

Construction of Food and Drug Safety Emergency Management System From the Perspective of Public Health Emergencies

Ning Pang

College of Economic and Management, Guilin University of Electronic Technology, Beihai, 536000, China

Keywords: Public health emergencies; Food and drug safety; Emergency management system

Abstract: With the continuous improvement of global public health awareness and the rapid development of science and technology, the food and drug safety emergency management system faces many opportunities and challenges. Based on this, this study aims to explore the construction of food and drug safety emergency management system from the perspective of public health emergencies. In this paper, the current situation of food and drug safety emergency management in China is deeply analyzed, and a targeted emergency management system construction scheme is put forward by combining the theory of crisis management and risk management. The results show that optimizing the organizational structure, strengthening the emergency resources reserve and enhancing the information technology support are the keys to improve the emergency management ability of food and drug safety in China. This study not only provides theoretical support for the formulation of relevant policies, but also provides reference for emergency management in practice.

1. Introduction

With the acceleration of globalization, public health emergencies occur frequently, which has a serious impact on human society [1]. As an important part of people's daily life, the safety of food and medicine is directly related to public health and life safety [2]. In the context of public health emergencies, the construction of food and drug safety emergency management system is particularly important [3]. The purpose of this study is to deeply analyze the current situation and problems of food and drug safety emergency management in China, and put forward targeted improvement suggestions, with a view to enhancing China's ability to respond to public health emergencies and ensuring public health and life safety.

This study focuses on the emergency management system of food and drug safety under public health emergencies. First of all, through literature analysis, the theoretical and practical results of food and drug safety emergency management are sorted out. Secondly, combined with the actual situation, using the methods of case study and empirical study, this paper deeply analyzes the current situation, problems and challenges of food and drug safety emergency management in China. Finally, based on crisis management theory and risk management theory, the construction scheme and optimization suggestions of food and drug safety emergency management system are put forward.

2. Public health emergencies and food and drug safety

Public health emergencies refer to major infectious diseases, group diseases with unknown causes, major food and occupational poisoning and other events that seriously affect public health [4]. This kind of incident is sudden, public and harmful, which has a serious impact on social stability and economic development. In recent years, public health emergencies, such as SARS, H1N1, Ebola virus disease and COVID-19, have occurred many times around the world, which have brought great challenges to human society [5].

Food and drug safety is an important link in public health emergencies. On the one hand, food and medicine are the basic needs of people's daily life, and their safety is directly related to public health and life safety. During public health emergencies, the safe supply and effective supervision of food and medicine are of great significance for stabilizing social order and ensuring public health

[6]. On the other hand, food and medicine may also become the carrier of public health emergencies. For example, in some infectious diseases, food or medicine may be contaminated and carry viruses or bacteria, thus aggravating the spread of the epidemic. Therefore, strengthening the emergency management of food and drug safety is one of the important measures to deal with public health emergencies.

3. Analysis on the current situation of emergency management of food and drug safety

3.1. Overview of emergency management system

On a global scale, the construction of food and drug safety emergency management system has been widely concerned. Developed countries usually have relatively complete emergency laws and regulations, efficient emergency response mechanisms and advanced emergency technical support. For example, in response to food and drug safety incidents, the US Food and Drug Administration can quickly start emergency plans, coordinate resources of various departments, and ensure timely handling of incidents [7]. The European Union has also established a similar emergency management mechanism to conduct risk assessment and emergency response through a unified food safety agency.

In contrast, the development of food and drug safety emergency management system in developing countries started late and faced many challenges. These challenges include imperfect laws and regulations, insufficient regulatory resources, and unsmooth emergency response mechanism [8]. However, with the improvement of global public health awareness, more and more developing countries begin to pay attention to and invest resources to strengthen the construction of food and drug safety emergency management system.

