International and national law enforcement in the country

Nuclear Non-Proliferation

State office for Nuclear Safety (SONS) is the main responsible state body. The main aim in the area of the control of non-proliferation of nuclear weapons is to make the control tasks more effective and thus to reduce further the risks of possible misuse of nuclear items for other than peaceful purposes. The work of the State Office for Nuclear Safety (SONS) in this area is based on the Resolution 1540 of the UN Security Council, which bound UN member states to accept transparent measures for strengthening the control of non-proliferation of nuclear weapons. The goal of these measures is to prevent the illicit trafficking with nuclear materials and other nuclear items suitable for the development and manufacturing of nuclear weapons and so far efficiently reduce the risk of nuclear terrorism.

The verification approaches and measures utilized by the International Atomic Energy Agency (IAEA) to verify that nuclear materials are not diverted from peaceful uses to nuclear weapons or other nuclear explosive devices in accordance with *Treaty on the Non-Proliferation of Nuclear Weapons* (NPT) commitments are commonly referred to as "safeguards".

The work of the SONS is targeted on the area of state control over the nuclear items, on fulfilling international obligations of the Czech Republic in accordance with the NPT, the Agreement between the IAEA, Euratom and non-weapon member states in connection with the NPT (Safeguards Agreement) and the Additional Protocol to the Safeguards Agreement. The Additional Protocol issues the inspectors the power to supervise not only nuclear materials and sites where have been previously or is being handled now with the nuclear materials, but the state's nuclear program, for example, the development or manufacture of components for nuclear facilities.

Chemical Weapons Prohibition

Since 2000 The State Office for Nuclear Safety (SONS), as the National Authority of the Czech Republic, has been guaranteeing obligations resulting from the *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction* (also Chemical Weapons Convention or shortly CWC). The implementation of the chemical weapons prohibition belongs to the priorities of the SÚJB. The target is to contribute to the reduction of the risk of their abuse, including prevention to possible non state party threat.

The SONS carries out the function of state surveillance over the measures related to the prohibition of chemical weapons in accordance with the national Act No. 19/1997 Coll., as amended, on some measures concerning chemical weapons prohibition and the national Decree No. 459/2020 Coll., implementing the Act No. 19/1997 Coll., where chemicals are listed in individual Schedules in accordance with the classification.

The Act No. 19/1997 Coll. has been recently amended by the Act No. 336/2020 Coll. [3] to reflect last changes and development in CWC. As a result of it, the original Decree No. 208/2008 Coll. has been fully replaced by the Decree No. 459/2020 Coll. [4]

This concludes also participation of SONS experts in the activity of international control regimes like Australia Group. Although this may not bring any internationally legal obligations for the Czech Republic, it is understood as an important tool for securing a rigorous fulfillment of the measures related to the prevention of the proliferation of weapons of mass destruction.

All SONS activities in the area of the prohibition of chemical weapons is widely coordinated with the activities of other governmental bodies in this area and respects the principles of the European Union Strategy against the proliferation of chemical weapons, which the Czech Republic accepted. The SONS also closely cooperates with the Organization for the Prohibition of Chemical Weapons.

Biological (Bacteriological) and Toxin Weapons Prohibition

State office for Nuclear Safety (SONS) is the national authority responsible for the fulfilment of the *Biological (Bacteriological) and Toxin Weapons Convention* (BTWC). The Convention is implemented into the Czech legal system by several measures. The main principles of the convention are covered by national Act No. 281/2002 Coll., about biological weapons prohibition (Biological Act). [5]

This Biological Act regulates rights and obligations of natural persons and legal entities as associated with the ban on development, production, stockpiling and use of bacteriological (biological) and toxin weapons; their disposal and with the handling of highly hazardous and hazardous agents and toxins that could be abused to violate the ban on bacteriological (biological) and toxin weapons; and regulates the execution of governmental administration in this area.

There are also other legislative measures and regulations that are closely connected to objective of the Convention (the protection of health of humans, animals, plants and the environment, etc.). The summary of the overall implementation of BWC has been presented as part of the working paper on Meeting of State Parties of the Convention in 2012. All SONS activities in the area of prohibition of biological and toxin weapons are coordinated with activities of other governmental departments and in respect of the European Union Strategy against the CBRN threat. SONS experts also take part in the international control activities such as The Australia Group.

