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# REQUIREMENTS FOR ENSURING THE POPULATION WITH SAFE AND CLEAN FOOD DURING TECHNOGENIC AND SOCIAL EMERGENCIES

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**Annotation.**This article examines the requirements for providing the population with safe and clean food during technogenic and social emergency situations. Special attention is given to food safety measures, sanitary and hygienic standards, storage and transportation conditions, and the organization of emergency food supply systems. The study also highlights the importance of rapid response mechanisms, quality control, and coordination between health and emergency management authorities in preventing foodborne diseases and protecting public health during emergencies. The article emphasizes modern approaches to ensuring food security and maintaining the stability of essential supplies under crisis conditions.

**Keywords:** emergency situations, technogenic emergencies, social emergencies, food safety, clean food supply, sanitary and hygienic requirements, public health, food security, emergency response, food distribution, infectious disease prevention, population protection.

**Introduction**. In recent years, the world has faced a significant increase in technogenic and social emergency situations that threaten human life, public health, and social stability. Industrial accidents, chemical and radiation disasters, large-scale fires, transport crashes, environmental pollution, epidemics, pandemics, armed conflicts, and social instability have become serious global challenges. Such emergencies not only cause economic damage and environmental destruction but also directly affect the living conditions of the population. Under these circumstances, ensuring the continuous supply of safe and clean food products becomes one of the most important tasks for governments and emergency management systems. Food is considered one of the primary necessities for human survival, and its availability during emergencies plays a critical role in maintaining public health and social stability. In emergency conditions, disruptions in food supply systems may lead to hunger, malnutrition, the spread of infectious diseases, and increased mortality among vulnerable groups such as children, elderly people, and patients with chronic illnesses. Therefore, the organization of reliable food supply systems and the protection of food quality are essential components of emergency preparedness and response. Technogenic emergencies are especially dangerous because they may cause chemical, biological, or radioactive contamination of water, soil, and agricultural products. Industrial explosions, toxic gas leaks, nuclear accidents, and environmental pollution can make food products unsafe for human consumption. Contaminated food may result in mass poisoning, infectious outbreaks, and long-term health complications. For this reason, strict sanitary and hygienic control, laboratory testing, and continuous monitoring of food products are required during and after emergencies. Authorities responsible for food safety

must ensure that only properly inspected and safe products reach the population. In social emergency situations such as armed conflicts, migration crises, civil unrest, or pandemics, food distribution systems often become unstable. Transportation routes may be damaged, supply chains interrupted, and access to essential goods limited. As a result, certain regions may experience shortages of food products and clean drinking water. In such conditions, the creation of emergency food reserves, effective logistics systems, and rapid response mechanisms becomes highly important. Governments and humanitarian organizations should work together to provide timely assistance and maintain stable food supplies for affected populations. Another important aspect of food supply during emergencies is the preservation of nutritional value and product quality. Food products provided to the population must contain sufficient nutrients, vitamins, proteins, and calories necessary for maintaining normal body functions and strengthening the immune system. Poor-quality or expired products may worsen the health condition of affected people and increase the risk of disease outbreaks. Therefore, compliance with international food safety standards and sanitary regulations is necessary in all stages of food production, storage, transportation, and distribution. Modern technologies also play an important role in ensuring food safety during emergency situations. Digital monitoring systems, laboratory diagnostic methods, refrigerated transportation, and automated storage facilities help maintain food quality and prevent contamination. In addition, early warning systems and coordinated communication between health authorities, emergency services, and food suppliers improve the efficiency of emergency response activities. Thus, providing the population with safe and clean food during technogenic and social emergencies is not only a humanitarian issue but also an important factor in protecting national security, public health, and social stability. Developing effective strategies for food safety management, improving emergency preparedness, and strengthening cooperation between responsible organizations remain urgent tasks in modern society.

