

DISASTER MEDICINE IN EUROPE – An Update 2003

Foreword

Modern society is increasingly vulnerable to both natural disasters and technical disasters. Preparedness to meet disasters has become an important concern and most countries have developed national and local plans for interventions in various disaster scenarios. A summary of emergency planning in Europe was published by HOPE in 2001 (see publication list n° 59). After the attack on the World Trade Centre, interest has focused on measures to diminish the threat scenarios and risks of disasters. This does not merely apply to threats of terrorism or risks of technical disasters, but just as much to measures to reduce the consequences of natural disasters. In the European Union, several initiatives have been taken to increase cooperation between the member states to protect their populations against different risks of disasters. Warning systems are being developed and communications networks are being established. The WHO is also working in a similar way to meet the threats posed by earthquakes, floods and drought. The importance of international cooperation to reduce the risks of disasters and to limit their consequences is becoming increasingly important.

In this report from October 2003, an overview is provided of the ongoing activities in Europe. The report builds on the report published in January 2001 – Disaster Medicine – Organisation and Trends. Both reports are combined in this document which has been given the title Disaster Medicine – An Update 2003.

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Background

In January 2001, HOPE published a report entitled "Disaster Medicine in Europe – Organisation and Trends" ⁽¹⁾. The purpose of the publication was to acquire knowledge about risks and threats, plans and levels of preparedness and the operational principles being used to meet disasters in different countries in Europe. The publication was limited to peacetime disaster scenarios, in which hospitals would play an important role, and did not take up the wars that had affected Europe in recent years.

In the report it was stated that the predominant risks for emergencies in Europe were associated with accidents in communications, fires, chemical accidents and accidents due to severe weather conditions. But it was also emphasized that the risks and threats scenario was constantly changing.

The attack on the World Trade Centre in New York on September 11, 2001 is an example of this. Even if terrorist attacks had occurred earlier (the explosion at the World Trade Centre 1993, the terrorist attack using sarin in Tokyo 1995, and the bomb attacks in Northern Ireland and Israel during recent decades), the attack on September 11 initiated a somewhat new risk scenario based on terrorist threats and terrorist attacks and the engagement of the international community.

In the report published earlier, HOPE documented that today most countries in Europe have well developed levels of national preparedness to meet disasters. At the same time it was pointed out that rapid economic growth, with the emergence of multinational centres, creates new risks for disasters and new threat scenarios. Therefore, the need of international cooperation to analyse and evaluate disaster risks and threat scenarios is increasingly important as demonstrated by the events of September 11. The intention of this follow-up report by HOPE is to describe the efforts that are now being made at both national level and within the framework of the EU to increase knowledge of current and future threat and risk scenarios and to create the conditions necessary to permit joint efforts to be successful if major accidents and disasters occur.

A NEW THREAT SCENARIO

The terrorist attacks on the World Trade Centre in 1993 and on September 11, 2001, bio-terrorism with sarin in Tokyo 1995 and with anthrax in USA 2001, and the suicide bomb attacks in, for example, Russia, Indonesia and Israel in recent years indicate the emergence of a somewhat new risk scenario with disasters that destabilise and challenge industrial society. The threat scenarios are difficult to anticipate and this leads to suspicion, anxiety and antagonism. The risks assume emotional and social dimensions and have considerable economic consequences. The events that have taken place create panic and the interventions are rarely cost-efficient. As an example it can be mentioned that immediately after the terrorist attack of September 11, 475,000 units of blood were collected - but less than 300 units were actually used for victims of the disaster. Alarming future scenarios lead inevitably to political decisions that have considerable legal and financial consequences. After the anthrax attacks in 2001, the Bush administration requested an additional appropriation of USD 11 billion for the fiscal years 2003-2004 ⁽²⁾, merely for protection against bio-terrorism. The needs for research, education and information are considerable in order to provide a firm foundation on which realistic risk evaluation and well considered interventions can be based.

However, risk evaluation will always vary between countries on account of their history, culture and economic situation. Disaster risks and threat scenarios must be balanced against other risks and threats in the society in question, against common accidents and health risks, and against the capacity of society to overcome a disaster, should one arise.

Disasters are usually defined as events with a scope exceeding the capacity of local society to intervene and which meet one or more of the following criteria – 10 or more dead, 100 or more affected, and the need of national or international help. When using this definition, Europe was affected by, on average, 70 disasters each year in the 1990s with a total of 3 600 dead and with damage estimated at more than USD 9 billion each year ⁽³⁾. At the same time, on a world-wide basis, almost 80 000 people died each year in disasters in the 1990s ⁽⁴⁾.

