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"New diseases are global threats to health that also cause shocks to economies and societies. Defence against these threats enhances our collective security. Communities also need health security. This means provision of the fundamental prerequisites for health: enough food, safe water, shelter, and access to essential health care and medicines. These essential needs must also be met when emergencies or disasters occur."

Dr Margaret Chan
Director-General, WHO

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Assessment of health security and crises management capacity

Republic of Moldova

IHA

March 2008

Abstract

“Support to health security and preparedness planning in EU neighbouring countries”, a WHO Regional Office for Europe project supported by the European Commission, Directorate-General for Health and Consumers, has the overall objective of assessing national capacity to respond to public health emergencies and iÜlement the International Health Regulations (IHR) in selected European Neighbourhood Policy (ENP) countries while promoting a multisectoral approach to ensure the interoperability of existing public health emergency plans and their coherence with the EU policies and strategies. After negotiation with the relevant ministries of health, Armenia, Azerbaijan and the Republic of Moldova were selected for assessment.

In February-March 2008, a WHO multidisciplinary team, in cooperation with local counterparts, carried out the assessment in the Republic of Moldova using a newly-developed standardized assessment tool to evaluate the health risks, the status of generic emergency plans and the interoperability of public health emergency plans in the country. The WHO health system framework was used as the conceptual basis for describing and analysing the health system. The report includes the conclusions of the assessment team as regards generic preparedness planning, the IHR, chemical safety and climate change and health in relation to disaster preparedness and response.

Keywords
Security measures
Disease outbreaks
Natural disasters
Emergencies
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Foreword

This report describes the situation in the area of health crisis management in the Republic of Moldova as of March 2008. A WHO mission to the country completed its work on 5 March 2008, which is therefore the cut-off date for the information in this report and any changes in the situation that have taken place since the mission are not reflected.

The report evaluates the arrangements in place and the level of health system preparedness to any crises, regardless of their cause. It also pays attention to risk prevention and mitigation initiatives in the country. While the emphasis is on the national level, some attention has been paid to crisis management capacities on the regional level and to the linkages between various levels of government.

The preparation process for comprehensive health security assessments in selected Member States of the World Health Organization European Region started in early 2007 with expert consultations to develop and define an assessment tool. The countries to be assessed also needed to belong to the group of countries falling under the so called European Neighbourhood Policy of the European Union.

The Republic of Moldova fulfils the above mentioned criteria. The Ministry of Health welcomed the assessment team from the WHO Regional Office for Europe to pilot the newly developed assessment tool in the country. The assessment visit took place from 24 February to 5 March 2008 by a five-member team representing expertise in the areas of general disaster preparedness and response, chemical safety, health effects of climate change and the International Health Regulations. During the assessment visit, the WHO team met with over 30 representatives (and some of them several times) from the key institutions involved in crisis management activities in the Republic of Moldova, mostly in the capital Chisinau but also in Cahul district. The national contributors are acknowledged in Annexes 1–3 of the report. However, the Trans-Dniester (Transnistria) breakaway region was not visited and this region and the related "frozen conflict" situation are therefore not covered by the assessment or this report.

This health crisis management review in the Republic of Moldova was carried out thanks to the efforts and support from the Ministry of Health. Special thanks go to Dr Mihai Pisla, the Main Counselor from the Office of the Minister of Health and a key expert on crisis management, who organized the visits, contacted all relevant sectors, provided invaluable information and participated in most of the interviews.

Particular thanks are also extended to the staff of the WHO country office in the Republic of Moldova, who supported the preparation and implementation of the mission from its inception.

We acknowledge the grant from the European Commission, Directorate-General for Health and Consumers, which supported both the implementation of this project and the preparation of the report.

Gerald Rockenschaub
Regional Adviser

Jukka Pukkila
Desk Officer

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SECTION A: INTERNATIONAL POLICY CONTEXT

HEALTH SECURITY – CURRENT ISSUES AND TRENDS

Global health security

The United Nations Commission on Human Security established that good health and human security are inextricably linked and that illness, disability and avoidable death are critical pervasive threats to human security *(1)*. It identified the three main health challenges as: conflict and humanitarian emergencies; infectious diseases; and poverty and inequity.

The statistics show a steady rise in the number of disasters[1] *(2)* worldwide, many of which are attributed to climate change. In the past 20 years, disasters have killed over 3 million people and adversely affected over 800 million.

Not only are the established infectious diseases spreading more quickly (for example, multi-drug resistant tuberculosis (TB) and HIV/AIDS are becoming an increasing threat to health security) but new diseases are also emerging at a faster rate than ever before (one or more per year since the 1970s). Nearly 40 diseases now exist that were unknown a generation ago.

Natural and man-made disasters, depending on their magnitude and the vulnerability of the populations they affect, can have a devastating effect on the health status both in the short- and long term. This is often aggravated by economic loss, which also has a negative impact on the heath status and, therefore, on the economic burden in the health sector as a whole.

Increasingly, disaster management is becoming a priority in countries. The reasons for this are the following.

- The economic and political implications of disasters, particularly outbreaks of communicable diseases, and their effect on trade and tourism, can be enormous. Low-income countries are clearly the most vulnerable to these negative effects.
- The effects of climate change have serious implications for global health security. In addition to the consequences for the health of individuals, environmental changes may well result in mass population movement and competition for scarce resources, leading in turn to conflict and political instability.

[1] For inclusion in the Centre for Research on the Epidemiology of Disasters (CRED) database, a disaster must have resulted in at least one of the following criteria: 10 or more deaths; 100 or more people affected; a declaration of a state of emergency; a call for international assistance.

- States Parties to the revised International Health Regulations (IHR), which came into force on 15 June 2007, are legally bound to meet their requirements.

Governments, particularly in low-income countries, are often loath to invest in strategies aimed at disaster prevention and/or risk reduction and there is an overall tendency to under-invest in the health sector. Statistics show *(3)* that, on average, the lower the Gross Domestic Product (GDP) of any particular country, the smaller the percentage invested in health.

Health security in the World Health Organization European Region

In 2006, three countries of the World Health Organization (WHO) European Region were among the top ten countries in the world most affected by crises (according to number of deaths), ranking fourth (the Netherlands – heat wave in July), fifth (Belgium – heat wave in July) and eighth (Ukraine – cold wave in January).*(4)*

Between 1990 and 2006, 42 million people in the Region were directly affected by natural disasters. Of these, there were 609 accidents, 344 floods, 112 events of extreme temperature, 170 windstorms, 102 earthquakes, 31 droughts, 58 wildfires and 57 landslides and avalanches, resulting in over 90 000 deaths. This does not include the wars and violent conflicts that have killed over 300 000 people in the Region over the last 20 years (see below). Other severe events in the recent past include the Chernobyl nuclear power plant accident in 1986, which the United Nations estimates affected several million people, and the Spitak earthquake that killed over 25 000 people in Armenia in 1988[2].

Since 1990, a series of violent wars and conflicts in the Region have had vast political, social and human consequences. Armed conflict in Bosnia and Herzegovina, Croatia, Serbia (including the United Nations Administered Province of Kosovo), Slovenia and The former Yugoslav Republic of Macedonia resulted in an estimated 125 000 fatalities and the displacement of up to 3 million people. The break-up of the former Soviet Union brought about a number of violent episodes in Azerbaijan (Nagorno-Karabakh), Georgia (Abkhazia and South Ossetia), the Republic of Moldova (Transnistria), the Russian Federation (Chechnya, Ingushetia, North Ossetia and Dagestan) and Tajikistan, causing the loss of an estimated 200 000 lives.

A number of serious terrorist attacks have taken place in the Region in the last fifteen years, including those which occurred in France (Paris, 1995), Spain (various ETA (bombings; Madrid train attack, 2004), Turkey (various) and the United Kingdom of

[2] The EM-DAT database *(2)* does not include data from before 1990 for individual republics of the former Soviet Union.

Great Britain and Northern Ireland (London, 2005). Reportedly[3], more than five times as many attacks have been thwarted in Belgium, France, Germany, Italy, the Netherlands, Spain and the United Kingdom, and the list of failed or aborted attempts is probably longer than we may ever know.

The break up of the former Soviet Union and former Yugoslavia and the enlargement of the European Union (EU) have led to major changes in the health sector in many low- and middle-income countries. In many instances, the World Bank and international policies for donor funding and economic growth have been the driving force behind these changes. Often, rapid decentralization and privatization strategies for health service delivery were not preceded by the necessary process of building local management capacity at the sub-national and municipal levels; nor were they necessarily accompanied by a transfer of national resources. In many countries, access to services has only improved for the privileged few, while for the poor and vulnerable the barriers to accessing health care have increased.

International Health Regulations

The need to strengthen capacity for emergency preparedness and response, particularly in low-income countries, is firmly based on current trends and statistics and supported by a wide variety of literature on global warming, environmental hazards, bioterrorism and re-emerging and emerging diseases, particularly severe acute respiratory syndrome and avian influenza. The level of international concern about this need is reflected in an increasing amount of media coverage and the establishment of various commissions, committees and international coordinating bodies (e.g. the United Nations International Strategy for Disaster Reduction[4], the Commission on Human Security[5] and the WHO Health Action in Crises Programme[6]) to address issues related to emergency preparedness and response.

Growing concern about national, regional and international public health security led to the adoption of the revised International Health Regulations by the 58th World Health Assembly in May 2005. These provide a new legal framework for strengthening surveillance and response capacity and protecting the public against acute health threats with the potential to spread internationally, negatively affect human health and interfere with international trade and travel.

The revised IHR have a much broader scope than the previous version dated 1969, which focused only on the international notification of specific communicable diseases. States

[3] http://www.radionetherlands.nl/currentaffairs/region/westerneurope/ter050218, accessed on 7 September 2008.
[4] http://www.unisdr.org, accessed 7 September 2008.
[5] http://www.humansecurity-chs.org/, accessed 7 September 2008.
[6] http://www.who.int/hac/en/, accessed 7 September 2008.

Parties to the IHR are now obliged to assess and notify WHO of any event of potential international public health concern, irrespective of its cause (whether biological, chemical or radionuclear) and origin (whether accidental or deliberate). The criteria for assessing the international public health implications of any given event are outlined in the algorithm presented in Annex 2 of the IHR. These include health-related events that are unusual or severe, may have a significant impact on public health, may spread across borders, and may affect freedom of movement (of goods or people). ´

For effective implementation, States Parties (with WHO support) are also required to develop a national IHR implementation plan by June 2009 and to meet national core capacity requirements by June 2012. How this can be achieved, particularly in low income countries, is not yet fully envisaged.

The European Union and the European Neighbourhood Policy

At present, 27 of the 53 Member States of the WHO Regional Office for Europe are also members of the European Union (EU). A further three countries are in candidate status (Croatia, the former Yugoslav Republic of Macedonia and Turkey). Albania, Bosnia and Herzegovina, Montenegro and Serbia are in the process of negotiation.

Furthermore, in 2004, to avoid the emergence of new dividing lines between the newly enlarged EU and its immediate neighbours, and with a view to strengthening the prosperity, stability and security of all concerned, the EU invited the neighbouring countries to become part of the European Neighbourhood Policy (ENP). This policy builds upon a mutual commitment to common values, such as democracy and human rights, rules of law, good governance, market economy principles and sustainable development, and is distinct from the accession process. ENP countries in the WHO European Region are Armenia, Azerbaijan, Belarus, Georgia, Israel, the Republic of Moldova and Ukraine. They are bound by an agreed action plan, which includes political and economic reforms with short- and medium-term priorities, such as the harmonization of national legislation on communicable disease surveillance and response and environmental health, and the coherence of national public health crisis plans with current EU policies and strategies.

Both the IHR and the ENP are legally-binding agreements. They provide a framework within which countries are required to strengthen crisis preparedness and response and thus health security at both European and global levels.

EU support to crisis preparedness and response

In March 2007, in the light of the ENP and the IHR, DG SANCO[7] (under priority 2.2 of the DG workplan), provided funding to the WHO Regional Office for Europe for a one-year project entitled: Support to health security and preparedness planning in EU neighbouring (ENP) countries. The overall objective was to assess available capacity to respond to public health crises in selected ENP countries, including the core capacity required to implement the IHR, and to promote a multisectoral approach to ensuring the interoperability of existing public health emergency plans and their coherence with the EU policies and strategies.

The specific objectives of the project were:

- to coordinate the development of a feasible and standardized assessment tool for evaluating (a) the priority health risks; (b) the status of generic emergency preparedness plans; and (c) the interoperability of public health emergency plans in selected countries;
- to conduct assessments in three ENP countries of the WHO European Region, the candidate countries being Armenia, Azerbaijan, Belarus, Georgia, Israel, the Republic of Moldova and Ukraine, and to disseminate the results;
- to produce and submit a final, consolidated report, including strategic and operational recommendations on further developing a joint European Commission–WHO plan of action to improve the level of preparedness in the assessed ENP countries and other EU neighbouring countries.

After negotiation with the relevant Ministries of Health, Armenia, Azerbaijan and the Republic of Moldova were selected for assessment using the newly-developed assessment tool. All three countries showed a keen interest in strengthening the capacity of the health sector for crisis preparedness and response at national level, as well as a willingness to host the mission.

The following is a report on the findings of the third and final assessment, conducted in the Republic of Moldova in February–March 2008.

[7]Directorate-General for Health and Consumers – http://www.epha.org/r/64, accessed on 16 August 2008.

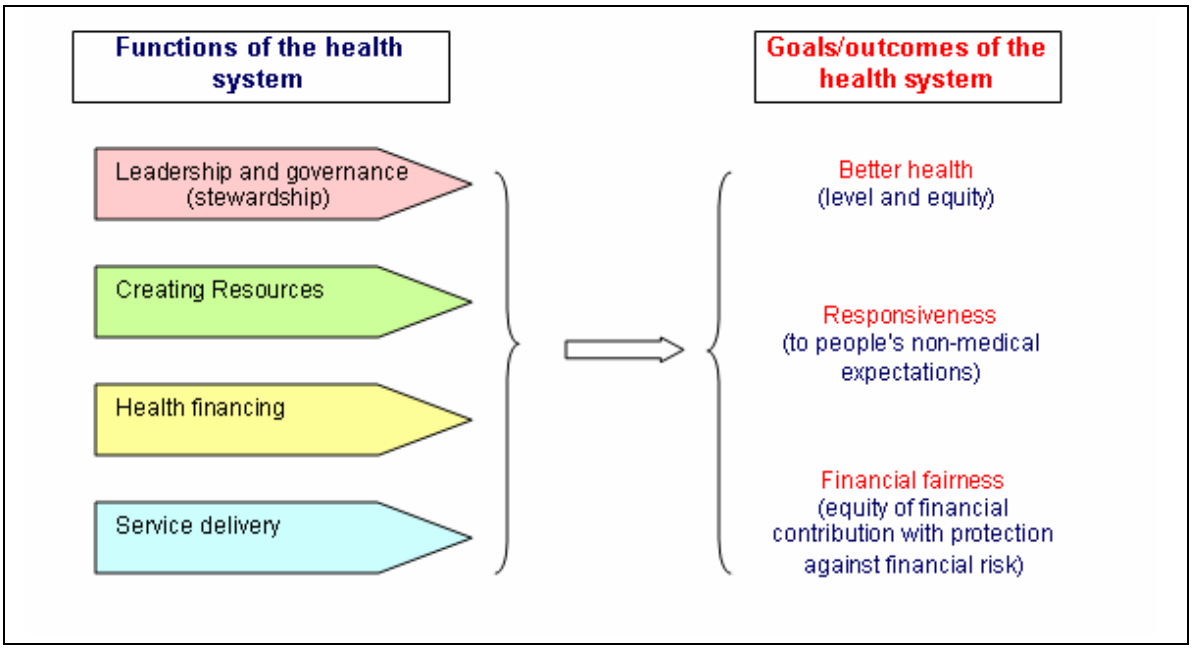
THE WHO HEALTH SYSTEMS FRAMEWORK

Health systems are defined by WHO as comprising all the resources, organizations and institutions that are devoted to taking interdependent action aimed principally at improving, maintaining or restoring health.

It is generally recognized that health systems vary widely in performance and countries with similar levels of income, education and health expenditure can differ in their ability to attain crucial health goals. This is mainly attributable to differences in design, content and management strategies that are often complex and difficult to assess when viewed as a whole. By transforming the crucial health goals into a number of measurable objectives and assessing these on the basis of four key functions needed by all health systems to fulfil their purpose, WHO is focusing on improving health systems performance in all countries in the Region. Working within this health systems framework**,** WHO can help decision-makers at all levels to analyse variations in health care performance, identify factors that influence it, and establish policies with the aim of achieving better results.

The following four key functions make up the WHO health systems framework *(5)*: (1) leadership and governance; (2) creating resources; (3) health financing; and (4) service delivery (Fig. 1).

Fig. 1. WHO health systems framework



Leadership and governance of the health system are achieved through careful and responsible management that results in influencing all sectors with regards to policy on and action for population health. In connection with preparedness planning, this means ensuring the existence of national policy that incorporates health system crisis preparedness. It also means having effective coordination structures and partnerships in place and involves advocacy, risk assessment, information management and monitoring and evaluation.

Creating resources includes engaging all the health workers aimed primarily at protecting and improving population health. It also encompasses health technologies, infrastructure and pharmaceuticals. In terms of crisis management, preparedness planning ensures that, given the available resources and circumstances, there will be a sufficient number of qualified staff to respond to a crisis. Education and training, the collection, analysis and reporting of data, and management of the supplies and equipment needed to respond to a crisis, also fall under this heading.

The **health financing** function ensures the collection of revenues, their subsequent pooling and, finally, the purchase of health services from providers. In terms of crisis management, a good health financing system ensures that there are adequate funds for health system activities related to risk prevention and mitigation, preparedness and response. It also provides financial protection in case of a crisis, ensures that crisis victims have access to essential services, and that health facilities and equipment are adequately insured for damage or loss.

