Work Manual of 12320 Health Hotline Responding to Public Health Emergencies

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Chapter 1 Overview

The Health and Family Planning Department shoulders important responsibilities in emergency response, it is not only responsible for the urgent handling of public health emergencies, but also undertakes medical rescue mission in natural disasters, accidents and social security events. While risk communication is an important part in emergency management work, runs through the whole process of emergency management, and also an important content in the urgent handling of public health emergencies. Risk monitoring is an important precondition of risk communication, and public opinion monitoring is an important means of risk monitoring. Since ten years ago, 12320 Health Hotline has carried out effective risk communication, extensive propaganda of prevention and control knowledge and real time public opinion monitoring actively, has accumulated rich practical experience in health emergency response, plays a more and more important role in emergency response.

I. The concept and features of public health emergencies

It is specified in the Emergency Response Law of the People's Republic of China (No.69 Presidential Decree) promulgated in 2007 that, emergencies refer to "natural disasters, accidents, public health events and social security events that occur suddenly, cause or might cause serious social harms, for which emergency response measures should be taken". It is specified in the Regulation on the Urgent Handling of Public Health Emergencies (State Council No.376 Decree) promulgated by the State Council in 2003 that, public health emergencies refer to "sudden outbreaks of serious contagious disease, colonial disease of unknown causes, important alimentary or occupational toxicosis that have caused or might cause serious effect on the health of the general public and other incidents that affect the health of the general public seriously". Public health emergencies are generally divided into four levels, namely,

particular major (Level Ⅰ), major (Level Ⅱ), large (Level Ⅲ) and common (Level Ⅳ levels according to the nature, hazard rating and coverage.

Generally, public health emergencies have the following features: firstly, outbreak, i.e. arise suddenly, occur unexpectedly; secondly, publicity, i.e. occur in the field of public health, have the attribute of public health; thirdly, severity, i.e. cause or might cause harms to the public health and life safety, even influence economic and social development, national security and stability; fourthly, urgency, i.e. emergency measures should be taken to control and eliminate the harms or potential harms caused by public health emergencies timely.

The objects of health emergency response management include four kinds of emergencies, namely, natural disaster, accident disaster, public health emergency and social security event. Generally, after a public health emergency occurs, under the unified leadership of local government, the Health and Family Planning Department will organize specific response works; after natural disaster, accident disaster, social security events occur, Health and Family Planning Department makes corresponding medical rescue efforts.

II. The situations of domestic and foreign public health emergencies

(Ⅰ) The situations of foreign public health emergencies

With the continuously accelerating global social development and global economic integration process, global public health emergencies embody different features from previous ones, including diverse types, high frequency, large scale, serious losses, wide ranging influence and complex reasons, have increasingly become common challenges to all the countries in the world. Especially after entering the 21st Century, public health emergencies of major influence occurred successively for many times, for example, outbreak of infectious diseases, severe acute respiratory syndrome ("SARS") epidemic raged through 32 countries and

regions in the world in the first half of 2003, A (H1N1) influenza that originated from Mexico swept the world in 2009, O104:H4 escherichia coli started outbreak in Germany and then in neighboring countries in 2011, Ebola haemorrhagic fever outbreak in West Africa in 2014, Anthrax biological terrorism after United States "9 ·11" terrorist attack, global antibioterrorism situation becomes increasingly complicated. At the same time, food safety issues, environment and health issues also gradually become one of the public health issues highly concerned by the governments of different countries.

(Ⅱ) The situations of domestic public health emergencies

Currently, with the deteriorating of natural eco-environment, the changes of human lifestyle and social behaviors, economic globalization and migration of more workers, various public health emergencies occur frequently in China, cause serious harms. Under the background of economic globalization, the incentive and influence of some public health emergencies in China also show strong international features, for example, half of the global new infectious diseases were found in China; with increasing population movement scale and fast migration speed, major and extra large outbreaks and colonial disease of unknown causes happen occasionally, spreading of diseases becomes more extensive in scope, and faster, cause serious losses, prevention and control difficulties increase; more and more public health emergencies related to social and economic development occur successively, food pollution and food poisoning events happen occasionally; market disorder in the production and operation of food drugs, weak supervisory power and other problems have not been solved fundamentally yet; the proportion of public health emergencies in schools remains high and does not fall; in 2013, totally 1077 public health emergencies were report in 31 provinces (autonomous regions, municipalities directly under the Central Government) of China. As far as event type is concerned, infectious disease event is dominant, accounts for 73%; next is food poisoning, which accounts for 14%;

environmental factor event accounts for 9%, occupational poisoning event accounts for 3%..

Currently, natural disasters, accident disasters, social security events happen frequently in China, medical rescue efforts are arduous. China is one of the countries in the world that suffer from the most serious natural disasters, from Great Wenchuan Earthquake in 2008, Gansu Zhouqu Massive Mudslide Disaster in 2010, Lushan Earthquake in 2013 2014 Ludian Earthquake, each major natural disaster is an ordeal to the health emergency response capability, it is the most important task of the Health and Family Planning Department to ensure no plague after calamity. At the same time, China is in critical period of reform and development, and rapid development period of industrialization and urbanization, total quantity of production safety accidents remains high and does not fall, very serious accidents happen occasionally, social safety faces new challenges, anti-terrorism situation is serious, the arduous mission of maintaining national security and social stability raises new requirements on the health emergency response capability.

III. The significance of risk communication and public opinion monitoring for health emergency response

The response to emergencies involves four stages, namely, prevention and emergency preparedness, monitoring and early warning, emergency response and rescue, post-event recovery and reconstruction. Risk communication refers to the communication among stakeholders such as government, media, the public etc concerning risk factor information, is critical to learn risk information and control risk development in real time. Risk communication is an important component of emergency management work, plays a vital role in to get effective risk information, establish rational communication bridge among the government departments, professional agencies, the public and media.

Risk communication runs through the whole process of urgent handling

of public health emergencies, risk communication for public health emergencies is also called risk communication for health emergency response, which refers to the communication for potential undetermined health risk, based on science, mainly in the form of information transfer in public health emergency response process. Through effective, good communication with the public, professional agencies, media and government departments, risk communication for health emergency response strives for support and cooperation, reduces and avoids risk, controls and eliminates the harms of public health emergencies, quiets down the adverse effect and potential adverse effect caused by the event, builds good public opinion environment, maintain and build good image of the government and relevant departments.

Risk monitoring is an important precondition of risk communication. Risk monitoring, risk assessment, information management, plan development, organization and implementation, effect evaluation etc are required for the risk communication work. Risk monitoring refers to an activity, in which, various monitoring technologies are used to grasp abnormal changes in the risk indicators of public health emergencies dynamically, judge whether up to the level for concern, whether beyond the preset threshold, so as to decide whether corresponding measures should be taken. With respect to the monitored object, risk monitoring includes three forms, i.e.monitoring of public health emergencies and relevant factors, public opinion monitoring and monitoring of other risk information. Risk monitoring could enable relevant personnel participating in the risk communication to acquire possible risk information in the whole occurrence, development process of public health emergencies timely, find, assess, prevent and control the risk factors in public health emergencies as early as possible, decrease the probability of risk out of control, and reduce the harms of public health emergencies.

Public opinion monitoring is an important means of risk monitoring, a

method of nontraditional risk monitoring for public health. The purpose of public opinion monitoring is to, grasp the truth and the public opinion related to the physical, mental health and life safety of people timely, and understand various concepts, emotions, willingness, attitudes, opinions and suggestions of the stakeholders such as the government, social organizations and the public for public health issues, through relevant technologies and work flow, long-term continuous monitoring and analysis of the opinions expressed by various media and the public. The key to public opinion monitoring is the hot spots, focus issues and sensitive topics related to public health emergencies in certain regions and certain time ranges.

In practice, public opinion monitoring has become one of the key works in public health emergency response process in China. In recent years, from the outbreaks of infectious diseases such as "SARS", bird flu, hand-foot-and-mouth disease and influenza pandemic, to food safety issues such as melamine, clenbuterol hydrochloride, trench oil and plasticizing agent, they are fermented, developed again and again under the appeals of the public right to learn the truth, become hot spot public health issues the arise the attention of the society, even beyond the public health emergencies, they have generated extensive and profound social impact. At the same time, with the development of Internet and the rapid increase of netizens, network has become an important channel for the expression of public opinion, important media for the formation, propagation and development of public feelings, due to its features of wide coverage, fast propagation speed and high interactivity. As of June 2014, Internet popularity rate in China was 46.9%, scale of netizens was up to 632 million. In which it is noteworthy that, the scale of mobile phone netizens was up to 527 million, mobile phone has become the most important terminal for netizens to get on the Internet. While the appearance of Weibo, wechat and other We Media, has overthrow traditional information propagation mode more thoroughly, provides

more extensive free space to propagate hot spot public health issues and relevant information. Therefore, the monitoring of public opinion for public health issues, establishment of Internet-based public opinion monitoring platform, are helpful to grasp social conditions and public opinions related to public health timely, and to provide effective decision basis for health emergency response.

IV. The important role of Health Hotline in health emergency response

（Ⅰ）The concept and features of Health Hotline

12320 Health Hotline is a comprehensive health information service platform initiated by National Health and Family Planning Commission, established by Health and Family Planning Department at all levels, open to the general public, it is an important part of health service system to propagate health policy information, popularize health and disease prevention knowledge, receive the reporting of health complaints, assume public opinion monitoring for public health emergencies and so on.

12320 Health Hotline has the following four features: firstly, strong public welfare property, it is a health service platform of the government with low input, wide coverage to benefit the people; secondly, entensive accessibility, it is comprehensive utilization practice of modern information technology, it may be popularized all over China, provides transregional services by means of 12320 Health Hotline, website, Weibo, wechat etc; thirdly, easy use, it is a clear channel to facilitate the general public for inquiry, as long as the public remember five numbers, they may understand all knowledge related to health and get relevant services; fourthly, good social benefits, it could meet the requirements for economic and social development and maintaining public health continuously. Through resource integration, 12320 Health Hotline realizes effective communication among the government, Health and Family Planning Department and the public, extends the scope of service

of health care facilities greatly.

12320 Health Hotline has advantages in ten aspects: firstly, unity, a unified short number applicable to the whole country, easy for the masses to memorize and use; secondly, authority, it transfers authoritative information of the Health and Family Planning Department; thirdly, consistency, 12320 Health Hotline all over China provides consistent information; fourthly, specialty, with comprehensive and regularly updated knowledge base, professional consultant team and expert team; fifthly, three-dimensional, all-around service modes of telephone, website, Weibo, wechat, short message, mobile phone self-service terminal etc, could meet health needs of groups at different levels through many channels; sixthly, time effect, easy to dial, help the public to acquire health information at all times and places; seventhly, pertinency, point-to-point communication provides personalized instructions; eighthly, mass, service content covers the whole industry of health care; ninthly, interactivity, one-to-one interaction between the public and consultant, is easily acceptable to the public; tenthly, wide coverage, by the end of 2014, 28 provinces were covered, and all 31 provinces will be covered in 2015.

(Ⅱ) The construction and development of Health Hotline

At the end of 2005, in order to cope with public health emergencies and major public health issues timely and effectively, provide a united public service number easy for the public to memorize and use, so as to facilitate the communication between the public and the Health and Family Planning Department, the former Ministry of Health issued the Notification of the Ministry of Health Concerning the Activation of "12320" National Public Welfare Telephone for Public Health (W.B.F. (2005) No.486), national 12320 public welfare telephone for public health was put into service officially, it becomes government hotline in health industry and its function is orientated to consultation and

complaints reporting in the field of public health. In 2006, the former Ministry of Health established 12320 work leading group and office, in which the former Vice Minister in charge assumed group leader, relevant service departments or bureaus became members, it was co-located with China 12320 Management Center in Chinese Center for Disease Control and Prevention, thereafter, it has promoted 12320 construction all over China in the construction working principle of "Pilot first, steady promotion".

In Mar. 2012, the former Ministry of Health issued Notification of the Ministry of Health Concerning Further Construction of 12320 Public Welfare Telephone for Public Health (W.B.F. (2012) No.14), redefined the positioning and function of 12320, required local health departments to include the 12320 construction in overall reform and development of local health services, include in general planning of the public health system and health information construction, construct covering national 12320 health hotline service system gradually. In Mar. 2013, 12320 public welfare telephone for public health was renamed officially as 12320 Health Hotline.

Through years of development, 12320 experienced the development process from out of nothing, pilot to comprehensive promotion. Firstly, continuous expansion of service content. By the end of 2014, 12320 was put into service in 28 provinces of China, service content was broadened from the field of public health at the beginning of activation to every aspect in health care industry gradually. Since 2013, acceptance content in aspect of family planning has been added in some provinces. Secondly, continuous innovation of service mode. At present, a comprehensive three-dimensional service platform that integrates telephone, voice, website, short message, Weibo, wechat, mobile phone platform and self-service terminal is being built for 12320 Health Hotline gradually. Thirdly, continuous improvement of serviceability. In recent years, by strengthening and normalizing management, training and evaluation,

standardized construction of 12320 Health Hotline has been promoted continuously; by establishing coordination transfer linkage mechanism for complaints reporting related to medical and health services, the appeal expression mechanism, contradiction resolution mechanism, rights and interests guarantee mechanism have been developed preliminarily; by establishing routine and emergency public opinion collection, study, judgment and early warning mechanism, responsive capability to public opinion monitoring has been enhanced. Fourthly, gradually revealed brand effect. Since 2012, 12320 subject awareness campaign has been carried out in Mar. 20 every year, propaganda has been increased and service quality has been improved continuously, social impact has been expanded continuously, the Hotline has been praised by the public and the industry, awarded in many fields, "service experts" emerge in many posts, the Hotline has been widely accepted by the people of all walks of life. Practice proves that, 12320 Health Hotline has participated in the handling of many public health emergencies or major health campaigns, plays an important role in policy interpretation, knowledge popularization, risk communication, information release and public opinion monitoring etc.

(Ⅲ) The role of Health Hotline in health emergency response

In the responses to public health emergencies such as Sanlu Infant Milk Powder Contamination Incident, A (H1N1) influenza, Xinjiang poliovirus importation outbreak, human infection with A(H7N9) avian influenza virus etc, 12320 Health Hotline has been proved again and again in practice, plays an important role to support decision-making and guide service.