Natural disasters (hydro-meteorological and geophysical disasters) still dominate the world threat scenario and account for more than 85% of all deaths in disasters, while technical disasters (i.e. industrial, transport and miscellaneous disasters – such as the collapse or destruction of domestic buildings etc) account for less than 15 %. Natural disasters also constitute the greatest threat in Europe even if, in terms of numbers, they do not exceed the technical disasters.

At the same time as less developed and poor countries are more vulnerable to natural disasters and have great difficulties of coping with the consequences of these disasters, economic growth does not mean a reduction in risk. Instead, rapid and unplanned urbanisation can lead to greater risks and damage in cases of natural disasters and environmental disasters, as well as technical disasters. Even the highly developed countries in Europe and the USA have become increasingly exposed to risks. This applies in particular to the risks of technical disasters since the dependence of society on increasingly sophisticated infrastructure has grown.

INTERNATIONAL COOPERATION

There has been an increase in the need of international cooperation to analyse and evaluate disaster risks and threat scenarios and to coordinate interventions when disasters occur. As early as in 1985, at a meeting in Rome, the member states of the European Union agreed to coordinate their interventions for civil protection. During the period 1985 – 1994, a number of preliminary proposals were approved that formed the basis of today's extensive agreements on coordinated activities in order to meet risks of disasters. The responsibility for interventions rests with each individual member state and the European Commission's programme should only have a supportive function. The first major civil protection action programme was adopted in 1997. This was followed up in 1999 by a more extensive scheme. Projects to improve preparedness that are supported by the programme are financed jointly by the Community and by at least one of the member states. The programme includes risk evaluation, information to the public, preparedness and response, analysis after the disaster and horizontal actions ⁽⁵⁾.

In 2001 the governments in the European Union adopted a plan to facilitate cooperation and communication between the member states ⁽⁶⁾. Government authorities in a region affected by a disaster will be able to get rapidly into contact with experts in other EU states through a network. The network will also be available for countries outside the Union that seek assistance in dealing with disasters. A special Monitoring and Information Centre (MIC) was established by the European Commission in Brussels. It will be open 24 hours a day, 365 days per year. In addition to its having access to experts in the network, the Centre will also be able to mobilise disaster teams to be sent to the scene of a disaster whenever necessary.

Disaster interventions can affect several areas of expertise in the EU, for example justice and home affairs where the police forces of several countries are involved, or environmental legislation on disasters if assumed to have a serious impact on the environment. In situations of this type, the EU's civil protection experts must cooperate with other programme units in the EU and be aware, for example, of the EU's Seveso directive, which regulates interventions in cases of disasters concerning chemicals. After the disaster in Seveso in 1976 when a chemical factory exploded, EU governments adopted the so-called Seveso directive ⁽⁷⁾, which had the aim of preventing major industrial accidents and of limiting their impact. Special rules and safety routines were drawn up for risk industries. The directive has been updated on several occasions and, in 1999, Seveso directive II was adopted ⁽⁸⁾. This is a mandatory directive for the chemical industry. The Seveso directive does not cover the handling of nuclear material or the transport of hazardous goods. These aspects are regulated in special legislation.

In the EU a special action plan has been drawn up for community cooperation in cases of accidental and deliberate pollution at sea ⁽⁹⁾. As early as in 1978, the European Community adopted an initiative to reduce the risks and consequences of marine pollution. The role of the European Community has now been given its legal foundation through a decision of the European Parliament and the Council in December 2000. This decision creates a framework in the Community that has the objective of supporting and supplementing the efforts of member states; of contributing to improving the capabilities of the member states for response in cases of incidents; strengthening the conditions for and facilitating efficient mutual assistance and cooperation; and promoting cooperation among member states in order to provide for compensation for damage in accordance with the polluter-pay principle. A special Management Committee has been formed, consisting of national experts who will be responsible for transforming the principles in the framework into practice.

Nordic health preparedness agreement

In 2002 the governments of Denmark, Norway, Finland, Iceland and Sweden concluded an agreement on emergency services between the health and medical authorities in each country in order to increase the capacity of the Nordic countries to deal with crises and disasters. Examples of crises of this type are natural disasters and events (accidents and acts of terror) involving, for instance, radiation, biological substances and chemical substances. The agreement covers both measures to ensure preparedness and to provide assistance when one of the parties to the agreement is affected by a crisis or disaster. With the support of the agreement, obstacles to cooperation shall be removed and opportunities made available for the exchange of information, and experience and for joint human resource development. The agreement shall not constitute an obstacle to the Nordic states fulfilling their commitments under international law or participating in any other forms of international cooperation.