Service delivery relates to a service production process that, when needed, combines the input of various providers into health interventions that are effective, safe and of high quality, and ensures their delivery to relevant individuals or communities in an equitable manner and with a minimum waste of resources. The organization and management of services are reviewed through a health system crisis management process to ensure access, quality, safety and continuity of care across health conditions and health facilities during a crisis.

Table 1 shows the key components of the four functions related to the health system crisis management process.

Table 1. Key components related to crisis management – by health system function

Leadership and governance	Creating resources	Health financing	Service delivery
Policy and legislation	Human resources	Preparedness funding	Guidelines and protocols
Institutional framework	Medical supplies and pharmaceuticals	Contingency funding	Mass casualty management
Essential leadership functions	Data collection, analysis and reporting		Risk management of health facilities
Partnerships and coordination			Lifelines, logistics, telecommunication and security

Health system performance is measured not only by how well each function in the framework is carried out but also by the relationship between the functions. Good interaction is crucial to attaining better health outcomes.

In 2006, the WHO Regional Office for Europe utilized the health systems framework to develop the document, *A practical tool for the preparation of a hospital crisis preparedness plan, with special focus on pandemic influenza (6)*. It aims to provide a simple tool for planning appropriate measures to be adopted by a hospital and/or, more generally, a health facility in preparation for a critical situation. As this was welcomed by the Member States, the Regional Office decided to extend this concept to developing a similar tool for preparing a crises preparedness plan for the health sector as a whole, again based on the health systems framework. This would constitute a part of the DG SANCO-funded project, and serve as a basis for developing a standard assessment tool. Therefore, the Health systems preparedness planning workshop was held in March 2007 in Barcelona, Spain, with the objective of developing this tool and of agreeing on a tool for assessing national health security capacity.

The assessment tool utilizes the four core functions of the WHO Health System Framework to conceptually separate, classify and analyse the different components that are essential to a comprehensive and effective crisis management process.

Further information on health systems can be found in: *The world health report 2000 (5)*, WHO Regional Office for Europe Health System's Strategy *(7)* and *Everybody's business: Strengthening health systems to improve health outcomes (8)*.

CROSS-CUTTING ISSUES FOR DISASTER PREPAREDNESS AND RESPONSE

Effective crisis preparedness and response is governed by a number of crosscutting (strategic) principles, which WHO encourages Member States to adopt. These are the all-hazard approach, the multidisciplinary (intrasectoral) approach, the multisectoral approach and the comprehensive approach.

The all-hazard approach

Different crises invariably result in similar problems and response requiring similar systems and types of capacity. The need for information management and resource management (including human resources), as well as of maintaining effective communication strategies, is in essence the same whether the crisis is the result of an earthquake, a flood or a terrorist attack. Hence, WHO promotes a generic, all-hazard approach, actively discouraging the establishment of vertical planning mechanisms, while recognizing that each different type of crisis requires a specific area of technical expertise.

The multidisciplinary (intrasectoral) approach

Health systems are defined as comprising all the organizations, institutions and resources that are devoted to producing action aimed principally at improving, maintaining or restoring health *(7)*. This includes public and private initiatives (for example, by nongovernmental organizations (NGOs) and international agencies), and action at central, local, population and military levels – from tertiary care to local community health care – all of which may have a role to play during a crisis. WHO, therefore, encourages transparency and interoperability in the planning process, and promotes the involvement of all disciplines and levels of the health system to ensure a coordinated and effective response, making the best use of often scant resources and ensuring that plans are appropriate and feasible.

The multisectoral approach

Health sector plans also need to be linked to and interfaced with national disaster preparedness and response plans to avoid confusion, prevent duplication of effort and make the best use of resources. This is important not only during a crisis but also as part of prevention, reduction and mitigation strategies. Other government departments, private enterprises and commercial organizations can play an important role in reducing the negative health effects of, for example, inappropriate urban development and use of land, poor agricultural practices and inadequate legislative procedures. Although not directly responsible, the Ministry of Health needs to ensure that health is not overlooked in the

push for greater profits and economic growth and to advocate a multisectoral approach in dealing with health issues. However, multisectoral planning continues to be a challenge in many countries as governmental departments often prefer to develop their own individual plans, in parallel with other key partners.

The comprehensive approach

The economic consequences of a crisis can be enormous and risk reduction, prevention and mitigation are increasingly becoming priority areas that need to be taken into consideration when planning national crises preparedness, mitigation and response *(9)*. Therefore, WHO encourages Member States to develop and implement strategies for the different aspects of crises preparedness planning, bearing in mind that they are not separate entities but overlap with each other in scope and timeframe *(10)*. They can be summarized as follows:

- Prevention, reduction and mitigation: Activities that address these aspects aim to reduce the likelihood or impact of a disaster and, in the health sector, are devoted mainly to ensuring the functionality of the health facilities and key installations in the aftermath of a disaster.
- Preparedness: This requires a multidisciplinary, multisectoral planning process to strengthen the capacity and capability of systems, organizations and communities so that they can better cope with emergencies when they occur.
- Response and recovery: Action related to this aspect covers a wide range of activities implemented during and after an emergency, which have specific humanitarian and social objectives linked to long-term strategic goals and sustainable development.

OBJECTIVES AND METHODOLOGY

Objectives of the mission

1. To support the Ministry of Health of the Republic of Moldova in identifying the strengths, weaknesses and gaps in current disaster preparedness and response plans and in setting up a framework for developing country capacity and strengthening health security overall, including an action plan for the implementation of the revised IHR.

2. To pilot and further develop a flexible tool for the assessment of the country's capacity for emergency preparedness and response with special reference to:
    - the legal framework and institutional arrangements in place for the prevention and mitigation of, preparedness for and response to potential natural and man-made disasters[8] ;
    - the compatibility of the national legal framework with the provisions of the IHR;
    - the core capacity necessary for IHR implementation;
    - the capacity to deal with disasters resulting from the release of chemical substances, be they accidental or intentional;
    - the capacity to deal with emerging threats related to climate change, including increased morbidity and mortality from heat, heat waves, floods, windstorms, and communicable diseases (vector-borne, waterborne and foodborne).
    - avian influenza and pandemic influenza.

3. To share information and experiences with national personnel, other United Nations agencies, donor organizations and national and international NGOs involved in disaster preparedness and response activities throughout the Republic of Moldova.

[8] The definition of a disaster in this context includes all natural and man-made events which affect health security and where local resources and/or expertise are overwhelmed and outside support is required to reduce the impact on morbidity and mortality. This definition covers disasters at local, regional and national levels.

Methodology

A multidisciplinary team of five international experts (Table 2) carried out the assessment from 25 February to 5 March October 2008 in cooperation with local counterparts from the WHO Country Office. One of the international experts was nominated to write the final report with contributions from the other experts to, in particular, the sections related to climate change, chemical safety and the IHR.

Table 2. WHO Crises Management Assessment Team in the Republic of Moldova

Name	Position	Area of expertise	No. of days
Dr Nida Besbelli	Technical Officer, Chemical Safety Noncommunicable Diseases and Environment, WHO Regional Office for Europe	Chemical safety and environmental health	3
Mr Thomas Hofmann	Technical Officer, Communicable Disease Surveillance and Response, WHO Regional Office for Europe	International Health Regulations	5
Dr Franziska Matthies	Technical Officer, Global Change and Health, Noncommunicable Diseases and Environment, WHO Regional Office for Europe	Health effects of global change (including climate change)	3
Ms Barbara Pearcy	Short Term Consultant, Disaster Preparedness and Response Programme, WHO Regional Office for Europe	Disaster management, communicable disease control and response, public health laboratories	10
Dr Jukka Pukkila	Desk Officer, Disaster Preparedness and Response Programme, WHO Regional Office for Europe	Disaster management	10

Standard assessment tool

The assessment was carried out using a standard tool that had been previously piloted in Armenia and Azerbaijan and revised on the basis of the experience gained in these countries. The assessment tool consists of a master questionnaire covering the pertinent issues related to health crisis management in the health sector and supplementary questionnaires tailored to individual functions within the Ministry of Health and other ministries, as well as to donors, NGOs and the United Nations agencies. The supplementary questionnaires are utilized to feed information into the master questionnaires, triangulate responses and provide different perspectives on the main issues to be covered. It should be noted that the assessment tool is still under development.

Sources of information

Interviews with key stakeholders

Structured and/or informal interviews were carried out (using the assessment tool where appropriate) with representatives of the key stakeholders, which in this context included:

1. the Ministry of Health and related departments;
2. other government ministries, in particular the Civil Protection and Emergency Situations Services (under the Ministry of the Interior), the Ministry of Environment and Natural Resources and the Ministry of Agriculture and Food Industry;
3. United Nations agencies: The United Nations Children's fund (UNICEF), the United Nations Development Programme (UNDP);
4. the European Commission delegation in the Republic of Moldova;
5. the World Bank;
6. the WHO Country Office.

A detailed overview of the schedule of the mission and those interviewed can be found in Annex 1.

Review of documents and reports

The following documents were reviewed for background information and with the aim of triangulating and supplementing information collected during interviews.

1. Report on environmental protection in the Republic of Moldova. Ministry of Environment and Natural Resources, 2007.
2. Relief and technical assistance response to the drought in Moldova, Project Status Report No. 2. 31 January 2008. United Nations Moldova.
3. Healthcare System Development Strategy, 2008-2017. Ministry of Health, 2007.
4. Health Care Systems in Transition, the Republic of Moldova (Draft 2008), WHO.
5. Rural Productivity in Moldova – Managing Natural Vulnerability (World Bank, May 2007).
6. Assessment of food supply, related to drought (Food and Agriculture Organization, World Food Programme, August 2007).
7. Drought after-effects upon population (UNICEF, October 2007).
8. Disaster risk reduction – assessment and project development (United Nations, November 2007).
9. The Strategy for Central Public Administration Reform in the Republic of Moldova.

Introductory meetings and feedback sessions

A round-table meeting to discuss the objectives of the mission was held on the first day (Monday, 25 February 2008), chaired by the Minister of Health and attended by key stakeholders from the health sector (Annex 2).

Another meeting, chaired by the Minister of Health, was held on Tuesday, 4 March 2008, to provide feedback on the initial findings of the mission (Annex 3).

Recording and analysis of results

Step 1 – Accuracy of the facts

Transcripts were prepared as soon as possible after the interviews and shared with other interviewers present to allow for additions and corrections and ensure a common understanding of the facts. The WHO Country Office in the Republic of Moldova was asked, where possible, to clarify any contradictory information and to provide additional information where necessary.

Step 2 – Feedback

The team met at the end of each day to share information, discuss the findings of the day and plan future interviews. On Saturday, 1 March 2008, the three international team members still present reviewed the responses to each question in the master questionnaire to reach a consensus on: (a) what information was already available; (b) what further information was required; (c) which key findings had been identified; and (d) the content of the short presentation on the findings to be made for the Ministry of Health on Tuesday, 4 March.

Step 3 – Triangulation and report writing

Following the mission, when all the transcripts had been received by the report writer, a further analysis of the information was carried out. Using a system of triangulation, the responses were compared for differences in the viewpoints of the interviewees with respect to the key issues of the Health Systems Framework, as well as in the interviewers' interpretation of the information received. It should be noted that qualitative research techniques, such as textual analysis of the transcripts or transactional analysis of the interviews themselves, were not used.

The findings of the assessment mission are presented in the following sections of the report:

Section B: Overall findings

This section consists of a narrative report comprising chapters on:

- Risk assessment;
- Legal framework;
- Institutional and organizational framework;
- Partnerships and coordination;
- Crisis planning;
- Strategic initiatives;
- The International Health Regulations (IHR);
- Climate change and health;
- Chemical safety

Section C: Health Systems Framework – analysis and recommendations

This section systematically lists the key findings according to the four functions of the WHO Health Systems Framework. Each finding is based on a clear rationale and followed by the recommendations of the assessment team.

Issues related to methodology and problems encountered

As the standardized assessment tool and overall methodology are still under development, it is difficult to verify whether the problems and gaps in data collection are inherent in the methodology itself or due to true inconsistencies in the information gathered.

The assessment is very ambitious and attempts to address a large number of specialized subject areas that are often themselves the basis of an assessment, for example, communicable diseases surveillance and control *(11)*.

Deliverables

As this mission had a number of objectives, the projected deliverables were as follows.

(a) To the Ministry of Health of the Republic of Moldova

1. A comprehensive report highlighting the strengths, weaknesses and gaps in the present national disaster preparedness and response planning framework in the Republic of Moldova.

(b) To the WHO Regional Office for Europe

1. Baseline data on the present capacity of the Ministry of Health of the Republic of Moldova to respond to a crisis situation, which will enable WHO to better target future technical assistance and evaluate progress made within the framework of the Biennial Collaborative Agreement.
2. Baseline data on the current core capacity for implementation of the IHR, on the basis of which it will be possible to determine the WHO support required in order to meet the IHR requirements by 2012.
3. A revised assessment tool that can be further developed by the WHO Regional Office for Europe for use on a regional and, potentially, a global basis.

(c) To the European Commission

1. A report on the current capacity of the Republic of Moldova to respond to a crisis situation and on the strengths and weaknesses observed.
2. An overview of the current status of the DG SANCO-funded project, "Support health security and preparedness planning in European Neighbourhood Policy (ENP) countries".

SECTION B: OVERALL FINDINGS[9]

Fig. 2. Map of the Republic of Moldova

Source: Map No. 3759 Rev. 3, October 2006. United Nations, Department of Peacekeeping Operations, Cartographic Section.

[9] It is understood that following the assessment mission a number of changes have taken place in the organizational framework of the Ministry of Health and its subordinate institutions, which have served to strengthen the crisis preparedness and response activities in the Republic of Moldova. The text of the report may therefore not always be representative of the current situation.

Official country name:	The Republic of Moldova
Capital city:	Chisinau
Main ethnic groups:	Moldovan/Romanian, Ukrainian, Russian, Gagauz
Main languages:	Moldovan, Russian, Gagauz
Main religion:	Eastern Orthodox
Monetary unit:	Moldovan leu (MDL)

The Republic of Moldova is effectively a land-locked country situated in south-eastern Europe, bordered by Romania to the south and west, and Ukraine to the north and east. Due to its position in eastern Europe, it has suffered a chequered history, fought over by the Austrians, Romanians, Russians and Turks since the first Moldovan state was declared in 1365 *(12)*.

RISK ASSESSMENT

Past crises and potential threats

The database of the Centre for Research on the Epidemiology of Disasters (CRED) *(2)* lists floods, extreme temperatures, wind storms and drought as the natural disasters that are responsible for the highest mortality rates and have the greatest adverse effect on large numbers of the population in the Republic of Moldova (Table 3).

Table 3. Most significant natural disasters occurring in the Republic of Moldova in terms of death and population affected, 1990–2008

Disaster	Date	No. of fatalities	No. affected[a]
Flood	August 1994	47	25 000
Windstorm	November 1994	3	25 580
Flood	July 1997	9	2 244
Flood	March 1999	0	1 713
Epidemic	August 1999	0	1 647
Drought	May 2000	2	[b]
Windstorm	November 2000	0	2 600 000
Flood	June 2002	1	500
Flood	August 2005	0	6 500
Extreme temperatures	January 2006	13	[b]
Drought	2007	0	210 394
TOTAL		**75**	**2 873 578**

Source: EM-DAT: The OFDA/CRED International Disaster Database, Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain, Brussels, Belgium.

[a]Definition: People requiring immediate assistance during a period of emergency, for example, basic survival needs, such as food, water, shelter, sanitation and immediate medical assistance.
[b]No data provided.

A more detailed overview follows of the types and frequency of disasters that have been encountered in the Republic of Moldova highlighting disaster threats that deserve consideration in the planning process.

Communicable diseases

Following independence, an increase in the incidence of vaccine-preventable diseases was precipitated by poor economy, an increase in population movement and a general deterioration in the implementation of prevention and control programmes. As in a number of neighbouring countries, the Republic of Moldova suffered a major outbreak of diphtheria between 1994 and 1996, peaking in 1995 with over 9 reported cases per 100 000 people *(13)* and over 700 people affected in 1994 and 1995. A cholera outbreak also occurred in 1995, a measles outbreak in 2002 and, in 2007–2008, an outbreak of mumps in young adults with approximately 1900 cases a week reported in February 2008.

Since the mid-1980s, increases in TB have been seen in all of the countries of the former Soviet Union. The Republic of Moldova experienced this epidemic later than average but, since 1989, the incidence of TB in the country has been rapidly and unremittingly rising (Fig. 3). HIV rates have been more unevenly distributed within the countries of the former Soviet Union; concentrated epidemics were experienced in (among others) Latvia and Ukraine, whereas in the Republic of Moldova the trend in recent years has been a steady increase (Fig. 4).