Firstly, effective risk communication. After a major public health emergency occurs, 12320 Health Hotline will establish a green channel for communication between the government and the public timely, guide the public to give correct reaction, avoid social panic as far as possible.

For example, in Sept. 2008, when Sanlu Infant Milk Powder Contamination Incident occurred, the former Ministry of Health designated Beijing 12320, Shanghai 12320 as "National Health Hotline for Infant Milk Powder Contamination Incident" for collective answering of the public consultation of Infant Milk Powder Contamination Incident, hospital treatment of children patients and other problems, the Hotline became a composite type carrier for the public to express appeals, solve contradictions, guarantee rights and interests, facilitate the communication between government and the public. After poliovirus importation outbreak in Xinjiang in Aug. 2011, outbreak of human infection with A(H7N9) avian influenza virus in East China etc in Apr. 2013, 12320 Health Hotline started consultation of public health emergencies jointly in 25 provinces, to accept report of the public concerning poliomyelitis outbreak and outbreak of human infection with A(H7N9) avian influenza virus, consultation of disease prevention and control knowledge around the clock.

Secondly, extensive propaganda of prevention and control knowledge. Popularize health emergency response knowledge, increase self-protection awareness of the public, guide, organize the public to participate in public health emergency response effectively by means of 12320 Health Hotline, official website, Weibo, wechat etc. For example, from worldwide spreading of A H1N1 influenza in Apr. 2009, 12320 in 18 provinces took actions together for active response, received the report of outbreaks, collected social opinion, provided 24 h consultation on the common sense and preventive measures of diseases for the public. In one year, totally 247689 consultations on A H1N1 influenza were accepted, communication channel became clear, mental pressureff the public was relieved effectively, mass panic was avoided.

Thirdly, real time public opinion monitoring. In recent years, 12320 Health Hotline insists on the establishment and consummation of public opinion collection, study and judgment mechanism, care for the public

opinion actively, guide public opinion correctly. The Hotline provided basic data for the Health and Family Planning Department to formulate or adjust policies by collecting local 12320 acceptance information to prepare daily report of public opinion monitoring on public health issues. At the same time, 12320 Health Hotline utilized telephone, Weibo etc for public opinion poll timely, result of the poll provided objective true decision-making evidence and reference basis for the Health and Family Planning Department to adjust epidemic prevention and control strategy in phases.

Through efforts in nearly ten years, 12320 Health Hotline has become a professional consultancy and service facility for the public to learn health knowledge, a department and important public opinion monitoring organization that firstly perceives social opinion, an authority to propagate positive energy information related to health in real time, and the government hotline in health industry that will firstly come to the mind of the public and is trusted by the public in case of public health emergencies. Whether 12320 Health Hotline could monitor early information of sensitive public opinion in the earliest, quickest, most accurate way and report to the Health and Family Planning Department and government is essential for timely taking of measures, conrol of public health emergency development and correct guidance of social opinion. With and more and more fast informatization process in China, modern media propagation modes beome increasingly diversified and fast, concern of the public and society on health issues becomes more and more higher. How to let the public recognize risks correctly and take correct and effective actions timely through active and effective risk communication, extensive propaganda of prevention and control knowledge and real time public opinion monitoring is an important responsibility of 12320 Health Hotline.

Chapter 2   Main Responsibilities of the Health Hotline in Health Emergency Response

As a professional consultancy and service facility,12320 Health Hotline assumes important responsibilities, for example, propagate health laws, regulations and policies to the public, popularize health knowledge and skills, accept consultation, complaints and report of events from the public, guide the public in scientific hospitalizing, monitor public opinion on public health emergencies, analyze and feed back etc, it is an important main channel for the Health and Family Planning Department to transfer government information, understand social conditions and public opinions, respond to social concern, propagate health knowledge, it is an important means to strengthen and innovate social administration, open health administration affairs and provide public health services. Practice shows that, 12320 Health Hotline has special, indispensable, non-replaceable position in health emergency response work, has become an important part in health emergency response work.

I. Responsibilities of the institution

In accordance with relevant provisions in the Emergency Response Law of the People's Republic of China, Law of the Peoples Republic of China on the Prevention and Treatment of Infections Diseases, Regulation on the Urgent Handling of Public Health Emergencies, Overall Emergency Preplan for National Sudden Public Incidents, National Emergency Plan for Public Health Emergencies, National Emergency Plan of Medical Rescue for Public Emergencies, National Criteria of Health Emergency Response Management for Health Departments (on Trial) etc, main responsibilities of 12320 Health Hotline in health emergency response include acceptance of complaints reporting, public opinion monitoring, knowledge propaganda and education, provision of decision basis, participation in plan formulation etc under unified leadership of the Health and Family Planning Department.

Main responsibilities of 12320 Health Hotline include the following six aspects.

(Ⅰ) accept complaints reporting of the public for public health emergencies such as infectious diseases, colonial disease of unknown causes, food safety and occupational poisoning etc and other emergencies that severely influence public health.

(Ⅱ) establish and consummate monitoring and early warning system for public health emergencies, utilize hotline, website, Weibo, wechat, short message and other channels to carry out public opinion monitoring of public health emergencies, analyze and give warning timely.

(Ⅲ) with respect to the nature of public health emergencies, carry out health, disease prevention knowledge propaganda and education, increase health awareness and self-protection capability of the public.

(Ⅳ) find and track the development situation of public health emergencies, provide notification and report according to channels, government and provide the basis of decision-making for Health and Family Planning Department.

(Ⅴ) participate in the drafting of emergency plan for the outbreaks of major infectious disease, colonial disease of unknown causes, major food and occupational poisoning and other emergencies that influence public health severely.

(Ⅵ) complete other matters assigned by the Health and Family Planning Department timely.

II. Post responsibilities

According to the health emergency response requirements of 12320 Health Hotline, generally, the following posts are allocated: administration (director, section chief), position management (group leader), quality control, acceptance of consultation, acceptance of complaints, acceptance of report of events, public opinion monitoring,

risk communication, health propagation, new media management, information management, safety management etc; they assume corresponding responsibilities for organization management, coordination of health emergency response, acceptance of the report of events and complaints, risk communication, health propagation, public opinion monitoring, data analysis, system maintenance, logistic support etc. One responsibility for one post or a variety of responsibilities for one post may be implemented. The posts should have different focuses, act in accordance with the division of their functions and duties, cooperate in despite of work division, work closely with each other, respond to health emergencies jointly.

Main responsibilities of the posts for health emergency response are as follows:

(Ⅰ) **administration post**

1. Organize, coordinate health emergency response work of 12320 Health Hotline under unified leadership of Health and Family Planning Department.

2. Organize to formulate or execute the guidance for consultation of emergency plan and risk communication of 12320 Health Hotline.

3. Organize and instruct the training and implementation of the guidance for consultation of emergency plan and risk communication of Health Hotline.

4. Organize risk communication and public opinion monitoring of the Health Hotline.

(Ⅱ) **position management post**

1. Responsible for professional guidance of the consultants, supervise, check work completion status of the consultants, put forward correction opinions.

2. Responsible for site management of the answering hall, timely, deal

with the difficult and complicated problems and emergencies reflected by the public properly.

3. Examine complaints, reports and suggestions etc related to public health emergencies and other health emergency events.

4. Organize the consultants to carry out business study and training timely, help the consultants to increase their service level.

(Ⅲ) **quality control management post**

1. Responsible for quality monitoring, analysis of the calls related to important public health emergencies, ensure accurate classification of the call information and reasonable handling.

2. Formulate acceptance work flow for the calls related to public health emergencies, and urge for examination.

3. Organize quality management knowledge training and evaluation of health emergency response consultants, increase quality awareness of the consultants.

(Ⅳ) **consultant post**

1. Accept the calls of the public for consultation, complaints, reports etc related to public health emergencies and other health emergencies, record the information in detail.

2. Provide health education service related to public health emergencies and other health emergencies for the public.

3. Collect, sort out hot spot, difficult issues and advice related to the public for public health emergencies and other health-related emergencies, and provide consultant opinions.

4. Receive special training of knowledge and skills related to health emergency response.

(Ⅴ) **public opinion monitoring post**

1. Collect, analyze relevant public opinion information from the hotline,

website, Weibo, wechat, media etc.

2. Monitor public opinion at key websites, key forums in real time, grasp sudden changes, orientation, features and trend of public opinion in public health network at any moment.

3. Prepare public opinion monitoring analysis report, and report to relevant responsible persons timely.

4. Study, research new methods and new technologies of public opinion monitoring.

(Ⅵ) **new media management post**

1. Acquire, release prevention and control knowledge, instant dynamic, emergency measures, public opinion monitoring information etc related to public health emergencies.

2. Timely view, search, collect the comments, consultation, complaints and suggestions published by net friends at website forum, Weibo and through other channels.

3. In combination with the public hot spot issues, organize, plan interactive activities with the public, play the role of positive propaganda.

4. Strengthen linkage and collaboration of new media, share resources with Weibo, wechat etc of the health and family planning systems at all levels, exert and expand the influence of new media, guide public opinion actively.

5. Strengthen the study of new media knowledge, grasp the development trend of new media and public opinion features timely.

(Ⅶ) **information management post**

1. Collect, sort out, analyze, evaluate Health Hotline related information timely, and carry out big data research on this basis.

2. Execute data security, keeping and confidentiality rules and regulations strictly.

3. Establish database, execute data backup management strictly, ensure timely data query, call and recovery.

(Ⅷ) **safety management post**

1. Establish and consummate hotline safety management system and information security system.

2. Organize safety inspection, find out unsafe factors or hidden troubles timely, supervise and urge relevant posts and personnel to make corrections timely.

3. Organize the formulation of Health Hotline emergency plan, carry out emergency drilling.

4. Provide education and training of safe production knowledge and skills for all staff.

(Ⅸ) **training management post**

1. Formulate training work plan according to the response work to emergencies, organize personnel training, and evaluate the training effect.

2. Organize to prepare emergency training materials, explain the guidance for consultation of risk communication.

(Ⅹ) **computer room management post**

1. Check equipment workload in the room, ensure orderly execution of emergency response work.

2. Prepare emergency storage against overload.

III. Staff composition

(Ⅰ) organization of two teams

Health emergency response expert team and consultant team should be established for 12320 Health Hotline, personnel adjustment and supplement should be made timely according to the health emergency response situation.

If required, 12320 Health Hotline may organize the experts in medical institutions, institutions for disease control and prevention etc to form a 12320 Health Hotline health emergency preparedness team. In case of colonial diseases of unknown causes, corresponding specialist physicians should join 12320 Health Hotline timely according to different clinical manifestations, disease progression status etc to answer calls from the public for clarification.

(Ⅱ) The requirements for staff composition

In order to adapt to health emergency response requirements, quantity, specialty, educational background, language, gender etc should be considered for personnel composition, ensure reasonable specialty structure, diverse subjects and diversified structures.

1. Post composition: for both routine consultation and emergency consultation, ensure organic combination and integration of routine consultation and emergency consultation.

2. Age structure: lay stress on younger persons, who are competent of high strength assignment.

3. Gender structure: in the principle of female dominant, male assistant, give full play to the features of female consultants such as strong communication skills, more acceptable to the public, at the same time, take advantage of good physical strength of male consultants, who will assume safety management and other heavy load works.

4. Educational background structure: background of undergraduate college should be dominant, capable to meet basic requirements for cultural quality, adaptive to risk communication and public opinion monitoring for health emergency response.

5. Specialty structure: covering the specialty categories involved in public health emergencies and relevant health emergency events, so as to adapt to the response requirements to public health emergencies and

health-related emergencies with different nature and different type.

6. Quality structure: high political quality, professional ethics and professional competence, young and vigorous, with rich experience in health emergency response.

Chapter 3 Emergency Response Process of the Health Hotline

12320 Health Hotline should carry out prevention and emergency preparedness, monitoring and early warning, emergency response, summary and assessment and other works for public health emergencies and other health-related emergencies in the principles of "Prevention first, always on the alert, unified leadership, classified response, clear target, promoting health, compliant with laws and rules, improving systems, making a concerted effort, resource sharing, combination of ordinary and military applications, emergency dominant". Analyze hazard rating, predict the development trend, start emergency response at corresponding level timely according to the occurrence, development rules and features of public health emergencies and other health-related emergencies. At the same time, establish and consummate Health Hotline emergency system, normalize work flow, complete working system, increase emergency response capability of the Health Hotline according to the requirements of relevant laws and regulations.

I. Prevention and preparedness

Prevention and preparedness is the work at initial stage of the whole health emergency response. Good prevention and preparedness is favorable to avoid or reduce the occurrence of public health emergencies and other health-related emergencies, reduce waste of social resources, save labor force, financial resources and material resources, achieve the effect of "getting twice the result with half the effort". For good prevention and preparedness, health emergency response concept must be changed from focus on emergency response, overlook in normal times to more focus on the work in normal times, "Be prepared for danger in times of safety, thinking means preparedness, and preparedness averts peril".

The works of the Health Hotline at prevention and emergency preparedness stage mainly include the following aspects.

(Ⅰ) establish multi-department linkage mechanism

Health emergency response is a complicated system engineering, individual department, organization or social group could not complete independently, joint participation of the whole society is required, some public health emergencies and other health-related emergencies even require effective response of several regions, countries and even the whole world. Therefore, it is very important to establish a health emergency response linkage mechanism across administrative regions, with multi-department linkage.

In normal times, 12320 Health Hotline should establish emergency linkage mechanism with Health and Family Planning Department, institution for disease control and prevention, medical institutions, health supervision department and relevant departments in the precinct actively under unified command of Health and Family Planning Department, construct emergency response linkage organization network and sharing platform including Health and Family Planning Department, Health Hotline center and linkage units, realize information intercommunication, resource sharing, coordination, complementary advantages and daily interaction, finally realize an effective emergency response mechanism of multiagent cooperation across departments, across levels.

(Ⅱ) assessment of emergency response capability

1. Assessing the coping capacity of the Health Hotline system platform

In order to ensure 12320 Health Hotline to cope with significantly increaing calls, prevent the crash of system or platform, dynamic scientific assessment should be carried out for emergency support capacity of the hotline system platform periodically, eliminate troubles timely, keep maintenance, increase handling and bearing capacity under abnormal conditions, ensure stability and uninterrupted operation of the hotline system and platform. Formulate an emergency plan for the Health Hotline call center to cope with emergencies, start the plan timely in case

of emergency, minimize the loss and influence. Complete system configuration, technical proposal for emergency response, carry out scientific assessment on its bearing capacity and maximum load, prevent busy telephone channel in case of significantly increasing calls or redundant telephone channel due to wrong prejudgment.