3. CBRN threats in the Czech Republic

Efficient protection of citizens through anticipation, deterrence, preparedness, response and adaptation to crisis situations – in other words, maintaining disaster resilience – faces new challenges. Collaboration between national, European and international stakeholders requires unified processes and management systems as well as technical, procedural, operational and semantic interoperability.

The Czech Republic has certainly not lagged behind in such an important area as CBRN protection. It is possible to be confident of this, be it through the development and introduction of means of radiation, chemical, biological research, means and reagents for the decontamination of equipment, material of all kinds, and persons, individual and collective protection, prophylaxis and the treatment of affected persons of the armed forces and the general population. In 1990 and 1991, the chemical unit of the former Czechoslovak Army was involved in the Gulf War, and its operations within the mission of international forces, equipment, and readiness were positively evaluated at an international forum.

The question of the executive, responsible and control body, which in the Czech Republic is the State Office for Nuclear Safety, is also essential. It may have escaped the uninformed that a state office that has nuclear safety in its name also includes the following three important expert areas of activity: *Non-proliferation of nuclear weapons, Prohibition of chemical weapons, and Prohibition of biological (bacteriological) and toxin weapons.*

In another case, a habilitate work from 2011 focused on the issue of protecting the population from chemical terrorism, where a total of 91 different measures were proposed in specific areas, i.e., preventive measures, punitive measures, rescue and protective measures, liquidation measures and recovery. [6]

The good preparedness of everyone (paramedics, medical personnel, police, special hospitals, special military units, the general population, etc.) for extraordinary events, especially for managing their consequences, including possible terrorist CBRN attacks, requires the following necessary procedures in particular:

- systematic preparation of control units and authorities for the possibility of CBRN terrorism;
- sufficient knowledge of CBRN terrorism acquired by the population (knowledge of the population about possible extraordinary events and emergency situations at the place of their residence or work, including terrorist attacks; clarification of the methods of warning and protection of the population; questions, etc., answered by the administrative authorities at the place their residence);
- basic provision of written instructions related to CBRN terrorism to the general public and their correct response (description of possible emergency events, including terrorist attacks; methods of warning the population; shelters for the population and protection systems; improvised protective equipment and aids, what to pack for an evacuation, evacuation routes, assembly points for the evacuated population, etc.);
- practical training of residents for cases of CBRN attacks; necessary activities and use of various personal protective equipment and aids; production of improvised protective equipment; training in what to pack in the case of an evacuation; training in the evacuation of the population; comprehensive training of acquired skills and habits; training of the population in response to possible extraordinary events and emergency situations);
- theoretical training of rescuers, medical staff and policemen for cases of CBRN attacks and assaults (acquiring the necessary basic knowledge and awareness of CBRN issues);
- practical training of first responders, rescuers, medical staff and police officers on training grounds and in exercises in the case of CBRN terrorism (acquiring the necessary skills and habits for operations in extraordinary events and emergency situations [terrorist attacks]); and
- systematic, regular, and comprehensive verification of knowledge, skills and habits of rescuers through not only written tests, but also practical verification in the field.

The overall preparedness of the population for extraordinary events, emergency situations, and their adverse effects is a very complex, complicated, and long-term issue. In the Czech Republic, a system for preparing all groups of residents for extraordinary events and emergency situations has not yet been created (only partially for primary school pupils and

secondary school students). An integral part of such preparation must be regular and systematic preparation of the population for possible CBRN attacks.

Terrorist groups are constantly analyzing, evaluating, and researching all possible ways to cause mass attacks on certain Western targets, especially with the aim of disrupting the Western way of life.

A massive attack would focus on crowded public places such as airports, large supermarkets, sports stadiums, large cultural halls, large-capacity spaces for the population in general, so that the attack not only causes hundreds of casualties and injuries, but also causes other great damage. These are so-called soft targets, which are generally insufficiently protected.

However, terrorists can easily smuggle a large amount of toxic substances or explosives into these public places, which would lead to a mass terrorist event. Terrorists could easily exploit dangerous biological agents or radioactive materials for their aims. Just imagine what could happen at the capital's airport, if an attacker would be armed not only with automatic weapons, but they would simply use a bottle of sarin [alternatively cyclo-sarin, soman, tabun]. How would we deal with such a horrific chemical event that would undoubtedly leave hundreds of people dead?