Fig. 3. Tuberculosis incidence per 100 000

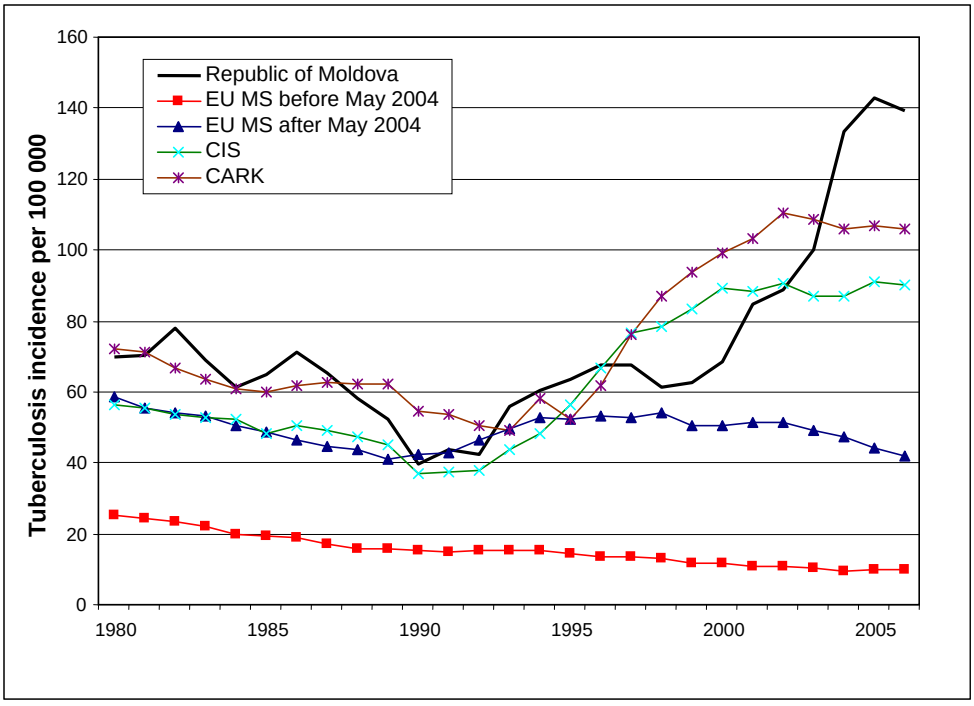
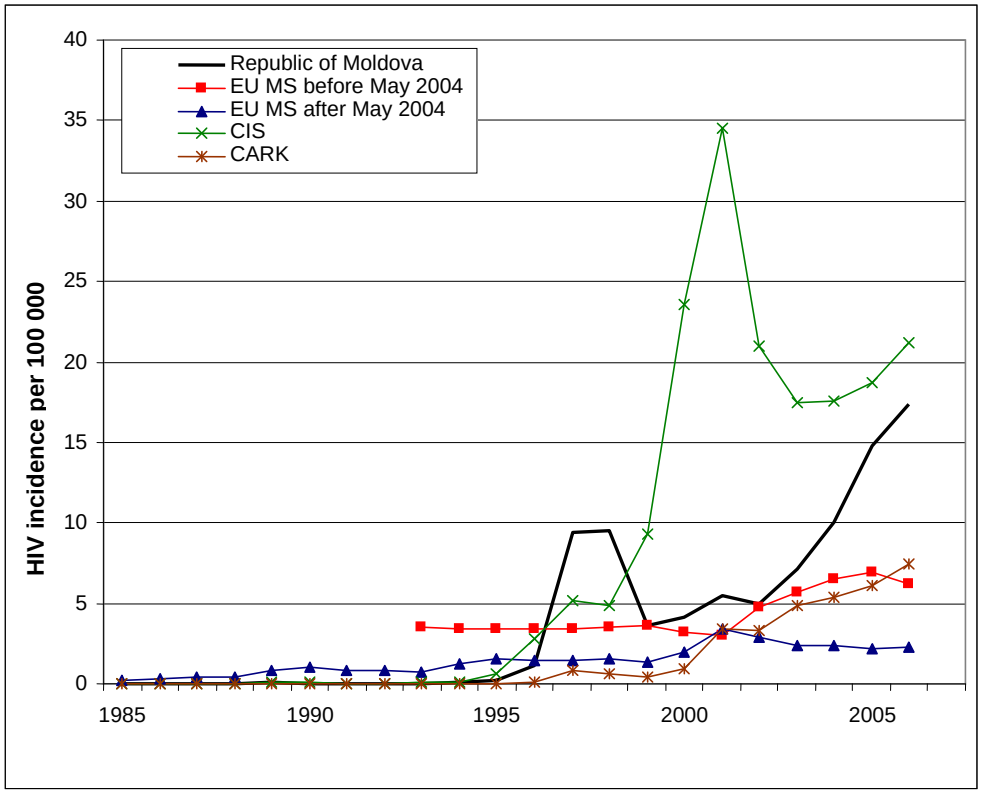


Fig. 4. HIV incidence per 100 000



Earthquakes

Situated in the seismic zone of the Carpathian Mountains, the Republic of Moldova regularly experiences earthquakes. Their epicentre is most often located in the Carpathian Mountains in the south (Vrancea, Romania), 225 km from Chisinau. Over the past 200 years, the Republic of Moldova has suffered sixteen major earthquakes of force 7–8 on the Richter Scale, four of which happened last century (1934, 1940, 1977, 1986). Documentation on impact is scarce except in relation to the earthquake in 1986, when it was reported that 261 people had been injured, 1200 rendered homeless, over 7000 buildings damaged and the economic losses were estimated at US $510 million *(13)*. Mortality to date has been low but there are concerns that a major earthquake will occur sometime in the future and that it will seriously affect the capital city of Chisinau.

Drought

The Republic of Moldova normally records moderate winters and warm summers but abnormally high temperatures and low rainfall over a three-year period led to a serious drought in 2007 when harvests were severely diminished and the socioeconomic situation rapidly deteriorated. A total of 210 000 people were reported to have been affected *(2)*

and in a survey carried out by UNICEF *(14)*, 80% of those interviewed considered that the drought had had an adverse affect on their state of health. The effects of poor nutrition were exacerbated by reduced access to potable water, particularly in rural areas where 45% of the population rely on wells as their main source of drinking water.

Flooding

Flooding occurs relatively frequently in some parts of the Republic of Moldova. It involves mainly the smaller internal rivers and affects approximately 168 settlements (160 000 people) and a surface of 1300 km^2. In 1994, severe floods in Cimişlia killed 29 people, destroyed 802 homes and left over 2000 houses badly damaged. The true extent of the damage caused by floods – that were mainly the result of heavy rainfall – is not known since local floods are not always registered and, therefore, individual victims and damage to private property may not be recorded.

In the 1960s and 1970s work was carried out on the large infrastructures and, as a result, flooding from the Republic of Moldova's larger transboundary rivers, Dniester (Nistru) and Prut, no longer poses a significant threat. The most serious events begin upstream, in the Carpathian Mountains, which makes it easier to predict potential threats than is the case when they occur in the smaller, internal rivers.

Landslides

Large areas of the Republic of Moldova are affected by landslides (approximately 790 km^2 with a total 15 000 locations) and they are increasing every year *(15)*. While landslides can be triggered by heavy rainfall or earthquakes, these are not the causes in the Republic of Moldova, where they are probably linked to subsidence from large construction works and widespread deforestation. Landslides in the Republic of Moldova are relatively slow-moving and not a major contributor to morbidity or mortality *(2)*. The danger they cause is mainly related to local displacement, which may result from damage to buildings and other assets. During the past two decades, two major landslides have affected inhabited areas: (1) the Leuşeni village of the Hînceşti district (1988) where 214 houses were destroyed and 137 damaged; and (2) the Teleneşti district (1999) where 61 houses were destroyed and 73 damaged.

Severe weather conditions

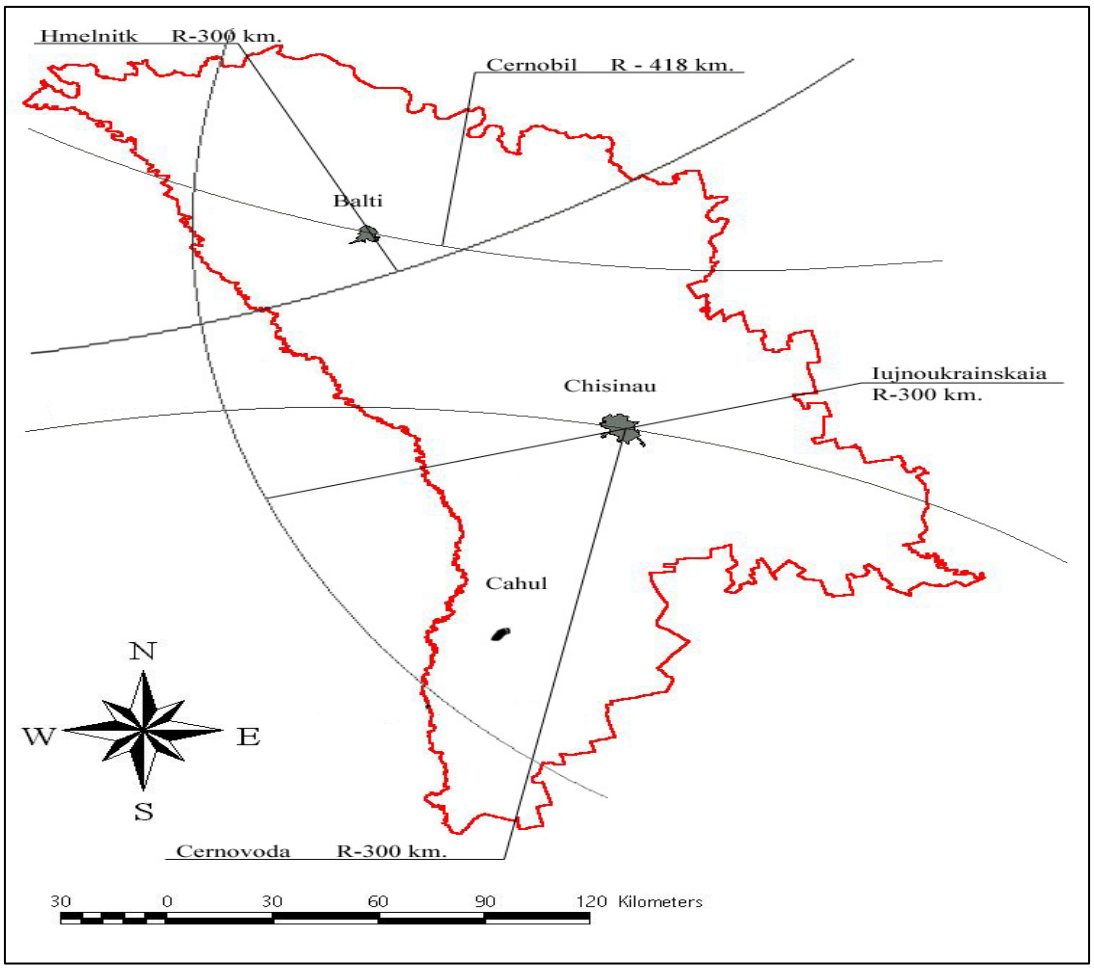
The Republic of Moldova is subject to a number of severe weather events, particularly between May and August when storms are, by nature, very local and can occur very suddenly. These events include torrential rainfall (often the cause of the flooding of small rivers as noted above), hail and heavy winds, sometimes in combination. Even in the absence of river flooding, in most years the Republic of Moldova's torrential summer rainfall causes more economic damage than any other natural hazard, apart from erosion, as it washes out roads, damages the electric power distribution network, clogs wells, and

causes other infrastructural damage *(15)*. For geographical reasons, the Republic of Moldova is especially affected by hail, which often causes severe local damage. For the period 1998–2005, a conservative estimation of the cost is about US$ 5.9 million.

Nuclear accidents

The Republic of Moldova does not have nuclear power plants but there are seven located in neighbouring countries, within a distance of approximately 400 km: one in Bulgaria, one in Romania and five in Ukraine. Except for the reactor in Romania, they are based on the same technology as the Chernobyl reactor and considered disaster-prone.

Fig. 5. Nuclear power stations in countries neighbouring the Republic of Moldova



Source: Civil Protection and Emergency Situations Services, Ministry of Interior, Republic of Moldova, 2008.

Industrial accidents

No major industrial accidents have been recorded since the country became independent in 1991 *(2)*. However, pollution above the normal levels is not uncommon in the smaller rivers, especially during the summer when oxygen levels are low. In 2007, seven cases of heavy pollution occurred in the river that passes through Chisinau. Both the larger Dniester (Nistru) and Prut rivers originate in the Carpathian Mountains in Ukraine, the Prut heading south to form a 711 km border between the Republic of Moldova and Romania, and the Dniester (Nistru) crossing through the Republic of Moldova on its way to the Black Sea. Both neighbouring countries have large chemical facilities with the potential to precipitate an accident that could directly affect the Republic of Moldova.

Other potential hazards include the regular transport of nuclear waste from Bulgaria to the Russian Federation across the Republic of Moldava and the necessity to import all fuel and gas by road and through a gas pipeline. Two explosions had occurred in the 24 months prior to the assessment. An oil refinery exists in Comrad and a new port will be opened in July 2008 at Giurgiulesti along the 480 km stretch of the Danube River that passes through the south of the Republic of Moldova, allowing free access to international waters. An increase in the transport of potentially toxic substances by road and rail, more industry and greater population movement across the borders, are all seen as potential risks.

Environmental issues

There is heavy use of agricultural chemicals, including banned pesticides, such as DDT, which have contaminated the soil and groundwater. Poor farming methods have also led to extensive soil erosion.

An in-depth risk analysis of natural hazards was conducted by the World Bank in May 2007 and resulted in a comprehensive report, *Rural Productivity in Moldova – Managing Natural Vulnerability (15).*

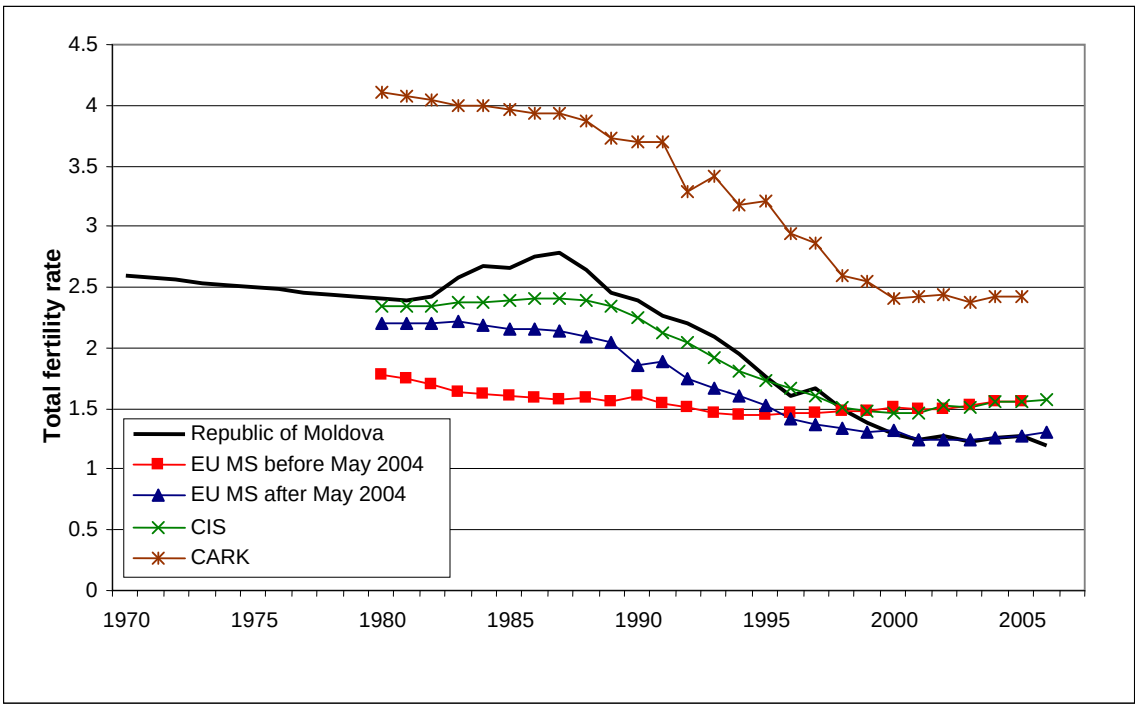
Factors affecting the vulnerability of the Republic of Moldova

Demographic factors

The Republic of Moldova was the most densely populated country of the former Soviet Union. The population had reached 4.3 million at around the time of independence with approximately 750 000 (17%) living in the capital of Chisinau. However, since then the population has been rapidly decreasing and, by 2006, had fallen to 3.6 million. The reason for this was a combination of negative population growth (-0.11%: 2007 estimate) and the emigration of young adults in search of work, mainly to the Russian Federation and Romania. An estimated 25% of the country's economically-active population has emigrated and remittances amount to 20–25% of the gross domestic product (GDP).

The current population density figure of 122 persons per km^2 is now in fact comparable to that of the EU average of 112 per km^2 and the Republic of Moldova ranks 87th in the world in terms of population density.*(16)* However, although the total fertility rate[10] dropped below the replacement rate [11] of 2.2 in 1993, and since the year 2000 has been approximately the same as the EU rate before May 2004 (Fig. 6), it should be noted that the proportion of children under 14 years of age still remains higher than that in the EU and equal to that in the Commonwealth of Independent States (CIS) (Fig. 7).

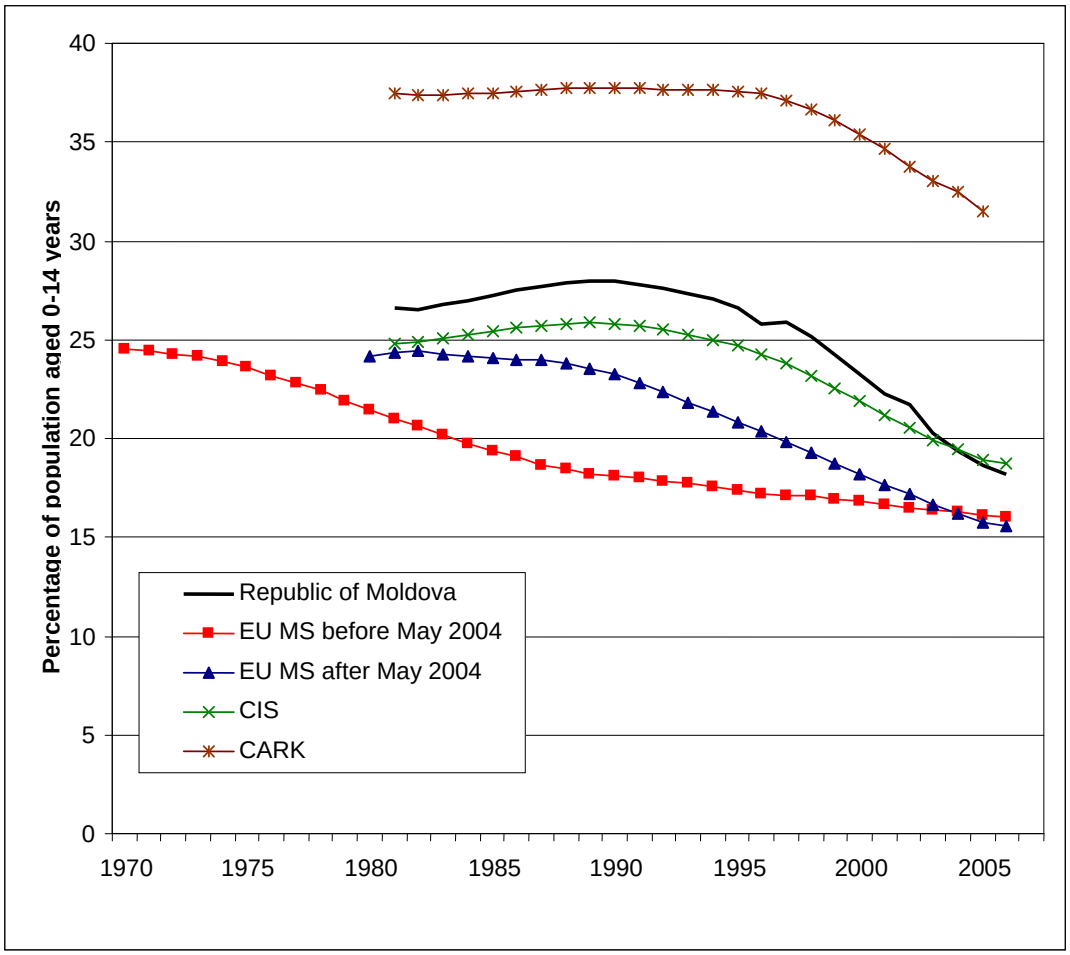
Fig. 6. Total fertility rate



[10] The total fertility rate is an estimate of average completed family size based on current age-specific birth rates.