Assessment items for coping capacity of the Health Hotline system platform include: service population in the precinct, traffic forecast and analysis, telephone channel setting, position equipment, computer room software/hardware equipment, service system, network, power supply, air conditioning/ventilation, safety facilities etc.

2. Assessing the capability of hotline consultants

In order to ensure sufficient human resources, timely, effective and organized health emergency response work for 12320 Health Hotline, objective, scientific, operable assessment indexes should be formulated, normative assessment system should be established, specific comprehensive assessment should be carried out for health emergency response work experience, specialty composition, service level, psychological quality, physical quality etc of Health Hotline management personnel and consultants. At the same time, scientific assessment should also be carried out for the quantity and health emergency response knowledge reserve level etc of management personnel and consultants who undertake 12320 Health Hotline emergency response task (including whether experts, volunteers etc are needed for participation). With respect to the assessment results, tried and true improvement measures should be formulated to combine ordinary and military applications, realize dynamic retrospective assessment, so as to ensure orderly, effective promotion of health emergency response work of 12320 Health Hotline.

(Ⅲ)Formulate emergency plan

Health emergency plan of 12320 Health Hotline should be prepared in accordance with the Law of the Peoples Republic of China on the

Prevention and Treatment of Infections Diseases, Regulation on the Urgent Handling of Public Health Emergencies, Overall Emergency Preplan for National Sudden Public Incidents, National Emergency Plan for Public Health Emergencies, National Emergency Plan of Health Rescue for Public Emergencies etc, on the basis of regional health emergency plan and work guide, in combination with public opinion monitoring situation and hot spot and difficulties in consultation of 12320 Health Hotline; pertinency, practicability and operability of the plan should be enhanced practically based on scientific assessment and demonstration. Fundamental principles of health emergency response, warning classification and information report requirements, standard and measures of classified response, emergency safeguard measures etc of the Health Hotline should be defined in the plan, especially how to participate, how to act, which health emergency response activities to participate in should be normalized for 12320 Health Hotline. At the same time, the emergency plan of 12320 Health Hotline should embody policy and guidance, for example, content of the plan should be matched with and adapt to corresponding parts in the emergency response plans of the government, Health and Family Planning Department in this region, could meet the requirements in emergency response plans of the government, Health and Family Planning Departmental for 12320 Health Hotline, respective responsibilities and responsibility assignment should be reasonable and definite. After the plan is prepared, purposeful simulation drills should be performed continuously to check and improve feasibility, availability of the plan.

At the same time, national and provincial experts with rich practical experience in 12320, sound theoretical basis, and experts from health care, disease prevention and other relevant departments should be organized to prepare the Guidance for Emergency Consultation of 12320 Health Hotline jointly, instruct local authorities to carry out risk communication for health emergency response correctly, normalize answers, provide

professional and uniform consultation services for the public timely. It should be prepared in accordance with national prevention and control scheme, diagnosis and treatment scheme etc, increase accuracy and authority of the information source, ensure acquisition of public opinion information from hotline, Weibo, wechat, network and other channels timely, find out publicly scrutinized hot spot issues and difficulties. And emphasize practical, specific, strong operability features, revise and improve it continuously with the progress of public health emergencies and the changes of other important situations.

(Ⅳ) Strengthen the training of health emergency response skills

Formulate health emergency response training program for the Health Hotline in combination with the responsibilities of Health Hotline in health emergency response work and plan as a whole, define the purpose of training, training content, training participants. China 12320 Management Center is responsible for the formulation of the training plan, strengthens the instruction and support for local health emergency response training work. The training should intend to increase emergency response skills of Health Hotline management personnel and consultants, enhance their emergency awareness, update their health emergency response knowledge, focus on the enhancement of overall health emergency response capability and level of the Health Hotline. Establish periodical training system, carry out health emergency response knowledge propaganda and education, provide training on protection and other skills with respect to the features of various public health emergencies and other health-related emergencies. Provide intensive training on knowledge and skills of early symptom identification, public opinion warning, emergency consultation, risk communication etc against public health emergencies and other health-related emergencies for 12320 Health Hotline consultants.

1. Training participants: China 12320 Management Center is mainly

responsible for the training of teachers, including Health Hotline management personnel and backbone consultants at national level and provincial level.

2. Training content and mode: training content includes health emergency response and risk communication, public opinion monitoring etc in the Health Hotline. Including: interpretation of the laws and regulations, plan and standards related to health emergency response work, health emergency response work flow etc. Revise and update the training content according to the purpose of training, requirements of the training participants and assessment result etc in real time, at the same time, select appropriate training materials or organize to prepare training materials. Training methods may be diversified, for example, centralized teaching, group discussion of special subject, academic lecture, experience sharing, case analysis, on-site teaching, simulation drill etc; video, broadcast TV, distance learning and other advanced means may also be fully utilized to enrich training forms continuously. After the training is ended, training effect should be learned through questionnaire, collective informal discussion, spot check and follow-up survey and other forms, and the training should be summarized and assessed to further enhance the training quality.

(Ⅴ) Participation in health emergency response drilling

12320 Health Hotline should carry out drilling according to the actual situation in this region and work requirements, in combination with emergency plan periodically or aperiodically whichever is appropriate, firstly, carry out emergency drilling in the Hotline by simulating public health emergencies and other health-related emergencies, so as to test the plan, exercise team, find out problems, make corrections and enhancement, improve and strengthen emergency preparedness, coordination and handling capability of 12320 Health Hotline, summarize and assess the drilling result, further revise and improve 12320 Health

Hotline emergency plan. Secondly, participates in health emergency response training and drilling activities organized by the government at the same level actively, check and increase comprehensive quality and capability of the emergency team, accumulate practical experience continuously through comprehensive drilling. Thirdly, mainly check whether the information channel in clear, emergency preparedness is sufficient, mechanism of a reaction is sensitive, command system is effective etc through health emergency response simulation drill.

II. Monitoring and early warning

Monitoring and early warning refers to a process, in which advanced information technology is used as platform for effective dynamic monitoring of the hidden troubles, threats and hazards of various potential public health emergencies and other health-related emergencies by means of forecast, simulation and other technologies, thus forward looking analysis and judgment may be given, possibility and hazard level of various public health emergencies and other health-related emergencies may be assessed timely for prevention and warning, so as to formulate specific countermeasures. Monitoring and early warning is an important means of 12320 Health Hotline in health emergency response work. Health Hotline risk monitoring, study, judgment and early warning capability should be further improved to "control early, control from the beginning, control the symptoms", "nip in the bud".

Monitoring and early warning of public health emergencies and other health-related emergencies by 12320 Health Hotline mainly includes the following works.

（Ⅰ）Establish information system and monitoring network

Establish unified information system of public health emergencies and other health-related emergencies for 12320 Health Hotline, integrate existing resources effectively to realize information interconnection and sharing. Establish efficient, shortcut, clear information communication

and resource sharing mechanism timely, ensure relevant organizations in the hotline and in the region to intercommunicate information related to public health emergencies in real time, contact relevant health emergency response departments and experts timely, take advantage of the departments in the region for strong cooperation, resource sharing, highlighting the focal point, joint research; give full play to the technical advantages and expert advantages among regions, among countries, carry out technical exchange, technical cooperation, personnel training and technical support. Construct internal and external communication platform for the Health Hotline, transfer information timely via automatic office system, Email, QQ group etc; realize "resonance with the frequency "in the handling work with the government or Health and Family Planning Department, lay stress on the content of information communication and communication occasion, and abide by relevant laws and regulations, do a good job in information security and confidentiality. Establish and consummate monitoring network of public health emergencies and other health-related emergencies for 12320 Health Hotline, strengthen the construction of monitoring facilities and equipment, allocate full-time or part-time monitoring personnel or information reporter. Participate in risk monitoring in this region, grasp public comments, advises and public opinion on the prevention and control of public health emergencies and other health-related emergencies through monitoring and analysis, provide decision basis for follow-up prevention and control work against public health emergencies and other health-related emergencies.

(Ⅱ) Carry out risk assessment

Establish scientific and reasonable risk assessment index system for 12320 Health Hotline against public health emergencies and other health-related emergencies, as a "barometer" or "alarm" to judge public health emergencies and other health-related emergencies. Judge, describe and forecast change trend of the public health emergencies and other

health-related emergencies through 12320 Health Hotline, official website, Weibo, wechat and other channels, in combination with summary and cognition of the development rules of public health emergencies and other health-related emergencies, analyze existing status and specific information of public health emergencies and other health-related emergencies comprehensively, compare with the expected target to find out the symptoms of potential public health emergencies and other health-related emergencies, provide the basis to issue warning information, take scientific and reasonable countermeasures timely.

(Ⅲ) Issue warning timely

Divide warning level of public health emergencies and other health-related emergencies for 12320 Health Hotline scientifically, define the warning response measures for different levels. Determine corresponding warning level according to the forecast information and risk assessment result of public health emergencies and other health-related emergencies, in accordance with possible hazard rating of the events, degree of emergency and development trend, issue forecast and warning before the occurrence of public health emergencies and other health-related emergencies, at the same time, adjust warning level and end the warning status timely according to the changes of the situation, so as to provide scientific decision basis for the Health and Family Planning Department etc, so that the Health and Family Planning Department and relevant departments have sufficient time to take corresponding countermeasures and response measures.

III. Response and handling

Emergency response and handling refers to the behavior of emergency management organization or decision maker in virtue of scientific means and methods, taking emergency response measures and emergency rescue actions to emergencies, so as to eliminate or reduce hazards of the emergencies. After public health emergencies and other health-related

emergencies occur, just determine level of the emergencies according to controllability, severity and sphere of influence of the emergencies, start emergency response procedures at corresponding level, take scientific and reasonable emergency response measures, actively and reliably control the situation, reduce the hazards to the maximum extent.

(Ⅰ) Event assessment

Assess severity of the emergencies according to the degree of emergency and distribution scope of public health emergencies and other health-related emergencies. Assess, study and judgment the situation of public health emergencies and other health-related emergencies timely and correctly in the whole process of health emergency response, care for the trend, make necessary preparations to prevent expansion of the emergencies. Wrong judgment of the nature and severity of the emergencies, insufficient assessment of further development status and trend of the emergencies often lead to inaccurate response time in the emergency handling process, even intensify the contradiction, spread and worsen the situation, further increase the handling difficulties.

Formulate scientific assessment plan before the assessment of public health emergencies and other health-related emergencies, define assessment purpose, scope of objectives and content, determine the members of expert assessment group, responsible person and his responsibilities, collect information required for the assessment comprehensively. Main content of assessment includes the following three aspects: 1. Type and nature of the emergencies. Define quantity of the emergencies, one or more simultaneously; determine type and nature of the emergencies, whether they are outbreak, prevalence of major infectious diseases, colonial disease of unknown causes or major food poisoning, occupational poisoning, or other health-related emergencies that influence public health. 2. Scope and severity of the emergencies. Considering current influence, follow-up influence and potential hazards

of the emergencies, assess the subsequent influence and affected scope of the emergencies, physiological, psychological influence on people as well as the impact on economic and social development of the whole society, and on government image etc, control effect of the emergency measures already taken (including whether emergency measures are comprehensive, implementation status, actual effect, existing problems and difficulties etc). 3. Development trend of the emergencies. Put forward consultation advices for health emergency response work at next step according to possible influence and degree of the emergencies, for example, which specific action measures should be taken, whether the Health Hotline emergency plan is started and so on.

(Ⅱ) Emergency response

1. Classification

Determine the classified response level to health emergencies of the Health Hotline matched with the level of the emergencies on the basis of the confirmed level of the emergencies according to the assessment result of the Health and Family Planning Department of the government at all levels on the severity of public health emergencies and other health-related emergencies, in accordance with National Overall Plan for Public Health Emergencies, National Emergency Plan of Health Rescue for Public Emergencies etc, report to local health and family planning authorities for approval. Health emergency response of the Health Hotline is generally divided into four levels: Level Ⅰ (corresponding to particular major), Level Ⅱ (corresponding to major), Level Ⅲ (corresponding to large), Level Ⅳ(corresponding to common).

The classified response to health emergencyies may observe the following principles

(1) Start the Health Hotline health emergency response at corresponding level in case of public health emergencies and other health-related emergencies at different levels.

(2) Upgrade early warning and response level timely for public health emergencies and other health-related emergencies whose situation and influence are expanded continuously.

(3) Scope restriction, decrease corresponding response level for the public health emergencies and other health-related emergencies that will not be further speaded.

(4)Increase corresponding response level for the public health emergencies and other health-related emergencies occurred in schools and in major activity periods.

2. Classified response

The Health Hotline should persists in the principles of hierarchical management, classified response, strips and blocks dominant, dependency administration under the unified deployment and arrangement of government at all levels and health and family planning emergency headquarters. Coordinate closely with relevant departments, quick response, carry out hierarchical and classified health emergency response in combination with actual situation in this region.

(1) start of the classified response

Start Level Ⅰ response to health emergencies of the Health Hotline if one of the following conditions is met: ① the State Council will start National Overall Plan for Public Emergencies in case of particular major emergencies; ② relevant departments of the State Council will start National Emergency Plan for Public Health Emergencies or National Emergency Plan of Health Rescue for Public Emergencies in case of particular major public health emergencies; ③ start Level Ⅰ emergency response of the Health Hotline in special conditions.

Start Level Ⅱ response to health emergencies of the Health Hotline if one of the following conditions is met: ① the government at provincial level will start overall emergency plan at provincial level in case of major

emergencies; ② relevant departments at provincial level will start public health emergency plan at provincial level or emergency plan of medical rescue for public emergencies at provincial level in case of major public health emergencies; ③start Level Ⅱ emergency response of the Health Hotline in special conditions.

Start Level Ⅲ response to health emergencies of the Health Hotline if one of the following conditions is met: ① the government at municipal (prefecture) level will start overall emergency plan at municipal (prefecture) level in case of large emergencies; ② the government at municipal (prefecture) level will start public health emergency plan at municipal (prefecture) level or emergency plan of medical rescue for public emergencies at municipal (prefecture) level in case of large public health emergencies; ③ start Level Ⅲ emergency response of the Health Hotline in special conditions.