Many countries have recently begun to prepare for prevention and response, although most are not well prepared for CBRN threats. Typically, the response is based on the capabilities of guards and local first responders. The overall preparedness of society for CBRN attacks and assaults is a complex matter that has been building over many years, and it is essentially a never-ending process of improving CBRN prevention, preparedness & protection.

The current situation in the area of protection against CBRN threats in the Czech Republic is at a fairly good level, but the state of preparedness must be constantly improved.

This was shown when dealing with the protection of the population in connection with the spread of COVID-19. There was a certain spontaneity, poor organization of measures, starting with the initial insufficient supply of medical equipment, insufficient stocks in the warehouses of supplies (masks, respirators, decontamination agents, solutions and mixtures). This was closely related to unclear management, the announcement of individual measures, when unclear, political decisions were often taken without being sufficiently supported by an expert opinion and without knowing both the short-term and the long-term impacts.

The awareness of the population presented by the leading representatives of the government at daily press conferences became counterproductive over time, gradually provoking mistrust and increasing negative resistance of part of the population, which led to the creation of two differentiated groups of the population with different opinions on solving current protection problems, starting with the use of protective equipment (masks, respirators), limiting public life, limiting the number of people at various events, and especially vaccinations, which led to the organization of protests and the personal attacks on certain people working in health and hygiene.

In this regard, the media also played a negative role, which, although in good faith, gave space to various experts with pedagogical and scientific degrees, but without sufficient education and experience in the assessed problems of medicine, epidemiology, and hygiene. This in itself only contributed to deepening the mistrust of the population and the negative perception of the enforced measures, often leading to them being ignored. In this sense, it is necessary to analyze the way and extent of information transmission and the involvement of professionals and citizens in public discussion. Everyone's interest must be a balanced, expert discussion supported by specific results and statistics, not the daily presentation of politicians in the media. The fact that the Czech Republic still does not have a National Strategy and a National Action Plan for protection against CBRN, which would focus mainly on the protection of the population, the protection of rescuers, and other involved persons, is problematic.

4. Integrated Rescue (Emergency) System in the Czech Republic

The current situation in the area of protection against CBRN threats in the Czech Republic is at a fairly good level, but the state of preparedness must be constantly improved.

This was shown when dealing with the protection of the population in connection with the spread of COVID-19. There was a certain spontaneity, poor organization of measures, starting with the initial insufficient supply of medical equipment, insufficient stocks in the warehouses of supplies (masks, respirators, decontamination agents, solutions and mixtures). This was closely related to unclear management, the announcement of individual measures, when unclear, political decisions were often taken without being sufficiently supported by an expert opinion and without knowing both the short-term and the long-term impacts.

The awareness of the population presented by the leading representatives of the government at daily press conferences became counterproductive over time, gradually provoking mistrust and increasing negative resistance of part of the population, which led to the creation of two differentiated groups of the population with different opinions on solving current protection problems, starting with the use of protective equipment (masks, respirators), limiting public life, limiting the number of people at various events, and especially vaccinations, which led to the organization of protests and the personal attacks on certain people working in health and hygiene.

The Integrated Rescue System is determined for co-ordination of rescue and clean-up operations in case, where a situation requires operation of forces and means of several bodies, e.g. firefighters, police, medical rescue service and other bodies, or in case, where the rescue and clean-up operation is necessary to be co-ordinated from the Ministry of Interior of the Czech Republic or by a leader of region's level, or by mayors of municipalities with extended responsibilities.

As the Integrated Rescue System are therefore considered the co-ordinated proceedings of its bodies during preparations for emergencies, and during rescue and clean-up operations.

In case of a chemical, biological, radiological and nuclear (CBRN) threat, the role of the Fire Rescue System has been crucial since 2001 when national Act No. 239/2000 Coll. [7] for the Integrated Rescue System began to apply.

The Integrated Rescue System is not an organization but a coordinated process of its units in planning and preparing for emergencies and carrying out rescue and recovery operations. Basic bodies of the IRS are the Fire Rescue System, Police and Emergency Medical Service, and they operate on a 24/7/365 basis throughout the whole country. If necessary, the main units collaborate with other bodies of the Integrated Rescue System, such as the army, Red Cross, etc. The Act also transferred activities and responsibilities for the Civil Protection from the Ministry of Defense to the Ministry of Interior and then directly to the Fire Rescue System of the Czech Republic. The Fire Rescue System plays a key role in the Integrated Rescue System, because firefighters have the position of officers in charge not only for fires but also for most of other threats including CBRN incidents.