[11] Replacement rate is the average number of children per family required to keep the population in equilibrium

Fig. 7. Percentage of population aged 0–14 years



Conclusion

The decrease in the young-adult population as a result of emigration, together with the relative large numbers of vulnerable groups (children and chronically-ill adults) could result in a high dependency ratio that needs to be taken into consideration when planning for crises. Continued low fertility may result in the need to decrease children's services, which would have implications for surge capacity and, in turn, for children during emergencies.

Economic factors

Previously, the Republic of Moldova was a small, highly-integrated part of the economy of the former Soviet Union, with a large manufacturing industry in Transnistria. The country has few natural resources and depends on imported energy and other raw materials. It remains one of the poorest countries in Europe and, with 54% of the

population living in rural areas, the economy relies mainly on agriculture and food processing. Of a labour force of 1.33 million, 40.7% work in agriculture, 12.1% in industry and 47.2% in services. However, of the total land area of 33,844 km^2 only a 3000 km^2 area (9%) is irrigated and almost 50% of the population rely on wells as their main source of drinking water.

Table 4 shows that, by 1994, the gross domestic product (GDP) had fallen to 40% of its 1990 value. Economic growth was resumed only in 1998 (later than in many other countries of the former Soviet Union and central and eastern Europe) but, by 2004, it was still only at 44% of the 1990 baseline.

Table 4. Real gross domestic product (GPD), purchasing power parity (PPP) US$ per capita

Year	GPD, PPP, US$ per capita	% of 1990 baseline
1990	3896	100.0
1991	3500	89.8
1992	3670	94.2
1993	2370	60.8
1994	1576	40.5
1995	1547	39.7
1996	–[a]	–[a]
1997	1500	38.5
1998	1947	50.0
1999	2037	52.3
2000	2109	54.1
2001	2150	55.2
2002	1470	37.7
2003	1510	38.8

[a]No data available.

In 1999, 73% of the population was classified as poor[12]; by 2004, this proportion had fallen to 26.5% *(17)*. This improvement was paralleled in the level of inequalities, which – reflected as a Gini coefficient – changed from 0.38 in 2000 to 0.36 in 2004[13]

Since hitting a record low in 1999, public spending in the health sector in terms of percentage of GDP has now returned to levels similar to those reported in 1996 and is in line with or slightly higher than those in EU Member States in eastern Europe (Figs. 8

[12] Based on absolute poverty line.
[13] On a scale of 0 to 1, with 0 representing perfect equality.

and 9). This shows a commitment to health expenditure on the part of the Government. However, as GDP (PPP) is currently so low, it should be noted that the Republic of Moldova actually spends less on health in absolute terms than any other country in the WHO European Region.

Fig. 8. Real gross domestic product, purchasing power parity in US$ per capita

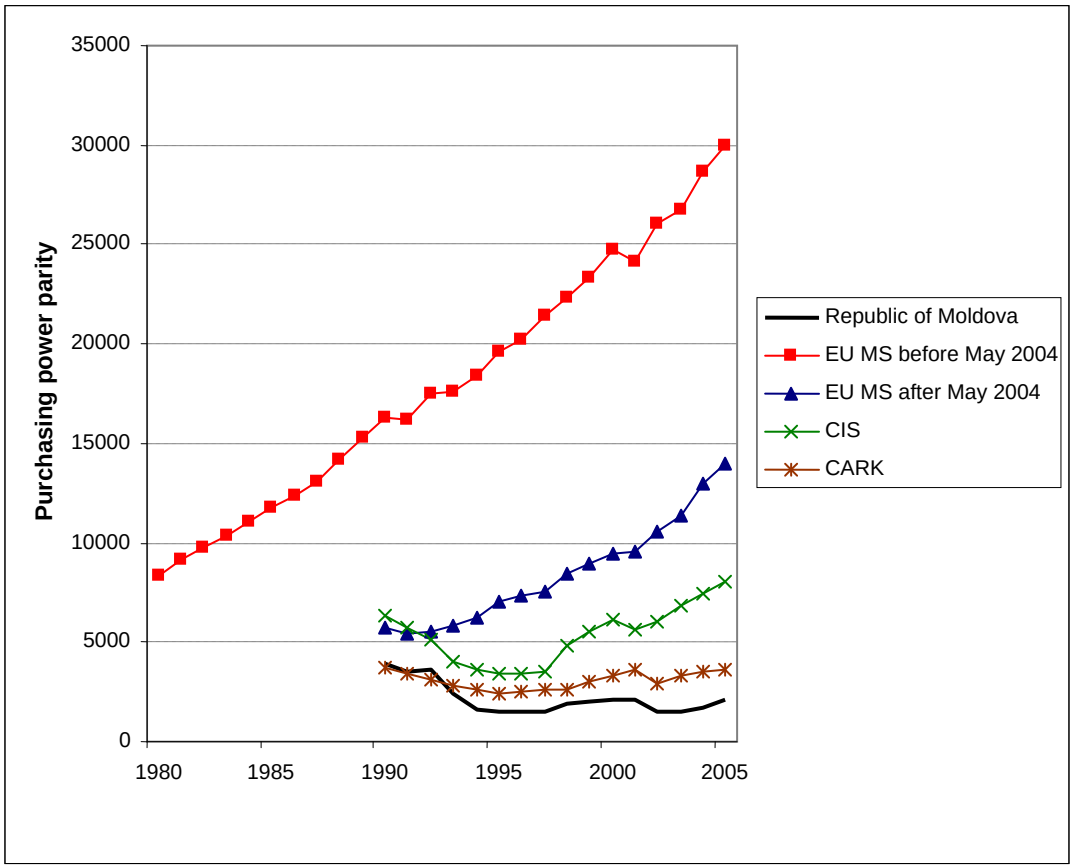
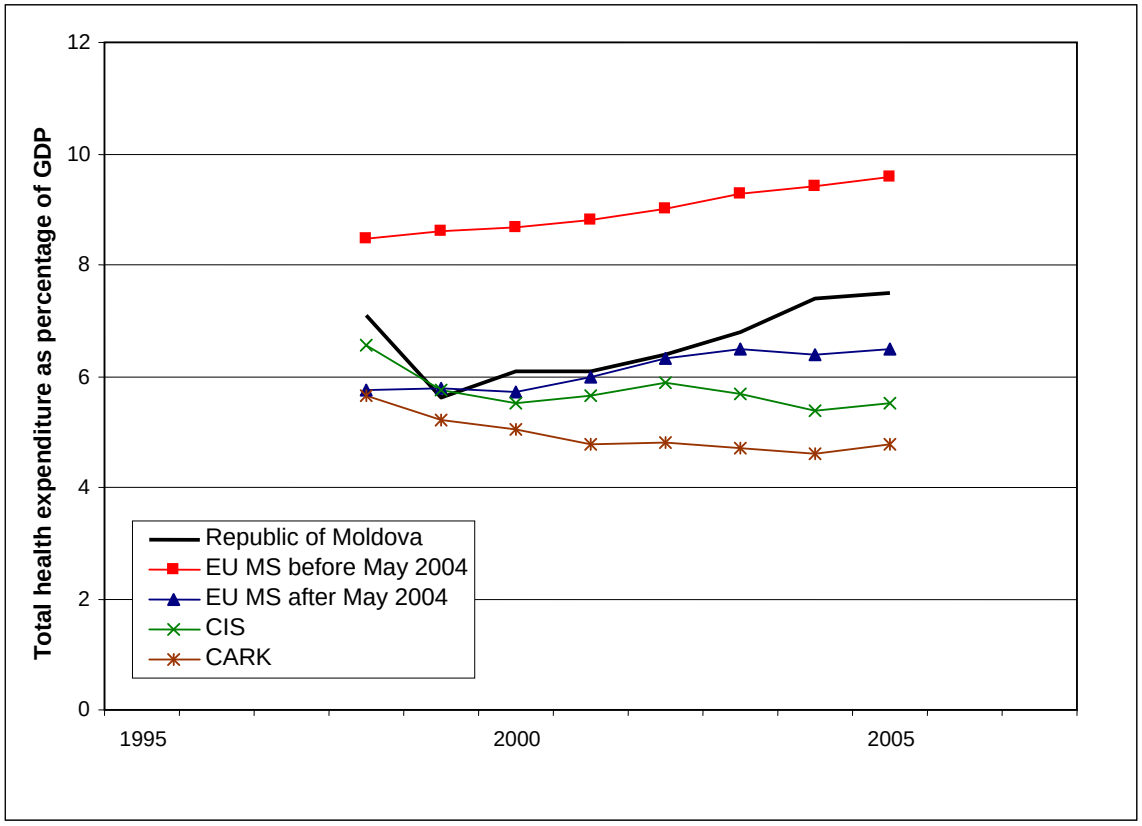


Fig. 9. Total health expenditure as percentage gross domestic product (GPD), WHO estimates



Conclusion

The financial resources available for health in the public sector are very limited. There is still substantial poverty in the Republic of Moldova and the private health sector is small. Furthermore, a large proportion of the Moldovan population relies heavily on agriculture and has poor access to irrigation and potable water. The effects of a crisis on the health status could be severe, particularly if it is caused by droughts or floods.

Health status

The Republic of Moldova experienced the same dip in life expectancy at birth as other countries of the Commonwealth of Independent States (CIS), the central Asian republics and Kazakhstan during the economic transition of the 1990s, falling from 69.0 years in 1989 to 65.9 years in 1995, taking a middle position among these countries. Since then, figures have continued to improve, reaching an average life expectancy in 2007 of 68.5 years *(2)*, which almost equals pre-independence figures and is higher than the average for the CIS (Fig. 10). Life expectancy at 45 years is, however, amongst the lowest in WHO European Region with cardiovascular disease, cancers and, in particular, chronic liver disease and cirrhosis among the main causes of premature mortality (Fig. 11).

Mainly associated with hepatitis and alcohol abuse, which in turn are associated with social stress and poverty, the Republic of Moldova has the worst statistics for chronic liver diseases and cirrhosis in the whole of the WHO European Region (Fig. 12).

Fig. 10. Life expectancy at birth, in years

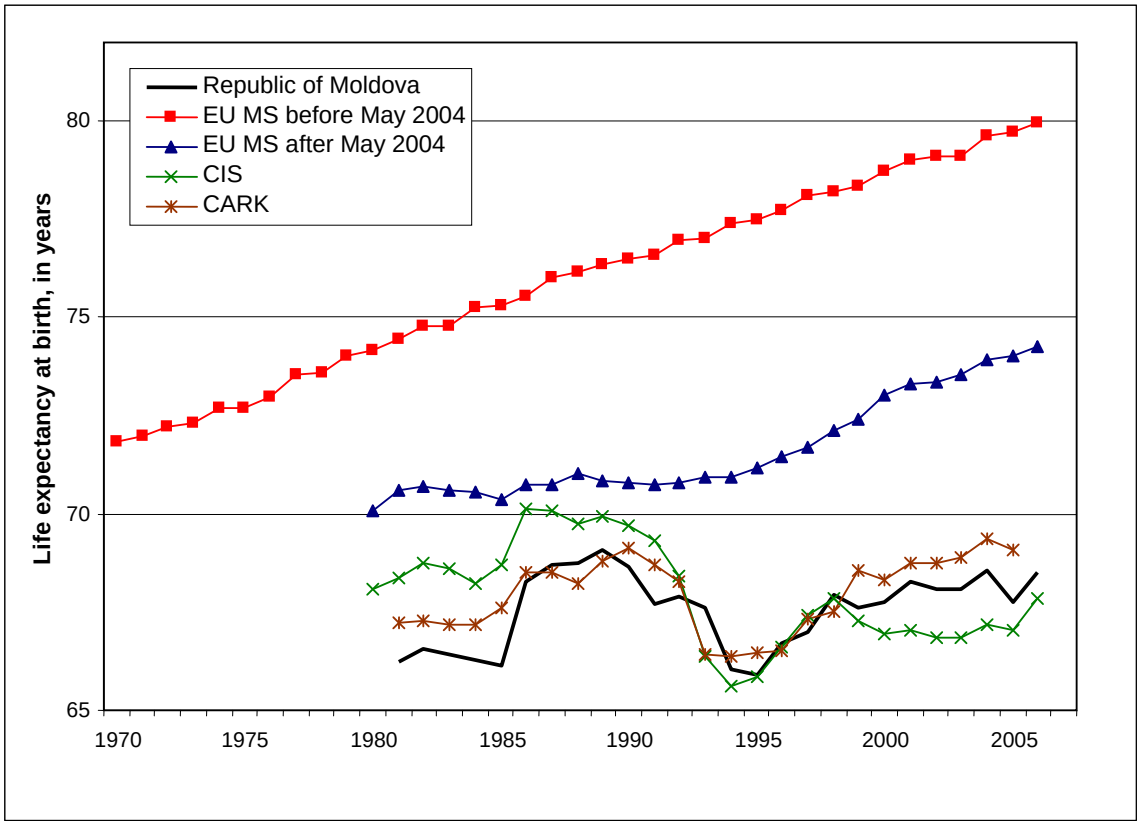


Fig. 11. Life expectancy at age 45, in years

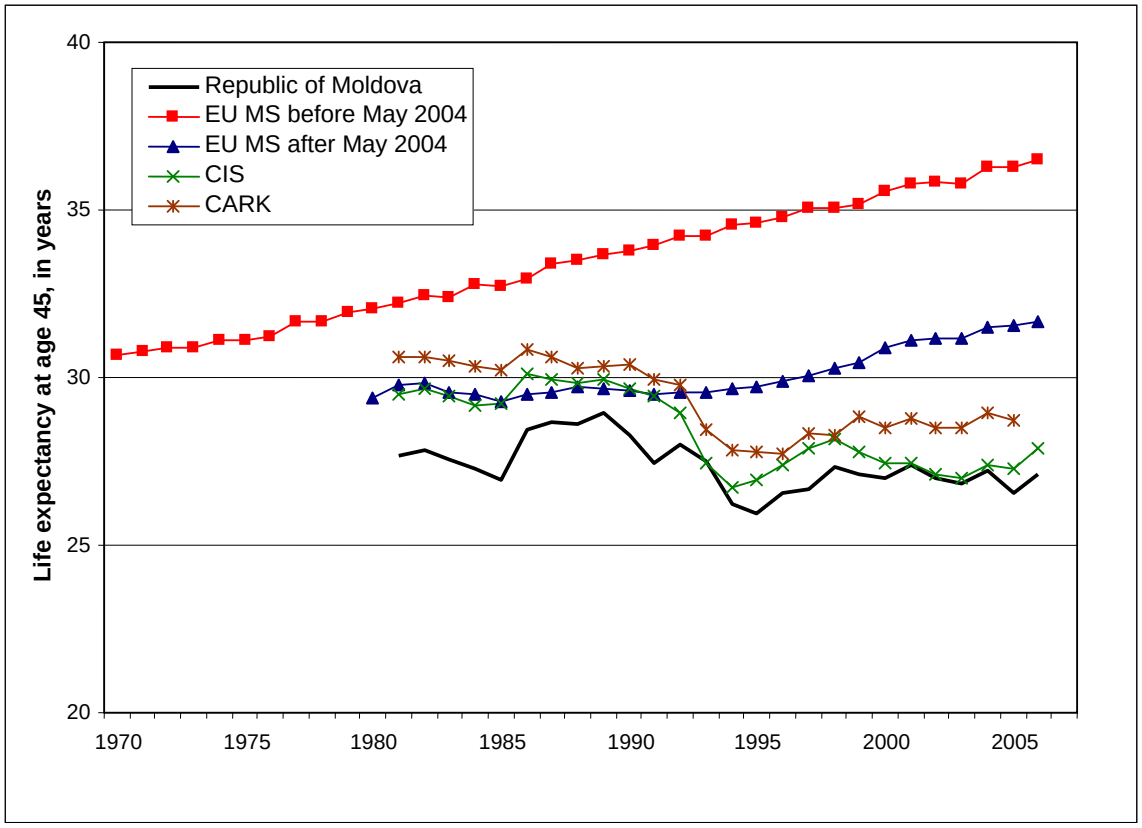
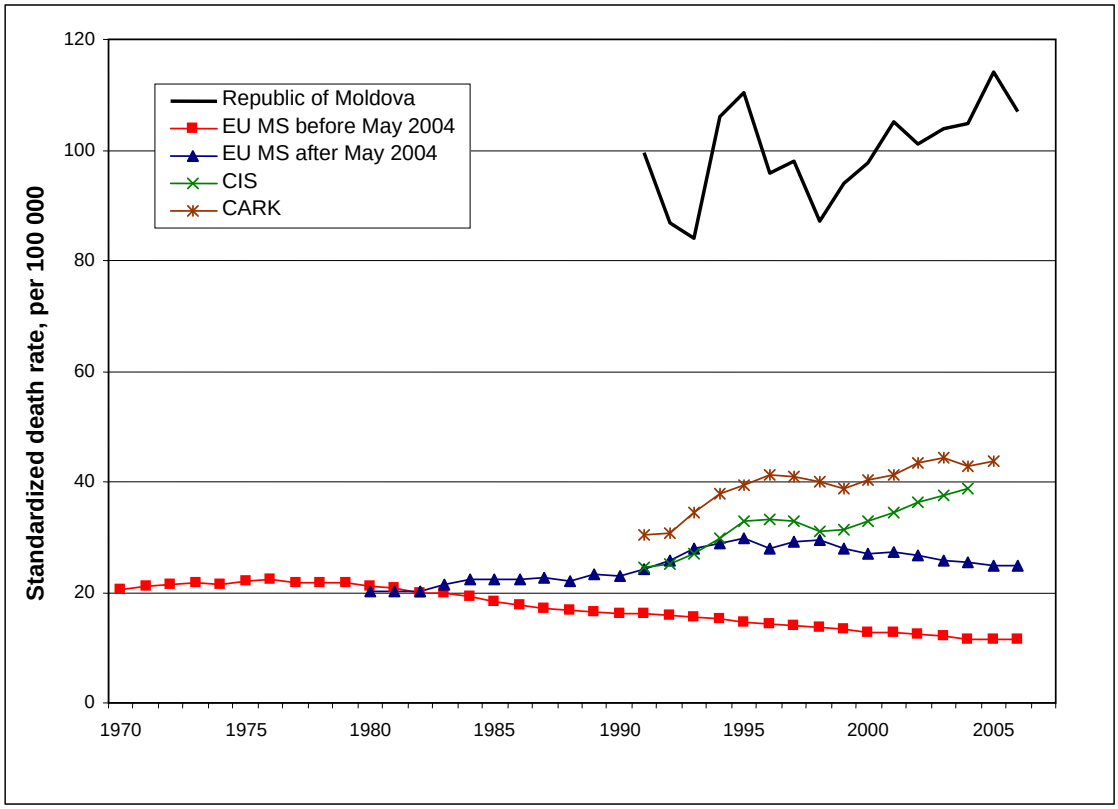


Fig. 12. Standardized death rates, chronic liver disease and cirrhosis, all ages, per 100 000



It is encouraging, however, that neonatal and post-neonatal death rates[14] in the Republic of Moldova show continuous improvement and remain in line with those of other CIS countries, although it should be noted that CIS rates still lag far behind those of the EU average (Figs. 13 and 14).