Start Level IV response to health emergencies of the Health Hotline if one of the following conditions is met: ① the government at county level will start overall emergency plan at municipal/county level in case of common emergencies; ② the government at county level will start public health emergency plan at county level or emergency plan of medical rescue for public emergencies at county level in case of common public health emergencies; ② other public health emergencies or other health-related emergencies at common level (Level Ⅳ) of health emergency response of the Health Hotline; ③ start Level IV emergency response of the Health Hotline in special conditions.

(2) specific measures for classified response

After the emergency response is started, Health Hotline should respond quickly, start emergency mechanism. Gather Health Hotline emergency team rapidly, implement emergency post responsibility system, cooperate based on division of labor and work closely. Implement response action at the same level according to the emergency response level.

Level Ⅰ response action:

① start 12320 Health Hotline Level Ⅰ emergency response immediately.

② organize national-level experts to assess nationwide public opinion, service population etc comprehensively, improve national-level Health Hotline emergency consultation guide and update knowledge base, instruct unified consultation answer of 12320 Health Hotline in all provinces.

③ open all emergency positions, and open all telephone channels, provide 7 * 24 h artificial voice consultation service; all staff in their respective posts, cancel staggered holidays, extend work time.

④understand social conditions and public opinions from official website, Weibo, wechat, short message and other public information exchange channels, propagandize health emergency response knowledge, answer consultation of net friends on the Internet.

⑤ provide intensive training of special subject health emergency response knowledge according to nature of the emergencies; authorities in all provinces (cities, districts) should organize and coordinate relevant clinical doctors or disease control experts to carry out on-site consultation according to the emergency consultation hot spots and difficulties;

⑥ local authorities should carry out public opinion monitoring in the precinct, and prepare daily report of public opinion monitoring, and report to China 12320 Management Center every day. China 12320 Management Center should summarize and report to National Health and Family Planning Commission.

Level Ⅱ response action:

① 12320 management center at provincial level should start Health Hotline Level Ⅱ emergency response immediately after receiving relevant indications concerning major health emergencies of the Health

Hotline. And should report to the health and family planning department at the same level and to China 12320 Management Center according to the provisions.

② Organize experts at provincial level to assess public opinion, service population etc in the provincial jurisdiction comprehensively, improve guidance for Health Hotline emergency consultation work at provincial level and update knowledge base, instruct municipal 12320 Health Hotline to give unified consultation answer.

③ Open 1/2 or above of emergency positions according to the call overflow situation, provide 7 * 24 h artificial voice consultation service; all staff in their respective posts, cancel staggered holidays.

④ Understand social conditions and public opinions, propagandize health emergency response knowledge through public information exchange channels such as Health Hotline official website, Weibo, wechat, short message etc.

⑤ Provide intensive training on special subject health emergency response knowledge according to nature of the emergencies. Organize and coordinate relevant clinical doctors or disease control experts to provde on-site consultation;

⑥ Carry out public opinion monitoring in this precinct, prepare daily report of public opinion monitoring and report to provincial health and family planning department and China 12320 Management Center every day.

⑦ Request health emergency expert group of national health hotline to give instructions according to the requirements;

Level Ⅲ response action:

① Start Health Hotline Level Ⅲ emergency response immediately. And report to health and family planning department at the same level and provincial health hotline management center according to the provisions.

② Organize experts at municipal level to assess public opinion, service population etc in the municipal jurisdiction comprehensively.

③ Open 1/3 or above emergency positions according to the call overflow situation, provide 7 * 24 h artificial voice service; health emergency response team and relevant personnel should be ready.

④ Understand social conditions and public opinions, propagandize health emergency response knowledge through public information exchange channels such as Health Hotline official website, Weibo, wechat, short message.

⑤ Provide intensive training on special subject health emergency response knowledge according to nature of the emergencies, and unify the consultation answer.

⑥ Carry out public opinion monitoring in the precinct, prepare daily report of public opinion monitoring and report to provincial, municipal health and family planning departments and China 12320 Management Center every week.

⑦ Request Health Hotline health emergency expert group at provincial level to give instructions according to the requirements.

Level Ⅳ response action:

① Start Level Ⅳ Health Hotline emergency response immediately. Report to health and family planning department at the same level and provincial health hotline management center according to the provisions.

② Organize experts at municipal level to assess the public opinion, service population etc in the county (district) comprehensively.

③ Determine whether to open emergency positions according to the call overflow situation, provide 7 * 24 h artificial voice or 7 * 8 h artificial consultation service, voice consultation mode may be used for services out of 8 h work time.

④ Understand social conditions and public opinions, propagandize health emergency response knowledge through public information exchange channels such as Health Hotline official website, Weibo, wechat, short message.

⑤ Provide intensive training on special subject health emergency response knowledge according to nature of the emergencies, unify there is consultation answer.

⑥ Carry out public opinion monitoring in the precinct, prepare public opinion monitoring report and report to provincial, municipal health and family planning departments every week.

3. Termination of the response

Health Hotline may organize the experts to perform analysis and demonstration according to the development situation of public health emergencies and other health-related emergencies, and the assessment result of public opinion monitoring and risk communication situations, put forward suggestions for termination of emergency response, report to the government or health and family planning emergency headquarters at the same level for approval, declare the termination after approved.

(Ⅱ) hotline public opinion monitoring

The Health Hotline should carry out hotline, network public opinion monitoring using routine monitoring and key monitoring. Run the Health Hotline public opinion monitoring through the whole occurrence, development process of public health emergencies and other health-related emergencies, grasp information of public health emergencies and other health-related emergencies timely, explore study, judgment and emergency response work of public opinion on health in social media environment actively.

Introduce public opinion monitoring platform timely, rely on cloud computing and vertical search technology to monitor public opinion at

key website, Weibo, wechat and forum around the clock, realize rapid identification and directed tracking of health-related hot spot personal name, hot spot health and medical institutions, hot spot words and expressions, hot spot issues, emergencies, major outbreaks, accomplish whole network monitoring, deep acquisition, find out potential information or risk points from mass information. At the same time, assisted with professional human judgment and analysis, make judgment quickly according to the development situation of public opinion, form the trend forecast, so as to help Health and Family Planning Department to grasp public opinion on health issues timely and dynamically, guide public opinion and propaganda orientation positively.

On the basis of public opinion monitoring via hotline, analyze information in the calls from the public carefully, judge relevant requirements of the public for emergency response in combination with development situation of the emergencies, pay attention to negative public opinion, assess risk level of public opinion correctly, research countermeasures for major and extra large public health emergencies and other health-related emergencies and social concerns, sensitive issues, give active response in an appropriate way.

It should be noted that, attention should be paid to early discovery and early report in the judgment process, try to find the contradiction at the beginning, and eliminate it as early as possible; strengthen the guidance on public opinion according to the judgment result, safeguard vital interests of the people, guarantee the right of the public to learn the truth, so as to safeguard social stability and reassure the people.

IV. Summary and assessment

（Ⅰ) follow up the development continuously

The Health Hotline should follow the development continuously, analyze the situation and trend at stages, judge the direction, scale of possible public opinion crisis as soon as possible after any symptom of potential

crisis is found. If the situation is worsened, give warning in advance, so that Health Hotline departments may prepare against upgrade and expansion of the situation jointly. If the situation gets better and even ends up, termination of emergency response may be declared.

(Ⅱ) summarize experience and lessons in the response work

At each development stage of public health emergencies and other health-related emergencies, the Health Hotline should organize relevant personnel to assess the health emergency response work by stages, summarize experiences and lessons in the response work, consolidate the strong ones and support the weak ones, address gaps, correct work thinkings, ensure sound progress of follow-up health emergency response work. The assessment content includes: outline of the emergencies, organization and coordination, work flow and emergency consultation, monitoring and early warning, classified response action and operating conditions of the system platform etc, for example, whether complete system is built? Whether emergency decision-making, command and coordination management mechanism is perfect? Whether the structure of health emergency response team is reasonable?

(Ⅲ) put forward improvement measures,

Insists on sustainable improvement principles according to the assessment result by stages, further analyze the reason of existing problems, put forward feasible improvement measures, supervise and urge the implementation, ensure effective health emergency response work. Health Hotline management should assess the effect of the measures taken, write assessment report and report to Health and Family Planning Department.

(Ⅳ) revise the guidance for risk communication work by stages

12320 Health Hotline should revise the guidance for risk communication work of 12320 Health Hotline timely in health emergency response according to the response situation to public health emergencies and other health-related emergencies, so that it becomes more operable and

instructive, more suitable for risk communication work of the Health Hotline.

Chapter 4 Risk Communication of the Health Hotline

Risk communication is an important component of emergency management, is a rational communication bridge among government departments, professional agencies, the public and media. 12320 Health Hotline should recognize special function of the risk communication from psychological, social background and cultural factors, determine the most accurate, valuable, meaningful information of risk communication, determine the most effective measures and skills of risk communication at different stages of various public health emergencies and other health-related emergencies, give the role of communication bridge into full play, reduce the public panic as far as possible, safeguard social stability and public trust in government.

I. Concept, classification and principles

(Ⅰ) The concept of risk communication

In broad terms, risk refers to the threat, danger and crisis that might be encountered in human survival, development process. Generally speaking, risk is the precursor of an emergency, is a potential and possible emergency. In the health field, risk generally refers to the possibility and adverse impact of potential hazard on human health and life safety. Risk includes two elements: possibility and adverse consequence--the former refers to probability of risk; the latter refers to possible influence of risk on the protected target and object after turned into reality as well as quantity and mode of the influence. Adverse consequence includes tangible and intangible aspects, that is to say, tangible objective loss (for example, personal casualty, economic loss, environmental impact etc) or intangible adverse impact (for example, psychological influence on groups, international influence, national reputation, national image and interests, social opinion and stability etc) might be caused. In most cases, influence in both aspects will occurrence simultaneously.

Communication refers to the process of information transfer, communication and comprehension from sender to receiver. Communication has meanings in three aspects: firstly, human-human interaction. Communication must be an interactive activity performed by at least two or more persons jointly. Secondly, the information is transferred. Information sender sends the information to the counterpart receiver through appropriate channel. Thirdly, the transferred information is accepted and understood by the receiver. The communication process consists of four elements, i.e.sender (the person who provides information), receiver (the person who obtains the information), information (the message transferred to the receiver), channel (the carrier for information transfer).

Risk communication refers to cooperation and dialog among the government and relevant departments and the media and public, i.e.interactive process among the risk assessor, administrator and other relevant parties concerned (for example, among experts and the public, government officials and community or social groups). Risk communication is a dynamic process of risk in information source and flow direction. Since risk is subjective, involves several stakeholders such as risk inducer (generator), risk bearer, risk handler and so on, different stakeholders have different perceptions on risk, the action of any party will exert influence on risk selection and handling result. Therefore, effective information communication among different stakeholders is of great importance.

Risk communication for health emergency response refers to risk communication in the response work to public health emergencies and other health-related emergencies, refers to the activity in which relevant departments discuss and decide how to reduce risk jointly, communicate potential uncertain health risk information and reach common understanding in health emergency response work, so as to take unified actions. Take an example of the prevention and control of infectious

disease utbreak, risk communication requires the reporting of outbreak to the government actively when infectious diseases outbreak, the requires cooperation with news media after authorized, notifying the public, society and stakeholders and relevant departments timely, conveying the epidemic situation, individual infection risk, preventive measures, current attitude of the government and professional agencies and relevant handling measures taken, answering relevant questions and confusions of the public, so that the public could recognize disease risk, grasp necessary prevention and control knowledge and take appropriate actions timely. Health Hotline plays an important role of bridge in risk communication for health emergency response.

(Ⅱ) The purpose and features of risk communication

1. The purpose of risk communication

The purpose ofrisk communication is to spread risk information via target groups, so that the communication object could recognize the risk correctly, take effective prevention, treatment and control behaviors, so as to minimize the risk hazard of on the public and the society. Effective risk communication work, is favorable to get support and cooperation, reduce and avoid risk, control and eliminate the hazards of public health emergencies and other health-related emergencies, quiet down the adverse effect or possible adverse effect of the emergencies, build necessary public opinion environment, maintain and shape good image of the government and relevant departments.

2. The features of risk communication

Firstly, risk communication runs through the whole process of risk management. Risk management is a management activity of the risk bearer for risk identification, risk analysis, risk assessment and risk handling, handle the losses caused by risk properly, expect to achieve maximum safety guarantee with minimum cost. Risk communication runs through the whole process of risk identification, risk assessment, risk

handling and risk monitoring.

Secondly, risk communication for health emergency response involves many fields, including guidance of public opinion, media communication, role positioning etc, detailed analysis should be carried out in aspects of skills for public relations, generation and control rules of public opinion, media system and environment etc.

Thirdly, risk communication is an interactive process of information participated by multiple parties equally. Risk communication is a cooperation and dialog activity between the government, relevant departments and the public, the key is to establish trust relationship between the government and the public. Since difference exists among the public and policy maker, experts in relevant fields in aspect of risk perception, so trust issue becomes very important. The monopoly of information channel, the concealment, misinterpretation of the information by any partyfacing risk might lead to disastrous consequences. The government and the public, media should become main body of propagation in risk communication. On the one hand, as the organizer of risk response and authority accessible to the information source, the government should release risk information to the public and media timely, and regard the public and media as partners to cope with risk jointly. On the other hand, as another main body of communication, the information provided by the public and media is also very valuable. Government departments may understand specific influence and hazard rating of the risk event through in-depth investigation, especially understand risk perception degree and attitude of the public, instruct the follow-up risk communication work.

Fourthly, risk communication is a work that combines audience psychology with communication skills. Stakeholders of risk communication include risk policy maker, decision maker, experts and the receiver of risk information--the public. The effectiveness of

persuasion of the stakeholders of risk communication on the audience is not only positively correlated authority of the information source, but also positively correlated with psychological proximity of both communication parties. Therefore, risk communication is often regarded as a technical work involving rhetoric, conversation skills and speech ability etc. However, all these technical links could not be separated from two important preconditions: firstly, accurate assessment and grasping of risk information; secondly, accurate judgment of public psychology.