In the beginning, firefighters were mainly focused on industrial and traffic incidents connected with the leakage of hazardous chemicals. However, after several dangerous terrorist attacks across the world, tasks and equipment of the Fire Rescue System of the Czech Republic needed to be updated to cover all CBRN threats.

The national Act No. 239/2000 Coll. on the Integrated Rescue System and on amendment of certain codes, in latter wording, is the basic legal frame.

Basic Integrated Rescue System bodies:

- Fire Rescue Service of the Czech Republic and fire units, based on fire cover,
- Police of the Czech Republic,
- Medical Rescue Service.

Other Integrated Rescue System bodies:

- Specified forces and means of armed bodies,
- Other armed security services,
- Other rescue services,
- Public health protection authorities,
- Emergency, stand-by, specialised and other services,
- Civil Protection establishments,
- NGOs and civil associations, which can be used for rescue and clean-up operations.

As permanent authorities for coordination of Integrated Rescue System bodies are considered the operational and information centers of the Integrated Rescue System, i.e. the operational centers of regional Fire Rescue Services and the Operational and Information Centre of the Directorate General of Fire Rescue Service of the Czech Republic.

The Czech Republic has gradually developed several large and detailed integrated rescue system emergency response plans (type activities) for the most important areas of CBRN, as shown below:

- reaction to the misuse of biological warfare agents and biological agents against the population (General Directorate of the Fire and Rescue Service of the Czech Republic, Emergency Response Plan 2006),
- reaction to dirty bombs or other dangerous radioactive materials (General Directorate of the Fire and Rescue Service of the Czech Republic, Emergency Response Plan 2015),
- reaction to the misuse of chemical warfare agents and toxic industrial chemicals in the Metro in Prague (General Directorate of the Fire and Rescue Service of the Czech Republic, Emergency Response Plan 2013).

The above-mentioned three plans are regularly practiced, for example, it is possible to briefly recall the exercise METRO 2014 (underground, subway, tube), which was a large verification exercise of the entire Integrated Rescue System with a simulated use of the chemical warfare agent, sarin. This thoroughly and consistently verified the correctness, comprehensiveness and reality of the new plan, issued one year before.

We can name the set of measures as a necessary chain: *prevention, preparedness, detection, identification, monitoring of the presence of hazardous substances, protection, rescue, mitigation of consequences, first aid, transport of those affected, hospitalization of those affected, treatment of those affected, disposal of dangerous contaminants, recovery, etc.*

The main task of the IRS rescue units at the scene of a CBRN event is to quickly identify the specific needs that arose in connection with it directly at the specific location where the IRS cones hit. The areas that differ the most from normal procedures are the nature of crisis communication and the preparation of the health care system.

An important difference from standard-type events is the organizational complexity of CBRN incidents, accidents & disasters, precisely because of the heavy burden on the healthcare system. Distinguishing the physical consequences of exposure to CBRN agents and the effects of stress is a particularly difficult task.

5. Missing CBRN Strategy and CBRN Action Plan in the Czech Republic

Despite the fact that the above-mentioned emergency response plans cover the area of CBRN quite comprehensively, we still see certain professional gaps in the area of CBRN protection. That is why it would be very useful and beneficial to create a *National CBRN Strategy* in the Czech Republic and subsequently a *National CBRN Action Plan* to protect the population and professional rescuers from the mentioned threats.

A great advantage is that many developed countries have created such documentation, and it is mostly publicly available (Canada's example). This already created documentation can be very inspiring for the Czech Republic, and it may largely become a basic model to be elaborated in accordance with the conditions in our country.

It may seem that such expert and relatively detailed scenarios can be inspirational and, in this way, also a kind of guide to carrying out a terrorist attack for terrorists and hostile persons. On the other hand, one must see the necessary main and fundamental reason for creating possible terrorist scenarios. To find the best, fastest, and most reliable ways to rescue and protect against CBRN terrorism, we need to ingeniously create such fictional but realistic scenarios of terrorist attacks that will be the basis for countermeasures throughout a complex and interconnected chain of measures.