3.2. Problems and challenges of emergency management system in China

China food and drug safety emergency management system has made remarkable progress in recent years, but there are still some problems and challenges. First of all, the system of laws and regulations needs to be improved. Although China has promulgated a series of laws and regulations related to food and drug safety, there are still gaps and vague areas in emergency management, which need to be further clarified and refined [9]. Secondly, the emergency response mechanism needs to be optimized. When dealing with food and drug safety incidents, coordination among departments is very important. However, there are still some problems in China's emergency response mechanism, such as division of departments and poor information, which affect the efficiency and effectiveness of emergency response. In addition, emergency resources and support capacity are also a big challenge. Emergency handling of food and drug safety incidents requires a lot of manpower, material resources and financial support. However, at present, there are still some deficiencies in China's emergency resources reserve and support capacity, so it is difficult to meet the complex and changeable emergency needs. Finally, information technology support needs to be strengthened. With the development of information technology, informatization plays an increasingly important role in emergency management of food and drug safety [10]. However, there are still some shortcomings in information technology support in China, such as poor data sharing and imperfect information system, which restrict the efficiency improvement of emergency management.

4. Theoretical basis of emergency management system construction

(1) Crisis management theory

Crisis management theory is a theoretical system to study the management behavior in the process of crisis prevention, response and recovery. In the construction of food and drug safety emergency management system, crisis management theory provides important theoretical support. This theory emphasizes three important stages: pre-crisis prevention and preparation, rapid response in crisis and post-crisis recovery and reconstruction. By establishing a sound early warning mechanism, emergency plan and crisis communication mechanism, the impact of crisis events on

public health and social stability can be effectively reduced. In the field of food and drug safety, the application of crisis management theory is shown in Table 1.

Table 1 Application of crisis management theory in the field of food and drug safety

Application aspect	Specific content
Establishment of early warning system	Timely discover and predict potential food and drug safety risks.
Emergency plan formulation	Clarify the responsibilities and coordination mechanisms of various departments to ensure a rapid response to the crisis.
Strengthening crisis communication	Timely release accurate information and guide the public to rationally respond to crisis events.

(2) Risk management theory

Risk management theory is a theoretical system to study the management behavior in the process of risk identification, evaluation, control and monitoring. Risk management theory also plays an important role in the construction of food and drug safety emergency management system. This theory emphasizes identifying potential risks, evaluating the magnitude and probability of risks, and taking corresponding control measures to reduce the impact of risks on targets.

In the field of food and drug safety, the application of risk management theory is shown in Table 2.

Table 2 Application of risk management theory in the field of food and drug safety

Application link	Specific contents and measures
Establishment of risk assessment system	Conduct a comprehensive risk assessment of all aspects of food and drug production, processing and circulation, and timely discover and eliminate potential safety hazards.
Formulation of risk control measures	Strengthen supervision to ensure compliance in all aspects.
	Improve the production process and reduce risks in the production process.
	Improve inspection and testing ability to ensure product quality and safety.
Construction of risk monitoring mechanism	Regularly monitor and analyze food and drug safety risks, and provide scientific basis for policy formulation and emergency response.

5. Construction and optimization of emergency management system

5.1. Construction objectives and principles

When constructing and optimizing the food and drug safety emergency management system, we must first make clear the objectives and principles of the construction. In terms of objectives, the core objectives should be to ensure public food and drug safety, improve emergency response efficiency and reduce crisis losses. In principle, it is necessary to follow the principles of scientific, systematic, practical and forward-looking. The scientific principle requires that the system construction must be based on scientific theory and practical experience; The systematic principle emphasizes the coordination and cooperation among all components; Practical principles pays attention to the operability and actual effect of the system; The forward-looking principle requires that the system can adapt to new situations and challenges that may arise in the future.

5.2. Organizational structure and operation mechanism

Organizational structure is the skeleton of emergency management system, which determines the division of responsibilities and the way of cooperation between departments and personnel. When constructing the organizational structure, this paper clarifies the responsibilities and authorities of emergency management departments at all levels and establishes an efficient command and coordination mechanism. At the same time, a special emergency response team should be set up to handle specific emergency events. See Figure 1 for details.

