



Strengthening health systems' response to crises

Towards a new focus on
disaster preparedness



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Report on a WHO workshop
Skopje, The former Yugoslav Republic of Macedonia
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Finally we are delighted that Dr Marc Danzon, WHO Regional Director for Europe, in his second five-year term, is continuing to provide full support to the Regional Office's country strategy of matching services to new needs. This strategy makes possible the strengthening of disaster preparedness and response in the WHO European Region, in line with the new global strategic priorities of the Health Action in Crises Department of WHO headquarters.

Gerald Rockenschaub and Maria Cristina Profili
Disaster Preparedness and Response
WHO Regional Office for Europe

FOREWORD

This report is a result of a three-day workshop on strengthening national disaster preparedness capacity of health systems to respond to crises in the WHO European Region. The workshop was attended by representatives of 12 Member States of the European Region, laying the ground for further collaboration to improve effective partnerships between all Member States and the WHO Regional Office for Europe in the field of disaster preparedness and response.

The workshop fell within the framework of the Regional Office's country strategy of matching services to new needs and in line with the new WHO global strategic priorities of health action in crises. It involved WHO country staff and the national disaster focal points of the ministries of health, in the 12 Member States that had identified disaster preparedness and response as an area for collaboration within the framework of the Biennial Collaborative Agreements for 2004–2005 with the Regional Office.

The health sector has to play an essential role in response to all kinds of natural or man-made disasters, as the protection of human beings and their health is of primary importance in all emergencies. Strengthening health systems to enable them to provide reliable services in crisis situations, when typically systems tend to be overwhelmed, has to be promoted to become a key area of concern in all European countries. Increasingly, as our societies are confronted by new challenges and threats, our preparedness efforts have to be adapted accordingly. Whether chemical, biological or nuclear threats – or terrorist attacks – are added to the already extensive list of potential technological and natural hazards, essential health services must become better prepared to respond and to function adequately.

Lessons learnt from previous crises clearly indicate that sound preventive efforts largely pay off in future emergencies. Preparedness programmes are more effective when they are designed and implemented as a continuous process, based on a sound analysis of hazards and vulnerabilities. The ministry of health, the government institution responsible for securing and coordinating public health response in crises, requires political support, including appropriate financial and human resources, to ensure that the health system is prepared to cope with disaster situations. The establishment of a special disaster reduction unit within each ministry of health in the European Region will facilitate this challenging task.

The disaster preparedness and response programme, in synergy with other relevant technical units at the WHO Regional Office for Europe, is committed to working more closely with

Member States, in partnership with other key stakeholders during the current biennium and beyond to achieve tangible results at the country level.

The disaster preparedness and response programme will continue its technical assistance to countries to effectively promote evidence-supported interventions in crisis situations, so that suffering and death are minimized, health systems protected and repaired, and national authorities and communities enabled to prepare, respond, recover and mitigate the effects of disasters within and across the Region.

Gerald Rockenschaub
Regional Adviser
Disaster Preparedness and Response

1. INTRODUCTION

Why is there a renewed focus on the disaster preparedness of health systems in the European Region?

During the past decade the European Region, with its 52 Member States, has undergone dramatic changes, some of them causing serious health problems. The relative collapse of health services in parts of the Region, the re-emergence of communicable diseases, natural and man-made disasters, armed conflicts escalating into full-blown complex emergencies and unprecedented social violence have all taken a heavy toll on the health of populations. Partly this is due to an increase in population density, changes in human settlement patterns or profound changes in the environmental equilibrium, with vulnerable groups suffering the most.

The disaster preparedness and response programme at the Regional Office has played a key and leading role in coordinating and providing humanitarian assistance to countries in the Region facing dreadful complex emergencies and natural disasters. It has supported their health systems and health services from recovery from crisis to sustainable development.

The extensive experience gained from these activities and the increasing demands of Member States highlight the importance of health systems being adequately prepared to respond to crisis.

Disasters have enormous consequences, socially and economically, and have long-term detrimental effects, especially on vulnerable societies and population groups. The people affected have a right to receive adequate help. Support and appropriate assistance should be provided according to their specific needs.

Disaster preparedness is primarily the responsibility of national authorities and provides an excellent opportunity for community involvement.

Contingency planning should employ a participatory approach, with the integration of community members and local resources, national institutions and local organizations forming its foundation. Active community participation is one essential key to the success of disaster preparedness planning.

The health sector is involved in all kinds of disaster response and the performance of the health system is crucial since it directly affects the health and survival of the population.

The ministry of health is on the front line in crisis situations and has to coordinate the emergency response of the health sector. It is responsible for developing a comprehensive, participatory and intersectoral disaster preparedness programme. This requires a dedicated structure, preferably a disaster reduction unit or department with specific responsibilities and resources.

The ability of the ministry of health to lead preparedness and response within the health sector depends also on its capacity to collect and appropriately disseminate relevant and reliable health information; to balance its political authority in multilateral coordination with other ministries involved; to coordinate with the other institutions the appropriateness of plans and resources; and to establish partnerships and collaboration at national and international level.

The lessons learnt from WHO globally in all its emergency programmes are predominantly based on a clear understanding of the importance of focusing on the country context, promoting access to care and best practice in public health, supporting existing local health capacity, and assessing and identifying country-specific hazards and vulnerabilities.

Coordination is another key component of disaster preparedness and response, and the capacity of

Box 1. WHO's new strategy for health action in crises

Up to two billion people may face threats to health because they are at risk of or exposed to crisis conditions. More than 40 million are living in crisis conditions at this moment.

A crisis is created when the system is damaged.

People are exposed to a crisis when local and national systems are disrupted and cannot meet their basic needs, including health, food, water and sanitation.

A crisis can be triggered in three ways:

- sudden, catastrophic events, such as earthquakes, hurricanes, flooding, or industrial incidents;
- complex, continuing emergencies, including the hundred or so conflicts under way at this time, and the consequent displacement of millions of people;
- insidious disasters, such as widespread arsenic poisoning in the Ganges Delta, the increasing prevalence of HIV infection, etc.

High mortality and suffering are common characteristics of crises.

Effective action saves lives.

- Preparedness makes a big difference.
- The speed and quality of the response are both critical if lives are to be saved.

People whose work affects the health of victim communities can make a real difference in a crisis, whether or not they see themselves as part of the health sector.

All those likely to be in a position to help in a crisis need help themselves NOW:

- to prepare better for ill health in crisis;
- to prevent the knock-on consequences to health in a crisis;
- to promote a speedy and equitable recovery of the health system and of the health of individuals.

Source: Reducing the impact of crises on people's health. Geneva, WHO, 2004.

the health sector to respond effectively to crises heavily depends on available and timely resources allocated for the purpose.

Over the past year, with the increasing demand and extent of the emergency needs of Member States, the Health Action in Crises Department of WHO headquarters in Geneva, working with its six regional offices under a new leadership, has developed a new strategy for health action in crises (see Box 1) and a three-year programme designed to make the whole Organization more reliable and effective in supporting health stakeholders in crises. This programme was designed with the involvement of over 300 key people, departments and agencies.

The health action in crises global strategy slotted comfortably into the framework of the Regional Office country strategy of matching services to new needs, which resulted in the elaboration and signature of a common framework, the Biennial Collaborative Agreements (BCAs) (see Box 2).

Twelve Member States of the European Region and their respective ministries of health expressed their commitment to develop and strengthen a programme for disaster preparedness and response, as part of these BCAs, for the biennium 2004–2005. These outlined a mutual commitment to work on a range of agreed health priorities for the current biennium, including disaster preparedness and response.

A milestone in the field of disaster preparedness and response for the biennium 2004–2005 was the World Conference on Disaster Reduction, held in Kobe, Hyogo, Japan in January 2005. The Conference, organized by the United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction, was overshadowed by one of the worst natural disasters the world has ever experienced: the massive earthquake off the coast of Sumatra and the subsequent tsunamis which devastated parts of south-east Asia and Africa on 26 December 2004. This came as a wake-up call to the international community, once again underlining the

Box 2. BCAs are a true partnership

A true partnership between the Ministry of Health and the World Health Organization lies in the people who work together. Identifying the most appropriate resource person for collaboration is a rewarding means of achieving results together.

The crucial point for starting the collaboration was setting the specific terms of reference for the national counterpart. The clear requirements and suggestions for designating such a person proved to be extremely useful in selecting the most appropriate national coordinator.

Sound objectives for the workshop were set up and basic reference material was provided in order to set a common language and a starting point for discussion.

By doing so, committed and experienced partners had a true opportunity to contribute to the results of the workshop in Skopje, laying the ground for future collaboration in the field of disaster preparedness and response.

*Dr Paulina Miśkiewicz
Liaison Officer, WHO Country Office, Poland*

importance of having disaster preparedness plans and strategies in place to increase the resilience of affected communities. Member States and stakeholders adopted the Hyogo Declaration and the Hyogo Framework for action 2005–2015 to achieve substantial reduction in disaster losses.