Fifthly, risk communication relies on an effective system. As far as Health and Family Planning Department is concerned, not only sufficient risk communication is required within the department, but effective risk communication with stakeholders outside the department is also required, only in this way could effective risk communication be realized. The communication within government organizations, including the communication among the government and research institutions and other groups handling the risk will often exert critical impact on final result of the communication. However, in the practice of risk communication, people often care for how to carry out effective external communication (i.e.how to establish trust relationship between the public and the government), but often ignore the communication issue within the organization. Therefore, how to establish an all-around risk communication system for both effective external communication and sufficient internal communication is of great importance to increase the whole effect of risk communication for health emergency response.

(Ⅲ) The role of risk communication

Risk communication is one of the important paths of risk management, plays a vital role in getting effective risk information, coordinating the cognition, decision-making, behaviors of government and the public. Risk communication is also an important part of health emergency response work, is the precondition and basis for organizational

decision-making, is a communication bridge for the government departments, professional agencies, the public and media.

Specifically, the role of risk communication for health emergency response includes the following parts:

1. Provide accurate health risk information for the general public, family or organizational framework timely, help people to overcome psychological fear and anxiety.

2. Inform the public about the potential health risk caused by public health emergencies and other health-related emergencies and the actions to be taken, change the attitude and behaviors of people towards health risk, encourage the general public to participate in risk response.

3. Fulfill the rights to know and supervise of the public conferred by law.

4. Provide public opinion information to the media for correct guidance of the public.

5. Increase information exchange among the government departments, professional agencies and experts.

6. Provide practically effective measures and suggestions for health emergency response work to the government.

(Ⅳ) fundamental principles of Health Hotline risk communication

Generally speaking, in case of public health emergencies or health-related emergencies, people will not only receive information selectively, but also seek information actively, therefore, risk communication shall follow four principles.

Firstly, validity. Ensuring effect is the first principle of risk communication. Therefore, transfer the information related to the emergencies that the public want to understand, self-protection measures of the public etc to the public timely and effectively, enhance recognition of the public on risk, help the public to evade or accept risk.

Secondly, pertinency. Select core information for communication, appropriate expression means and communication channel according to specific conditions at that time as well as characteristic and actual demand. With respect to core information, use hotline, short message, Weibo, wechat, website etc selectively for risk communication.

Thirdly, timeliness. Try to transfer core information to the public in the quickest actual effect and most effective way. The Hotline should fully utilize three-dimensional service system for quick propagation of information and effective interactive communication.

Fourthly, accuracy. Try to transfer the most accurate information to the public in correct mode during risk communication, give accurate and objective answer in the hotline, avoid ambiguity and misinterpretation of information as far as possible.

For the sake of a better health emergency response work, the Health Hotline should participate in risk communication work actively, insist on the following six fundamental principles, and run them through every aspect of risk communication work.

1. Take precautions. Formulate and consummate Health Hotline risk communication scheme continuously. Through risk assessment, understand and assess category of public health emergencies and other health-related emergencies in this region that are most likely to occur, formulate risk communication scheme and plan of the Health Hotline for health emergency response in advance; assess and determine requirements of the audience for information, grasp concern points of the public; according to features of the emergencies and the public attention, develop and provide related information, make modification and improvement continuously as appropriate in actual work, increase pertinency and accuracy of the information.

2. Timeness and initiativeness. In current information era, information is transferred very rapidly, information of public health emergencies and

other health-related emergencies will arouse the attention of news media and the public very quickly. After an emergency occurs, the public aspire to acquire related information timely, often accept the information easily without analysis and judgment, and believe firmly even in case of incorrect relay of an erroneous message. Health Hotline should make a response quickly, put forward key points of information communication, let the public understand the true facts actively as soon as possible, have the initiative to guide correct direction of public opinion.

3. True information. Accurate, true should be the preconditions of Health Hotline information. If some public health emergencies and other health-related emergencies are complicated, all ituations could not be grasped at the first moment or comprehensive information could not be released timely due to the selection of release occasion, definite, brief message should be released timely, follow-up report may be given when comprehensive and accurate follow-up information is collected. False news should not be released, otherwise the entire health emergency response work might go into a passive situation.

4. Consistent answer. This is a vital principle to be trusted by the public. The occurrence, development of public health emergencies and other health-related emergencies is often an undetermined dynamic process. In this process, "information asymmetry" issue is sometimes very evident: lack of information at early stage of emergencies, a great deal of information emerges in the development process. Therefore, the answer published by Health Hotline should be highly unified at this time, any information contradictory to those release by the government and health emergency response department should not be provided. Inconsistent answer might lead to public opinion crisis, increase the difficulty and complexity of health emergency response work.

5. Favorable response. Generally the occurrence of public health emergencies and other health-related emergencies enables the public to

generate guesses and suspicions, the masses often have suspicions and distrust psychology if they could not acquire accurate information, tend to accept and spread speculative message more easily. Therefore, to win the trust of the public, always be sincere, frank, open and transparent, insist on practical and realistic, do not conceal the facts, do not evade problems, so as to win the understanding, support and trust of the audience.

6. Safeguard reputation. The Health Hotline is a main channel of the Health and Family Planning Department to transfer information to the public. Winning the understanding and trust of the public, safeguarding government reputation are the start point and goal of risk communication, also the responsibilities of the Health Hotline. In the whole process of risk communication, the Health Hotline should give the role of effective communication bridge among the government departments, professional agencies, the public and media into full play, avoid influence on the trust of the public in the government due to unclear communication.

II. Core information of Health Hotline risk communication

(Ⅰ) The features of core information

The information of risk communication is divided into general information and core information. Compared with general information, core information refers to the most important information in risk communication for health emergency response to be understood and grasped by the target audience.

Core information in Health Hotline risk communication mainly includes the following content:

1. Accurate description of public health emergencies and other health-related emergencies, for example, occurrence time, place of the emergencies, number of people affected, potential risk, possible development trend etc.

2. Measures of the Health and Family Planning Department and other

relevant government departments already taken and/or to be taken to control the public health emergencies and other health-related emergencies as well as the input health resources and rescue capability etc.

3. Instructions for individuals, including relevant knowledge to be understood by the affected people and the public and coping behaviors to be performed by individuals and so on.

4. Release of follow-up information of the public health emergencies and other health-related emergencies, for example, when, where, in which mode to release and by whom and so on.

(Ⅱ) The determination of core information

Public health emergencies and other health-related emergencies have the features of sudden occurrence, unforeseen, quick process, wide influence etc, proceed rapidly once occurred, might cause a large number of personal casualty, severe property losses and extensive negative social impact in a short time. Therefore, the key to core information of the Health Hotline risk communication should be propaganda of prevention and control knowledge of the public health emergencies and other health-related emergencies as well as countermeasures of the government, enable the public to fully understand hazards of emergencies and protection measures, make mental preparation, intensify confidence of the public in proper handling of the emergencies by the government.

The Health Hotline should make emergency preparedness in routine work, especially the selection, determination and preparation of all information to meet the requirements of the public in advance, improve knowledge base, process the knowledge of new outbreaks of infectious diseases etc in the knowledge base timely. Update and produce core information timely in case of public health emergencies and other health-related emergencies, provide training for the consultants, ensure timely and effective risk communication in case of emergencies, assist coordinated,

orderly health emergency response work, reduce the hazards caused by public health emergencies and other health-related emergencies to the maximum extent.

Core information of risk communication should be determined timely in case of public health emergencies and other health-related emergencies according to the information provided by health emergency response group, with respect to different groups and different stages of emergency development. The following problems should be considered in the selection and determination process of core information of the Health Hotline:

1. Judge the impact of emergencies on the public correctly. Before determining the core information, firstly analyze the public health emergencies and other health-related emergencies deeply and accurately, define the impact or possible impact of the emergencies on public health, people affected and the scope, main reason that causes public panic and controllable degree of the emergencies etc.

2. Provide recommended measures to protect individual health for the public. After public health emergencies and other health-related emergencies occur, the highest concern of the public is how to protect the health of themselves and their family. This becomes a core information of the Health Hotline. The suggestions that may be memorized and operated easily by the public should be put forward as soon as possible. For example, when a poisonous gas leakage accident occurs nearby, the recommended measures should include: stay indoors as far as possible, use wet towel, sheet etc to cover the mouth and nose, wait for rescue and so on.

3. Express the most core information in the most simple, the most popular language. After public health emergencies and other health-related emergencies occur, the public become nervous, their ability to listen, understand, memorize and process information decrases. Therefore, core

information should be told to the public in concise, explicit, easily understandable language, mainly teach specific definite action measures to the public to protect the health of themselves and their family. For example, when a river water pollution accident occurs, it is important to tell the public not to drink water in the river directly; it is unnecessary for the public to understand which substance polluting the river water, what the pollution level is immediately.

4. Information content should not be too much. Research on communication sciences shows that, when a person is under pressure or unhappy, amount of information to be accepted at one time is limited. People are unable to note and accept more than three pieces of information, the content of each information should not exceed 40 characters, each key information should not exceed 10-15 characters, and they often care the information heard at the very beginning and at last. Therefore, the most important information point should be placed in at the beginning and at last in risk communication.

5. Fully embody care and respect. The key of public attention is trust, interests, fair, control and other problems in case of public health emergencies and other health-related emergencies, especially whether someone cares them at this time. Researches show that, in initial 9-30 s after an emergency occurs, 50% of people want to be listened, cared, commiserated and sympathized, 15%-20% of people need the government or relevant departments to show honest and open attitude, while only 15%-20% of people need professional interpretation.

6. Positive statement should be dominant. When very nervous or worried, people will pay attention to negative information rather than positive information. Researches show that, adverse impact of a negative information may be eliminated by at least 3 pieces of positive information. Therefore, avoid the use of very absolute vocabulary (for example, "never", "always") when preparing core information, and avoid

unnecessary negation as far as possible.

In addition to follow the above-mentioned principles to determine core information of public communication, it should be noted that, core information could not influence all target groups, nor solve all communication problems. To determine core information, requirement characteristics of different people should be analyzed according to the requirement investigation in detail, core information for different target audience groups should be determined specifically. At the same time, psychological need of the public for communication and information is different at different stages and different key nodes of the emergencies, flexible adjustment should be made timely and specifically.

III. Risk communication measures of the Health Hotline at different stages

Facing unexpected public health emergencies and other health-related emergencies, people often become panic. Risk communication should fully utilize the communication platform (Weibo, wechat, website, short message platform etc) of the Health Hotline in effective communication mode, release the fact information timely and orderly, reduce panic psychology of the public, guide the public to make rational judge and decision, so as to enhance rationality of the public, achieve good communication effect. In this process, always regard the public as the "center", follow the principles of "early preparation, timely and active, true information, consistent answer, favorable response, safeguarding trust".

In time sequence, risk communication of the Health Hotline is generally divided into four stages: early stage of the emergencies, initial stage, continuous stage, subsiding stage. Risk communication work have different requirements at different stages, corresponding measures should be taken.

（Ⅰ) early stage of the emergencies

1. Features of the stage

At this stage, the symptoms of public health emergencies and other health-related emergencies appear continuously, yet, have not caused damage or damage is very small. For example, outbreak of major infectious diseases (for example, Ebola outbreak) occurred in foreign countries or outside this administrative area, yet no local cases, but, high risk of local outbreak exists, now the Health Hotline should take emergency response measures according to the arrangement of Health and Family Planning Department.

2. Communication requirements

At this stage, the key to risk communication work lies in the study and judgment of the emergencies themselves and further development possibility. The following need to be solved: ① clear department collaboration channel, emphasize information exchange cooperation mechanism among the organizations (departments); ② acquire base data related to the emergencies, grasp public opinion monitoring situation related to the emergencies; ③ study characteristics of the emergencies themselves, reserve scientific, accurate knowledge, research report or work process.

3. Communication measures

At this stage, risk communication mainly includes the formation of working mechanism, situation analysis and judgment, information collection and sorting.

Firstly, establish a working mechanism. Check the emergency plan of the departments, institutions at higher level and lower level, improve or prepare plan with respect to the emergencies; form transverse communication mechanism across organizations, regions as well as national, provincial and municipal longitudinal information communication mechanism, realize information linkage and sharing; establish shortcut information notification mechanism; determine target

group and communication channels; determine information processing and release flow.

Secondly, situation analysis and judgment. Under the established working mechanism, acquire data related to the emergencies, analyze public opinion. Assess the level and type of potential public health emergencies and other health-related emergencies; forecast public concerns reasonably; understand up-to-date progress of the emergencies at any moment.

Thirdly, information collection and sorting. With respect to the scientific issues involved with the emergencies, seek assistance from relevant departments, educational institutions and research institutions, reserve relevant scientific, authoritative information points, advances in the research, handling progress and other information, process and develop authoritative unified answer for reply, submit to the authorities for review and to relevant organizations (departments) for read in turn.

(Ⅱ) initial stage

1. Features of the stage

At this stage, public health emergencies and other health-related emergencies have already occurred and might be developed rapidly, the situation is serious, and might be upgraded continuously, arouse the attention of more and more media, the public urgently need to know accurate information timely, for example, occurrence time, place, scale, hazard of the emergencies, countermeasures of relevant government departments and so on. Therefore, the Health Hotline must provide simple, reliable, traceable, consistent and timely information. Because information related to the facts is often disperse and incomplete, administrator of the Health Hotline should arrange special persons to collect, process and verify related information timely, determine press release and transfer the information to the consultants and the personnel responsible for information gathering, editing and release as soon as possible.

2. Communication requirements

Health Hotline should adopt multi-channel quick response, provide simple, reliable, traceable, consistent information to the public via various paths timely. At the same time, Health Hotline should grasp the most accurate information and unified answer timely, ensure the released information to be reviewed and authorized by authorities, ensure reliability and authority of the information.

3. Communication measures

Firstly, quick judgment of risk and emergency response. After the public health emergencies and other health-related emergencies occur, organize experts to study and judge the risk timely, start corresponding emergency response procedures according to the judgment result. With progress of the emergencies, carry out the second risk assessment according to the up-to-date information, judgment should be made continuously, response procedures should be adjusted continuously. Information of medical treatment, disease prevention and control, health knowledge etc should be released timely to eliminate panic and disturbed psychology of the public, safeguard good service image of the Health and Family Planning Department actively. Information release channels include both traditional media such as newspapers and periodicals, TV, broadcast etc, and new media such as Weibo, wechat, government affairs website etc. Telephone consultation to 12320 Health Hotline should be explained and replied according to the unified answer.

