



Research on the Countermeasures to Improve the Ability of Community Intelligent Emergency Management

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Abstract. The community is an important part of urban safety. When the crisis comes, the community is the first scene of all kinds of emergencies and the first scene of disposal. The community is the forward position of prevention and response to emergencies. Due to the low level of emergency management in cities in China, the lack of community public safety awareness and the awareness of risk prevention, the knowledge and ability of emergency disposal are still insufficient. Therefore, it is very important to enhance the emergency management ability of the community to alleviate the negative impact of emergencies, restore social order and reduce the cost of government treatment. In this article, how to strengthen community smart emergency management is emphasized from building emergency management community, creating an intelligent platform by information technology, continuously improving the professional quality of managers, strengthening the publicity and education of the community masses, conducting regular practical exercises, and improving the community emergency fund guarantee mechanism.

Keywords: intelligent emergency response · emergency management capability · community

1 Introduction

Since the beginning of the 21st century, all kinds of emergencies have swept across the world, and human society has irreversibly entered the risk society, and China is no exception [1]. Under the realistic background of frequent emergencies in China, urban communities have become an important carrier to deal with emergencies, as well as the scene of emergencies and the primary link to prevent crises.

With the concept of “smart city” put forward, “smart community” is also known and expected by the public, which has become a new thinking to explore community emergency management [2]. Smart community is an efficient information system with full use of information technology to integrate community home, community property, community health care, community services, e-commerce, network communications which can provide a safe, efficient, comfortable and convenient living environment for community residents, and realize the computerization, networking and skill-based life

and service. Smart community is a new management form of community based on large-scale information intelligent processing [3]. “Smart community” is not only a concept of community construction, but also a new mode of exploring grass-roots governance under the new situation.

2 The Necessity of Community Intelligent Emergency Management

Community is not only the grass-roots organization of social management, but also the direct receptor of accidents and disasters. Community is the organization of self-service, self-management and self-education for residents, the carrier of government functions at the bottom, and the basic unit of emergency management. It can explore community emergency forces, drive social forces to participate in emergency management, and safeguard the interests of residents [4–6]. For this reason, in the process of emergency management, the community has a better understanding of the needs of residents, local natural and geographical conditions, and has more sufficient information advantages and rapid action advantages in the process of decision-making and rescue implementation, which can reduce the decision-making time and improve the efficiency of emergency management. As an autonomous organization of citizens, the community can make use of the organizational characteristics of autonomy. In emergency management, we can control and eliminate risks at the source, mobilize community emergency forces, and understand the emergency needs of residents. Community emergency safety construction is an important way to build a reassuring society, enhance the legitimacy and credibility of the government, and promote the harmonious development of society.

3 Problems and Analysis of Current Community Emergency Management

After investigation and analysis, the problems of community emergency management in China are as follows.

3.1 Management Mode

For a long time, China’s community has been using the government-led emergency management model, the community residents’ committee is nominally an autonomous organization, but most of the time it accepts the leadership of the street office, and its main function is to manage social affairs [7]. As the most basic unit of social governance, the community is not a grass-roots government department after all, and the human and material resources mobilized are very limited. The support of the street to the community is also very limited, and the community people are directly affected by the risk and the responders, so the traditional top-down management model is not suitable for community emergency management.

3.2 Resources Need to Be Exchanged

Although resource fit integrates emergency management into the construction of smart communities, in order to achieve efficient emergency management of smart communities, it is necessary to accommodate all kinds of resources within the jurisdiction, and to focus on the different characteristics of resources and manage them differently. Many communities have schools, kindergartens, trusteeship centers and so on. In these places, emphasis should be placed on cultivating the emergency management awareness and skills of students and children, such as the use of fire extinguishers and fire hydrants; in some communities, there are armed police force and fire brigades, etc. and the communities can jointly build emergency management and emergency rescue with the army. With multi-agent participation, the emergency management of smart communities has gradually changed from single-core management to two-way governance and eventually to multi-party co-governance, and has embarked on a benign interactive development path.

3.3 Funding Constraints

At present, most of the funds for community emergency management mainly come from the subdistrict offices, the allocation of funds from higher authorities and related work funds, and all the funds for activities must be applied to superior through various projects, or self-financing. But emergency management is a long-term battle. It needs long-term persistence, especially the emergency supplies. Rain boots, umbrellas, flashlights and the cost of emergency management are not small expenses and there is a funding gap [8].

3.4 Lack of Technology Integration

Science and technology is a double-edged sword, on the one hand, it can make our life convenient, improve the efficiency of work, save costs, but there are also some problems, such as how to reasonably apply big data technology to grass-roots governance which is a big challenge [9]. The later operation, maintenance and technical support will also be a problem. For example, how to ensure the security of their own information when the community and community residents use the big data platform is a test of the innovative ability of the community to drive the virtual society and keep pace with the times.

3.5 Lack of Talents

Emergency management staff is an important part of the operation of emergency management in the whole smart community. The allocation of community emergency management staff, especially the allocation of high-quality full-time emergency management staff, is the core and key to determine the good operation of emergency management in smart community. Emergency management in smart community is different from that in traditional community. There are higher requirements for the comprehensive ability and professional knowledge ability of emergency management staff. In the survey, it is found that many smart communities have insufficient emergency management personnel, low professional skills and comprehensive ability, and imperfect training system and assessment mechanism.