[14] Neonatal deaths tend to reflect access to, and quality of, obstetric services, whereas post-neonatal deaths tend to reflect conditions in the social environment.

Fig. 13. Neonatal deaths per 1000 live births

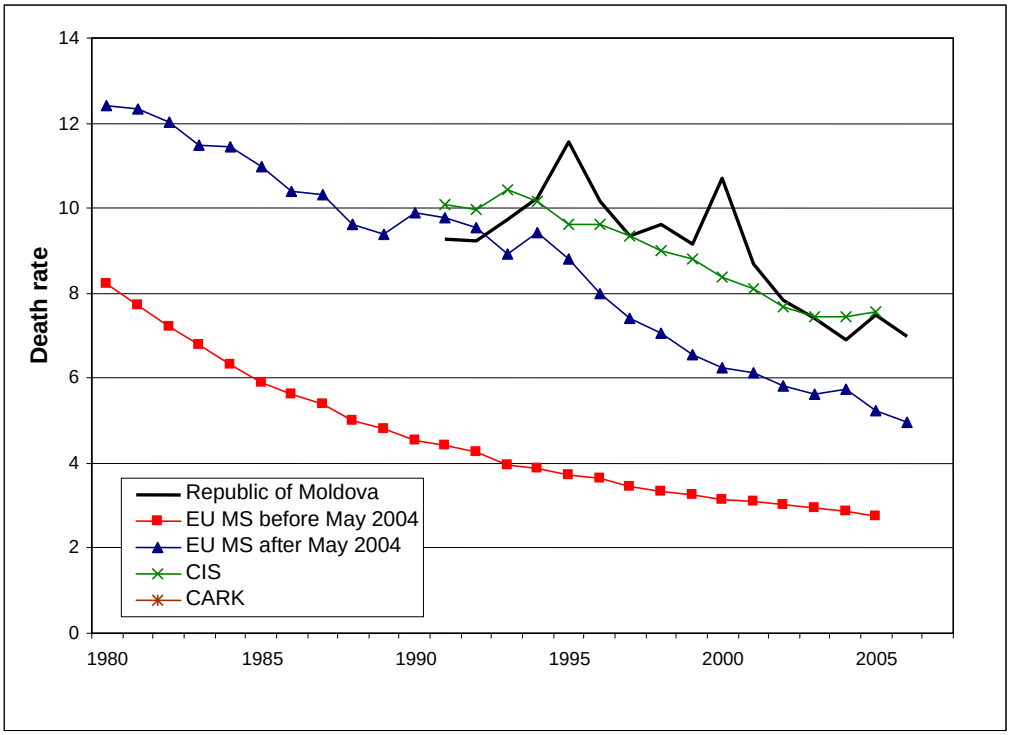
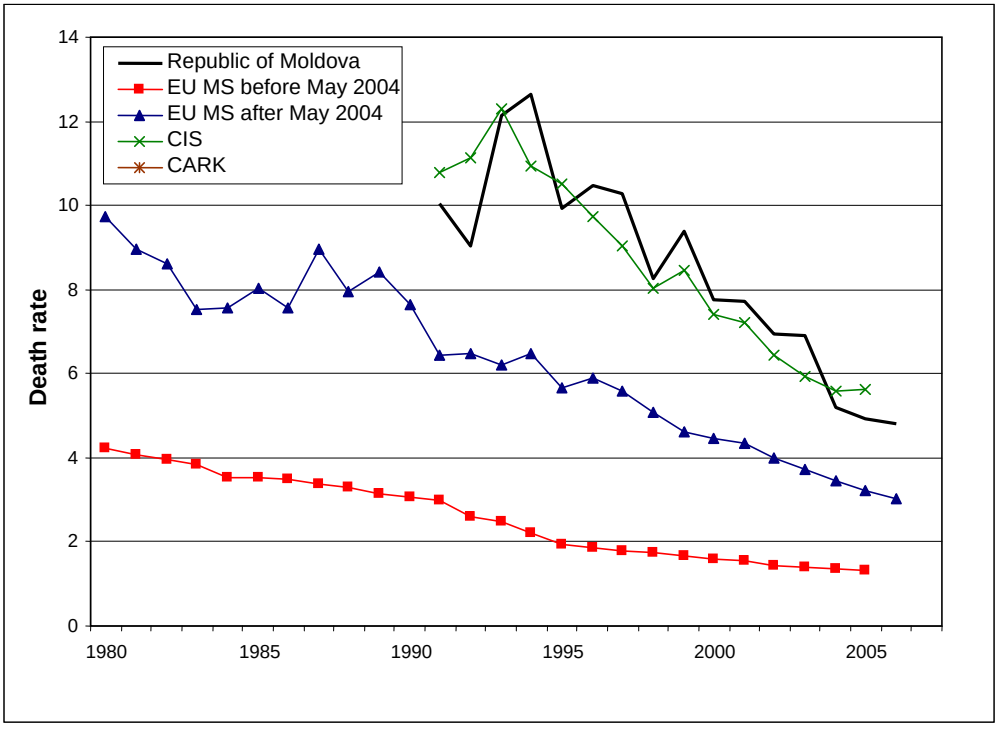


Fig. 14. Postneonatal deaths per 1000 live births



Conclusions

Overall health status in the Republic of Moldova is steadily improving, indicated by an increase in life expectancy at birth and a decrease in neonatal and post-neonatal death rates. However, there is a high incidence of chronic diseases in people over the age of 45. Maintaining routine health services for this vulnerable group during a crisis could be an important factor in decreasing avoidable mortality and morbidity.

Political issues

Since the Republic of Moldova claimed independence from the former Soviet Union in 1991, there has been civil unrest in Transnistria that sought to maintain links with the former Soviet Union and declared independence from the Republic of Moldova shortly after secession. Although the self-proclaimed Transnistria-Moldova Republic has never been recognized internally or internationally as an independent state, it currently has its own parliament, president, constitution, economic system and currency. Under the supervision of the Organization for Security and Cooperation in Europe (OSCE), the Republic of Moldova and Ukraine operate joint customs posts to monitor the transit of people and commodities through the Transnistria region (around 0.6 million). Basic health and demographic data for the inhabitants have not been available since 1997.

Conclusion

Access to timely and accurate data is of paramount importance in ensuring a rapid and coordinated response to a potential crisis. This is particularly important for an effective surveillance of population risks, which is the cornerstone of the IHR.

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LEGAL FRAMEWORK

Civil protection

The Government Commission for Emergency Situations is defined under the Law on Civil Protection, No. 271 of 9 November 1994 and established by Government Decision No. 1340 of 4 December 2001 on the Commission for Emergency Situations of the Republic of Moldova. Its function is national (multisectoral) policy development and planning for crisis preparedness, mitigation and response.

The implementation of policy and plans is mainly achieved through the Civil Protection and Emergency Situations Services, which come under the authority of the Ministry of Interior, and are regulated mainly by the following legislation:

- ***Law No 271 on Civil Protection of 9 November 1994,*** which establishes the fundamental principles of civil protection and the legal framework according to which all public authorities, enterprises, institutions, organizations (irrespective of property type and organizational form), and normal citizens are required to act.

- ***Decision No. 347 of 25 March 2003,*** which includes a definition and classification of the different types (natural, technological, biological-social) and levels (local, territorial, national, transboundary) of an emergency. Classification is based on the cause of the emergency, the extent of the area affected and the severity of the consequences, using the criteria of number of people injured, number of people affected and extent of economic loss (in lei). Decision No. 347 also includes the methodology for collecting and exchanging information on prevention and response.

- ***Decision No. 961 of 21 August 2006,*** which establishes a national laboratory network for the surveillance and control of radioactive, poisonous and highly toxic substances, and biologic agents in the environment.

- ***Law No. 93 on Civil Protection and Emergency Situations Service of 5 April 2007,*** which establishes the Civil Protection and Emergency Situations Services, defines its roles and responsibilities at national and sub-national levels, as well as the conditions of service. According to the law, the Civil Protection and Emergency Situations Services are responsible for coordinating the activities of all authorities involved in response to disasters, including the health authorities.

Health services

In the health sector, crisis preparedness, mitigation and response is covered by two overarching laws:

- ***Law No. 1513 of 16 June 1993 on the sanitary-epidemiological safety of the population,*** which refers to the prevention and control of communicable, noncommunicable and occupational diseases, and to poisonings related to environmental and industrial hazards, as well as habitat, education and human behaviour.

- ***Law No. 411 of 28 March 1995,*** which establishes the fundamental requirements for providing health care to the population, also in crisis situations (Article 24).

The Ministry of Health has made it clear that the current policy is to strengthen crisis preparedness and response in the health sector and, to this end, has established a regulatory framework to implement Article 24 of Law No. 411 on health care. This includes: (a) the establishment of a disaster medicine centre (Order No 259 of 23 June 2006); (b) the establishment of a disaster medicine service (Order No 317 of 2 August

2007); and (c) the nomination of the current advisor in disaster medicine as the main specialist of the Ministry of Health in disaster medicine.

Annex 4 lists the laws and governmental decisions of the Republic of Moldova in relation to crisis preparedness and response.

The International Health Regulations

After a long consultative process the national plan of action for the implementation of the IHR was submitted to the Government for approval on 27 February 2008[15].

The IHR will not be ratified by the Republic of Moldova, as ratification is not required from the States Parties. This, however, means that the IHR will not be published in the official gazette (*Monitorul Oficial*) and therefore will not automatically become known to the civil servants.

The Republic of Moldova and the European Union

The Republic of Moldova first established relations with the EU in 1994 through a Partnership and Cooperation Agreement, which entered into force in 1998. With the advent of EU Enlargement in May 2004 and the establishment of the European Neighbourhood Policy (ENP), the Republic of Moldova embarked on a much closer economic and political relationship through the adoption of the three-year EU-Moldova Neighbourhood Action Plan in February 2005[16]. The Action Plan aims at improving relations in areas of foreign and security policy, resolving the problems pertaining to Transnistria, promoting economic growth, and reducing poverty. Each ministry has established a division responsible for EU integration and the process of aligning Moldovan laws and regulations with the EU acquis communitaire[17] is in process, coordinated by the Department for European Integration situated within the Ministry of Foreign Affairs and European Integration.

Other international conventions and agreements

The Republic of Moldova joined the CIS in 1991 and has been a member of the United Nations since 1992. It was one of the first former Soviet Union states to join the Council of Europe and the OSCE, and is also a member of the World Trade Organization (WTO)

[15] On 26 March 2008 (three weeks after the assessment mission) the Government issued Decision No 475 "*On approval of the Plan of Action for the implementation of IHR in the Republic of Moldova"*, establishing a formal national framework for planning and conducting concerted intersectoral activities in 2008–2012.
[16] http://www.delmda.ec.europa.eu, accessed 7 September 2008.
[17] The body of EU laws which must be adopted by any country that wishes to become a member of the European Union.

and the Stability Pact for South Eastern Europe. The Moldovan Government collaborates with the North Atlantic Treaty Organization (NATO) but has been proclaimed as a permanently neutral country that does not permit the stationing of foreign military troops on its territory.

The Republic of Moldova is signatory to various international treaties that have an impact on health, including the United Nations Convention on the Rights of the Child (January 1993) *(18).* It is also a party to a number of environmental agreements in areas, such as air pollution, persistent organic pollutants, biodiversity, climate change, desertification, endangered species, the environment, hazardous wastes, ozone layer protection and the protection of transboundary waters and international lakes (Annex 5).

INSTITUTIONAL AND ORGANIZATIONAL FRAMEWORK

In most instances, crisis planning and response involves all parts of the health system to a lesser or greater extent, each part having a different but important role to play in the final outcome. The organizational framework lays the foundations for establishing a coherent and coordinated health system that can prepare for and respond to a wide variety of different crisis situations. The following overview of the institutional framework in the Republic of Moldova highlights the roles and responsibilities of the various stakeholders, with specific relevance to crisis preparedness and response.

Background

In 2005, the Government embarked on a programme of public sector reform (Government Decision No. 1402) to ensure that central public administration would be in compliance with the EU standards and meet the needs of the population. The overall strategy aims to establish a purchaser–provider split in public service delivery and assign responsibilities and legal competencies in a clear manner, while avoiding ambiguity and an overlapping of functions within and between ministries. This process has resulted in the reorganization and downsizing of the Ministry of Health and the creation of new departments for policy development and strategic planning.

In 1999, the Law on Local Public Administration initiated a process of decentralization. Eleven regional administrative units were established, of which the primary health care facilities, hospitals and emergency services were made responsible for their own budgets. However, four years later – in 2003 – this structure was replaced by 37 administrative areas comprising 32 districts (rayons), three municipalities, and two (autonomous) territorial units (Table 5).

Table 5. Public administrative areas of the Republic of Moldova

Districts (rayons) (32)	Municipalities (3)	Autonomous territorial unit (1)	Territorial unit (1)
Anenii Noi, Basarabeasca, Briceni, Cahul, Cantemir, Calarasi, Causeni, Cimislia, Criuleni, Donduseni, Drochia, Dubasari, Edinet, Falesti, Floresti, Glodeni, Hincesti, Ialoveni, Leova, Nisporeni, Ocnita, Orhei, Rezina, Riscani, Singerei, Soldanesti, Soroca, Stefan-Voda, Straseni, Taraclia, Telenesti, Ungheni	Balti, Bender, Chisinau	Gagauzia – with three districts: Comrat, Ceadir-Lunga and Vulcanesti	Transnistria

As there are no district health authorities, the directors of the 37 hospitals were given the authority to manage the local health services and the related budgets, including the planning and execution of contracts with the National Health Insurance Company. However, responsibility for the emergency (ambulance) and public health services at local level remained under the authority (and within the central budget) of two semi-autonomous (vertical) institutions, the National Emergency Medicine Centre and the National Preventive Medicine Centre.

The health sector reform started in 1997 with the introduction of family health care and a large reduction in the number of hospitals, hospital beds and health personnel. In 2001, funding mechanisms changed to a system based on the number of patients, rather than the number of beds. Owing to lack of funds, the introduction of the National Health Insurance Fund and mandatory contributions for the working population and their employers (agreed on paper in 1998) were delayed until 2004. The National Health Insurance Company, established in 2002, is an independent government body, chaired by the Minister of Health. It acts as the sole purchaser of health care services, thereby linking the insurance scheme to the introduction of a contractual relationship between purchaser and provider and of a basic health care package available to the entire population. The National Health Insurance Company now deals directly with the health facilities on contracting the delivery of the basic health care package. In addition, family doctors are paid on a capitation basis and receive performance bonuses for reaching specified public health targets (such as immunization rates based on lists of registered patients). Hospitals are paid on a "per case" rate and ambulance services on a "per visit" rate. Contracting has meant a change in the status of health care organizations from budget-dependent agencies to autonomous public organizations.

Funds collected through the mandatory health insurance scheme are automatically divided into four sub-accounts: the Main Fund; the Reserve Fund; the Preventive Fund; and the Administrative Fund. The Main and Reserve Funds are allocated 94% of the revenue and the Preventive and Administrative Funds are each allocated 2%. In 2006, 52% of the Main Fund was allocated to hospital care, 31% to primary care, 9% to

emergency care, 6.5% to specialized outpatient care, 1.4% to high performance health care, and 0.1% to home health care.