WHO's role in the preparation for the Kobe event was:

1. to encourage health ministries to cooperate closely with their foreign affairs and other focal ministries in the preparation of country reports,
2. to promote the integration of disaster risk-reduction planning into the health sector, and
3. particularly to promote the goal of “hospitals safe from disaster” by ensuring that health facilities are built so they remain functional in disaster situations and by reinforcing existing facilities, particularly those providing primary health care.

2. OVERVIEW OF THE WORKSHOP

Background

The three-day workshop on strengthening national disaster preparedness capacity of health systems to respond to crises was held in Skopje from 13 to 15 July 2004. It brought together WHO staff and the national disaster focal points of the ministries of health of 12 Member States committed to developing disaster preparedness and response plans. These are Albania, Armenia, Azerbaijan, Czech Republic, Georgia, Kyrgyzstan, Poland, Russian Federation, Serbia and Montenegro, Tajikistan, The former Yugoslav Republic of Macedonia and Turkey.

The aim of this workshop was to strengthen the capacity of their health systems to respond to crises and to increase their reliability and capabilities before, during and after a crisis.

The objectives of the workshop were:

- to better understand the current status of disaster preparedness and response in each country,
- to build consensus and to develop a framework for key areas of intervention,
- to identify methodologies and guidelines for disaster preparedness planning, and
- to strengthen partnership and cooperation at national and international level.

Preparation

Early in April 2004, a start-up plan was prepared to begin implementation of a disaster preparedness and response programme in the 12 countries. The plan began with a desk review of each country, the development of such management tools as a checklist for disaster planning and country disaster situation profiles, and a profile of the disaster focal point in the ministry of health. Each country nominated a representative from the ministry of health to be the national disaster focal point, and to liaise with the WHO disaster preparedness and response programme, for the biennium 2004–2005. These newly appointed disaster focal points were briefed on the preparations and objectives of the workshop.

Activities

Introductory presentations gave participants background information on technical issues and also established a set of common definitions. Then the representatives of countries with recent experience of natural disasters, such as Turkey and The former

Yugoslav Republic of Macedonia, presented their particular cases and the lessons learnt. After this, the Russian Federation representative described the organization of a WHO collaborating centre and the development of capacity building to respond to emergencies. Finally, the Head of the WHO Country Office for Serbia and Montenegro shared lessons learnt from complex emergencies in the Balkan region.

Four working groups then discussed the four main building blocks of national disaster preparedness and response: policy and guidelines; training and capacity building; assessing the level of disaster preparedness; coordination and partnership.

A field visit was made to the Institute of Earthquake Engineering and Engineering Seismology (IZIIS) in Skopje. A presentation by IZIIS was followed by a discussion on the significant role of health care facilities in alleviating the consequences of disaster. This was complemented by a laboratory simulation of the condition of a health facility subjected to minor, strong and extreme earthquakes, to highlight and demonstrate structural and non-structural vulnerabilities.

Finally, the workshop focused on building and strengthening partnerships through intercountry networks and activities. The creation of active intercountry partnerships was identified as an important first step, along with the establishment of the disaster reduction unit within each health ministry, the carrying out of structured risk assessments and the strengthening of capacity building efforts.

3. CASE HISTORIES AND LESSONS LEARNT

Turkey: the Marmara earthquake

Necati Dedeoglu

An earthquake measuring 7.8 on the Richter scale struck the Marmara region of Turkey on 17 August 1999. It hit a densely populated area at 3:02 in the morning. About two million people in five towns were affected. Essentially it was an urban earthquake. According to official statistics, 18 256 people died, 48 905 were wounded and 357 322 buildings were damaged, of which a third collapsed.

Most of the lessons learnt were not new and should have been learnt much earlier. The Marmara earthquake was a turning point in Turkey's approach to disaster management and much has been done since then to improve preparation.

Prevention

The probability of natural and technical hazards in each area has to be determined beforehand and measures must be taken to prevent them. We must change our attitude from “disaster management” to “risk management”. As in medicine, prevention is much more humane, cost-effective and easier than cure (disaster response and rehabilitation) and, as in medicine, much less glamorous.

Some special buildings (hospitals, schools, administrative buildings) must be built to resist most hazards and to continue functioning in any kind of disaster.

When resources are limited it is very difficult to convince policy-makers to invest money for a disaster that may happen 10–20 years later, as there are other pressing needs and much competition for resources.

Preparation

The Ministry of Health was not ready for the disaster. It had no central office specifically dealing with disasters. Personnel were not experienced or trained and did not speak a foreign language. Now a new section has been set up within the Ministry.

The first to help those trapped and injured were the relatives or neighbours of the victims, but they did not know what to do nor did they have any tools. They used their hands to

extract people from the rubble and looked on helplessly as their relatives died of easily preventable medical conditions.

Many voluntary groups arrived much earlier than the civil defence teams. Nongovernmental organizations and civilian organizations must be included in any disaster planning.

Insufficient research was done on previous earthquakes. Specific types of wounds, required medicines, equipment and human resource needs were not anticipated. A major effort was made to collect data on these issues two months after the Marmara earthquake. Now we are better informed.

Legislation had to be changed. New regulations were formulated to prepare the state for future disasters.

Some procedures and protocols must be prepared before any disaster, such as standard protocols for sending samples to the laboratory and procedures for examining them, management of rat bites (which were frequent), management of corpses (including animals), and a surveillance system.

Coordination among responsible ministries and other organizations was one of the biggest obstacles to preparation. Every office and institution had its own plan, unrelated to larger regional or national plans. Too many coordination bodies were formed for the rescue phase and no coordination existed for preparation activities.

International support and coordination are very important in preparation. New ties and projects were formed with the United Nations, the Federal Emergency Management Agency (FEMA), the International Federation of Red Cross and Red Crescent Societies and the World Bank.

Having an emergency plan (local administration, hospitals, organizations) on its own does not help during emergencies, unless it is updated and tested regularly. Risks, vulnerabilities, organizations and legislation all change as time passes.

Training people once is not sufficient. Within a year they forget almost all they have learnt. Training should be repeated.

A country should be prepared for every kind of natural and man-made disaster. It is a matter of the mental preparation of the public and the government. For example, although well prepared for an expected earthquake, Istanbul was caught unawares by terrorist bombings.

Postgraduate training programmes on disaster preparedness have been started in engineering and medical faculties.

Education is the key to preparedness. Neither the public nor the relevant personnel was ready for the disaster. Although some educational and training activities are now carried out in schools, medical faculties and with the public, they are not systematic or widespread enough.

Response

The availability of plenty of bottled water saved people from many diarrhoeal diseases.

Neither search and rescue personnel nor medical emergency teams were prepared to give immediate on-the-spot medical treatment. This caused a total of 639 crush syndrome cases, many of which could have been saved by early intervention. Now, 300 emergency doctors have been trained to give medical support, including amputation, before the victim is rescued.

No proper data could be collected during the week after the earthquake. Even the number of fatalities was inaccurate. We have no idea about the time of death or cause of death. Some people should be trained and nominated to do nothing else but set up a simple information system and collect essential data during the acute phase.

Except for a few very well equipped tent hospitals (with laboratories and surgical equipment), hospitals and medical aid sent from abroad were useless. Drug donations in particular caused a lot of problems. Many were not emergency medicines, some were out of date, all were difficult to classify. Foreign doctors came late and could not speak the language.

Identifying the corpses caused major problems. In the event of disaster normal procedures for identification cannot be used. Each unidentified corpse was photographed using a Polaroid camera, the pictures and personal belongings were put into a numbered envelope, and the person was buried in a grave with the same number written on the head panel. The photographs were displayed later, for identification by relatives.

Ambulance services, which were well organized and developed before the earthquake, worked very efficiently. Thousands of injured were carried away quickly and safely to hospitals in nearby cities that were not affected by the earthquake.

Rehabilitation and reconstruction

The poor, the elderly, children and women suffered the most from the disaster. The whole country donated generously for their support.

Examination of individual buildings and reinforcement of those that are unsound is an immense task. Even five years later, we still have not completed inspection of the hospitals. Tools are needed for simple assessment and improvement of buildings.

People forget disasters very quickly. Five years on, the same mistakes are being repeated. There is a high turnover of decision-makers and experienced and/or trained personnel in government offices. This endangers institutional memory.

It was realized that local authorities should be given more responsibility, both before and after the disaster. They are closer to the people than the central government, can communicate better and understand better their specific needs.

Mental health problems, especially post-traumatic stress disorder, were widespread. Only a few affected people could get proper treatment. Contingency plans should be made to manage psychiatric problems following disasters.

Increasing the resilience of communities to disasters is only possible through sustained development efforts. Communities with educated, healthy, informed, organized individuals living and working in healthy environments are fundamental to reduced vulnerability in disasters.