**Relevance.**Ensuring the population with safe and clean food during technogenic and social emergency situations remains one of the most urgent global problems today. Armed conflicts, industrial accidents, migration crises, epidemics, pandemics, and civil unrest often disrupt food supply systems and create serious risks for public health. In such situations, shortages of essential food products and drinking water may occur, while sanitary and hygienic conditions deteriorate significantly. As a result, the risk of malnutrition, infectious diseases, and social instability increases among the affected population. The relevance of this topic is also connected with the growing frequency of emergencies caused by globalization, climate change, urbanization, and technological development. Modern societies depend heavily on stable transportation networks, storage systems, and international supply chains. Any interruption in these systems may lead to delays in food delivery and reduced access to nutritious products. Therefore, the development of effective emergency food management systems and rapid response mechanisms is becoming increasingly important for every country. Another important factor that determines the significance of the topic is the direct impact of food quality on human health during emergencies. People affected by disasters require balanced nutrition rich in proteins, vitamins, minerals, and calories to maintain immune resistance and physical strength. Consumption of contaminated or expired food products may worsen health conditions and contribute to outbreaks of foodborne and infectious diseases. Consequently, strict compliance with food safety standards and sanitary regulations is essential in all stages of food production, transportation, storage, and distribution. In addition, modern technologies and digital monitoring systems provide new opportunities for improving food safety and emergency preparedness. The use of laboratory diagnostics, refrigerated transportation,

automated warehouses, and early warning systems allows responsible organizations to maintain product quality and coordinate humanitarian assistance more effectively. Strengthening cooperation between governments, healthcare institutions, emergency services, and international humanitarian organizations is therefore a key element in ensuring social stability and protecting national security during emergencies. Thus, the study of food safety and population supply during technogenic and social emergency situations is highly relevant both from medical and socio-economic perspectives. Developing sustainable strategies for emergency food supply and improving preparedness systems remain important priorities for modern public health and disaster management policies.

**Materials and Methods**. This study is based on the analysis of scientific literature, international guidelines, and reports related to food safety management during technogenic and social emergency situations. A descriptive and analytical approach was used to evaluate the main challenges in food supply systems under conditions of armed conflicts, pandemics, natural disasters, and civil unrest. The materials include publications from the World Health Organization the Food and Agriculture Organization and other international humanitarian organizations, as well as research articles focusing on emergency nutrition, food logistics, and public health protection. In addition, data from national emergency preparedness programs and case studies of recent crisis situations were reviewed to identify common patterns and effective response strategies. The methodological framework of the study is based on comparative analysis, system analysis, and risk assessment approaches. Comparative analysis was used to examine different food supply models in emergency settings. System analysis helped to evaluate the interaction between food production, storage, transportation, and distribution systems. Risk assessment methods were applied to identify potential threats to food safety, including contamination, spoilage, and supply chain disruptions. Furthermore, qualitative analysis was used to assess the role of modern technologies such as digital monitoring systems, refrigerated logistics, and early warning mechanisms in improving food safety and emergency response efficiency. Overall, the combination of these methods allows for a comprehensive understanding of food safety challenges and provides a basis for developing effective strategies for emergency food supply management.

**Conclusion**. In conclusion, ensuring the provision of safe, nutritious, and sufficient food during technogenic and social emergency situations is a critical component of public health protection and humanitarian response. Emergencies such as armed conflicts, pandemics, natural disasters, and civil unrest significantly disrupt food supply chains, leading to shortages, reduced food quality, and increased health risks for affected populations. The study shows that maintaining food safety during such conditions requires a comprehensive approach, including the establishment of emergency food reserves, efficient logistics systems, and strict control of food quality at all stages of the supply chain. Proper nutritional content of food is essential to support the immune system and overall health of vulnerable populations during crises. Modern technologies, including digital monitoring systems, laboratory diagnostics, refrigerated transportation, and early warning systems, play an important role in improving the efficiency and reliability of emergency food distribution. In addition, effective coordination between governments, healthcare institutions, and humanitarian organizations is necessary to ensure timely and equitable food access. Thus, strengthening emergency preparedness, improving food safety management strategies, and enhancing international cooperation are essential measures for protecting public health and ensuring social stability during emergency situations.

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