The Law on Local Public Finances (No 397 of 2003, Article 18) allows the local public authorities to establish a reserve fund of up to 2% of their budgets for unexpected expenditure, including crisis preparedness, mitigation and response. Hospitals are required to keep stocks of drugs for emergencies and 5% of their regular budgets as reserve funds. The government contingency fund is administered by the Government Commission for Emergency Situations.

Crisis management and emergency medical services

Ministry of Health Commission for Emergency Situations

The Ministry of Health Commission for Emergency Situations (Health Crisis Commission) is the main public authority responsible for crisis management in the health sector. It is chaired by the Minister of Health and attended by the heads of departments and relevant medical institutions. As well as convening urgently in the event of a crisis, it meets regularly twice a year, once to plan activities for the coming year and later to review progress. However, unlike the national Commission, there is no operational body or secretariat and it functions purely through its members and their relevant departments or organizations in the health sector.

Furthermore, all health facilities and institutions subordinate to the Ministry of Health have their own commissions.

The directors of district hospitals and the directors of municipal health departments (in Chisinau, Balti and the autonomous territorial unit, Gagauzia) are automatically responsible for coordinating crisis preparedness and response at the subnational level and they are obliged to take part in meetings of the District/Municipal Commissions for Emergency Situations. However, the Emergency Medical Services and the Preventive Medicine Centres are not necessarily represented on these commissions, nor do they, as vertical autonomous institutions, fall under the authority (administratively or financially) of a district hospital director.

Advisor to the Minister of Health on Disaster Medicine

The Advisor to the Minister of Health on Disaster Medicine was appointed in 2007 with terms of reference relating to strengthening crisis preparedness and response in the health sector. The incumbent (Dr Pisla) is one of the five permanent advisors who figure on the organigram of the Ministry of Health. Recently retired from the military as Head of Medicine, Dr Pisla is an expert in disaster medicine and, after being appointed as Advisor, adopted the role of Health Crisis Coordinator, although his remit does not include communicable disease control. He shares the coordination activities with the

Chief Sanitary Doctor, who is also a Deputy Minister, and devotes 50–100% of his time to crisis preparedness and response. However, unlike the Chief Sanitary Doctor, he has no authority in this area as Advisor and was therefore nominated by ministerial order to be Main Specialist in Disaster Medicine of the Ministry of Health. The Institute of Main Specialists consists of experts in different technical fields who are highly regarded by their peers. This title gives Dr Pisla the authority to request information from institutions subordinate to the Ministry of Health and play a key role in developing policy and influencing the decision-making process.

Although the appointment of the Advisor to the Minister of Health on Disaster Medicine is an excellent step forward in strengthening crisis preparedness and response in the health sector, the current arrangement has a number of inherent problems:

1. As coordination responsibilities are divided between the Advisor to the Minister of Health on Disaster Medicine and the Chief Sanitary Doctor, there is no true multi-hazard health crisis coordinator.
2. If there is a change in Minister of Health or in priorities, the terms of reference of any of the Advisors to the Minister of Health can also change. Therefore, although the position is included in the organigram of the Ministry of Health, it is not necessarily related directly to crisis preparedness and response.
3. The title of Main Specialist is bestowed upon an individual and is not a position that is part of the institutional framework, which means that this arrangement does not ensure continuity.

The National Scientific and Practical Centre of Emergency Medicine

The National Scientific and Practical Centre of Emergency Medicine (National Emergency Medicine Centre) is responsible for the delivery of emergency medical care and routine ambulance services. Like the National Preventive Medicine Centre, it maintains a vertical, hierarchical structure, and is accountable to the Ministry of Health. Its services are divided into five autonomous zones (the capital Chisinau, the central zone, the northern zone, the southern zone and the autonomous region of Gagauzia), which separately draw up contracts with the National Health Insurance Company for funding. However, the Chisinau branch of the National Emergency Medicine Centre acts as the main coordinating and dispatch centre and is responsible for the overall performance of the services rendered by the Centre.

In addition to the emergency stations in the five zones, there are 40 emergency sub-stations and 84 smaller emergency points in the rural areas, each one covering approximately 25 km^2 with a maximum response time of 25 minutes. Chisinau city is divided into five sections, each with one sub-station, and there are an additional four points in the suburbs, providing a maximum response time of 10 minutes.

Although the district branches of the National Emergency Medicine Centre coordinate closely with the director of the district hospital, emergency medical services are

financially and technically a separate entity and do not come under the authority of the local health services or administration. Table 6 provides an overview of the distribution of emergency ambulance services in the Republic of Moldova.

Table 6. Distribution of emergency ambulance services in the Republic of Moldova

Zone	No. of districts	Population	Sub-stations	Emergency points	Maximum response time (minutes)
Northern	11	1 285 000	11	24	15
Central	17	1 325 000	17	35	15
Southern	4	269 000	4	14	15
Gagauzia (autonomous)	3	169 000	3	7	25
Chisinau		780 000	5	4	10

Source: The National Scientific and Practical Centre of Emergency Medicine, the Republic of Moldova.

There are currently 303 ambulances in the fleet, which was upgraded in 2003 with 45 new ambulances and new equipment. Ambulance teams consist of a doctor, a feldsher[18] and a driver. During any one day, 230 emergency teams are on duty and respond to between 2000 and 3000 calls. The introduction of service payment per visit in 2004 is said to have greatly improved access to emergency ambulance services, particularly in rural areas. Despite the subsequent change in method of payment to per capita payment, access to services has been mainly unaffected.

All preparedness planning for mass casualty management was said to be coordinated with the Civil Protection and Emergency Situations Services, the roles and responsibilities of the various players having been defined in the regulations. All major emergencies are reported to the Civil Protection and Emergency Situations Services and the governor of the respective district. Communication channels are maintained via the telephone (including mobile telephones) and the Internet, and there are separate communication lines with the Civil Protection and Emergency Situations Services, the Hydro-meteorological services (Hydromet) and the police.

By law, the local authorities are required to establish first aid teams of volunteer non-medical personnel (of which there are 1015 for the whole country) that can work together with the ambulance teams during a crisis. The National Emergency Medicine Centre coordinates with the National Blood Transfusion Services on maintaining blood stocks.

Emergency medicine in the hospital setting and mass casualty management are included in the curricula of medical students and there is now a three-year post-graduate training

[18] Feldsher – a cadre of medical staff whose level of training is higher than that of a nurse but who have not qualified as doctors.

programme for emergency medicine specialists. The Faculty of Post Graduate Medicine offers a number of obligatory short courses and postgraduate training in public health, including a module on climate change and health. However, training in disaster management is not available.

Under funding provided by the United States Agency for International Development (USAID), the National Emergency Medicine Centre, in partnership with the American International Health Alliance, have established the Regional Emergency Medical System Training Centre for Belarus, the Republic of Moldova and Ukraine, based at the Chisinau branch of the Centre. The staff of the training centre received training designed for trainers in emergency medicine, mainly in the USA, covering issues, such as trauma life support, basic vital resuscitation, advanced cardiac support and nuclear safety. The training centre has also organized and hosted a series of training programmes for local staff involved in emergency health care, including emergency (ambulance) doctors, feldshers and drivers, as well as for representatives of non-medical services, such as fire-fighters.

The training centre also received support from the International Atomic Energy Agency (IAEA) to organize regional training on emergency health care in case of nuclear accidents at atomic power plants (in neighbouring countries, as the Republic of Moldova does not have any nuclear power plants of its own). Currently, the training centre – in partnership with the United States NGO, North-West Medical Teams – is implementing a project involving the provision of continuous training to professionals involved in pre-hospital emergency care.

The Civil Protection and Emergency Situations Services provide training in search and rescue at their training centres in Chisinau, Balti and Cahul. Their own personnel have received international training in Croatia, Romania, the Russian Federation and Ukraine.

Disaster Medicine Centre

The Disaster Medicine Centre was established in 2007 on the recommendation of the Advisor to the Minister of Health on Disaster Medicine. Institutionally, it is a department of the National Emergency Medicine Centre.

It was originally the plan to include the Disaster Medicine Centre in the organigram of the Ministry of Health. However, as a result of the public sector reform process restricting the number and functions of staff within the Ministry of Health, the plan was abandoned. The Medical-Biological Protection Division of the Civil Protection and Emergency Situations Services was seen to be carrying out the disaster medicine function and, therefore, it was not deemed necessary to have a department in the Ministry of Health with the same function.

The Disaster Management Centre has a staff allocation of four professionals for the positions of: disaster management coordinator (civil defence expert); preventive medicine

specialist; pharmacist; emergency medicine specialist. Only one of the positions is currently filled due to lack of funding and adequate facilities. The job descriptions of the proposed staff provide for an all-hazard, multi-disciplinary approach.

The person in the position that is currently filled (and, in the absence of a suitably qualified coordinator, is designated as Deputy Director) previously worked for the Civil Protection and Emergency Situations Services. His main tasks are to:

- coordinate with the Civil Protection and Emergency Situations Services (Ministry of Interior);
- review and obtain ministerial approval for district preparedness plans;
- monitor and evaluate the effectiveness of the plans by conducting simulation exercises in cooperation with the Civil Protection and Emergency Situations Services.

In practice, the Disaster Management Centre exists only on paper and the Deputy Director works under the authority of the Advisor to the Minister of Health on Disaster Medicine. However, the Advisor cannot, as a government employee, become director of the Disaster Medicine Centre, which is an autonomous body subordinate to the Ministry of Health and actually under the authority of the National Emergency Medicine Centre. The current position of the Disaster Medicine Centre is, therefore, extremely weak as the Centre has little or no authority in its own right and its main access to decision-makers is through the Advisor to the Minister of Health on Disaster Medicine, whose remit may change in the future. The general opinion is that, as a coordinating body, the Disaster Management Centre should be included in the Ministry of Health organigram, directly responsible to the Health Crisis Commission and responsible for all hazards. This is, however, not possible within the ongoing public sector reform process, which places restrictions on the creation of new Ministry of Health posts.

The Operative Service of the Ministry of Health

The Operative Service of the Ministry of Health for round-the-clock communication is located in the Ministry but is part of the Disaster Management Centre, under the authority of the National Emergency Medicine Centre. It is responsible for taking telephone calls on a 24-hour basis from a variety of sources, through the public number (721010). The main role of the Operative Service is two-fold: (1) to deal with general enquiries from the public on health-related issues and problems in accessing health services (but not calls for emergency ambulance services; these are directed through the 903 number); and (2) to act as focal point for the communication of important information between the Ministry of Health and other ministries, subordinate institutions, hospitals and district authorities, on request.

The staff of the Operative Service has no authority so that, in the event of a serious problem, it is responsible only for ensuring that information reaches the relevant people within in the Ministry of Health, functioning basically as the Ministry's hot line.

The Operative Service seems to be well utilized and was referred to by everyone interviewed. The only concerns that were raised related to the fact that, as the five staff (of which most are ministry employees working part-time for the Operative Service) had such a high level of responsibility, they might benefit from training on dealing with specific scenarios. However, the Service is well organized and has well-documented standard operating procedures, with lists of contact numbers for hospitals and key personnel and a system of logging calls and action taken.

Preventive medicine and public health services

The Department of Health Protection and Preventive Medicine

The Department of Health Protection and Preventive Medicine was established within the Ministry of Health in 2007 and is currently responsible for collecting health data for use in strategic public health planning and policy development, and for developing norms and guidelines in relation to communicable disease surveillance and control and environmental health. However, it is hoped that, in the future, it will take a more active role in crisis management and thus adopt a health protection function. The Head of the Department reports to the Chief Sanitary Doctor who is also one of the three Deputy Ministers.

Although public health is still based on the sanitary hygiene and environmental health model of the former Soviet Union, there are plans to issue a new law to bring communicable and noncommunicable diseases under the same umbrella.

The National Scientific and Practical Centre of Preventive Medicine

The National Scientific and Practical Centre of Preventive Medicine (National Preventive Medicine Centre) is responsible for the routine delivery of public health services in cooperation with a network of 40 territorial branches based on the sanitary epidemiological services model of the former Soviet Union. Subordinate to the Ministry of Health and financed from the Ministry's budget, the Centre remains in full public ownership. Its responsibilities include the enforcement of sanitary norms in all public facilities (including health care facilities), environmental health monitoring, communicable disease surveillance and control, health promotion and the supervision of the national vaccination programme.

The Centre is currently nominated as the National IHR Focal Point. It was established in 1996 and has since amalgamated with a number of previously autonomous public health research institutes. This has resulted in two sources of funding: (1) the regular budget of the Ministry of Health; and (2) research grants. With 35 sub-units, it has a number of

Deputy Directors responsible for individual departments, of which the most important are: the Centre for HIV/AIDS; the Department of Virology (includes surveillance of hepatitis); the Department of Radio Protection and Radiation Hygiene; the Department of Health Promotion; the Department of Hygiene; the Department of Epidemiology/Department of Particularly Dangerous Diseases and Combat of Bioterrorism; and the Department of Social Hygiene Monitoring.

Although the 40 territorial branches coordinate closely with the director of the district hospital, preventive medical services are administratively, financially and technically a separate entity and do not come under the authority of the local health services or administration.

The old system of collecting communicable disease surveillance data, which was based on a separate reporting system for each notifiable disease, is currently under development with financial support from the International Development Association as part of the Avian Influenza Control and Human Pandemic Preparedness and Response Project, *Improved Surveillance System*. Furthermore, a European Commission mission recommended that the Republic of Moldova harmonize its health indicators with EU requirements to facilitate an exchange of information with EU networks on the surveillance and control of communicable diseases.

Case definitions have been harmonized with those of the EU and there are now 78 diseases under surveillance, 30 priority diseases having been identified. Order No. 385 of 12 October 2007 establishes the case definitions of and the reporting procedures for the 78 listed diseases and defines what constitutes an emergency. Most of the diseases are based on case reporting, with the requirement that health facilities submit data to the district Preventive Medicine Centres within 24 hours. These submit confirmed data to the National Preventive Medicine Centre, monthly for 72 diseases and weekly for AFP (acute flaccid paralysis). Influenza and respiratory infections are under sentinel surveillance and reported weekly or daily, depending on the situation. In the case of some rare diseases, e.g. plague, yellow fever and anthrax, and in accordance with certain criteria, the district Preventive Medicine Centres are obliged to report on a daily basis. The Internet is used for feedback.

The National Preventive Medicine Centre has a number of ‘outbreak teams’ that are available on a round-the-clock basis. These comprise a laboratory specialist, an infectious diseases physician, an epidemiologist and a food hygiene expert.

The Department of Particularly Dangerous Diseases and the Combat of Bioterrorism**,** established in 2006, comprises the staff of the Department for Particularly Dangerous Diseases of the Anti-Plague Station that existed under the system of the former Soviet Union. The Department was downsized and amalgamated with the National Preventive Medicine Centre to improve cost-effectiveness. It is responsible for specific technical

areas of IHR implementation and, in particular, for the development of the national IHR implementation plan which includes making the final decision about the location of the National IHR Focal Point.

Public health laboratory services

The National Preventive Medicine Centre is the institution in the health sector responsible for biological, chemical and radio-nuclear safety. It houses the public health reference laboratories currently attached to the various departments, including those for virology (hepatitis, polio and enteroviruses), bacteriology (zoonosis, enterics and cholera), sanitary bacteriology, sanitary hygiene, serology, parasitology, HIV/AIDS, radiology and toxicology. It is planned to amalgamate all the bacteriology laboratories into one and to centralize those for serology and Polymerase Chain Reaction (PCR). The measles and polio laboratories are WHO accredited. There is a national laboratory accreditation body but it is not recognized by the European co-operation for Accreditation[19] or the International Laboratory Accreditation Cooperation (ILAC)[20]. There is, however, ongoing contact with the WHO Lyon Office for National Epidemic Preparedness and Response[21] in reviewing laboratory legislation and developing standard operating procedures. A plan of action has been drafted to establish a national framework for laboratory support with a view to meeting international (ISO) standards.

Under the system of the former Soviet Union, training of laboratory staff was according to a well-developed curriculum and specialized courses but, since independence in 1991, the quality of training is said to have deteriorated. New recruits now have fewer skills and need on-the-job training.

In general, laboratories are poorly equipped with old, out-of-date equipment that lack modern safety features. The Laboratory for Particularly Dangerous Diseases and Combat of Bio-terrorism carries out testing for anthrax, plague, cholera, leptospirosis and tularaemia. Security procedures appear adequate with locked doors, hazard warnings, sealed storage units for strain collections, and a partially-installed automatic entry system. However, Level II safety cabinets for the protection of staff and Category 3 facilities are not available in the country. The methodologies employed are mainly classical and, therefore, confirmation of a diagnosis may take days rather than hours.

Virology diagnostic services are only available in Chisinau and, although these include PCR, the unit is specifically for avian influenza and the equipment is used only occasionally because of the small number of samples. In addition, there is no laboratory capacity for the diagnosis of vector-borne diseases, such as West Nile Fever, so that the possibility of rapidly identifying unusual (unknown) pathogens is relatively low.

[19] http://www.european-accreditation.org, accessed 29 August 2008.
[20] http://www.ilac.org/, accessed 29 August 2008.
[21] http://www.who.int/csr/ihr/lyon/en/index.html, accessed 29 August 2008.

There is no national system or standard procedure for the safe transport of laboratory and environmental samples. A few boxes that meet international standards are available for the emergency transport of samples abroad for confirmation of diagnosis.

The Republic of Moldova has some collaboration on testing (mainly for viruses) with neighbouring countries, including Lithuania, Poland, the Russian Federation and Romania. However, apart from those for measles and polio, there are currently no lists of designated reference laboratories or WHO collaborating centres for specific diseases in the region with which relationships could be established. The Republic of Moldova is a member of the WHO salmonella network for surveillance and quality control (Global Salm-Surv GSS), but not of any other international or European disease-specific network, as required by European Commission Decision 2003/542/EU[22].

Laboratory data are not generally used independently from epidemiological data for surveillance purposes, other than for a few specific diseases, such as polio (acute flaccid paralysis) and avian influenza.