Conclusion

Disasters provide us with many lessons to be learnt. This knowledge, our failures and successes, needs to be shared and disseminated. The crucial factor here, however, is to be able to make use of the lessons that have been learnt, to plan and to be able to implement these plans. In these days of environmental challenges, climate change, and rising terrorism, we all have to learn the fundamentals to prepare for disasters.

The former Yugoslav Republic of Macedonia: the response of the health system to flooding in June 2004

Vladimir Kendrovski

Early in June 2004, torrential rain caused serious flooding in The former Yugoslav Republic of Macedonia resulting in infrastructural damage to houses, roads and bridges as well as to agricultural facilities and water supply systems. The disaster affected an estimated 100 000 people. About 600 families required evacuation. The main impact was on agriculture, which suffered big losses, with repercussions for the general economy of the area. Several communities in the southeast region of the country (Strumica and Gevgelija) and, to a lesser extent, in the western region (Tetovo) were affected.

The causes of the floods included the extensive rainfall on 5–7 June, which made local rivers burst their banks, and the poor condition of the canalization systems in the flooded regions. Strumica region has a two-system approach to canalization, one for sewerage and one for irrigation and drainage. Gevgelija has only a single system for both. These systems are apparently not maintained effectively. There are even some deliberate blockages aimed at improving irrigation of the fields during dry periods.

Affected areas and immediate consequences

In Strumica region 13 villages were affected. The most critical situation was in Sachevo village, where all 80 households (550 people) were flooded out.

The flooding in Gevgelija municipality caused extensive damage to the transport infrastructure, individual buildings, industrial installations and agricultural land. The torrential rain was almost twice the average annual rainfall in this region. The bursting of the Toplec dam added to the flooding, so almost all buildings in Gevgelija and neighbouring

villages were flooded. Two houses in Gevgelija were destroyed and all facilities in the industrial zone in northeastern Gevgelija, as well as warehouses and other installations near the railway station, were affected. Three bridges were demolished. Some roads were destroyed or cut off from the road network, isolating many villages.

In Tetovo region, the Jegunovce community, consisting of 11 villages with a total population of 7500, was also flooded. Damage in the Tetovo region was less severe than in the southern and south-western parts of the country.

Response

After a first field assessment by the state and municipal crisis headquarters on 5 June, immediate steps were taken to start dealing with the consequences of the floods.

The Ministry of Health responded quickly through the Republic Institute of Public Health in coordination with other governmental bodies. Teams from the municipal civil protection offices and units were mobilized. They were aided by national Red Cross emergency response teams. Public enterprises in the affected municipalities offered their assistance as well. Neighbouring municipalities that escaped the flooding put their human and material resources at the disposal of the affected areas.

Some municipalities asked for a state of emergency to be declared, but in its session of 7 June the government decided against this as human lives were not in danger. Most of the evacuated families were accommodated with friends and relatives and there was no need for any large scale alternative accommodation.

The Office of the United Nations Resident Coordinator was in constant contact with the Centre for Civil Protection, the Government Intersectoral Crisis Committee and the International Federation of Red Cross and Red Crescent Societies, sharing information and assessing the need for urgent assistance from the United Nations system. WHO carried out a rapid environment and health assessment in the field, to estimate the health consequences and assess the appropriateness and adequacy of the public health response.

Immediately after the floods, two water tankers delivered drinking-water to the affected areas. The local institutes of public health appropriately conducted hyperchlorination of the water supply in the towns and the community networks. Daily sampling and analysis of drinking-water was performed on a large scale. Public awareness activities were launched to advise the population on drinking-water safety, on the possibility and prevention of epidemics and on the need to notify the health system in the event of acute diseases. Television commercials and radio spots were broadcast at frequent intervals. The public information campaign covered the need to boil water, food hygiene and notifiable illnesses.

All health facilities in the affected areas submitted daily telephone reports on communicable diseases to the local Institute of Public Health. This information was based on clinical diagnosis. Waiting for laboratory confirmation would have delayed identification of these trends. Continued surveillance for communicable disease was to be maintained over several months, with extra vigilance for “lag time” diseases (especially hepatitis A).

Sanitary inspectors and health promotion staff were mobilized. They provided direct information and advice to people whose land was affected.

Disinfection was organized on a large scale in the flooded areas, particularly where sewerage was involved. Washing down and disinfection of houses and streets in urban areas started as soon as the floods began to subside. Gevgelija region brought in large air driers to use in very damp houses.

Solid waste transfer centres were established for waste and damaged furniture. These were then moved to landfills, which were not affected by the flooding.

In Gevgelija, the flooding hit domestic animals badly. About 400 sheep and an unknown number of cows were drowned. The carcasses were collected by teams from the municipal sanitation department and quickly buried.

In order to detect and exclude potential contamination of drinking-water by pesticides or other chemicals, additional water samples from selected locations in Strumica were collected and analysed. In Gevgelija and Tetovo, this possibility was deemed to be negligible and no chemical analyses were performed. Here the water sampling and testing focused solely on detection of bacterial contamination of drinking-water. All three areas were scheduled for further chemical analysis of drinking-water after three months. This delay would allow for percolation of potential chemicals into the underground aquifers.

Conclusion

The main public health measures included enhanced epidemiological surveillance, provision of safe drinking-water by tanker where necessary, daily water quality controls, additional water treatment measures (hyperchlorination), cleaning and disinfection of affected buildings, waste management and vector control measures, and health education and public information. This public health response was deemed to be timely, appropriate and adequate, and it was able to prevent any serious health consequences among the affected population.

Provision of basic health care continued in all affected areas without interruption.

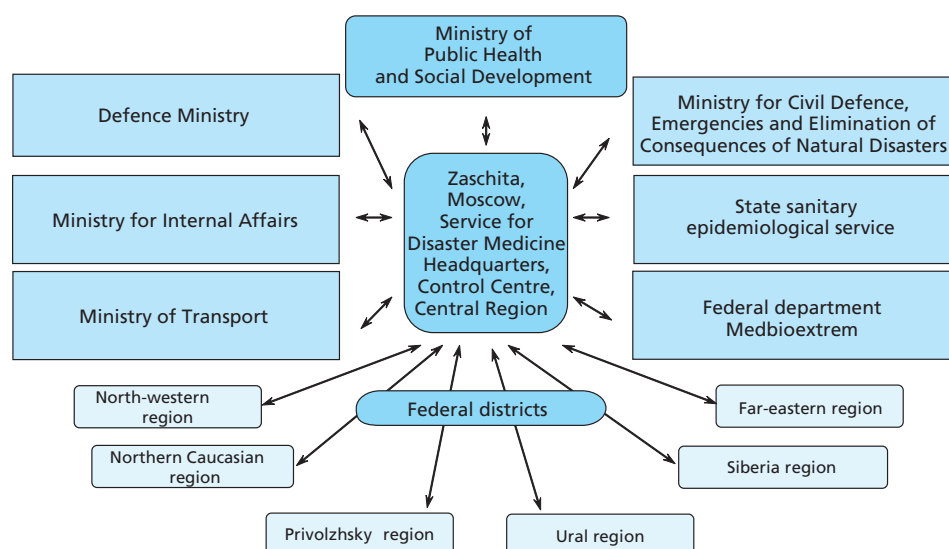
Epidemiological surveillance was maintained, with special attention to the detection of potential delayed epidemics (especially hepatitis A). Additional water samples from the affected areas were to be collected at the end of the summer 2004, to detect potential late contamination with pesticides and/or other chemical pollutants.

Russian Federation: the role of a WHO collaborating centre

Victor Preobrazhenskiy

Zaschita is the centre for the coordination of disaster preparedness and response in the health sector of the Russian Federation (see Fig. 1). It is a Ministry of Health and Social Development institution and a WHO collaborating centre for emergency and disaster medicine management.

Fig. 1. Coordination of disaster preparedness and response in the Russian Federation



Its main tasks are:

- development of disaster medicine services at federal, regional and national levels;
- provision to a high level of preparedness of human and other resources for emergency health relief;
- development of the organizational structures of disaster medicine units (emergency response teams, specialized medical teams, field hospitals) and equipment;
- development of additional training for specialists in the disaster medicine service;
- coordination of activities designed to mitigate or eliminate the potential effects on public health of accidents and natural disasters involving potentially hazardous industrial materials;
- development of an appropriate information system;
- improvement of the logistics organization of Zaschita, the regional centres for disaster medicine, and the building of a federal reserve warehouse for emergency medical supplies.

Zaschita's experience in disasters includes 15 non-military operations between 1997 and 2001.

Its response activities include the supply of field hospitals with staff, equipment and supplies, the supply of drugs, the provision of combat surgery teams, the evacuation of traumatized victims to nearby hospitals, vaccination campaigns in disaster areas and response to epidemics (such as typhoid).