Protection against terrorist attacks

After the terrorist attacks in the USA on September 11, the member states decided that the European Union should draw up a special coordinated strategy to meet threats of terrorism. On September 21, 2001, the European Council adopted an action plan to strengthen cooperation in the police and legal fields and to develop legal instruments to stop the financing of terrorism; to improve air safety and to coordinate the interventions of the European Union. With the aid of this plan, cooperation between the members states should be improved in respect of the evaluation of threats of terrorism using chemical, biological, radiological and nuclear material (CBRN); storage of material of this type; and preparedness and interventions should disasters occur ⁽¹⁰⁾. The responsibility for protecting the population against CBRN rests with each individual nation while the EU can contribute to the coordination of interventions and expert support if a request for assistance is received.

In accordance with the action plan, a report was published in November 2001 on ongoing activities in the EU and the member states to develop and implement interfaces between the civil protection mechanism, the network for epidemiological surveillance and control of communicable diseases, and activities in key complementary sectors such as research and the pharmaceutical field ⁽¹¹⁾. A follow-up report was published in June 2002 ⁽¹²⁾. The Council's terrorism working group has regularly exchanged information on terrorism-related incidents, and the current terrorist threat in Europe has been followed and analysed. In order to improve protection and reduce vulnerability, the Commission has drawn up guidelines for information to the public in respect of the CBRN threat. Research projects have been initiated on risk analysis, prevention, detection and intervention in cases of CBRN attacks.

Routines have been developed for the rapid exchange of information between the member states in cases of terrorist-related incidents. A network has been established in the European Union for epidemiological follow-up and control of infectious diseases, and new diagnostic tests have been developed to enable epidemics to be detected more rapidly. A communication system has also been established for B-C health alert notifications with direct lines between the member states.

At the request of the member states, the World Health Organisation Regional Office for Europe also arranged a meeting in Copenhagen in December 2001 with the purpose of assessing the risks associated with a biological, chemical or nuclear terrorist attack and to identify the necessary planning, service and communication arrangements required to ensure a timely and adequate response ⁽¹³⁾. At the meeting, emphasis was given to the importance of partnership working and inter-sector coordination, training, the need for clarifying management responsibilities and lines of communication, and the potential for using new technologies. A global intelligence, knowledge and information network is now being established for the rapid identification of potential risks to enable necessary protective measures to be taken quickly.

Research findings can also need to be protected in order that they are not misused for purposes of terrorism. In a recently presented report from a group of editors of scientific journals, it was stated that: "Fundamental is a view, shared by nearly all, that there is information that, although we cannot now capture it with lists or definitions, presents enough risk of use by terrorists that it should not be published." ⁽¹⁴⁾.

RESEARCH

EU initiatives

There is an extensive research programme in the EU called the Marie Curie Actions ⁽¹⁵⁾. Since 1984, research workers in the member states have had the opportunity to participate in education and research programmes that have been financed by the Sixth Framework Programme and the European Research Area (ERA). The objective is to develop and transfer research competencies, consolidation and widening of researchers' career prospects, and the promotion of excellence in European research. For the period 2002 – 2006 funds amounting to 17,5 billion Euro have been granted.

As a Directorate-General of the European Commission, the Joint Research Centre (JRC) offers research opportunities at institutes in Ispra (Italy), Karlsruhe (Germany), Petten (the Netherlands), Geel (Belgium) and Seville (Spain) ⁽¹⁶⁾. The various institutes have a unique infrastructure, considerable technical resources and high levels of scientific skills. In the JRC's plan of operations for the period 2003 – 2006, eight themes have been given priority, of which three are related to disaster response: safety of chemicals, energy and transport, nuclear safety and security. The eight themes are supplemented by three horizontal priorities of which public security and anti-fraud is one.

As a result of JRC's work, risk mapping of natural hazards has been implemented, for example in respect of forest fires and floods. Indices for fire risk assessment have been developed based on structural, meteorological and vegetation stress parameters and burnt areas are identified and mapped on satellite imagery of medium spatial resolution by change detection techniques ⁽¹⁷⁾. In a corresponding manner, a European flood alert system has been developed that simulates flood risks for the whole of Europe up to 10 days in advance. This has been made possible with the aid of ten-day weather forecasts from the European Centre of Medium-Range Weather Forecasting. JRC has also developed a flood modelling system that can assist in evaluating flood control measures in medium- and large-scale catchments. JRC focus is on trans-boundary catchments, such as Oder, Meuse, Elbe and Danube.