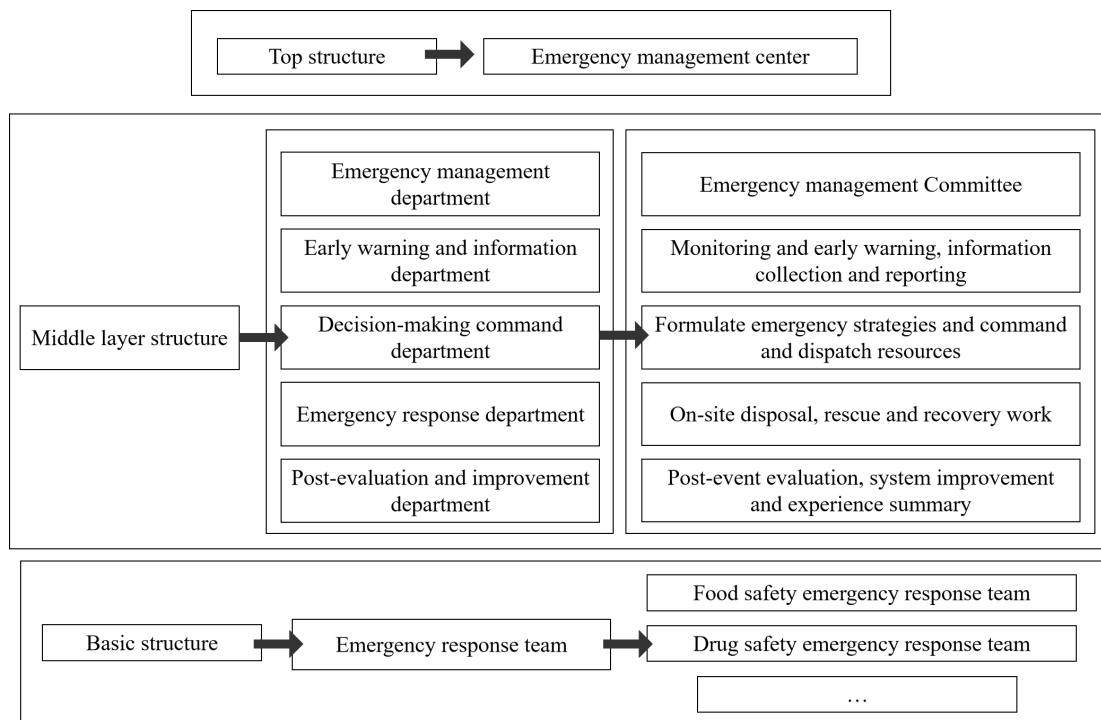


Figure 1 Organizational structure of emergency management system

The operation mechanism is the soul of the emergency management system, which ensures that the system can operate effectively at critical moments. The operation mechanism should include early warning mechanism, information reporting mechanism, decision-making and command mechanism, emergency disposal mechanism and post-evaluation mechanism. These mechanisms should be connected and work together to ensure the timeliness and effectiveness of emergency response.

5.3. Emergency resources, support capacity and information technology support

Emergency resources are an important material basis for dealing with food and drug safety incidents, including human resources, material resources, technical resources and information resources. When building an emergency management system, we should fully consider the rational allocation and effective utilization of resources to ensure that the required resources can be mobilized in time when an emergency occurs.

Support ability is an important support of emergency management system, which covers emergency team building, emergency material reserve, emergency technology research and development, emergency drills and other aspects. By strengthening the construction of these aspects, we can comprehensively improve the support capacity of the emergency management system and provide strong support for dealing with food and drug safety incidents.

Information technology support is the key means to improve the efficiency of emergency management system. Through the application of modern information technology, the rapid collection, processing, transmission and sharing of emergency information can be realized, and the scientific and timeliness of emergency decision-making can be improved. At the same time, information technology support can also help optimize the allocation of emergency resources and improve the coordination and efficiency of emergency response. When building an emergency management system, we should pay attention to the construction and application of information technology support, and constantly improve relevant information systems and platforms.