Its preparedness activities include staff training, publications on related matters, field training of preparedness skills, response planning at federal and regional level, and research.

Future development of Zashchita within the Russian Federation focuses on:

- improvement and development of disaster medicine;
- provision of high quality emergency medical care and treatment in emergencies, including sanitary measures and hygiene services for the affected population;
- development of epidemiology services for disaster situations;
- improvement of a medical scheme for the rehabilitation of emergency relief workers;
- emergency medical care in case of radiation and chemical accidents;
- improvement of logistics provision by the all-Russian services for disaster medicine.

Future development of Zashchita as a WHO collaborating centre focuses on:

- collection and dissemination of information;
- standardization of terminology and nomenclature, of technology, of diagnostic, therapeutic and prophylactic substances, and of methods and procedures;
- development, application and evaluation of appropriate technology;
- provision of reference materials and of services such as quality assurance;
- participation in collaborative research developed under WHO's leadership, including the planning, conduct, monitoring and evaluation of research, and the promotion of the application of its results;
- education and training, including research training;
- coordination of activities carried out by several institutions on any given subject;
- provision of information and advice on scientific, technical and policy issues.

Serbia and Montenegro: sharing accumulated experience

Luigi Migliorini

Over the past 10 years, the disaster preparedness and response programme of the WHO Regional Office for Europe has gained huge experience in the management of complex emergencies in south-eastern Europe, particularly in the Balkan countries.

While all crises are inevitably somewhat complex, in recent years the term “complex emergencies” has been used to describe the direct effects of armed conflict with disruption of civil society, ethnic conflicts, religious clashes, civil war, etc. In a region where we thought we would never again see a war, and as the countries of western Europe were consolidating the European Union, we found ourselves faced with 10 years of complex emergencies that led to the disintegration of the socioeconomic system and the collapse of national health systems.

Nobody had been expecting these unusual events. Local government, civil society, local and international communities and donors were equally unprepared to provide humanitarian assistance within Europe. Nongovernmental organizations, both local and international, as well as international agencies were taken by surprise by the need to deploy their human resources and efforts in countries with totally different civil, social and economic structures and patterns to those of countries elsewhere where humanitarian aid is usually most needed.

The assistance effort extended beyond mere relief into a lengthy period of transition towards sustainable development, where the Regional Office disaster preparedness and response programme played a key role in supporting the different ministries of health as they rebuilt their health systems. Today, the lessons learnt and the experience accumulated provide valuable experience to be shared with other countries now investing in disaster preparedness.

The lessons learnt include the discovery at the end of the armed conflict in Bosnia and Herzegovina of hundreds of tons of unused drugs stored in the country. Most of these were simply inappropriate donations. The cost to the international community of destroying them was close to €10 million.



Refugees from the Province of Kosovo crisis were sheltered in tent cities in The former Yugoslav Republic of Macedonia (1999)

Good, well-considered coordination is vital in a crisis, for without it the consequences of an emergency can be more damaging than its cause.

In December 1998, the WHO Regional Office for Europe held a coordination meeting to plan preparedness activities for the possible influx of a massive number of refugees from the Province of Kosovo, Federal Republic of Yugoslavia, into The former Yugoslav Republic of Macedonia. The estimated cost was around US\$ 60 000 for six months for preliminary activities, but no donations were made. Today we know how big the

crisis and its consequences were for the host country when, in March 1999, almost 400 000 people crossed the border from the Province of Kosovo. We can still see the effects of that crisis and some refugees are still in The former Yugoslav Republic of Macedonia and other neighbouring countries.

These two simple examples illustrate how better preparation could have provided more effective support to the national response.

4. BUILDING BLOCKS FOR NATIONAL DISASTER PREPAREDNESS

The four most important building blocks for national disaster preparedness are policy and guidelines, training and capacity building, assessing the level of disaster preparedness, and coordination and partnership.

Policy and guidelines

A clear policy and relevant guidelines are fundamental elements of disaster preparedness. Policy is defined as a set of statements or commitments to pursue courses of action aimed at achieving the defined goals of public or private institutions, while a guideline can be defined as a detailed plan or explanation for guidance in setting standards or determining a course of action.

Guidelines for disaster preparedness in the health sector should recommend the use of standard management techniques and the application of mechanisms to ensure multi-sectoral cooperation at the national, regional and community level. Guidelines should also highlight the importance of defining disaster preparedness planning as a continuous process, based initially on concrete results from a vulnerability assessment, and the importance of monitoring and evaluation of the programme.

A national preparedness plan for the health sector should:

- cover the entire health sector,
- guide the health sector in disaster prevention, mitigation, preparedness, response and early rehabilitation,
- employ a multi-hazard approach (natural, technological, complex disasters), and
- coordinate and cooperate with other sectors.

A disaster preparedness programme should be based on a thorough analysis of the country context (built on vulnerability and risk assessments, and so on), should promote concrete action, should define the actual starting point for response and should be simple and flexible.

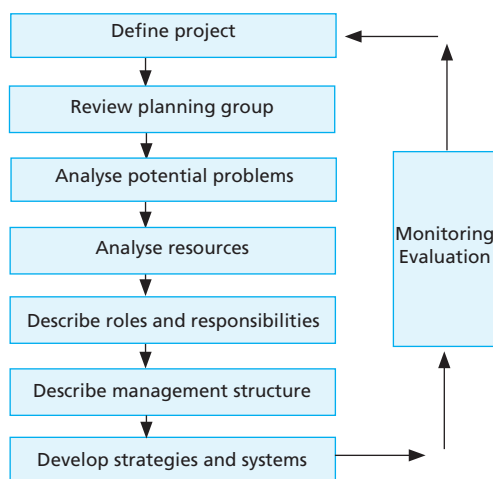
A sound and reliable programme for disaster preparedness should be considered a continuous exercise. Staff need to be trained in the planned activities and procedures,

which have to be tested on a regular basis and evaluated at certain intervals. This ensures that the plan is kept up to date and becomes a living document that can be adapted according to contingencies and an ever-changing environment (see Fig. 2).

It is not simply the elaboration of a written document; it is the actual process of assessing, understanding, learning, organizing and sharing what is of real relevance.

The most crucial products of the planning process are the definition of the roles and responsibilities of the main stakeholders in the health sector, the ways of interacting with other sectors, and the development of effective response strategies. Networks for collaboration with all stakeholders (institutions, agencies and nongovernmental organizations) are an integral part of the disaster preparedness plan, which should be based on active community participation.

Fig. 2. Disaster preparedness contingency plan cycle



Source: adapted from *Health sector emergency preparedness guide*. Geneva, WHO, 1998.

Conclusions

A thorough analysis of the country situation, the available resources, the probability and types of risks, and the vulnerability of population groups and the health system is the fundamental prerequisite for planning and implementing a national disaster preparedness programme for the health sector. Reliable valid data and information should be collected and evaluated in a structured way and then serve as the basis for further decision-making.

A common concern among participants was the level of legislative support for disaster preparedness. Some countries still lack the legal framework needed to support and promote the development of a national disaster preparedness programme. In this respect, laws and regulations would also facilitate the role of the ministry of health as coordinator of the public health response and would give the ministry an official and legislative mandate.

Establishment of partnership activities with other stakeholders is crucial for disaster preparedness planning; the ministry of health is expected to provide the lead in the health sector.

Coordination is essential, as is the facilitation of community participation.

All the above elements should be taken into account when drafting and developing a disaster preparedness policy for the health sector.

A detailed disaster preparedness workplan, incorporating timetables, targets and assessment tools for the entire planning process, will simplify the process and provide a structured project cycle framework.

Most participants emphasized the importance of two key technical components of the disaster programme:

- public health, including surveillance systems, health information (data collection and dissemination), the coordination of preventive measures and primary health care services including immunization, and water and sanitation control; and
- mass casualty management, covering primary, secondary and tertiary care of victims.

The national plan for disaster preparedness of the health sector should serve as the blueprint for provincial and local health sector plans.

Training and capacity building

Training is one method of transferring and strengthening appropriate knowledge, essential skills and the required attitudes for a specific objective. Training can build capacity if delivered in conjunction with access to information, authority, institutions, structures, plans, resources and partnerships. Training is a tool for advocacy and change; people can be transformed by training.

For disaster preparedness, training has been identified as a very high-impact activity to build capacity¹. Developing training material on key aspects of disaster preparedness and response, as well as supporting training delivery to strengthen national capacity, are core activities in WHO's strategy for health action in crises. Training is accepted by Member States as a useful and acceptable intervention regardless of the types of hazards or crises that are expected in countries.

Capacity is made up of information, authority, institutions and structures, plans and resources and partnerships. Training can strengthen each of these facets and provide a target group with skills, resources and technological abilities to enable it to better help itself. Increased emphasis is placed on developing overall policy frameworks in which individual organizations interact with the external environment and their respective area of endeavour.