Here we should chronologically list the measures from prevention, detection, identification, and monitoring of hazardous substances, through the evacuation and sheltering of the population, protection, rescue, mitigation of consequences, first medical care, safe and quick treatment of victims, hospitalization of affected persons and rescuers, to decontamination, restoration, and reconstruction of affected and contaminated areas.

The problem of dealing with extraordinary events and emergency situations is at a very comprehensive level in Canada. In addition, various manuals, aids, guidance documents, recommendations, management plans, and videos are readily available on their website. Why not learn from the experienced, why not use what has already been done and what has worked? It would perhaps be useful to establish fruitful international cooperation in this area.

The most important element of the whole process is the reliable collection of the most accurate information about a CBRN event for the authorities. This will create the necessary conditions for quick and correct decision-making on the need to take various measures. Obtaining the necessary information about the location of the event, the nature of the event, and the results of the first measurements, as well as information about the number of victims and injured and disabled persons, the extent of contamination, and other damages is undoubtedly very important. In addition, the correct and quick evaluation of the event by the control center is of fundamental importance.

Slow, erroneous, and incorrect evaluation of information leads to incorrect and erroneous conclusions and thereby to the incorrect deployment of forces and equipment. This can result in higher casualties, injuries to human health, and higher damages. In such a case, higher costs for dealing with a CBRN event can be expected.

Based on the results of the evaluation, it is then possible to determine the size of the contaminated area where it is necessary to use protective means of individual protection.

The scale of a CBRN event is another very important indicator. Depending on the scale of the CBRN event, the necessity of strengthening forces and equipment from the level of other regions, and from the government (central) level, or whether it is necessary to request international assistance, is subsequently decided on.

For this purpose, it is advisable to immediately request international assistance in the form of immediate contact with the Common Emergency Communication and Information System (CECIS). This involves an exchange of information between the affected area and CECIS, but also the exchange of information and concrete assistance from other countries in dealing with a CBRN event. [7]

Below is the typical and necessary equipment of rescue teams and groups for response and management of CBRN events:

- detection, identification, and monitoring devices for detecting dangerous substances or for determining the presence of radiation or contamination (based on the type of CBRN event);
- personal respiratory protection equipment and personal body protection equipment according to the type of CBRN event (e.g., protective masks, respirators, protective clothing, protective shoes, protective gloves, etc.);
- special sample sets for the safe collection of hazardous substances for subsequent thorough analysis to confirm previously found data on the radiological, chemical, and biological situation;
- decontamination agents, solutions and mixtures for the decontamination of emergency and rescue teams, specifically personnel, equipment, and materials, and the decontamination of contaminated areas;
- safe and reliable equipment for marking and clearly labeling the decontaminated (dangerous) area;
- means of communication and transport; and
- specific additional equipment of the group according to the CBRN event. [7]

Conclusions

There is a clear need to pay great and permanent attention to the issues of defense and protection of the state and its population, and have the necessary documentation prepared for the management of activities in extraordinary conditions at all levels. It is also necessary to prepare not only experts in the components of the integrated rescue system, armed forces, but also crisis managers in the national economy, in state and self-governing bodies, and public institutions.

Understanding the legislative system and the hierarchy of international, European and worldwide regulations is indispensable for a correct orientation in the issue. This is a whole group of national laws and their implementing decrees, as they were presented in this report. Different methodologies and guidelines regulating individual areas are also very important for saving human lives. The relevant Integrated Rescue System emergency response plans (type activities) appear to be pivotal in this field, which are apparently a unique and effective tool for effective protection and reliable liquidation of the consequences of extraordinary events associated with CBRN substances and materials, and clearly and consistently state in detail and interlinked the individual professional activities of the Integrated Rescue System rescue units.

The Czech government and the responsible Czech authorities consider security problems to be key issues of the state's internal policy. It is obvious that, at present, issues of state security are becoming a priority for the daily activities of the government, constitutional officials and individual departments of the national economy. The adverse international security situation, the war in Ukraine and the war in the Gaza Strip, as well as the shocking shooting of a university student at the Faculty of Philosophy in Prague at the end of 2023, are particularly contributing to this. This tragic event claimed 15 lives and injured many innocent people, many of whom remained hospitalized for a long time.