Public health laboratory services specifically for crisis situations are governed by Governmental Decision No. 961 of 21 August 06, which establishes a national laboratory network for the surveillance and control of the environment for contamination with radioactive, poisonous and highly toxic substances and biological agents. The document clearly defines the competencies required from and the roles and responsibilities of the various laboratories in the network in a crisis situation. Of the 162 laboratories listed, 38 belong to the Ministry of Health, 74 to the Ministry of Agriculture and Food Industry, 29 to the Ministry of Environment and Natural Resources, 13 to Hydromet, 4 to large enterprises and 1 to the Civil Protection and Emergency Situation Service. Of the 73 laboratories belonging to the Ministry of Agriculture and Food Industry, 3 are for veterinary diagnosis and the remainder for food testing. PCR is available in the National Preventive Medicine Centre and the Ministry of Agriculture and Food Industry.
The Civil Protection and Emergency Situation Services are responsible for coordinating the network and they run an annual quality control scheme in coordination with the national accreditation body.

Health care delivery (primary, secondary and tertiary care)

Although the Ministry of Health no longer directly funds or manages health care delivery in the regions, it remains overall responsible for the health system, together with the institutions that are under its authority, and for the management of national tertiary care facilities and republican hospitals, mainly those in Chisinau. The Ministry of Health is also responsible for coordinating a number of national vertical programmes, such as those

[22] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:185:0055:0058:EN:PDF, accessed 29 August 2008.

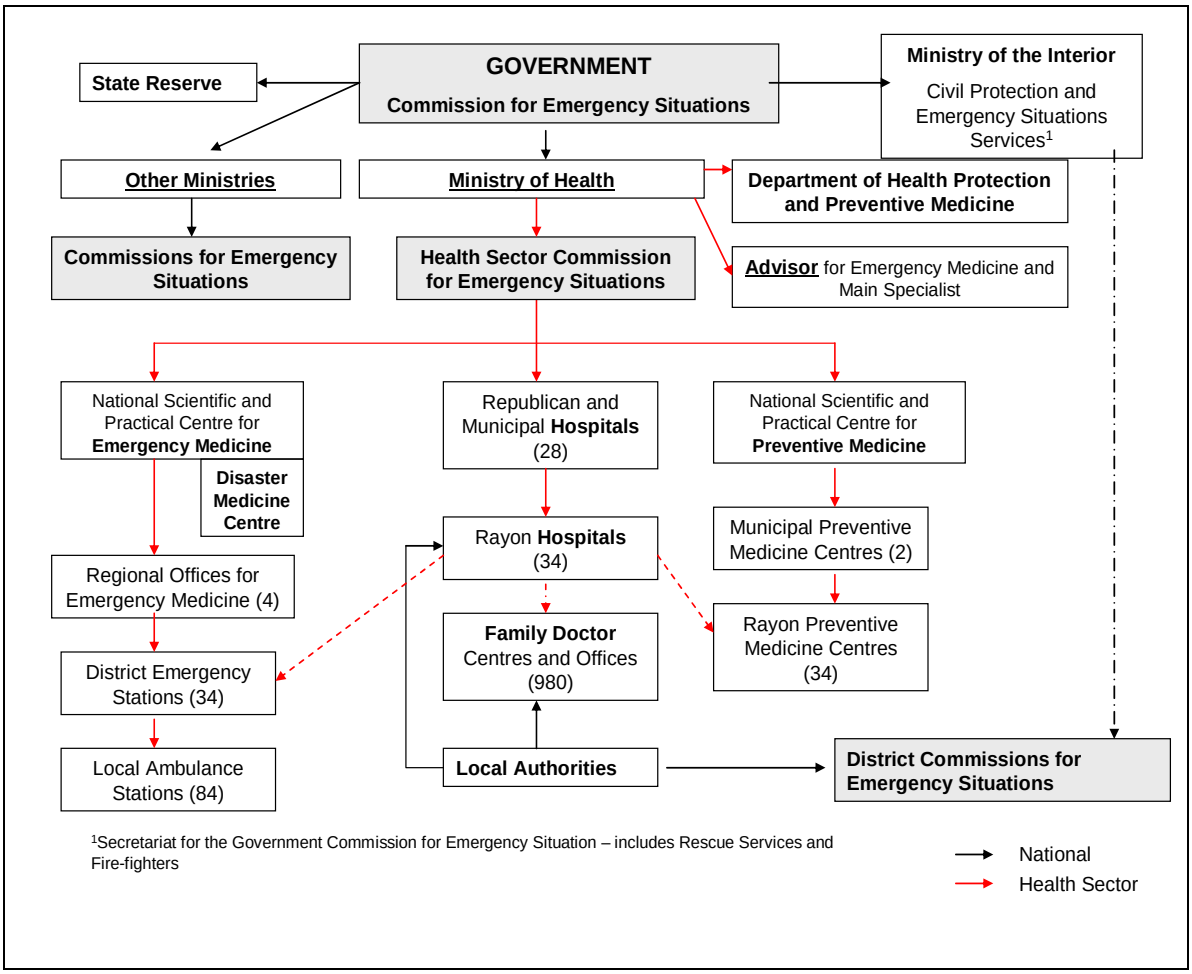
for vaccination, TB, HIV/AIDS, rabies, diarrhoeal diseases, health promotion, iodine deficiency, etc.

Secondary care is provided through general hospitals at district level (35 in total) and municipal general hospitals in Balti and Chisinau. The primary health care network is extensive and geographical access was said to be good. It consists of four types of providers: family medicine centres (based in the former district polyclinics); rural health centres and family doctors' offices (based in former rural medical points); and health posts for family doctors' assistants (feldshers) covering villages/areas with populations of less than 1000. Most primary health care facilities are integrated into the main health care system and are fully state-owned.

Parallel health services still exist in the Republic of Moldova, organized by other ministries and financed from the state budget. In 2006, these included 10 hospitals and 91 outpatient facilities serving the Ministry of Defence, the Ministry of Internal Affairs, the Ministry of Justice, the Ministry of Transport and the Border Service. These health facilities mainly serve people covered by the mandatory health care insurance scheme (soldiers, police officers, prisoners, etc.) but are outside the health sector reform programme.

The private health sector is currently underdeveloped.

Fig. 15. Institutional framework for crisis preparedness and response in the Republic of Moldova



PARTNERSHIPS AND COORDINATION

The Government Commission for Emergency Situations

The Government Commission for Emergency Situations (GCES) is the overall national body responsible for crisis management. It is chaired by the Prime Minister and includes representatives of all ministries and key organizations. The Commission meets regularly twice a year for preparedness planning purposes, as well as when a crisis is declared at national, regional or trans-border level, but not usually for incidents below these levels. It is by definition a high-level, political committee attended mainly by ministers and/or their deputies. Meetings of the Commission are called on the initiative of the Civil Protection and Emergency Situations Service of the Ministry of Interior.

Similar commissions exist for each individual ministry, large public institutions and private enterprises and there are sub-national commissions in each district, chaired by the local governors. All district sector heads and heads of hospitals (who act as coordinators for the health sector) are obliged to attend meetings of the district commissions, although attendance by representatives of other key institutions in the health sector, such as the district Preventive Medicine Centres and Emergency Medical Centres, varies from district to district. In the Cahul district, for example, the commission meets once every three months.

National Extraordinary Anti-Epidemic Commission

Another multisectoral mechanism for response to threats of epidemics caused by infectious and non-infectious diseases and bio-terrorism is provided by the National Extraordinary Anti-Epidemic Commission and the Territorial Extraordinary Anti-Epidemic Commissions, established under Government Decision No 919 of 30 August 2005. The National Extraordinary Anti-Epidemic Commission, chaired by the Deputy Prime Minister, functions on a more operational level than the Government Commission for Emergency Situations and convenes meetings on the initiative of the Ministry of Health. The territorial commissions are chaired by the heads of local public administration.

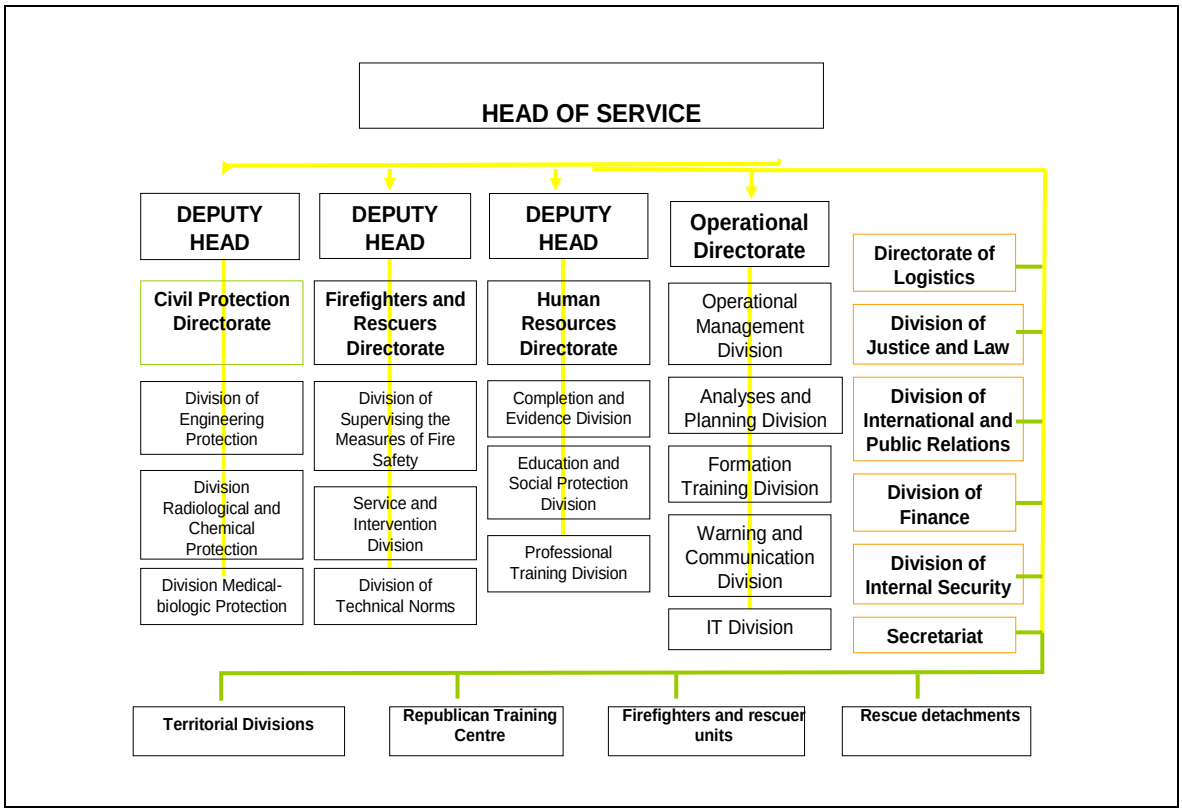
Only the anti-epidemic commissions (and not the Ministry of Health itself) have the power to establish quarantine procedures and initiate public health interventions, as well as coordinate and take decisions that are mandatory for ministries, services, agencies, local public administrations, organizations, institutions, enterprises and individuals. Decisions of the National Extraordinary Anti-epidemic Commission are published in the official gazette (*Monitorul Oficial*). Therefore, it should be noted that in the event of a public health event of international concern, which is reportable to the WHO under the IHR, it is this commission and not the Ministry of Health that would be ultimately responsible.

The Civil Protection and Emergency Situations Service

The Civil Protection and Emergency Situations Service constitutes the multisectoral agency responsible for overall coordination in emergency situations and come under the authority of the Ministry of the Interior. It functions as an executive agency (right arm) of the Government Commission for Emergency Situations of which the Minister of Interior is the deputy.

The overall mandate of the Civil Protection and Emergency Situations Service is to protect people and property, conduct rescue operations, mitigate the effects of crises, and plan crisis preparedness for the population. To this end, they carry out activities related to: risk assessment; training; crisis planning; monitoring and evaluation; prevention and reduction; early warning; mass casualty management and public communications. They are also responsible for fire-fighting services throughout the country.

Fig. 16. Structure of the Civil Protection and Emergency Situations Service of the Republic of Moldova



Source: The Civil Protection and Emergency Situations Services of the Republic of Moldova.

The structure of the Civil Protection and Emergency Situations Service is complex, consisting of a variety of Directorates, Divisions and Territorial Offices, branches in all districts, and a Republican Training Centre with sub-centres in Balti and Cahul.

The Service's main channel of communication with the Ministry of Health is through the Civil Protection Directorate that has three divisions: (1) the Medical-Biological Protection Division; (2) the Radiological and Chemical Protection Division; and (3) the Engineering Protection Division.

One of the responsibilities of the Medical-Biological Protection Division is to participate in the control of outbreaks of communicable diseases and epidemics, together with the Ministry of Health and/or the Ministry of Agriculture, as appropriate. This involvement is based on national law, which gives the Civil Protection and Emergency Situations Service the necessary authority to involve other ministries and public authorities in order to mount an effective public health response when necessary. Their direct contribution to outbreak investigations, however, seems to be minimal.

The Civil Protection and Emergency Situations Service carries out risk assessments and collect information from a number of sources. This includes hazard maps showing areas of seismic activity, power lines, dams, nuclear power plants, etc. They are in the process of installing a geographic information system (GIS). Due to the costs involved, this is taking longer than originally anticipated. It does, however, remain one of the priorities for the future.

The Civil Protection and Emergency Situations Service has an operations centre equipped with a telephone and two staff who ensure round-the-clock coverage. They are able to trigger an alarm at national, regional or local level by means of, for example, sirens, the television and the radio. They submit daily situation reports to the Prime Minister.

The Civil Protection and Emergency Situations Service is overall responsible for monitoring and evaluating the crisis preparedness capabilities of other agencies, also in the health sector, including all medical facilities and laboratories, and for submitting a full report to the Prime Minister. They conduct simulation exercises in 6–7 districts each year. As the emphasis has been on avian influenza in recent years, these exercises have been organized jointly with the Ministry of Health and the Veterinary Services of the Ministry of Agriculture and Food Industry. These multisectoral events are endorsed by the Prime Minster to ensure the full participation and cooperation of all concerned. Collaboration between the Civil Protection and Emergency Situations Service and the Ministry of Health is, therefore, mainly on an official basis and defined in the laws and regulations of the country.

The Republican Training Centre and its sub-centres in Balti and Cahul conduct regular training of engineers, heads of institutions, heads of civil protection services and heads of medical services.

The Civil Protection and Emergency Situations Service responds to 901 calls. In addition to fire fighters, they have teams of first responders dedicated for rescuing people. By law, these “rescuers” are not allowed to administer first aid. There are no paramedics.

The current and future priorities of the Civil Protection and Emergency Situations Service include: the establishment of a national crises management centre; the introduction of a 112 emergency call number; the implementation of GIS technologies; the establishment of a specialized sub-unit for international rescue operations; and the adaptation of the national legislation for civil protection to meet the EU standards.

The Ministry of Environment and Natural Resources

The Ministry of Environment and Natural Resources is responsible for the regulatory framework for climatic and environmental issues. It has three main technical departments and three semi-autonomous research institutions under its jurisdiction (Table 7).

Table 7. Departments and institutions of the Ministry of Environment and Natural Resources of the Republic of Moldova

Departments	Institutions
Analysis and Monitoring of Environmental Policies	The State Ecological Inspectorate
Pollution Prevention	The State Agency for Geology
Natural Resources and Biodiversity	The Hydro-meteorological (Hydromet) Services
Administration	National Agency for the Regulation of Nuclear and Radiological Activities

The State Agency for Geology, Hydromet and the National Agency for the Regulation of Nuclear and Radiological Activities, three semi-autonomous research institutions, are mainly involved in the risk assessment of and early warning systems for natural and environmental hazards. The Ministry of Environment and Natural Resources itself is mainly responsible for monitoring risks and informing the State Ecological Inspectorate that takes the necessary action.

The Ministry of Environment and Natural Resources has official lines of communication with the President, the Civil Protection and Emergency Situations Service, all state institutions (including the Ministry of Health) and the media in the event of a potential crisis, such as for extreme weather conditions, increased seismic activity, high levels of pollution or a chemical accident. With 18 meteorological stations across the country reporting every two hours, a five-day weather forecast is also available on their official website. The Ministry of Environment and Natural Resources works closely with the Preventive Medicine Centres at local level in carrying out investigations related to environmental hazards. Whether the lead is taken by the Ministry of Environment and Natural Resources or the Ministry of Health depends on the nature of the problem and the expertise required.

Monthly information on the quality of water, air and soil quality and levels of radio-activity is compiled according to established norms. The Ministry of Environment and Natural Resources monitors 17 rivers for 49 physical and chemical indicators and 5 hydro-biological indicators. Air quality is measured 3 times daily in 5 industrial cities (including 3 in Transnistria). When extremes of pollution are detected, they are urgently reported to the State Ecological Inspectorate that is responsible for investigating the situation in collaboration with the Civil Protection and Emergency Situations Service. As is the case for weather alerts, lines of communication have been established to alert state institutions in the event of abnormal findings. The Ministry of Environment and Natural Resources seemed assured that routine testing would pick up emergencies, such as a chemical accident in a factory.

There is a national action plan for environment and health that includes chemicals and climate change and health. The latest annual report on environmental protection in the Republic of Moldova was published in 2007.

The Ministry of Environment and Natural Resources is party to 18 conventions with established focal points and working groups for each of them (Annex 5). A reforestation programme is currently under implementation and is an important preventive measure.

Ministry of Agriculture and Food Industry

The Ministry of Agriculture and Food Industry is responsible for the regulatory framework of the agriculture sector, which includes improving agricultural productivity through the promotion of effective irrigation, forestation and other measures aimed at preventing soil erosion.

The veterinary services of the Ministry of Agriculture and Food Industry are responsible for animal health and food safety, including zoonotic and arthropod-borne diseases (such as brucellosis, avian influenza and relapsing fevers) that can affect human health and on which they coordinate with the Ministry of Health. They have recently been working with the Ministry of Health on developing 35 sanitary norms for human and animal health and food security, based on EU directives.

The Ministry of Agriculture and Food Industry and the Ministry of Health are jointly involved in a World Bank project on avian influenza. The two ministries worked together in developing the national IHR implementation plan.