For disaster preparedness one may need training in:

- monitoring hazards and vulnerabilities
- monitoring resources and capacities

¹ International Strategy for Disaster Reduction. *Living with risk. A global review of disaster reduction initiatives. 2004 version*. Geneva, United Nations Publications, 2004.

- assessing needs
- managing disasters
- coordination
- information management
- developing standards of response to crises.

Different levels of training or education have been found to be useful, including general awareness building, formal training and the use of technical aids.

Awareness-building activities include inductions, awareness programmes, media, seminars and conferences. Such activities help get political commitment and can start off disaster preparedness work or focus on special areas that require attention. They provide an effective channel to disseminate information and some knowledge.

Formal training can take place at many levels, undergraduate, postgraduate and on-the-job or professional training, and be carried out by academic institutions, governments, nongovernmental organizations, the United Nations, civil defence and private sectors. It can be the starting point for structured disaster preparedness programmes in countries. It can transfer knowledge and skills, affect attitudes, be highly motivating and create useful peer groups. On the other hand, it requires follow up and support, can be relatively expensive, and relies on the expertise of trainers and facilitators.

Technical aids include manuals, simulation exercises, videos, interactive CD ROMs and internet-based learning. They are useful for self-learning, refreshing and updating knowledge and continuous education. Motivation can be low, however. They are relatively accessible and inexpensive.

An assessment of training needs should be carried out before any decision is taken on which training to conduct and how. Training may be simple or complex depending on the needs of the country.

The following questions are pertinent before any training activities get underway.

- What are your priorities for training?
- Which type of training in disaster preparedness and response have you identified in the Biennial Collaborative Agreement for the current biennium?
- What are the training objectives, target groups, methods, duration and frequency for each type of training?
- What additional resources (human, financial, material) will be needed for each type of training?
- Is there someone in your national country team who can act as a training focal point?
- Which members of your team have already been trained in disaster preparedness and response? In what, by whom and when?

Conclusions

In terms of priorities for training, there were some shared opinions on what training activities were needed for different phases of a disaster (preparedness, response, recovery and mitigation) such as rapid health assessment.

All those likely to be involved should be trained, from senior managers in the health ministry at central level, through staff at the intermediate health care services level, to local communities and the general population.

The groups recommended “training of trainers” while formal and general awareness-building training were both seen as critical to the successful creation of a national disaster preparedness and response programme.

Awareness-building programmes were recommended for politicians and decision-makers; induction sessions should be offered to this target group at the country level.

WHO was asked to identify and provide training materials; the need to have materials in local languages was also highlighted.

Training sessions for strengthening skills in coordination activities and response capacities, such as crisis management, first aid and rapid health assessment, were also identified as priority areas for specific categories of workers.

Funding to develop training programmes was a common concern, although all participants agreed to identify current funds within the BCA with WHO as the main source.

International training activities were recognized by all participants as providing a great opportunity to create partnerships with other stakeholders and also involve donor communities. Some participants at the workshop started to develop joint plans for cross-border training events.

Assessing the level of disaster preparedness

The disaster preparedness and response programme of the Regional Office provided two management tools to help evaluate the current status of disaster preparedness planning in the 12 countries: a checklist and a template.

Checklist

The checklist is designed to show if the main components of the health sector's disaster preparedness planning are in place (see Box 3). This checklist provides tips and guidance to disaster preparedness managers. At the same time, it takes into account different situations and characteristics that may exist in each of the countries being considered.

Box 3. Components checklist

- Policy
- Planning
- Coordination
- Training and capacity building
- Monitoring and evaluation
- Risk assessment
- Risk reduction
- Mass casualty management
- Epidemiology
- Information management
- Resource management

Country disaster profile

The participants were also offered a template devised to help elaborate country disaster situation profiles (see Box 4). The template is a standard tool used in other WHO regions and has been adapted for the European Region.

The disaster situation profile of each country includes the health profile already developed for 28 countries in the European Region and sets out the key facts, issues and challenges relevant to the health sector in disaster situations as well as the main related activities. The profile is meant to serve as a shared template with a common framework.

Its purpose is to provide an overview of the situation regarding disaster preparedness in each country through concise, reliable and timely information. The targeted users are the stakeholders involved in preparedness, as well as those likely to become involved at a time of a crisis, at national and international level.

The profile can also help the ministry of health perform its coordination role in times of crisis by highlighting the strengths and weaknesses of the health sector.

Box 4. Chapters in the country disaster situation profile

General information

- demographic indicators
- main socioeconomic indicators

Basic health profile

- health indicators and epidemiological data
- five top causes of morbidity and mortality
- immunization/vaccination
- health care resources

Disaster profile

- natural disasters (hazard maps)
- technological/man-made disasters
- complex emergencies
- others

Health sector emergency planning

- ministry of health and health services structure
- organigram and lines of responsibility

Annexes

- list of laws
- list of main governmental organizations dealing with disaster preparedness and response
- lists of main universities/institutions dealing with disaster preparedness and response
- lists of main international organizations in the country
- others

Conclusions

There was general agreement among, and a commitment by, the 12 countries to use both tools for continuous monitoring of disaster preparedness planning and implementation.

The components of the checklist incorporate some further modifications that were made to allow for the particular needs of each country, to tailor a balanced and uniform approach toward disaster preparedness in the Region.

The checklist should also serve as a monitoring tool.

Participants agreed that the checklists would be compiled and submitted as soon as possible after the meeting, to provide WHO with more information on the requirements and shortcomings in the field of disaster preparedness in the health sector.

The country disaster situation profile was seen as a valuable tool for coordination and information. The participants proposed that the profile should be made more flexible, based on a common framework but with additional fields to cover areas that suited different circumstances, also leaving room for it to be adapted to the specific needs of each country.

Each country disaster situation profile would be both in English and in the official language of the appropriate country. It would be distributed to the national and international community involved in disaster preparedness and response.

The intention is to develop the country disaster situation profile in due course, although this may take some time and possibly require extra human and financial resources.

Coordination and partnership

The ministry of health plays a fundamental and central role in coordinating all activities in the health sector. This sounds obvious since it is the normal day-to-day mandate of a ministry of health. But when it comes to the field of disaster preparedness and response, this truism seems to get forgotten.

Multisectoral cooperation is essential in an emergency because all aspects of social, economic and political life can be affected. In this context, the health ministry has the primary responsibility of safeguarding the health and welfare of the population. Therefore the ministry has to ensure that the health system is prepared and ready to cope with different kinds of hazards and should allocate proper resources for this purpose.

In preparing for major disasters, the ministry of health is responsible for coordination and should identify a clear line of command within the health sector in a crisis situation. It should also promote adequate laws, policy and regulations, and allocate sufficient funds. The health ministry should integrate into its political priorities the development and promotion of norms covering:

- contingency planning and simulation exercises
- standardization and validation of existing plans (such as hospital disaster plans)
- mitigation of the impact of natural disasters or conflicts on key health facilities
- lists of essential drugs and supplies for emergencies.

It is extremely important to assign a specific role and responsibility to the ministry of health for one particular body, the disaster reduction unit or department (see Box 5).

The promotion of health education and training is also a priority in normal times and requires the expertise to be available within the health ministry. Only the health ministry

Box 5. The responsibilities of a disaster reduction programme/unit in the ministry of health

Promotion

- Promoting the adoption of legislation, policies and projects by other public or private sectors to reduce the risks to health and to facilitate the task of the ministry of health.
- Promoting the inclusion of disaster reduction measures/activities in development activities of other programmes/divisions of the ministry of health and the health sector.
- Promoting the use of the latest scientific knowledge about disaster risk management.
- Public education through mass media (television, radio and newspapers) and health educators in collaboration with other sectors.

Development of norms

- Construction and maintenance of norms and standards to mitigate the impact of conflicts or natural disasters on health facilities in consultation with the relevant ministries.
- Norms for contingency planning, simulation exercises and other preparedness measures in the health sector in consultation with the relevant ministries.
- Standardization and validation of existing plans (for instance, hospital disaster plans).
- Monitoring and evaluating mitigation and preparedness activities in order to incorporate lessons learnt into existing norms and standards.
- Providing lists of essential drugs and supplies for emergencies.
- Assisting in the development of protocols for telecommunication (such as internet and radio).

Training

- Assessment of current needs and offers in training for disaster preparedness, mitigation and response in the health sector.
- In-service training of health personnel (from prevention to response) with special focus on managerial issues.
- Inclusion of disaster management in the curriculum of pre- and postgraduate schools in health-related sciences.
- Preparation of training material for the presentation of health-related topics in training of other sectors (such as planning, engineering or foreign affairs).