The high-quality and sufficient professional documentation created must be constantly updated, supported by material and technical security, which will represent a long-term burden on the state budget due to the breadth of the problem. The system of education of the population of all age categories, the involvement of educational institutions, the information process to the necessary extent without subjective opinions, which ultimately lead to mistrust and rejection of the measures taken, must also play a role in the CBRN preparedness of the state and its population.

It is worth mentioning that the floods in the Czech Republic, which affected our country in recent years, caused multi-million dollars damages in the Czech Republic and caused the need to take effective preventive measures to guard against repeated events. How financially demanding it is shown by the slow and gradual solution and implementation of the individual proposed measures. Unfortunately, these tragic events did not go without taking a toll on human lives, which is the highest and most painful loss of all.

Therefore, it is very important that the Czech Republic also continues to pay increased attention to protection against chemical, biological, radiological and nuclear terrorism in vulnerable public places (e.g. in the Prague metro). However, they must also seriously consider all possible catastrophic scenarios of attacks and ambushes using CBRN agents and material.

Cruel, brutal, and violent acts of terrorism are planned to affect the public and to create shock and stress in entire nations. Negative experiences resulting from the horrors and memories of dead and disabled victims will leave a lasting impact on all persons affected by the attack, as well as their families and relatives, friends and acquaintances. [5]

State and intelligence services, together with police and state authorities, must focus thoroughly and single-mindedly on detecting any preparation of terrorist attacks in order to prevent such acts of violence worldwide.

Particular attention should be paid to the important issues of CBRN and related rapid and reliable protection of the population as well as rescuers and hospital staff in the Czech Republic and in other countries. CBRN terrorism could cause a very large number of victims. It is obvious that new terrorist threats will not escape the Czech Republic.

If the proposed management system saved a single human life (even though it can protect and save tens, hundreds, if not thousands of lives), it is undoubtedly worth it. The Czech Republic has many important professional publications that could greatly support the creation of a National Strategy for Protection in the field of CBRN and, as a result, a National Action Plan for this area. [8, 9]

It is important to emphasize that the experienced team of selected CBRN experts represents the foundation of a necessary temporary working group that could analyze, evaluate, and discuss the area and propose a comprehensive solution.

This can be implemented both as a public tender of the Ministry of the Interior of the Czech Republic and as a national security project within the framework of a public tender in the field of security at universities or other research and development workplaces and organizations in the Czech Republic.

In the end could be stress that Current Crisis Management and Emergency Planning in the Czech Republic in English you can study at student text. [10]

Acknowledgements

The research leading to this paper was partly supported from the EU Horizon project “*Comprehensive Hazard Identification, and Monitoring system for uRban Areas (CHIMERA)*”, Disaster-Resilient Society 2022 – HORIZON-CL3-2022-DRS-01.

References

33. **Tu A., T.** Chemical Terrorism: Horrors in Tokyo Subway and Matsumoto City, Alaken, Inc.: Fort Collins, Colorado, USA, 2002..
34. **Tu A., T.** (2018) Chemical and Biological Weapons and Terrorism, CRC Press.
35. **National Act No. 336/2020 Coll.**, about chemical weapons prohibition.
36. **National Executive Decree No. 459/2020 Coll.**, related national act about chemical weapons prohibition.
37. **National Act No. 281/2002 Coll.**, about biological weapons prohibition (Biological Act).
38. **Mika O. J.** Protecting the Population from Chemical Terrorism in the Czech Republic. (in Czech) [habilitate thesis], Brno University of Technology, Faculty of Chemistry, Brno, 2011.
39. **National Act No. 239/2000 Coll.**, about the Integrated Rescue (Emergency) System
40. **Mašek I., Mika O. J., Vičar, D.** CBRN Issues in the Czech Republic, Conference Proceedings from the CSCM–World Congress on CBRNe Science and Consequence Management, 12-17 April 2015, Zagreb, Croatia, 2015.
41. **Kysilko P., Mika O. J., Vičar, D.** Protection against Chemical Terrorism in the Prague Subway. NBC-2015 Symposium Proceedings–How Does the Landscape Envelope? Association for Protection, Rescue, Security and Safety, pp. 33-38, Helsinki, 2015.

42. **Fišerová L., Mika O. J.** Current Crisis Management and Emergency Planning in the Czech Republic. (in Czech), Brno University of Technology, Faculty of Chemistry, Brno, 2010.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of CNDCGS 2024 and/or the editor(s). CNDCGS 2024 and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.