National initiatives

Belgium

The Centre for Research on the Epidemiology of Disasters (CRED) ⁽¹⁸⁾ was established in Belgium in 1973. CRED, which is based in Brussels at the Department of Public Health of the Université Catholique de Louvain (UCL), became a World Health Organisation (WHO) Collaborating Centre in 1980 as a part of the WHO's global programme for Emergency Preparedness and Response. CRED is a non-profit institution with international status under Belgian law. CRED has formalised cooperation with the United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA) and the International Federation of Red Cross and Red Crescent Societies (IFRC). CRED's operational concept is to pursue research and to spread information to the international community so that adequate levels of preparedness are achieved and interventions in cases of disasters are made more effective. CRED's programme emphasises that the focus of international disaster response has to be shifted away from just delivering relief and emergency aid to protection of vulnerable individuals and communities. Sustainable actions, including human resource development and institutional and organisational strengthening, are becoming more important. CRED's research projects also have the aim of increasing knowledge of reasons for the occurrence of disasters and ways in which the vulnerability of society can be affected. Experience of disaster interventions is compiled and evaluated.

The Netherlands

In 2002, the government decided to establish a new, independent Safety Investigation Board to investigate all major accidents and disasters in the country ⁽¹⁹⁾. Both natural disasters and technical disasters would be studied as well as various near accidents. The objective is to increase knowledge in society to enable major accidents and disasters to be prevented and damage to be minimised.

The Safety Investigation Board will also pursue investigations abroad based on the engagement of the Netherlands in NATO and international agreements for air transport and shipping. On request, the Safety Investigation Board will also participate in investigations made by authorities in other countries.

Sweden

As early as in 1963, a committee was appointed in Sweden which was given the task of sending observers to areas affected by war or serious accidents. It was intended that these seconded observers, through their own observations and the information they collected, would analyse the course of disasters and the effects of interventions. In other words the task was to collect information, not to contribute expert assistance at the event in question. The committee was called the disaster medicine organisation committee (KAMEDO). KAMEDO was developed as a defence research project but the responsibility for KAMEDO was taken over by the National Board for Health and Welfare in 1989. During its 40 years' work, the committee has made a large number of studies and has collected and published a considerable amount of material in some 70 reports ⁽²⁰⁾.

PROJECTS

The first main project in the field of disaster medicine was held within the framework of the Community Action Programme for civil protection in 1998-1999. One objective was to establish a network of specialists in the European Union who could cooperate with each other in cases of disasters. Another objective was to start an education and training programme at European level for teachers in disaster medicine, and a third objective was to establish guidelines for psychosocial support in cases of disasters. While the first main project focused on activities, the emphasis of the second main project (2000-2002) was on policy making. The project has given priority to three areas in which policy papers and recommendations have been drawn up. The areas have been: preparation on large-scale accidents and disasters, cross border mutual assistance, and psychosocial care. The aim has been to bridge differences in culture, organisation and resources between the member states and not to standardise activities. The objective is "When struck by a large-scale accident or disaster, people living or travelling in European Member States should receive the same high quality of medical care".

SUMMARY

Previously, one of the major problems in disaster medicine has been the difficulty in obtaining political support for necessary resources to reduce risks and to increase protection against disasters. The Secretary General of the United Nations, Kofi Annan, has expressed the dilemma in the following way. "While the costs of prevention have to be paid in the present, its benefits lie in a distant future. Moreover, the benefits are not tangible; they are the disasters that did not happen". The disasters of recent years, and not least the terrorist attack against the World Trade Centre on September 11, 2001, has changed attitudes towards preparedness to meet disasters and most nations now realise the necessity of more extensive preventive efforts and early warning systems in order to avoid disasters and terrorist attacks. These developments have had the effect that disaster response focuses increasingly on surveying risks and reducing the vulnerability of society, and less on being prepared to act after the disaster has happened.

This also applies to environmental and natural disasters where both regions and countries see an increasing need of coordinated efforts to prevent or overcome disasters that could otherwise be spread to several countries. The European Union has taken a number of initiatives to facilitate cooperation between the member states and to support preventive work, preparedness and interventions when disasters occur. One precondition for the member states to be able to assist each other is access to an established and reliable common emergency communication and information system. A system of this type is now being created in the European Union.

Extensive work is also being done by voluntary organisations such as the International Federation of Red Cross and Red Crescent Societies (ICRC).

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