Secondly, risk monitoring and early warning. Grasp the information fed back by the public and released by media dynamically according to the information collected from consultation calls to 12320 Health Hotline and public opinion monitoring from network, so as to determine information requirements of the public, existing problems in communication, misunderstanding and worries of the public, gossip and orientation for public opinion, public advice etc, so as to instruct the risk communication

work. Make efforts to find, report as early as possible and respond rapidly. Prepare public opinion monitoring information and report to upper level periodically.

Thirdly, timely communication. Organize corresponding experts to study and discuss public concerns, the reason of panic psychology, enrich and improve background material or information, prepare guidance for the public information inquiry, respond to the public concerns accurately. To respond to the public concerns, transfer the available information to the public frankly, tell the public what happened, which risks to face, which self preventive measures to be taken etc, develop mutual trust between the Health Hotline and the public, let the Health Hotline become authoritative information source in the mind of the public, alleviate anxious, panic feelings of the public. At the same time, also tellthe public about the measures and methods of to be taken by relevant government departments, let the public know that the Health and Family Planning Department has formulated health emergency plan and response procedures, let the public understanding and support the work of the government and Health and Family Planning Department.

Fourthly, information authorization. Health Hotline should establish perfect working mechanism, participate in relevant work of the health emergency response work group actively, grasp the most accurate information timely. Information should be checked and authorized by authorities before release, so as to ensure reliability and authority of the information.

(III) continuous stage

1. Features of the stage

At this stage, public health emergencies and other health-related emergencies have been developed to medium term, the public have perceived hazards caused by the emergencies and further potential hazards, media care more about the development situation, gossip, rumors

etc might appear in the society. At this time, the Health Hotline should organize the experts, professionals timely to publish professional opinions openly (in the forms of expert presence, micro-interview etc), keep the hotline consultation, information release channel clear, monitor public opinion, respond to social concerns timely.

2. Communication requirements

At this stage, keep the Health Hotline clear, update the information continuously, strengthen public opinion monitoring, exchange information with the organizations (department) timely.

3. Communication measures

Firstly, assess progress of the emergencies continuously. Monitor effect of the communication activities continuously according to the determined risk monitoring method, work order should be entered with more details to facilitate query, understand public concerns from multiple channels, whether rumors appear, the effect of propaganda and education and the opinions fed back by the public, adjust communication information and communication measures timely. With progress of the emergencies, 12320 Health Hotline should organize professionals to express opinions, on the basis ofwork at the early stage of emergencies, organize field experts, relevant professionals to publish information openly via network live broadcast, material production, clarification on site and other paths, invite authoritative experts timely to the Health Hotline to answer telephones, attend micro-interview etc, give clarification to the public timely to eliminate panic and disturbed feelings of the public, help the public understand the risk accurately. For example, how did the emergencies occur? Whether occurred previously? How to prevent reoccurrence? May I be safe with development of the emergencies? Here, consultants should answer questions of the public comprehensively, objectively and patiently, and explain relevant problems, acquire trust and support from the public for the measures taken by the government and

Health and Family Planning Department.

Secondly, grasp dynamic development of the emergencies in real time. Media pay attention to development of the situation continuously, gossip, rumors appear, experts have different opinions etc, so the risk communication work faces larger challenges. The Health Hotline system must grasp development of the emergencies, the affect groups, media attention, whether expert opinions are consistent and other important information, prepare for various emergencies timely.

Thirdly, keep the hotline and information release channel clear. After heavy hotline work at early stage, hotline hardware, software maintenance should be strengthened at this stage, volunteers should be trained and personnel should be supplemented, so as to ensure the hotline and information release channel to be clear. By means of timely and effective communication and information release measures, explain the reason, purpose and effect of the measures taken by the government and Health and Family Planning Department to the public patiently, reduce puzzles and dissatisfaction of the public as far as possible, obtain understanding and support from the public. The Hotline may also let the public understand their risks accurately by holding lectures, setting publicity column, sending short message and so on, help the public to protect their health actively.

Fourthly, monitor public opinion and update the information. 12320 Health Hotline should collect feedback information of relevant departments and the public, supplement and improve risk communication scheme timely, promote the public to recognize their risks correctly, take rational behavior. Carry out public opinion monitoring and early warning, adjust existing risk communication strategy timely according to the monitored public opinion changes, increase pertinency and effectiveness of communication.

(Ⅳ) subsiding stage

1. Features of the stage

At this stage, public health emergencies and other health-related emergencies enter later stage, the emergencies have been controlled gradually and effectively, subsequent hazards are not expanded any more, mass panic disappears gradually, the public and media weaken their attention on such emergencies step by step.

2. Communication requirements

At this stage, 12320 Health Hotline should introspect and summarize the work at previous stage, continue to ensure continuous risk communication and public opinion monitoring, avoid rebounding of such event.

3. Communication measures

Firstly, continue to pay attention to development of the situation. Keep an eye on current and follow-up development of the situation, ensure the emergencies to be controlled effectively step by step, prevent repetition or new unforeseen circumstances. Reorganize risk communication activities if necessary.

Secondly, assess overall effect. Organize forces timely to carry out objective assessment on risk communication process and effect, assess whether the released core information is matched with the requirements of the public, situation of the public grasping core information and degree of satisfaction of the public etc.

Thirdly, improve risk communication plan. With respect to the experiences and lessons of the hotline in health emergency response work, put forward corrective measures to be implemented, so as to enhance the capability against similar events. The key is to increase supporting of the public for public health policies and measures, promote multi-department risk communication and institutional building for cooperation.

Fourthly, strengthen health propagation. After response to health

emergencies is ended, the public may accept and understand health knowledge of how to evade or reduce risks more easily. Take the Health Hotline as platform, coordinate with relevant departments actively, carry out health propagation campaign in multiple modes through multiple channels, strengthen health education and health promotion, increase health sentiment of the public, change unhealthy behavioral habits and lifestyle, increase awareness and skills of the public on disease prevention and control.

IV. Risk communication skills of the Health Hotline

In risk communication, 12320 Health Hotline must meet special appeals of the public. In the risk communication process for health emergency response, the Health Hotline and the public are in a special environment of abnormal management. The public dialing of Health Hotline or viewing of 12320 Weibo, wechat and website etc, means that they have relatively high expectation on the Health Hotline, hope the Health Hotline to publicize the information related to emergencies and the countermeasures taken by the government timely. At the same time, the interests of some people might be damaged after the public health emergencies and other health-related emergencies occur, they want to get compensation and pacification from the government. Good communication between the Health Hotline and the public is favorable to guarantee the right of the public to learn the truth in a better way, enhance understanding of the public on relevant information, and their recognition, support, coordination with the government behavior. If lack of recognition of government behavior, the public will hardly understand nor coordinate with the policy measures taken by the government actively, and the government is most likely so miss the best moment to control the situation effectively, even might further trigger off a series of social issues or serious consequences, cause damage of the government image, decrease of public trust.

In risk communication, it is very important to grasp corresponding communication skills for understanding risk perception of the public. Risk perception of the public on different public health emergencies and other health-related emergencies is not identical. Generally, if the emergencies are caused by human factors, the public will think higher risk, generate more severe negative psychology, which brings more difficulties to risk communication. Therefore, mental stress and psychological reaction of the public should be prejudged, so as to select suitable information, utilize appropriate media and propagation channel to increase the effect of risk communication.

Specifically, the skills for risk communication work of 12320 Health Hotline are in six aspects.

1. Build good communication atmosphere with the object of consultation

Advantages of Health Hotline consultation are bidirectional interaction and shortcut, consultants may answer questions of individuals directly, this is helpful for the public to obtain the required information accurately. The communication between both parties is not face to face, this is also favorable to eliminate worry and scruple of the inquirer. In the communication process, listen to more sound and suggestions of the public, respond to their possible worries, build a good communication environment.

2. No excessive consolation

Excessive consolation is not the purpose ofcommunication, not an appropriate method to keep rational attention. Original intention of excessive consolation might be good, yet the effect might be just the reverse. Therefore, the consultants should insist on practical and realistic when conveying information, describe patiently, without exaggerating or reducing the hazard or influence of the emergencies.

3. Highlight the focal point

Before communication, always define the purpose of communication, be goal-oriented. Generally, risk communication should emphasize the features of current situation and work measures etc, introduce risk-related information objectively, do not attempt to persuade the public that the risk is very low or do not worry anything.

4. Acknowledge the uncertainty

Public health emergencies and other health-related emergencies might be full of various uncertainties in the process of occurrence and development. When the public become depressed due to uncertainty of the emergencies, acknowledging uncertainty is an effective communication method. Acknowledge uncertainty objectively and frankly, express understanding of the public properly, let the public feel "sympathetic", feel the Health Hotline empathizing with them, so as to enhance sense of trust of the public effectively, guide the decision and confidence for joint work of health emergency response.

5. Active response

The key to communication is "timely", find out problems timely and solve them timely, timely resolve conflicts, if many problems are accumulated for solution, it is a waste of occasion and waste of time and energy. Therefore, after public health emergencies and other health-related emergencies occur, understand the information related to the emergencies rapidly, with respect to the questions of the public, develop accurate and effective viewpoint and information at the first moment, respond actively without evasion or delay.

6. Effective listening

Communication requires listenign with "heart", the communication effect could not be achieved without effective listening. Therefore, the consultants must listen to any question of the public patiently, try to avoid stimulating, irritating the public due to improper wording, incorrect attitude. For the questions and suggestions mentioned, identify them

carefully and analyze sensitive issues, make efforts to eliminate worries and doubts of the public according to unified answer.

7. Use technical terms with caution

To answer question of the public, try to be concise and comprehensive, use easily understandable sentences as far as possible, avoid long pause or use of too professional terms, ensure that relevant information transferred by the consultants is not ambiguous, may be understood correctly by the public.

8. Stay calm

The consultants should have relatively high pressure resistance, keep equanimity, cool, calm under stress and pressure, deal with all kinds of complex problems skillfully, explain the reason of unable to answer individual questions in health emergency response work patiently, correct inaccurate information timely.

V. Coping with rumors

(Ⅰ) The definition of rumors

Rumors refer to the comments without corresponding factual basis, fabricated and spreaded by certain means, i.e.refer to the information transferred via unorganized chain transmission channel the is generated naturally by some people (or a community, group and country) for specific motivation and desires, the content is not confirmed, lack of factual basis.

Rumors are demagogic to those who do not understand actual conditions, do not grasp scientific knowledge thoroughly. Rumors disrupt public feeling, influence social stability, add some disharmonious factors to the society, the hazard is obvious. When facing complicated information, people lack of judgment ability, plus panic, group psychology and other factors, rumors tend to be copied and spreaded rapidly. Especially with rapid development of Internet, Internet rumors are also spreaded in recent

years, exert severe adverse effect on the society. Many cases show that, Internet rumors are seriously destructive to social public order, generate destructive huge negative effect on social trust system. 12320 Health Hotline should fully recognize the impact of rumors on health emergency response work, coordinate with relevant departments actively, take effective measures to respond actively.

(Ⅱ) The features of rumors

1. Faster propagation speed. In virtue of network media platforms such as network community, forum, Blog, wechat, QQ and new media devices such as mobile phone, rumors are spreaded not only limited to specific groups, specific space-time, specific scope, the propagation speed and sphere of influence show exponentially growing.

2. Consummate continuously in interaction. Rumors may be sent to innumerable people via new media, at the same time, innumerable people may receive them. In the process of rumor receiving and sening, rumors are spreaded in different ways to wide scope, different information carriers are information sources of each other. Rumors do not become dispersed, differentiated significantly due to complicated propagation subjects and diversified propagation platforms, on the contrary, "people opinions for rumor information converges in durable interaction of social groups, influence and degree of damage reach maximum extent." Interaction not only converges people opinions, but also consummate the rumors continuously.

3. Increased concealment of propagation subjects. Modern information technologies especially network technology provide a virtual, individualized information transmission space for people, also provide an open concealed space for the propagation of rumors. The information source of most rumors is unclear, rumor makers and rumormongers generally do not assume foreseeable risks. "someone said" eliminates feeling of a crime. Especially network-specific anonymous function

increases the difficulty for common netizens to search the source of rumors, unfavorable for debunking rumors timely.

4. More demagogic content spreaded. Traditional rumors are often passed from mouth to mouth, information is often simple and fuzzy, propagation scope is relatively limited. In new media environment, "pictures show true facts", rumors may be transferred rapidly via text or audio & video, image and their combination, could enable relatively complicated information to become more vivid, specific, convincing, mixing the false with the genuine.

5. Psychological factors of propagation aggravate the propagation of rumors. Virtuality and anonymity of Internet enables Internet speech to be controlled by emotion, especially under the combined action of anonymous, group, stress, catharsis psychology, the gap between Internet world and real world becomes more and more close, netizens accept the rumors spread by familiar and trusted people in such true inductive environment.

6. High propagation influence. Internet rumors utilize the features of Internet such as high interactivity, instantaneity and concealment, and are spreaded via Weibo, forum and other popular channels, propagation speed is extremely rapid, the affected scope is extensive. Different information carriers influence and interact with each other, superpose and intensify the information, develop crossing, resonant, interactive propagation mode, become saturated instantaneously, and cross over space-time restriction, act in wide physical space, affect huge number of audience, cause amazing impact and damage.

(Ⅲ) propagation process of rumors

In social media environment, propagation stage of rumors may be roughly divided into three stages, i.e.formative period, high-tide period and recession period.

1. Formative period of rumors

The latent period of emergencies is often the formative period of rumors, the earliest rumors of emergencies often appear at this stage. Sometimes, the emergencies in latent period are unperceived. Due to the lack of warning mechanism for emergencies, administrators often neglect the appearance of emergency factors due to indifferent crisis awareness or certain inertia, thus lead to the outbreak of emergencies directly. At this stage, the true facts of emergencies are unclear, government fails to release information to the outside timely and even the information is blocked completely, requirements of the public for information could not be met, so subjective guess, hearsay are spreaded all around, become main sources for people to acquire information. Rumors are developed, reproduced and grow in such environment. In addition, due to fast circulation speed and wide coverage of Internet information, in social media environment, rumors are spreaded rapidly even in formative period, and arouse extensive attention of the public and media rapidly.