Coordination and liaison with other agencies

- Coordination within the health sector and with civil protection, civil defence or other agencies with multisectoral responsibility.
- Coordination with disaster focal point, unit or commission in other sectors (such as congress or parliament, foreign affairs, public works or the private sector).
- Coordination and collaboration with disaster programmes/units in the health sectors of neighbouring countries, as permitted by circumstances.
- Liaison with humanitarian organizations at national or international level (bilateral, United Nations agencies, International Federation of Red Cross and Red Crescent Societies and nongovernmental organizations).

Mobilization of the health response in the event of disaster

- Assisting in the mobilization, operational coordination and support to the health response in the event of natural, technological or man-made disasters.
- Assessment of needs and active dissemination of this information through meetings and development of web sites.
- Mobilization of financial resources, formulation of projects and quality control for response and rehabilitation.

Source: Area on Emergency Preparedness and Disaster Relief, Pan American Health Organization, Washington DC.

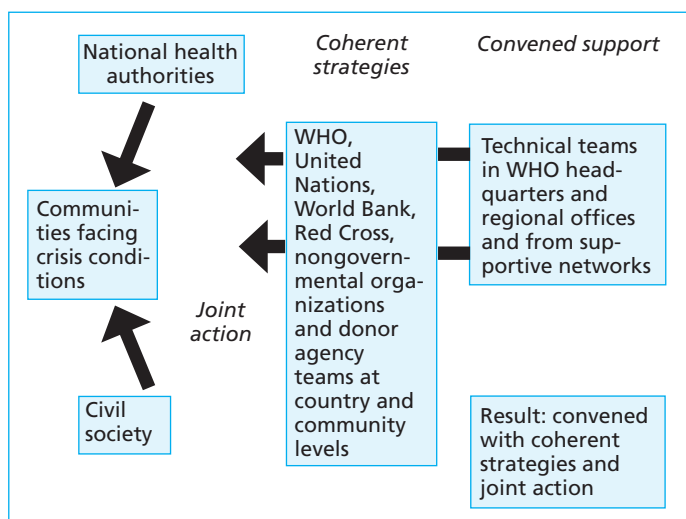
can provide an official assessment of current needs in training for disaster preparedness, mitigation and response in the health sector. In addition the ministry should organize training.

The ministry has other responsibilities as well, some of which are common to both preparedness and response. Coordination has a central role as do partnership activities, such as liaising with other stakeholders.

Coordination will be required:

- within the health sector and with civil protection, civil defence or other agencies with multisectoral responsibility;
- with disaster focal points, units or committees in other sectors (congress or parliament, foreign affairs, public works, private sector);
- along with partnership activities, with national and international partners and counterparts in neighbouring countries;
- in the form of liaison with humanitarian organizations at national or international level (bilateral, United Nations agencies, International Federation of Red Cross and Red Crescent Societies and nongovernmental organizations) (See Fig. 3).

Fig. 3. Coordination mechanism



Source: Health Action in Crises Department, WHO, Geneva.

Disasters do not respect national boundaries, so cooperation and mutual aid are vital. Coordination must be developed and endorsed at all levels:

- communities
- districts/provinces/regions
- national

- intercountry
- international.

The national coordinator for disaster preparedness should be the coordinator of the emergency response. This is the person in charge of the disaster reduction unit at the ministry of health. Before a disaster, this person's responsibilities will be to:

- develop and maintain national policy and disaster preparedness plans,
- bring all stakeholders together, and encourage others to prepare for emergencies,
- represent the health sector on national disaster committee/s,
- make sure that plans are up to date, and monitor and facilitate training activities, and
- liaise with national and international partners, set up partnership activities and promote and design collaborative agreements.

During and after a disaster, this person will:

- assess health needs (by gathering information) and disseminate the information,
- advise the health minister and possibly the government on what decisions to take, when and how,
- activate established lines of responsibilities and make sure networks use them,
- mobilize resources, formulate projects and ensure operational coordination, supporting the response capacity of the health system,
- maintain the quality and efficiency of the response in the framework of planned activities for response and rehabilitation, and
- coordinate external assistance and manage donations and supplies.

Conclusions

The coordination role of the ministry of health varies hugely in the 12 participating countries. The Ministry of Health and Social Development of the Russian Federation, and its institutions, has a clearly defined role but the health ministries of other countries have less organized coordination mechanisms and less well defined responsibilities.

Participants noted that the national coordinator for disaster preparedness and response activities often lacked any true authority, had inadequate resources and few opportunities for coordination with other stakeholders, such as military medical services and civil defence.

Some of the participating countries had recently appointed a new coordinator or established a new disaster reduction unit within the ministry of health without a clear mandate or terms of reference. They would benefit from collaborating with WHO and learn from the experiences of other countries and regions.

All participants advocated that financial and human resources be allocated to the health ministry's disaster reduction unit, and that the unit be officially recognized and dedicated to disaster preparedness and response activities for the health sector.

All the representatives highlighted the great importance of strong relationships and bilateral partnership activities among neighbouring countries. Disasters do not respect any boundaries, so the need for cooperation and mutual aid between countries was regarded as vital. Some countries started to identify areas for collaboration, mostly in the field of training and cross-border training events.

The most important international partners were identified as the United Nations Development Programme and the international Red Cross movement, which has significant experience in the field of disaster preparedness and response. WHO was asked to act as lead partner in strengthening health system capacity to respond to crises.

How WHO can help

WHO aims to provide reliable and effective support to national governments, communities and health stakeholders to prepare a response to the health aspects of acute and long-term crises, so as to minimize suffering and death and to open the way to the recovery of sustainable healthy livelihoods.

WHO works with national authorities to:

- assess health aspects of populations at risk of crisis, in advance and as crises evolve, so as to enable all concerned to set priorities and monitor progress;
- collaborate with health stakeholders in order to encourage open communication and joint action around the priorities;
- identify gaps in response to crises, and ensure that they are filled;
- improve capacity for crisis preparedness, response and recovery within local and national health systems, rehabilitate key institutions and train health personnel².

Critical elements of the WHO contribution are as follows.

- **Intelligence:** what, where and who is affected?
- **Best practices:** immediate minimum essential health action, anticipating longer-term needs, standardized tools for assessment, coordination of response and recovery.
- **Surge capacity** to respond quickly: convening and deploying technical, logistic and support teams and support for in-country capacity for assessment, outbreak response, repair and jump-start for critical services, tracking progress and coordination.

WHO can help with:

- collaboration in rapid assessment,
- rapid response teams and resources,
- information on prevailing diseases, national policies, immunization coverage, etc.,
- assistance with national authorities,

² Source: *Health action in relation to crises and disasters. Report by the Secretariat. Fifty-Eighth World Health Assembly. Provisional agenda item 13.3.* Geneva, WHO, 2005 (A58/6).

- technical guidelines on essential drugs, malaria, nutrition, immunizations, tuberculosis, AIDS, reproductive health, and many others,
- programme resources such as polio teams in Gujarat, India in 2001,
- experts for special health hazards, such as tropical diseases,
- training.

Through the Health Action in Crises (HAC) department in WHO headquarters people can:

- access the HAC web site to find health statistics and situation reports, access the *WHO handbook for emergency field operations*, and access all WHO technical guidelines, and
- get in touch with HAC to get immediate technical advice, identify health experts for rapid assessment, planning and coordination, obtain emergency health library kits and the health disaster library on CD Rom, strengthen dialogue with WHO offices at country and regional levels, and mobilize HAC funds through WHO country offices.

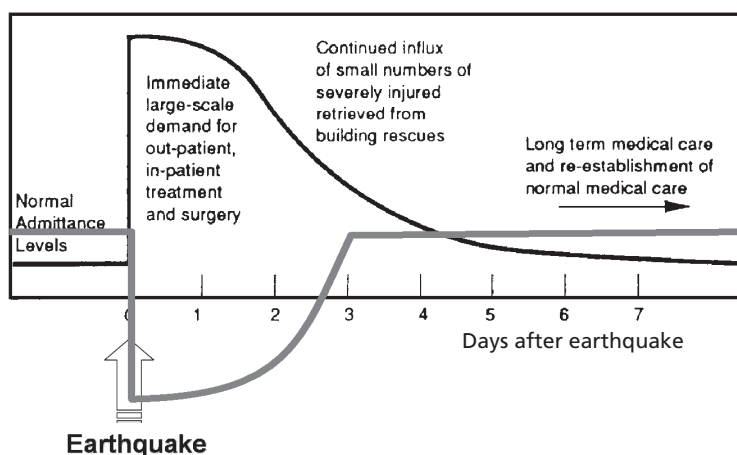
5. VULNERABILITY OF HEALTH CARE FACILITIES EXPOSED TO A STRONG EARTHQUAKE

Dr Goran Trendafiloski, Institute of Earthquake Engineering and Engineering Seismology (IZIIS), Skopje, The former Yugoslav Republic of Macedonia

Health care facilities play a significant role in the mitigation of disasters because their particular function is to treat the injured and handle outbreaks of disease. They are fundamental referral points for any community and should be prepared to deal with crises. Unfortunately, health care facilities are also susceptible to the effects of natural hazards and are victims of the effects of disasters.