4 Countermeasures and Suggestions

4.1 Creating Information Technology Intelligent Platform

At present, with the rapid development of Internet, big data, artificial intelligence and other technologies, community emergency management should take this opportunity to emphasize the role of information technology and build a highly intelligent information technology support system. Intelligent technology is used to create a shared interactive platform to collate and share the collected information. Intelligent security system, information diffusion system and neighborhood interaction system are integrated into an intelligent emergency management platform.

4.2 Building Community Emergency Management Community

Community neighborhood committees, community residents, enterprises, various organizations in the community and the government are the main bodies of the community [10]. With multi-forces and multi-subjects govern together, community emergency management can combine government services, effective intervention of market forces, and residents' active participation in the coordination and linkage of social forces, so as to give full play to the advantages and functions of co-governance.

4.3 Continuously Improve the Professional Quality of Management Personnel

Establish a special community emergency management command group, and clarify the division of tasks among the members of the group. Continuously strengthen the professional quality of managers, participate in relevant meetings and training. At the same time, further strengthen the construction of smart community emergency culture. It focuses on prevention for the smart community emergency management. The training of community residents' emergency knowledge and ability are also need strengthened.

4.4 Strengthen the Publicity and Education of the Community Masses

The community is an important unit to carry out emergency management work. Taking the community as a unit to carry out emergency management publicity and education can maximize the dissemination of relevant theoretical knowledge and practical experience to the public. Specific publicity and education methods are varied, for example, the development of emergency management training can be promoted by giving out rewards and incentives.

4.5 Conduct Actual Combat Drills Regularly

The first time, the first response is very important. The community actively organizes the emergency drill, which can test the scientific nature, practicability and operability of the emergency plan comprehensively and systematically, further enhance emergency awareness, improve the emergency skills of the masses, and maximize the maintenance

of community stability. Practice exercises should be carried out regularly. Let residents perceive the importance of emergency management from daily practical activities. According to the different ages, psychological characteristics and knowledge acceptance of the community residents, the corresponding emergency education publicity materials are compiled according to the emergency situation of the community. Through various forms, regular and frequent forms, and common forms in daily life, we should make efforts to involve community residents in practical exercises to deal with emergencies. For vulnerable groups, we can use door-to-door, community activities and other forms to focus on the training of emergency escape skills for the elderly and the publicity of common sense of emergency prevention in life.

4.6 Improve the Community Emergency Fund Guarantee Mechanism

Appropriately increase the investment of emergency funds to enable community emergency organizations to manage in a more orderly manner. In terms of financial security, we should give full play to the comprehensive role of financial resources, market resources and social resources. Firstly, in terms of financial resources, local governments should set up special budgets for community emergency response and require special account management. Secondly, in terms of market resources, we should encourage the establishment of a certain budget expenditure for disaster insurance in the community emergency budget, which can be used to purchase services of non-governmental organizations in emergency skills training, information collection and collation, etc. Thirdly, social resources mainly come from social donations.

5 Conclusion

Unlike traditional community emergency management, smart community emergency management relies on the construction of smart community, takes big data as the breakthrough point, carries out a series of community emergency management work, fully integrates the past emergency management experience into modern management means. Smart community emergency management takes modern information technology as the support, takes prevention and control and self-rescue as the core. Smart community emergency management emphasizes multi-subject participation to achieve more efficient, scientific and timely community emergency management. By changing from experience management to scientific decision-making, smart community emergency management not only attaches importance to the public safety deployment and management of the whole community, but also gives full play to the strength of community residents and social organizations to establish a “bottom-up, people-oriented” smart community emergency management model.

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References

1. Ying Xiong, Changjiang Liu, Baolong Zhang. Research on Four-dimensional Integrated Model of Smart Community Emergency Management. *Journal of Neijiang Normal University*, 2018,33:7.
2. Chang Ni. Research on the Construction of Urban Community Emergency Management Mechanism. *Management and Technology of Small and Medium-sized Enterprises*2021, 5:2.
3. Zhaozhi Wang, Jianhan Xue. Study on the mechanism construction of urban Community emergency Management. *Small and medium-sized enterprise management and technology*, 2021, 10:2.
4. Xin Wang. Explore the Innovative Model of Smart Community Emergency Management. *Global Market*, 2018,9:1.
5. Ya Wang. Innovative Research on Emergency Management System of Urban Smart Community. *Service Science and Management*,2021, 10:4.
6. Yi Song, Kaili Shao, Yanjie Wang. Construction of Smart Community Emergency Service Management System. *Internet of Things Technology*, 2022,12: 60-63.
7. Jie Liu, Xinyue Hu, Yi Yang, et al. Study on emergency response capacity building of typical communities in Yunnan Province. *China Safety Science Journal*, 2022, 32(S01):5.
8. Guofu Chen. Promoting smart community governance innovation from the perspective of big data. *Innovation*, 2021, 15(4):10.
9. Xueyan Yang, Danwa Feng. Research hotspot and development trend of intelligent community informatization construction. *Information Science*, 2021, 39(12):7.
10. Yong Han, Yi Zhu. Innovation of Smart Community service supply mechanism: A Case study of Smart Government Service Platform in Beihai City, Guangxi. *Corporate Economics*, 2021, 40(11):119-125.

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