2. High-tide period of rumors

After outbreak, emergencies develop and change rapidly, propagation of rumors also reaches high tide at this stage, and might lead to more serious situation. In the outbreak period of emergencies, media and social opinion pay significantly increasing and enthusiastic attention to the emergencies. Rumors not only stay in public opinion subjects of network community, forum, Blog, wechat etc, mainstream media rush in, not only fail to inhibit the rumors timely, but often become accomplice of rumor propagation. With more and more comments on the emergencies, influence and destructive power of rumors rise continuously. With decreased public trust in the government and relevant departments, at this stage, rumors even become "invincible", accepted and believed by the people instead of the true facts.

3. Recession period of rumors

After the emergencies enter extended period, related information of the

emergencies become rich and perfect gradually, government departments or administrators release and clarify facts of the emergencies, or take effective means to control worsening of the emergencies via various media platforms. At the same time, the emphasis on and utilization of new media enables official information to be spreaded rapidly, supersedes rumors gradually and become main information source of the public. At this stage, significance of rumors decreases, propagation frequency also decreases. Until entering resolution period of the emergencies, rumors decline. However, declining of rumors does not mean disappearing of rumors from then on, the influence of rumors will not be eliminated thoroughly either. When new relevant emergencies or subjects appear, new rumors will appear, and even counterpart of old rumors, so the new rumors seem "familiar".

(Ⅳ) The measures of Health Hotline against rumors

There are many rumors after a disaster. Under the background of social media era, it is difficult to avoid panic rumors related to major emergencies. Most important of all is to release information timely, comprehensively and clearly at the very beginning of emergencies, grasp the initiative of public opinion, avoid large scale propagation of panic rumors and misunderstanding rumors instead of the true facts. At the same time, carry out Internet public opinion monitoring, "find, investigate, clarify" panic rumors and misunderstanding rumors that will appear and already exist as early as possible, so as to prevent rumor fermentation, which might lead to extensive propagation, increase the difficulty of counteraction. Try to get the support of public security departments to attack the rumor makers if necessary.

1. Release information timely. "when truth is putting on its shoes, rumors have run through half of the world." With respect to the content of rumors, 12320 Health Hotline should respond to social concern timely in combination with the information released by the government and Health

and Family Planning Department actively at the first moment, win the trust of the public based on sincerity, guide the orientation for public opinion actively. So that rumors end with the true facts. In fact, the public would rather than accepting objective negative information, nor unwilling to see the government behavior of concealing information. 12320 Health Hotline releases accurate information actively to eliminate the impact of rumors, helps to establish public trust in the government, occupy mainstream media, so that rumors have nowhere to live.

2. Emphasize basic facts. Rumors end with the true facts. The best way to deal with rumors is the provision of true facts as soon as possible. "tell the facts, only tell the facts, tell the facts that you know", this is the fundamental principle to deal with rumors. 12320 Health Hotline should prepare relevant information based on facts, let the public fully understand development process of the emergencies. If the publicized information is not true, not only the public will lose trust in government, but also will quicken the propagation speed of rumors. When the information is disclosed, fuzziness of the emergencies approaches zero, propagation of rumors stops naturally.

3. Rational usage of 12320 Health Hotline to deny rumours. The timely, accurate and comprehensive release of message through authoritative government channel could increase acceptability and sense of trust of the public to the information. Therefore, more official information should be released through professional services of 12320 Health Hotline and through authoritative channels such as official Weibo, wechat, website etc, let the rumors decline gradually.

4. Strengthen public opinion monitoring. Understand the publicly scrutinized hot spot issues and difficulties from 12320 Health Hotline public opinion monitoring, further determine the content of information release specifically. At the same time, assess the information release effect at early stage via public opinion monitoring, adjust information

release mode and content timely according to the assessment result, so as to enhance the effect of information release.

5. Give the role of experts into play. In case of emergencies or when rumors prevail, trust of the public in relevant bodies for which rumors are spreaded is discounted. Here, experts and scholars may express an opinions, they are relatively independent of relevant bodies for which rumors are spreaded, have relatively high credibility in the public, the information released by them could achieve satisfactory effect.

(Ⅴ) precautions

1. Distinguish responsibilities

Relevant government departments represent the interests of the public, while enterprises and other private sectors generally involve private interests. When rumors aim at an enterprise or an enterprise itself is the source of public health emergencies, relevant departments should define their responsibilities, stand on the public side for effective communication, otherwise public trust in the government will be affected.

2. Attention should be paid to information consistency when denying rumours

During rumour denying and emergency response, the situation reported by media might differ from the facts since the emergencies are not grasped and understood comprehensively. Some media interpret out of context, amplify their desired information, further expand adverse effect. In order to ensure information to be authoritative and accurate, the released information should be unified, highly consistent, all staff of the Health Hotline should not take a stand without authorization.

3. Release positive true information, do not repeat rumors

In the released information materials, pay attention to the expression of rumors, emphasize positivity and authenticity of the released information, extract key information, find out news point. When facing media,

emphasize the extracted key information again and again, prevent the media from propagating rumors extensively by mistake.

Chapter 5 Public Opinion Monitoring of the Health Hotline

With rapid development of Internet, complicated public opinion information has been developed. Public opinion monitoring, analysis and judgment are used to provide scientific basis for the decision-making of the government and Health and Family Planning Department, and provide service to guide the public opinion. "Know the enemy and know yourself, and you can fight a hundred battles with no danger of defeat", Health Hotline public opinion monitoring should not goal-oriented, collect, analyze and prejudge the public consultation comments and viewpoints, perform continuous monitoring analysis, understand the influence and tendency of these comments and viewpoints on some hot spot, focus issues in real life, make preparations timely for health emergency response, prepare hotline public opinion monitoring report, report to relevant departments timely, provide scientific basis for the Health and Family Planning Department to fully grasp dynamic public opinion, guide public opinion correctly and take specific decision-making measures.

I. The definition and role of monitoring

(Ⅰ) The definition of public opinion monitoring

Generally speaking, public opinion monitoring refers to the behavior of collecting, analyzing and prejudging comments and viewpoints of media and the public on Internet. These comments and viewpoints have strong influence and tendency on some hot spot, focus issues in real life.

Specifically, public opinion monitoring means that Internet information acquisition technology and information intelligent processing technology are integrated to grab mass information on the Internet automatically, perform classification and clustering, subject detection, keyword detection, special subject focusing automatically, meet information requirements of the user for monitoring public opinion on Internet,

tracking special subject of news, developing briefing and report, chart and other analysis results, provide scientific basis for the Health and Family Planning Department to fully grasp dynamic thought of the public, guide public opinion correctly and take specific decision-making measures.

(Ⅱ) The definition of hotline public opinion monitoring

Health Hotline public opinion monitoring refers to the activity in which certain technology and work flow are used to carry out short-term or long-term continuous monitoring analysis on the Health Hotline consultation content, understand various concepts, emotions, willingness, attitudes, opinions and suggestions of the masses on health issues. The purpose of Health Hotline public opinion monitoring is to grasp objective social situation related to physical, mental health and life safety of the people consulted by the people via Health Hotline and subjective willingness of common people timely.

The key to Health Hotline monitoring is relevant emergencies, hot spot, focus issues and sensitive topics in certain region and time range consulted by the public via Health Hotline, especially relevant situations when public health emergencies and other health-related emergencies occur.

(Ⅲ) The role of hotline public opinion monitoring

Health Hotline public opinion monitoring is of very important significance. Firstly, grasp social conditions and public opinions, by understanding the emotion, attitude, views, opinions and behavioral tendency of the people from all levels of society on health emergency response work, provide public opinion information for government decision-making. Secondly, understand attention of the public on public health emergencies and other health-related emergencies and their information requirements timely, indicate direction for specific risk communication at later stage. Thirdly, find out and correct the errors, public opinion inconsistent with the facts timely, guide public opinion

effective.

II. Monitoring process and method

No matter for public health emergencies or other health-related emergencies, special person should be designated to be responsible for public opinion monitoring according to basic work procedures.

(Ⅰ) determine the monitoring content and scope

Understand the features and relevant knowledge of public health emergencies and other health-related emergencies through communication and exchange, looking up relevant literature and professional books; at the same time, in combination with the focus of attention consulted via public calls or in other modes at early stage, determine classification structure and name of reaction content of the public for such emergencies, add such classification structure and name into business data record software or other report level classification. The classification criteria are generally determined by China 12320 Management Center, released all over China for unified use.

(Ⅱ) formulate work flow

Designate information list for routine or special subject public opinion monitoring, determine the requirements and judgment standard for information collection, summary and analysis work, normalize work procedures. Register the information monitored by 12320 Health Hotline by various risks communication means respectively, summarize and analyze such information.

(Ⅲ) record the consultation information

When receiving consultation from the public (telephone, short message, Weibo, wechat etc), judge category of the calls according to their appeals, select such category in the entry system or report, then record content of the appeals in detail. Data monitoring system may be set in 12320 Health Hotline system for monitoring call data in real time. When data exceed

peak or are higher than normal values, the system will give warning automatically, at this time, arrange emergency positions imminently and dispatch consultants to help answering public calls. In Internet consultation, keyword frequency monitoring may be designed, whether it is necessary to start emergency response procedures may be judged according to the appearance frequency of the monitored content within a period.

(IV) analyze the consultation content

1. Analyze the category and change trend of various appeals, judge hot spot requirements of the public at each stage.

2. Analyze the change trend of call quantity in different time sections, forecast and judge peak period of public calls in advance, make preparation for peak time of the Hotline; analyze degree of change of the citizens' focus of attention in the same time unit from consultation via Weibo, wechat, website, provide reference for emergency response of the hotline.

3. For key information of complaints reporting, opinions and suggestions and repeated calls etc in public calls, organize forces to sort out specifically.

4. Carry out further analysis and data mining for relevant situations as required.

(V) prepare monitoring report

According to the call classification determined at early stage, in combination with the work requirements of Health and Family Planning Department and professional agencies, prepare monitoring report with clear hierarchy, strong emphasis, full and accurate data. Monitoring report is the basis of data collection and reporting, should reflect total number of consultations, category and number of various calls, response situation etc, including appeals accepted in multiple modes, for example, telephone,

short message, network, wechat, Weibo etc.

(Ⅵ) prepare the briefing of public opinion monitoring

Prepare monitoring briefing according to the above-mentioned monitoring data analysis result. Public opinion monitoring briefing should be prepared for public health emergencies and other health-related emergencies everyday in principle (daily report). The content to be prepared is divided into two major parts: firstly, analysis of the accepted data, secondly, progress of health emergency response work. Wherein, analysis of the accepted data includes written expression and graphic display, should reflect hot spot requirements of the public and the change trend, further study and judgment should be performed in combination with relevant information to provide decision support for the Health and Family Planning Department.

(Ⅶ) analysis, assessment and early warning

Carry out special subject follow-up for focus of attention of the public, focus of the emergencies by summarizing the information, analyze public opinion development trend timely, give warning for possible problems or issue warning prompt in a wider scope.

Chapter 6　Summary and Assessment of the Health Hotline

The Health Hotline plays an important non-replaceable role in health emergency response activities, such as guiding the public opinion, collecting public opinion, feeding back public opinion to the Health and Family Planning Department. Summarize and assess each health emergency response compaign carefully, this is of great significance for checking comprehensive capabilities, institutional mechanism building, infrastructure construction of the Health Hotline. Fully utilize the summary and assessment result, enhance social influence and popularity of the Health Hotline, increase trust and support of the public for the Health and Family Planning Department.

I. The definition of assessment

Assessment refers to all-around assessment activities in which certain assessment means are used to assess the efficiency, effect and effectiveness in the whole process of work plan, implementation and result. Assessment is tocompare objective facts and original plan, compare actual result and expected goal, then find out difference, analyze the reason, summarize rules, improve management, increase efficiency through comparison. In short, assessment means whether the things that should be done have been done, whether done correctly, whether there is any better method to get a better result.

II. The content of assessment

The content of assessment includes: pay a return visit to relevant links and the effect after implementation, investigate feedback of the public and society after health emergency response activity has been implemented, conduct systematic, objective analysis for the whole process of health emergency response activity; assess accuracy of health emergency response activity, check pertinency of health emergency

response activity, analyze validity of the health emergency response activity result; find out the reason of success or failure through analysis and assessment, summarize experience and lessons; put forward suggestions for decision-making of health emergency response and increase of health emergency response level in the future by means of timely and effective information feedback.

(Ⅰ) suitability assessment

Suitability refers to the proximity of actual state of Health Hotline emergency response activities to the optimal state. Suitability assessment is to assess whether the health emergency response activity is necessary for handling current public health emergencies and other health-related emergencies, whether it is demand-oriented, whether the activity scheme is targeted, whether the communication information provided is accurate.

(Ⅱ) integrity assessment

Integrity refers to the degree of integrity of relevant activity plan. Integrity assessment mainly assesses the integrity, rationality and operability of health emergency response activity plan, for example, whether the health emergency response activity has definite purpose and goal, whether the goal is quantified and classified, whether the goal could be achieved, whether sufficient resources are input, whether the measures taken are targeted and generate desired effect.

(Ⅲ) progress assessment

Progress refers to the degree of activity implementation. Progress assessment mainly assess whether corresponding works are completed according to the plan with guaranteed quality and quantity as scheduled in health emergency response activity. The significance of progress assessment is to understand the difference between actual progress and the schedule as well as the reason of difference, analyze the impact of progress difference on health emergency response activity.

(Ⅳ) efficiency assessment

Efficiency refers to the workload completed in unit time, it emphasizes quantity and output. Efficiency assessment mainly assesses the relationship between input and output of health emergency response activity, i.e.whether the same effect may be achieved using a more economical, efficient method, so as to minimize opportunity cost, maximize marginal benefit of the health emergency response activity.

(Ⅴ) effect assessment

Effect refers to the result generated by people or organizations through certain behavior, force, means, mode. Effect assessment mainly assesses the degree of realization of health emergency response activity to meet the expected goal, for example, whether relevant information is transferred properly, changes of the knowledge, attitude, beliefs and behaviors of the communication object, whether changed due to the work of the Health Hotline. Effect assessment should be measured by data as far as possible.

(Ⅵ) benefit assessment

Benefit refers to "effect and income", is the concentrated reflection of effect and efficiency. Benefit assessment mainly assesses the impact of Health Hotline emergency activity on the entire health emergency response activities, analyze the impact on the goal of health emergency response activity and contribution, so as to determine the contribution and value of hotline emergency response activity.