6. Conclusions and suggestions

Through in-depth analysis of the current situation, problems and challenges of food and drug safety emergency management, combined with crisis management theory and risk management

theory, this study constructed an optimized emergency management system. The research conclusions mainly include the following points: First, the importance of food and drug safety in public health emergencies is self-evident, which is directly related to public health and life safety, and is also an important cornerstone of social stability and economic development. Therefore, it is imperative to strengthen the construction of food and drug safety emergency management system. Secondly, there are still many problems in China's food and drug safety emergency management system, such as imperfect laws and regulations, unreasonable organizational structure, unsmooth operation mechanism, and insufficient emergency resources and support capacity. These problems seriously restrict the effectiveness of the emergency management system and need to be solved urgently. Finally, the optimization scheme put forward in this study includes perfecting the legal and regulatory system, optimizing the organizational structure and operation mechanism, strengthening the construction of emergency resources and support capacity, and improving information technology support. These schemes have strong pertinence and operability, and are expected to provide useful reference for the construction of emergency management system in practical work.

Based on the above conclusions, this study puts forward the following policy recommendations:

First, the government should attach great importance to the construction of food and drug safety emergency management system, incorporate it into the national public safety strategic system, and increase investment to ensure that all construction tasks are implemented.

Second, we should speed up the improvement of laws and regulations related to food and drug safety emergency management, clarify the responsibilities and authorities of various departments, and provide a solid legal guarantee for the construction of emergency management system.

Third, we should optimize the organizational structure and operational mechanism, and establish an efficient and coordinated emergency response mechanism to ensure that public health emergencies can be dealt with quickly and effectively.

Fourth, we should strengthen the construction of emergency resources and support capacity, increase investment in emergency teams, material reserves, technology research and development, and enhance the overall support capacity of the emergency management system.

Fifth, we should make full use of modern information technology, strengthen the construction of information technology support, improve the ability of collecting, processing, transmitting and sharing emergency information, and provide strong support for emergency decision-making.

References

- [1] Cao Hongmei, Han Guangshu, Gu Hai, et al. Construction of emergency management system for public health emergencies in hospitals based on novel coronavirus epidemic prevention and control [J]. *China Hospital Management*, 2020, 40(4):4.
- [2] Wang Yingmin, Zhang Yanmin, Chen Xiaomi. Construction of emergency management system for critically ill patients during epidemic prevention and control based on Internet technology —— Comment on "Occupational safety and health in public health emergencies: a guide to the protection of medical staff and emergency rescuers" [J]. *China Science and Technology of Work Safety*, 2020, 16(11):1.
- [3] Wang Shengpeng, Wang Yi, Zhu Jiong. Discussion on emergency management of traditional Chinese medicine preparations in medical institutions in public health incidents [J]. *chinese journal of modern applied pharmacy*, 2020, 37(8):6.
- [4] Zhang Ning, Zhang Shuwei. Emergency management strategies under major public health emergencies: from the perspective of behavioral science [J]. *Comparison of economic and social systems*, 2020(5):10.
- [5] Pang Xiaobo. Research on emergency management of public health emergencies in colleges and universities [J]. *Journal of Yan 'an Vocational and Technical College*, 2020, 34(4):6.

- [6] Dong Di. Analysis of hot trends of domestic emergency safety management under data governance-taking public health emergencies as an example [J]. *Cyberspace Security*, 2022(6):30-40.
- [7] Wei Daqiong, Long Chunhua, Wu Sisi, et al. Construction of emergency management system for public health emergencies based on novel coronavirus [J]. *Modern Medicine and Health*, 2021, 37(10):5.
- [8] Mao Yanping, Zheng Haorong, Chen Yalin, et al. Investigation and analysis on the current situation of urban government emergency management in major public health emergencies-taking Guilin as an example [J]. *Leisure*, 2021, 000(018):P.1-4.
- [9] Dai Hong. Analysis of the current situation of emergency management of public health emergencies in hospitals and countermeasures [J]. *Oriental Medicinal Diet*, 2020, 000(016):239.
- [10] Shen Shuming. On public health emergencies and emergency management [J]. *Journal of Practical Stomatology*, 2020, 36(2):4.