The consequences of a disaster can severely impede a health care facility's ability to function just when its services are most needed by the public (see Fig. 4). Hospitals may find themselves short of staff, without functioning equipment or communications and lacking water and electricity. But, in the aftermath of a crisis, they will never lack patients who rely on their services.

Fig. 4. Demands on hospitals immediately after an earthquake



The vulnerability of a health care facility can be structural, non-structural/functional or administrative/organizational.

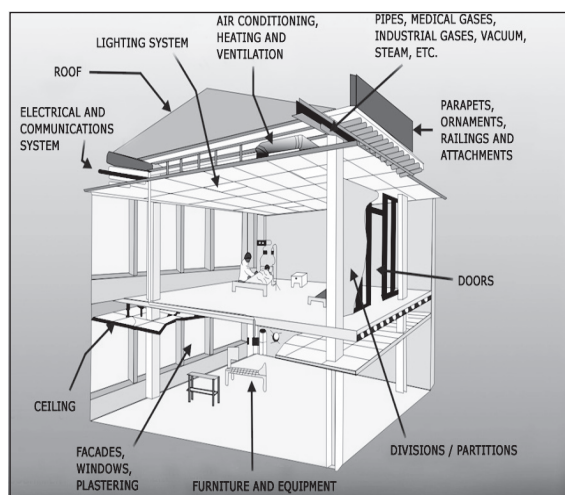
Structural vulnerability refers to the components of a building that are needed to maintain its structural integrity. They include the foundations, columns, supporting walls, beams and diaphragms (floors and ceilings designed to transmit horizontal forces occurring in an earthquake through beams and columns into the foundation).

Non-structural or functional vulnerability refers to components that are physically connected to a building's structure (such as partitions, windows, roofs or doors), those that are essential to the building's functionality (plumbing, heating, air conditioning, and electrical circuits), and items inside the building (medical or mechanical equipment, or furniture) (see Fig. 5 and Table 1).

Major structural or non-structural damage to hospitals exposes the surrounding population to an increased risk of transmission of contagious diseases. Inevitably it increases the burden of health care for outpatients and inpatients, and it reduces the quality of care available to communities affected by such environmental consequences as a shortage of potable water.

Administrative or organizational vulnerability refers primarily to the distribution of space, and the relationships between these spaces and the services provided in the health care facility.

Fig. 5. Disposition of the main non-structural elements



Source: *Disaster mitigation for health facilities*. Washington DC, Pan American Health Organization, 2000.

Table 1. Non-structural elements in a health care facility

Architectural	Installation	Equipment and furniture
<ul style="list-style-type: none"> • Interior partitions • Facades • Suspended ceilings • Roofs or decks • Parapets • Chimneys • Plaster • Glass windows • Attachments (such as signs or antennae) • Ornaments • Canopies • Lighting system • Railings • Doors and exit routes • Expansion joints 	<ul style="list-style-type: none"> • Medical gas piping • Industrial gas piping • Vacuum devices • Steam • Air-conditioning systems • Heating • Ventilation • Electrical wiring • Backup power • Communications • Drinking-water • Industrial water • Sewerage • Fire sprinklers • Other pipelines • Circulation (lifts or stairs) 	<ul style="list-style-type: none"> • Medical equipment • Laboratory equipment • Industrial equipment • Furniture • Supplies

Source: *Disaster mitigation for health facilities*. Washington DC, Pan American Health Organization, 2000.

A series of mitigation strategies can decrease the exposure of health care facilities to the consequence of hazards such as an earthquake. The strategies aim to reduce their vulnerability and maintain a desirable degree of functionality. A health care facility should be able to:

- resist minor (frequent) earthquakes without damage,
- resist moderate (occasional) earthquakes without structural damage but with some non-structural damage,
- resist major (rare) earthquakes but with significant structural and non-structural damage, and
- resist the most severe (very rare) earthquakes ever likely to affect the building, without collapse.

The mitigation strategies for earthquakes can be grouped into the following categories:

- seismic hazard
- structural system
- non-structural components
- organizational issues.

In a hospital environment, it only requires some simple measures to significantly reduce the potential hazard caused by non-structural objects during an earthquake. An object can be simply removed or relocated, restricted in its mobility and anchored with flexible

couplings or supports. An object or piece of equipment can be replaced with a higher quality device, or be slightly modified, strengthened or isolated.

Appropriate zoning and reorganization of areas in the health facility can ensure that the hospital functions as well in disaster conditions as in normal circumstances. For example careful organization and good links between the outpatient reception areas, the area surrounding the structure and the emergency services, and the creation of a safe area for general support services, make it possible to provide appropriate medical treatment. This way it is possible to avoid the functional collapse that sometimes occurs even though the building has escaped severe damage.

Laboratory simulation

Participants at the workshop visited the Institute of Earthquake Engineering and Engineering Seismology (IZIIS) where they saw a laboratory simulation of the effects of an earthquake on hospital buildings. The simulation (see picture) highlighted the causes of disruption of services in an average (unprotected) hospital under conditions of weak, strong and extreme seismic loadings.

The primary causes of disruption and internal disaster in hospitals include top-heavy equipment, incorrect settings and installation, and improper use of storage and service areas.

The three-part demonstration showed the unacceptable level of vulnerability of hospital environments and demonstrated the urgent need to improve the functional design of these institutions.

Corrective actions usually require little work or investment but they can dramatically reduce the non-structural vulnerability – the most dangerous of all – of a health care facility. IZIIS is working to improve mitigation procedures and strongly recommends their application to prepare health care facilities to cope with natural disasters.

6. CONCLUSIONS AND RECOMMENDATIONS

This workshop laid the foundation for further collaboration between the disaster preparedness and response programme of the Regional Office and those countries in the European Region who identified the disaster preparedness and response of the health sector as a priority area for collaboration with WHO.

It is a major challenge for health systems to protect the lives and the health of human beings affected by any disaster. Sound and effective preparedness strategies can make a huge difference and ensure the health services are reliable even during crises.

The workshop underlined considerable country differences in the commitment and authority of each ministry of health in national disaster preparedness and response efforts. A common concern was the need for political support to allocate adequate resources to the health ministry, in order to accomplish the key responsibilities in the area of disaster preparedness.

The disaster preparedness and response programme of the Regional Office is committed to improving its technical assistance to countries, to contribute effectively during the current biennium and beyond to the achievement of tangible results at the country level. It is committed to putting specific emphasis on:

- improved country capacity to prepare for, respond to and manage disasters,
- improved health information systems for disaster management at country level,
- improved capacity of country stakeholders in disaster preparedness activities,
- enhanced leading role for countries in disaster response management,
- developed guidelines on disaster reduction and humanitarian assistance.

Conclusions

The workshop reached the following conclusions about its four main objectives.

1. To better understand the current status of disaster preparedness and response in different countries

A broad consensus was achieved between the national disaster focal points and WHO country staff that health ministries should play a key role in coordinating the preparedness efforts of the health sector.

The level of preparedness of the ministry of health varies widely among the 12 participating countries. The country representatives made a common commitment to use the checklist and the country disaster situation profile as tools to continuously monitor their disaster preparedness planning and implementation processes.

They also agreed that awareness-building activities are required to help produce political commitment and plan to launch disaster preparedness work with a multisectoral approach involving other stakeholders and the community.

2. To build consensus and to develop a framework for key areas of intervention

A detailed workplan for operational implementation of the BCAs was reviewed in close cooperation with the national disaster focal points and WHO country staff, including specific products to be delivered with WHO assistance.

Two technical recommendations were identified in this framework as prerequisites for an effective disaster preparedness country strategy and should therefore be considered for immediate short-term implementation:

- establishment of a disaster reduction unit or department within each ministry of health, and
- provision of adequate financial and human resources, and political support to the unit enabling it to build up partnerships and collaboration.

The establishment of a special disaster reduction unit in each health ministry in the European Region would facilitate the promotion of disaster preparedness planning as a continuous process, and secure the coordination of the public health response in crisis situations. The unit should be supported by clear legislation at national and regional level. Laws and regulations could also establish the role of the health ministry as the authorized coordinator for disaster preparedness within the health sector, seeking partnerships and coordination with other sectors.

According to WHO's recommended terms of reference for a disaster reduction unit, the main functional areas of responsibility would include:

1. promotion of the concept of disaster preparedness,
2. development and establishment of norms and standards,
3. capacity building and training,
4. coordination within the health sector using a multisectoral approach, and
5. management of the health response in crisis situations.