III. Assessment focus at different stages

In Health Hotline health emergency response work, work contents at different stages have different focuses. In the assessment process, assessment should be carried out specifically with respect to the work features at different stages.

(Ⅰ) pre-assessment

Assessment of the emergencies at early stage, mainly assesses formulation of emergency plans for health emergency response activities, degree of perfection of special plan; check adaptability of the Health Hotline and multi-department coordination linkage mechanism in corresponding health emergency response activities; assess the situations of periodic training and drilling.

(Ⅱ) initial stage

Assessment of initial stage mainly involves the start time of quick response of 12320 Health Hotline; tracking of the occurrence and development information of the emergencies, whether the target groups to be served are reasonable, whether the public information collection channel is comprehensive, whether start time of the plan is appropriate, whether the public-oriented consultation knowledge base is prepared properly as well as operating conditions of the multi-department coordination linkage mechanism including mainstream media.

(Ⅲ) continuous stage

Assessment of continuous stage mainly involves operating conditions of the emergency plan and emergency response; operating effect of the Health Hotline and multi-department coordination linkage mechanism; public opinion monitoring coverage capability, public opinion analysis and feedback capability; coping capacity of health emergency response participants in the emergencies; reserve capacity of the infrastructure, backup line and position; capability of the Health Hotline to meet service requirements of the government and Health and Family Planning Department for the Health Hotline in emergency response, coping capacity oriented to the public and media and tracking capability for emergencies; applicability of the guidance for emergency consultation of the Health Hotline, the situations of health emergency response knowledge training, risk communication and hotline public opinion monitoring etc.

(Ⅳ) subsiding stage

Assessment of subsiding stage mainly involves comprehensive assessment of the management system for emergency plan and health emergency response, regional multi-department coordination linkage mechanism, expert pool resource reserve, software, hardware facility equipment and reserve of the Health Hotline; human resource participating in the health emergency response and their knowledge reserve etc, formulation of correction scheme, and sustainable improvement. With gradual experience accumulation of the Health Hotline in the response to various public health emergencies and other health-related emergencies, special plan and regional multi-department coordination linkage mechanism should be established to increase serviceability of the Health Hotline in special health emergency response activities.

IV. Assessment method

Data may be collected in the following ways for scientific analysis and research, and for assessing general situation of Health Hotline emergency response activities.

(Ⅰ) hold sum-up meeting

Sum-up meeting refers to a summary meeting of activity status in certain time period. Sum-up meeting is generally convened by a convener, who gathers representative personnel of health emergency response activities to participate, listen to assessment opinions of the participants on the status of health emergency response activities comprehensively (the convener does not express an opinion), as important basis for general assessment of the health emergency response activities.

(Ⅱ) Sampling survey

Sampling survey refers to a survey mode in which some survey units are extracted from survey population as samples for survey according to

certain mode and rules, and the population is deduced on these grounds. Assessment of the Health Hotline emergency activities requires the preparation of questionnaire according to the determined assessment indicators, select certain number of telephone consultation groups from the public of risk communication randomly for the questionnaire survey, analyze the result, and assess the effect. Content of the questionnaire mainly includes the understanding of knowledge related to public health emergencies and other health-related emergencies, the views on government prevention and control measures and the suggestions for prevention and control work at later stage.

(Ⅲ)Interview

Interview refers to a method to acquire work information from face-to-face communication with relevant personnel. The organizer interviews communication objects to achieve their opinions and suggestions for the health emergency response activities in the form of visit or via telephone as the basis of for follow-up measures. Many forms are permitted, for example, individual interview of key persons, focus group interview etc. Interview objects mainly include 12320 management personnel, consultants who participate in the health emergency response activities and experts who participate in health emergency response activities etc, content of the interview mainly includes feeling of the health emergency response activity at this time, existing problems in the activity and improvement suggestions etc.

V. Assessment conclusion and improvement

Through assessment of Health Hotline health emergency response activities, sort out the process of health emergency response work comprehensively, assess the success or failure, gain or loss scientifically, summarize experience and lessons to facilitate troubleshooting, put forward improvement measures to improve the health emergency response work. Check implementation status of emergency plan and

emergency response procedures and their scientificalness, rationality and operability in actual work in accordance with the emergency plan and emergency response procedures formulated in advance. At the same time, in combination with feedback opinions of the public, social opinion analysis and the assessment summary of the scheme executor etc, find out existing disadvantages in existing emergency plan and emergency response procedures and possible problems in execution process timely, put forward corresponding improvement proposal, so as to improve rationality and scientificalness continuously.

Appendix

Table 1　Common Failure and Treatment of 12320 Health Hotline System Platform

Type	Failure symptoms	Treatment principles
Position equipment	Position computer, phone set, earphone equipment failure; single position could not log in; single position could not use application program.	1. Position consultants should report to position group leader immediately, the position group leader should firstly arrange additional standby position, enter the processing flow of user call; 2. Notify system operating & maintenance personnel for treatment immediately; 3. Failure start and recovery time should be recorded on the shift exchange log.
Server system	Server application system, basic software system or hardware failure.	1. Server application system fails, emergency response scheme for system recovery (1) when server application system fails, the security administrator, system administrator, application administrator should determine severity of the failure preliminarily at once, estimate the time needed for troubleshooting of the faulty application system, take different application system recovery strategies according to the failure-free operating time required for the application system; (2) if the application system could not shut down, start hot-standby system immediately; (3) if the application system could not shut down while the failure may be eliminated within 10 min, the security administrator should instruct system administrator and application administrator to eliminate the failure immediately, restore normal operation of the system; (4) if the application system may shut down while the failure may be eliminated within 2 hours, the security administrator should disconnect the server from the network, coordinate with the system administrator and application administrator to deal with the server failure, eliminate failure as soon as possible, and restore the system operation;

(5) if the application system may shut down, but troubleshooting could not be completed within 2 hours, while the application system has cold standby system, the security administrator should disconnect the server from the network, notify the system administrator and application administrator to start cold standby system, complete installation, setting of the application system, perform data recovery, ensure normal operation of the system;

(6) if the application system may shut down, while cold standby application system is unavailable, the security administrator should notify the system administrator and application administrator, back up the data and programs of the existing system; if backup of the system data and programs could not be performed, the security administrator should get the latest backup of the application system from the backup administrator. While the security administrator determines backup available for the application system, he should notify the system administrator to repair or install the operating system again, and coordinate with the application administrator to install or repair the application system again and restore the latest backup data. If backup is missing or does not exist, security administrator should report to the superintendent, seek help from the technical supporter to complete hard disk data recovery;

(7) backup administrator should search local data backup timely when the application system fails; if local data backup is damaged or missing, he should copy data backup of the application system from nonlocal data backup to local immediately;

(8) the system administrator and application administrator should restart the failed server system when security is confirmed; if the system is restarted successfully, check data missing situation, utilize backup data for recovery; if restart fails, contact relevant manufacturer and technical support immediately to request assistance, analyze the failure reason: if hardware damage is affirmed by the equipment manufacturer or technical support, ask the manufacturer to provide warranty or repair according to the repair agreement. In case the server hardware is normal, restore or reinstall the system software as soon as possible, then restore or reinstall the application software, perform data recovery for the application system, after the application system completely restores normal operation, restart the restored application system server, then shut down the standby system.

2. Emergency response scheme for the server software system failure

(1) after the server software system fails, the security administrator, system administrator, application administrator should examine the server immediately, analyze the failure reason, take temporary emergency measures and report to

| | | the superintendent timely; at the same time, disconnect the failed server from the network, save the system state unchanged, take out system image backup disk, keep raw data, proceed according to emergency response scheme for system recovery;
(2) technical measures: after the failure occurs, the security administrator, system administrator, application administrator should examine the server system state immediately. If system software failure may be confirmed, the system may be entered, and the failure cause may be located clearly and eliminated immediately, eliminate it immediately. If it is estimated that the failure cause could not be located within 3 hours, report to the superintendent, request the system software manufacturer and technical support to assist the troubleshooting, or reinstall the operating system and application system according to the suggestions of technical support. Method to eliminate the failure of operating system, check whether all processes of the operating system are normal, whether there is any illegal process, whether osfile is damaged or missing, whether infringed by virus and Trojan Horse program, attacked by hacker;
(5) if not due to the failure of operating system, the security administrator should indicate the application administrator to check the application system, check method, check whether the application system code and data are destroyed, damaged, missing, if missing, restore from correct backup.
3. Emergency response scheme for server hardware failure
(1) after server equipment hardware failure occurs, the security administrator and system administrator should report to the superintendent of the center timely, and organize search, determine faulty equipment and failure cause, deal with it at early stage;
(2) according to the emergency response scheme for system recovery, take corresponding emergency recovery measures for the application system on the failed server;
(3) technical measures: after some methods are used to judge hardware failure preliminarily (the methods include: observe whether the system could start normally, record the prompt message on the display screen upon start, record the state of server state indicator light, record the information on system state display screen), the security administrator, system management should consult hardware administrator, hardware manufacturer, technical support to determine specific of hardware failure and the defective parts, contact for repair. |
| | | 1. Establish dual-computer equipment setting of the database system, i.e.two operating modes: minicomputer and |

Database security	Database access failure occurs on call center service platform.	server; 2. Once the database crashes, start the standby system immediately, and report to the superintendent; 3. Repair the host system during operation of the standby system; 4. If both systems crash, request support from the software/hardware provider immediately; 5. After the system is repaired and starts up, take out the first database backup, restore it to the host system as requested; 6. If the first backup is damaged, database could not be restored, the second data backup should be used for recovery; 7. If both backups could not realize recovery, request emergency support from relevant manufacturers immediately, and perform the following flow.
Network system	The network becomes abnormal, for example, could not be connected with position system, unable to connect extranet etc, including occasional temporary failure or partial interruption of system communication.	1. Emergency response scheme for line interruption outside WAN (1) after receiving line failure report, the network administrator should judge failure cause rapidly; (2) if within the jurisdiction of this company, the information management department should make recovery immediately; (3) if within the jurisdiction of network operator, contact him immediately, and ask for repair as soon as possible. 2. Emergency response scheme for LAN interruption (1) information management department should prepare network backup device in normal times, and store it in the designated position; (2) after LAN interruption occurs, information management personnel should judge failure node, ascertain the failure cause immediately, and report to the superintendent of the center; (3) if due to line failure, reinstall the line; (4) if due to the failure of network devices such as switch, connect the backup device immediately, and complete debugging; (5) if the switch profile is damaged, perform reconfiguration rapidly as requested, and complete the debugging;
		1. When the network suffers from illegal invasion, Trojan Horse, position computer is controlled remotely, web page content is falsified, data on the application server are copied, changed, deleted illegally, or the intrusion detection system detects hacker attacking, the user or administrator should disconnect the network, report to the superintendent

		of the center immediately;
Hacker attack event	Call center and relevant network platforms (including but not limited to wechat, Weibo, website, forum, internal office system, E-mail etc)	2. After receiving the report, the system administrator and security administrator should verify the situation, turn off the server or system, block or delete the defeated login account number, block out the network channels accessible to suspicious user; 3. The system administrator should clean up the system timely, restore data, programs, restore the system and network to normal sate; in serious cases, hacker attack behavior could not be judged accurately, protective and blocking measures could not be taken, request technical support immediately; **(also notify public security departments)** 4. Technical measures: check whether there is any hacker program and illegal process, use antivirus software, 360 Trojan Killer and manual methods to remove illegal programs, if the security administrator, system administrator, application administrator could not remove hacker program completely, the security administrator should report and request assistance from security vendor and security support timely, or reinstall the operating system and application system according to the suggestions of technical support.
Power supply system	Mains power failure and call center line failure power failure	1. If mains power failure occurs, turn off air conditioner and other equipments immediately to save UPS power. While mains power fails, UPS will be switched to battery pack power supply automatically, UPS battery capacity should ensure normal use of the service system and two emergency positions in the call center for 4 hours; 2. If call center line failure causes power failure of the call center, notify the technicians in the property management department or relevant departments to repair timely; 3. During power supply recovery, the security administrator should observe whether the system is restored normally.
Air-conditioning system	Air-conditioner could not be used normally.	1. In case of air-conditioner failure, notify the security administrator immediately; 2. The security administrator should contact repair personnel of the property management department to repair; 3. The call center should be provided with fans according to the scale of the center, so as to ensure air circulation and emergency use.
Fire in the position area		1. The position consultants should be familiar with operating method of fire extinguishers and fire alarm telephone; 2. The position consultants should operate computers according to the operating regulations, should not remove any computer without authorization, so as to prevent fire caused by short circuit of any line; 3. In case of a fire in the position area, observe the following principles: firstly, ensure personal safety; next, ensure

	Response to fire in the call center position area	critical equipment, data security; thirdly, ensure individual property safety, do not influence evacuation due to salvage of personal property; 4. In case of a fire, dial 119 to give an alarm immediately, position group leader should organize evacuation of on-site personnel. According extinguish fire according to actual situation, notify the superintendent of the center within 5 min after the fire is discovered; 5. After arrival in safety zone, the superintendent should report to higher leader as soon as possible.
Fire and lightning prote ction system for the computer room	In case of a fire in the call central computer room or there is a risk of lightning strike.	1. In case of a fire in the computer room, observe the following principles: firstly, ensure personal safety; next ensure critical equipment, data security; thirdly, ensure common equipment safety; 2. Personnel evacuation procedures: computer room operator on duty should ring fire alarm immediately, request support from public security fire control department via 119 telephone, all persons who will not participate in fire extinguishing should evacuate rapidly and orderly from the computer room according to predetermined line; 3. Fire extinguishing procedures: cut off all power supplies, start fire extinguishing system, evacuation should be arranged timely for the computer room with gas extinguishers. Firefighters must firstly wear gas mask, then take out powder fire extinguisher from the designated position for fire extinguishing; 4. After the fire is extinguished, personnel of the computer room should arrive on site immediately, report to the superior department. At the same time, contact Telecom , Unicom, Mobile and other relevant network companies and relevant equipment manufacturers, timely assess accident losses, discuss the best solution to restore normal operation of the network system; 5. In thunderstorm weather or early warning of thunderstorm is received from superior department, turn off all servers, and power off, suspend the operation of internal computer network. After thunderstorm weather is over, turn on the servers timely, restore the operation of internal computer network. Losses caused by lightning strike should be verified and reported timely, and details should be reported to the superintendent of the center.