3. To identify methodologies and guidelines for disaster preparedness planning

Capacity-building efforts, and specifically the development and implementation of tailored training packages, were identified as a high priority. These efforts would facilitate the introduction of specific guidelines to provide directions and set standards in the

following specific areas: development of the country disaster preparedness plan, rapid health assessment, and the role of the WHO country office in crisis situations, including the chain of command and lines of action.

The training packages are key components in the strengthening of national disaster preparedness programmes. As such they should be adapted to country-specific needs, offered as cross-border regional training events, and contribute towards building up national health systems' sustainable capacity to respond to crises.

Most countries represented requested training programmes, mainly for awareness building and formal training. A large part of the technical and financial support that WHO provides is allocated to capacity building, a primary concern for short-term action. WHO is committed to playing a leading role in providing and facilitating access to training in the European Region and to improving access to relevant documents and publications by supporting translations of key documents in local languages.

4. To strengthen partnership and cooperation at national and international level

The workshop established a new basis for creating international partnerships. New forms of bilateral cooperation were proposed and areas of cross-border collaboration identified and initiated.

Participants from neighbouring countries with similar risk profiles and vulnerabilities, such as Kyrgyzstan and Tajikistan, were the first to address the need to cooperate on preparedness activities and consider joint relief and recovery efforts for their health systems in transition.

Recommendations

The national disaster focal points and the WHO country staff jointly agreed to take concrete steps and actions and to work on the following short- and medium-term activities to promote further development of disaster preparedness programmes in their countries.

Policy tools and guidelines

- Health ministries would be encouraged to establish and strengthen the performance of a disaster reduction unit or department.
- Health ministries would be encouraged to gather political support for the unit to enable it to build up partnerships and collaboration.
- WHO would provide technical support (such as to develop terms of reference for national disaster focal points and terms of reference for the ministry of health disaster reduction unit).

Training and capacity building

- Training would be organized at country level for national staff to develop a national disaster preparedness plan.

- Training would be organized at intercountry level for national staff in rapid health assessment and management of health information in crises.
- Options would be identified for intercountry coordination and training within the Region.
- BCA implementation would continue and collaboration be further strengthened between the national disaster focal points and WHO staff, with both participating in the future training activities.
- WHO would provide technical support to the planned training activities.

Assessment

- Data and information would be collected for the agreed checklists to assess and monitor the level of disaster preparedness planning in each country.
- Risk and vulnerability data and additional information would be collected for the country disaster situation profile to serve as a basis for planning and implementation.

Coordination and partnership

- Intercountry collaboration would be supported, and partnership activities and exchange of information, experiences and lessons learnt in the Region would be facilitated.
- Resources for public health activities in the area of disaster preparedness and response would be actively coordinated.
- Fundraising for preparedness activities would continue, as would mobilization of revolving funds for emergency response needs.

The challenge ahead

The disaster preparedness and response programme of the Regional Office is committed to providing continuous support and resources to these initiatives, to further develop and strengthen the health systems capacity of each country to respond to crises. Based on the past extensive experience gained by the European Region in response activities, this workshop has contributed to set the agenda with a new focus.

New challenges and future threats require a renewed focus on structured preparedness efforts. The challenge is to identify and implement, and whenever necessary to develop, new, effective and efficient mechanisms to prepare health systems to effectively respond to and recover from crises.

Annex 1. Participants

National disaster focal points

Albania

Professor Eduard Kakarriqi
Head, Department of Epidemiology
Institute of Public Health, Tirana

Armenia

Dr Vardan Nersisyan
Hygienic and Anti-Epidemic Inspection
Ministry of Health, Yerevan

Azerbaijan

Dr Malyagat Karimova
Chief, Civil Defence Department
Ministry of Health, Baku

Georgia

Dr Dimitri Makhatadze
Deputy Head, Department of Disaster
and Emergency Medicine
Ministry of Health, Labour and Social
Affairs, Tbilisi

Kyrgyzstan

Dr Mirbek Nuraliev
Deputy Chief Doctor
Republican Hospital, Bishkek

Poland

Dr Pawel Abramczyk
Head, Department of Defence Affairs
Ministry of Health, Warsaw

Russian Federation

Professor Victor Preobrazhenskiy
Deputy Director, Zashchita
WHO Collaborating Centre
Ministry of Health and Social
Development, Moscow

Serbia and Montenegro

Dr Brankica Dupanovic
Head, Department for Infections
Clinical Centre of Montenegro
Podgorica

Dr Snezana Simic
Assistant Minister of Health
Republic of Serbia, Belgrade

Tajikistan

Dr Mouroudali Rouziev
Department of Surveillance Control
Ministry of Health, Dushanbe

The former Yugoslav Republic of Macedonia

Dr Nevzat Elezi
Deputy Minister, National Coordinator
for Disaster Preparedness
Ministry of Health, Skopje

Turkey

Dr Tacettin Kakillioglu
Department of Research, Planning and
Coordination
Ministry of Health, Ankara

Lecturers

Russian Federation

Professor Victor Preobrazhenskiy
Deputy Director, Zashchita
WHO Collaborating Centre
Ministry of Health and Social
Development, Moscow

Turkey

Professor Necati Dedeoglu
Head of Department of Public Health
Faculty of Medicine, Antalya

The former Yugoslav Republic of Macedonia

Professor Vladimir Kendrovski
Specialist of Hygiene and
Environmental Health, Republican
Institute for Health Protection, Skopje

Representatives of other Organizations

United Nations Development Programme

Mr Mislim Hasipi
Transitional Preparedness Planning
Assistant, Skopje, The former Yugoslav
Republic of Macedonia

World Health Organization

Country staff

Albania

Dr Santino Severoni
Head
WHO Country Office, Albania
E-mail: severonis@who-albania.org

Dr Vasil Miho
Liaison Officer
WHO Country Office, Albania
E-mail: vmiho@who-albania.org

Dr Ardian Xinxo
National Professional Officer
WHO Country Office, Albania
E-mail: office@who-albania.org

Armenia

Dr Yelizabet Danielyan
Liaison Officer
WHO Country Office, Armenia
E-mail: edanileyan@who.org.am

Czech Republic

Dr Alena Steflöva
Liaison Officer, WHO Country Office
Czech Republic
E-mail: wholoc@who.cz

Georgia

Dr Rusudan Klimiashvili
Liaison Officer, WHO Country Office
Georgia
E-mail: whologe@undp.org.ge

Dr Nino Mamulashvili
Project Officer, WHO Country Office
Georgia
E-mail: whologe@undp.org.ge

Kyrgyzstan

Dr Oskon Moldokulov
Liaison Officer, WHO Country Office
Kyrgyzstan
E-mail: omo@euro.who.int

Poland

Dr Paulina Marianna Miskiewicz
Liaison Officer, WHO Country Office
Poland
E-mail: paulina.miskiewicz@who.un.org.pl

Russian Federation

Dr Corinna Reinicke
Liaison Officer, WHO Country Office
Humanitarian Assistance Programme
North Caucasus
E-mail: c.reinicke@who.org.ru

Serbia and Montenegro

Dr Luigi Migliorini
Head, WHO Country Office
Serbia and Montenegro
E-mail: lmi.who@batut.org.yu

Tajikistan

Dr Nazira Poolatovna Artykova
Liaison Officer, WHO Country Office
Tajikistan
E-mail: lotjk.who@tajnet.com

The former Yugoslav Republic of Macedonia

Dr Jukka Pukkila
Head, WHO Country Office,
The former Yugoslav Republic of
Macedonia
E-mail: jpu@who.org.mk

Dr Marija Kisman
Liaison Officer, WHO Country Office
The former Yugoslav Republic of
Macedonia
E-mail: mki@who.org.mk

Dr Marija Gulija
National Professional Officer
WHO Country Office, The former
Yugoslav Republic of Macedonia
E-mail: mgu@who.org.mk

Ms Margarita Spasenovska
Programme Assistant, WHO Country
Office, The former Yugoslav
Republic of Macedonia
E-mail: msp@who.org.mk

Regional Office for Europe

Dr Gerald Rockenschaub
Regional Adviser
Disaster Preparedness and Response
E-mail: gro@euro.who.int

Ms Sharon Steele
Programme Assistant
Disaster Preparedness and Response
E-mail: shs@euro.who.int

Dr Maria Cristina Profili
Desk Officer
Disaster Preparedness and Response
E-mail: mcp@euro.who.int

Dr Enrico Davoli
Consultant
Disaster Preparedness and Response
E-mail: enrico.davoli@tin.it

Ms Sidika Tekeli-Yesil
Student Intern
Disaster Preparedness and Response
E-mail: sidikatekeli@hotmail.com

Dr Carlos Triginer Borrell
Technical Officer, Emergency Hos-
pital Services
WHO European Office for Inte-
grated Health Care Services
E-mail: ctr@es.euro.who.int

Headquarters

Dr Gaya Gamhewage
Technical Officer, Capacity
Development
Health Action in Crises Department
E-mail: gamhewage@who.int

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