The International Health Regulations and multisectoral collaboration

The introduction of the revised IHR and the development of a national IHR implementation plan initiated a broad consultative process involving fifteen ministerial

agencies. In its role as the National IHR Focal Point, the National Preventive Medicine Centre took the initiative to develop, in coordination with eight ministerial agencies, the national plan of action which was distributed to a further seven ministerial agencies for comments. This consultative process took over five months and many revisions before the 31 points of action were eventually agreed. Communication was mostly by official letter and electronic mail. Meetings were held with the relevant agencies, mainly the Customs and Border Police and the Ministry of Environment and Natural Resources, which voiced major differences of opinion. The latter had concerns about the responsibilities imposed by the plan and, since very little reference to chemical and radionuclear safety is made in the IHR, they did not feel that their involvement was justified[23].

Cooperation with neighbouring countries

The Republic of Moldova has bilateral and multilateral agreements with Romania and Ukraine for all emergency situations, including both information exchange and assistance. Agreements also exist for exchange of communicable disease data although the National Preventive Medicine Centre expressed some dissatisfaction about how this worked in practice, particularly as regards the timeliness and completeness of the data they received.

The Republic of Moldova is a member of the Stability Pact for South Eastern Europe (South Eastern Europe Health Network) through which a series of projects are currently being implemented or are planned for the future. These include strengthening the surveillance and control of communicable diseases; enhancing the quality and supply of blood and blood products; strengthening institutional capacity and intersectoral collaboration to improve access to safe food products; and developing integrated emergency medical services.

International donor funding

The Ministry of Health and subordinate institutions are currently benefiting from external cooperation aimed at strengthening their crisis preparedness and response capacity, including preparedness for avian and human pandemic influenza (Table 8).

[23] Subsequent to the assessment, the national plan of action for the implementation of the IHR was approved by Government Decision No. 475 in March 2008 requiring the following to carry out specific tasks: Ministry of Health; Ministry of Agriculture and Food Industry; Ministry of Environment and Natural Resources; Ministry of Internal Affairs; Customs Services; Border Police; State Administration of Civil Aviation; Ministry of Transport and Roads; Ministry of Culture and Tourism; Administration of the free international port Giurgiulesti.

Table 8. International funding of crisis preparedness and response in the Republic of Moldova

Project	Donor	Approximate budget
Biennial Collaborative Agreement (BCA) 2008 – 2009	WHO	(a) Overall budget: US$ 1 800 000 (b) For crisis management (WHO Priority 5): US$ 250 000 (c) For communicable disease control: US$ 630,000 USD (WHO Priority 3)
Avian influenza control and human pandemic preparedness and response project	World Bank	US$ 8 000 000 over 2 years
Planned: Joint UN Crisis Management Project	*UNDP, UNICEF, UNFPA, WHO*	*US$ 750 000*

The World Bank project on avian influenza control and human pandemic preparedness and response (March 2007 – March 2009) comprises the following three components: human health, animal health and public information and awareness. The two main partners in the project are the Ministry of Health and Ministry of Agriculture and Food Industry. UNICEF Moldova acts as the sub-recipient for the Ministry of Health as regards the communication component. As is the case in many other countries, rather than focussing solely on avian influenza, the World Bank in the Republic of Moldova is taking advantage of the relatively large amount of funds available to strengthen the overall communicable disease surveillance and control capacity in the country to improve its ability to deal with any outbreak or epidemic. This includes the introduction of a case-based notification system, the computerization of data and the mapping of facilities.

The National Emergency Medicine Centre received support for training purposes from the following donors:

1. USAID: for the establishment of a Regional Emergency Medical System Training Centre for Belarus, the Republic of Moldova and Ukraine based in Chisinau;
2. The IAEA: for the organization of regional training on emergency health care in case of nuclear accidents at atomic power plants;
3. The North-West Medical Teams (United States NGO): for the provision of continuous training to professionals involved in pre-hospital emergency care (ongoing).

The World Bank is supporting the Ministry of Environment and Natural Resources in the implementation of the "Persistent Organic Pollutants (POPs) Stockpiles Management and Destruction" project (co-financed by the Government of the Netherlands). The aim of the project is to protect the environment and human health by safely managing and disposing of large stocks of POPs, in line with the Stockholm Convention *(19)*. In total, between

1100 tons of pesticides and over 19 000 capacitors will be transported to France for disposal[24].

The Ministry of Agriculture and Food Industry is currently the beneficiary of a number of projects related to crisis prevention and response:

1. The Agricultural Pollution Control Project, which aims significantly to increase the use of environmentally-friendly agricultural practices in the Republic of Moldova, both by farmers and by the agriculture industry, in order to reduce the discharge of nutrients from agricultural sources to the Danube River and the Black Sea.

2. A multilateral project launched in response to the drought in 2007 with a total estimated budget of approximately US$ 13 million. By end January 2008, approximately US$ 8.5 million had been realized for the purchase of seeds for planting in the spring of 2008. Some US$ 4.3 million still had to be found.

3. A DG SANCO project to develop sanitary and environmental norms and a project funded by the European Commission to establish an animal registry to improve traceability and strengthen early warning systems (total budget: US$ 18 million).

The Civil Protection and Emergency Situation Services have provided international support during the crises in: Indonesia (tsunami, December 2004); the Russian Federation (Beslan, September 2004); Pakistan (earthquake, 2005); Romania (flooding, April–May 2006); and Bulgaria (flooding, April–May 2006).

Other partners

The Moldovan Army is comparatively small. It has a medical department for ‘fast reaction’, a small number of medical combat personnel and only one hospital with the capacity to develop a small medical detachment. However, the military medical capacity is considered to be an important resource for response in an eventual crisis.

The Ministry of Health has very little coordination or collaboration with national or international NGOs operating in the Republic of Moldova, such as the Moldovan Red Cross.

[24]http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/MOLDOVAEXTN/0,,contentMDK:20875351~pagePK:141137~piPK:141127~theSitePK:302251,00.html, accessed 8 September 2008.

CRISIS PLANNING

National plans

The Civil Protection and Emergency Situation Service is responsible for preparing (every 5 years) and updating (annually) a national, multisectoral plan for the protection of civilians. It includes components of all plans prepared by the various ministries and government agencies, including the health sector. This plan is a confidential document.

Health sector plans

Ministry of Health

There is one all-hazard plan for the whole health sector. It appears short and concise but an English translation was not available for review. The Ministry of Health also issues guidelines on preparedness planning to hospitals and district authorities. Plans developed by the district authorities (under the supervision of the directors of the district hospitals) are approved by the district governors in coordination with the Disaster Medicine Centre.

The establishment of emergency medical teams is governed by law. As well as 236 emergency medical teams (and ambulances) that are in permanent readiness, the following teams can also be established in the event of an emergency:

- 1015 first aid teams (comprising non-medical personnel of the local authorities who work together with the ambulance teams);
- 620 paramedical teams (comprising personnel of family doctors' offices who work together with the ambulance teams);
- 488 medical teams (comprising personnel of family doctors' centres and district hospitals who work together with the ambulance teams);
- 90 specialist teams (organized by the republican and municipal hospitals in Chisinau to assist the district hospitals if required);
- 40 preventive medicine teams (comprising personnel from the National Preventive Medicine Centre and the district Preventive Medicine Centres);
- 3 emergency medical detachments (comprising personnel of the republican and municipal hospitals in Chisinau). These teams are meant to substitute a district hospital or to establish one in the vicinity of the emergency. For the time being they exist only on paper due to inadequate field equipment.

Through the World Bank avian influenza project, detailed plans have been elaborated for heath sector preparedness for and response to avian influenza and influenza pandemic, and for annual national health sector programmes on the prevention and control of communicable diseases (such as rabies, tuberculosis, HIV/AIDS, sexually transmitted

infections, diarrhoeal diseases, cholera, plague and tularaemia), which are approved by the Government under the routine annual budget allocation.

However, there are no technical plans for specific disaster needs with standard operating procedures and guidelines, such as treatment guidelines for crush injuries, guidelines for emergency surveillance procedures during an earthquake or flood, guidelines for the collection and transport of laboratory and environmental samples or guidelines on management of dead bodies.

Health facilities

A Ministerial Order specifies which hospitals are responsible for providing specific services and provides information on their current capacity, including the specialist teams that are available for mobilization.

All hospitals are required to have an internal emergency plan (including evacuation procedures) as part of the community crisis plan. In large facilities, it is required that a civil protection plan is available on every floor.

In the Cahul district[25], the services of a doctor are available on a 24-hour basis. The doctor, who is trained in initiating a response, is responsible for monitoring the safety and security of the hospital and has a list of persons to contact. A plan exists for creating additional beds if needed, with the option of transferring patients to hospitals not affected by the crisis. Having experienced problems with the electricity supply during the earthquake of 1977, the hospital now has three different sources of electricity, an independent generator and emergency stocks of fuel.

Most health facilities were built more than 20 years ago and therefore meet the building standards of the former Soviet Union for earthquakes of force 7–8 on the Richter scale. The local authorities are responsible for the maintenance of buildings but, although there is a national building standards mechanism, the regulations from the time of the former Soviet Union have not been updated. There is no national programme for ensuring the resilience of health facilities during a crisis.

Public communication systems

The Press Section of the Ministry of Health organizes press conferences on a regular basis to keep the public informed of important health issues. The Department of Preventive Medicine of the Ministry is involved in developing this information.

Within the structure of the National Preventive Medicine Centre, there is a Health Promotion Department that operates at national and district levels. It is responsible for

[25] The findings in the Cahul district may not be representative of all districts in the country.

preparing health education materials and developing key messages related to communicable diseases. Routinely, it is responsible for approving health messages and carrying out mass media campaigns through television and the radio broadcasts or by using mobile loud-speakers that are available in all districts. However, there do not appear to be any procedures in place for field testing or evaluating the effectiveness of the messages given.

During a crisis situation, all health messages to the public require the approval of the Ministry of Health.

The Civil Protection and Emergency Situation Service creates messages in advance for dissemination when necessary by means of television, radio and an alarm system for early warning. There are also local warning systems, such as the mobile loudspeaker systems used by the police. The Civil Protection and Emergency Situation Service felt that general health issues were well covered by the Ministry of Health through weekly televisions shows and published articles.

Pharmaceuticals and medical equipment

The State Agency for Material Reserves, Public Acquisitions and Humanitarian Aid is the national body responsible for purchasing and stocking materials for crises situations, including medical equipment and pharmaceuticals. They have four storage depots across the country, including refrigeration facilities. The composition of the list is confidential, but it includes hundreds of items, including 110 drugs. The list is constantly updated and the Ministry of Health advises on the drugs and medical items that are to be included. Expiry dates are closely monitored and the stocks are kept constantly up-to-date with the help of a computerized stock management system. However, they doubt that this stock management system could be used for managing incoming humanitarian assistance. The State Agency felt that it was the responsibility of the Ministry of Health to develop stock management systems for donated pharmaceuticals and medical equipment.

The Agency has in fact three important, cross-cutting functions related to crisis management. These are:

1. maintenance of stocks of essential items for crisis response, including pharmaceuticals, medical equipment, fuel, generators, construction material and wheat;
2. procurement of central supplies (funded by the Government);
3. coordination of humanitarian aid.

While the State Agency is in charge of coordinating material humanitarian aid, the Interdepartmental Commission on Humanitarian Aid, currently chaired by the Deputy Minister of Economy, is in charge of the overall coordination of humanitarian aid. The Ministry of Health also has a commission that deals with health-related humanitarian assistance.

All drugs must be registered with the National Drug Agency, which is subordinate to the Ministry of Health and responsible for the registration and quality control of pharmaceuticals. The law on humanitarian aid was recently revised to ensure that all drugs have an expiry date of at least one year on arrival in the country (with the exception of some vaccines, where a 6-month expiry date is accepted). There is a draft national law allowing drugs to be taken from private pharmacies during an emergency, with retrospective compensation.

The National Emergency Medicine Centre also maintains drug reserves for all events (purchased from their regular budget) and issues guidelines to the subnational centres on what stocks they should keep for the treatment of 100 people in any particular situation. District hospitals also maintain limited stocks of drugs, the release of which requires the signature of the Chief Doctor.

The Ministry of Health does not have its own reserve of drugs and equipment.

Biological chemical and radionuclear accidents

Although the Republic of Moldova does not have its own nuclear power stations, there are 7 atomic power stations, with 24 reactors in a 400 km radius. In addition, nuclear material is regularly transported from Bulgaria to the Russian Federation through the Republic of Moldova. The Civil Protection and Emergency Situation Service has their own continuous monitoring system with an officer on duty 24 hours a day and three monitoring centres throughout the country. Vehicles entering the country are monitored by border controls and there are five organizations involved in radiation safety (including the Ministry of Environment and Natural Resources and the Ministry of Health). On the advice of the IAEA, the National Agency for the Regulation of Nuclear and Radiological Activities was created in March 2007 (Governmental Decision No. 328 of 23 March 2007 "On the approval of the Regulation, organizational structure and maximum number of staff of the National Agency for the Regulation of Nuclear and Radiological Activities"). The Agency regulates all the activities of the various institutions. Nevertheless, there continues to be a degree of overlap and poor cooperation between those involved, as well as a variation in standards.

The National Preventive Medicine Centre assists in the surveillance of biological and chemical agents or radionuclear material (BCRN), the overall assessment of potential crises, laboratory diagnoses and the issuance of guidance to the Civil Protection and Emergency Situations Services and other related services. The Centre is also involved in simulation exercises. Some new Personal Protective Equipment (PPE) has been purchased through the avian influenza project, which can be supplemented by the old PPE if necessary.

STRATEGIC INITIATIVES

The following strategic initiatives have direct relevance to crisis preparedness and control in the Republic of Moldova:

- Health systems development strategy and plan of action for 2008–2017;
- Reform of the emergency services to bring them in line with EU standards (a single emergency line, an integrated operational management structure for all emergency services, and a Disaster Operations Centre);
- National development plan for 2008–2011;
- National health policy;
- Strategy for the development of the agro-food sector for 2006–2015;
- National action plan to combat desertification;
- National strategy for the sustainable development of forestry.

The Government has also already identified the following key challenges for strengthening national capacity for crisis preparedness and response:

- To establish forestation and irrigation programmes to address soil erosion and enhance agricultural productivity;
- To update equipment and regional capacity for response to medium- to large-scale medical disasters or pandemics;
- To introduce flood protection measures;
- To enhance capacity for combating local hail storms;
- To improve capacity for forecasting all natural hazards, including equipment;
- To integrate the information management system with a standardized geographical information system.

THE INTERNATIONAL HEALTH REGULATIONS

The Ministry of Health has taken two important steps to facilitate the implementation of the International Health Regulations (IHR) by:

1. nominating the National Preventive Medicine Centre as the National IHR Focal Point; and
2. establishing an inter-agency, multisectoral committee as a platform for planning and consensus building.

The National Preventive Medicine Centre has been a strong driving force, not only in initiating the implementation process, but also in ensuring the involvement of all key stakeholders in the development of the draft national plan of action, which was presented to the Government for approval at the time of the mission in February 2008. Thus, the Republic of Moldova was one of the few countries that, at the time, had come so far in the implementation process.

However, the following formalities have hampered the process.

- The Ministry of Environment and Natural Resources noted that although chemical and radionuclear safety were referred to in the preamble, they were not included in the actual articles of the IHR. Therefore, they therefore, did not consider their involvement to be adequately justified and refused further collaboration in the drafting process.
- The customs and border police were originally concerned about the increase in responsibilities imposed on them by the IHR. After lengthy correspondence and discussions, as well as a two-day meeting, agreement was reached on their role in the implementation of the IHR and on how this would be reflected in the national IHR implementation plan.
- After prolonged debate, the Ministry of Justice decided that, as the IHR came under international law, they did not need to be ratified by individual States Parties. The main disadvantage of this is that the official translation of the IHR text, which is based on the Romanian and Russian versions, will not be published in the official gazette (*Monitorul Oficial*), thus limiting public access to it.
- The first draft of the plan of action was rejected on the grounds that the wording required revision.

The National IHR Focal Point is already operating a 24-hour service and is therefore accessible at all times, the only problem being that those on duty are not always fluent in English. They felt confident that core capacity would be in place by 2009 and that the reporting system would be in compliance with the requirements of Annex 2 of IHR. However, they felt that the IHR tool for establishing whether an event should be notified

to WHO or not was too flexible, somewhat subjective and open to personal interpretation. As there had been little opportunity to actually use the tool, they had decided to develop national standard operating procedures for reporting.

The main outstanding issue is the fact that the current National IHR Focal Point has no legal basis. This can only be established when the national IHR implementation plan has been approved and the Ministry of Health has made the final decision on which institution should be the National IHR Focal Point.

Despite major steps forward in establishing a multisectoral approach to the IHR, further difficulties can be anticipated. Important stakeholders, such as the Ministry of Environment and Natural Resources, continue to be reluctant to collaborate and the responsibilities of the health sector overlap with those of other sectors (particularly the Civil Protection and Emergency Situations Service) in relation to general planning of crisis preparedness and response. The Medical-Biological Protection Division of the latter-mentioned is directly involved in outbreaks of communicable diseases and epidemics but is not part of the Ministry of Health structure or of the Ministry of Health Emergency Commission. The Civil Protection and Emergency Situations Service does not consider the IHR as part of their responsibility despite the fact that the IHR now covers issues, such as chemical safety, which normally come under their jurisdiction. However, they do not consider that these issues are the responsibility of the health sector either. The recently created Disaster Medicine Centre has a remit to coordinate between the various sectors and might be a means of bridging the gap between the health sector and the Civil Protection and Emergency Situations Service. However, it is currently understaffed and lacks adequate funding. Direct dialogue between the Ministry of Health and the Ministry of the Interior is probably necessary to resolve some of these questions.

At district level, it is unclear whether coordination of IHR-related activities will be the role of the Preventive Medicine Centres or the hospital directors, who are already responsible for coordinating crisis response at this level.

The Republic of Moldova has bilateral agreements with their neighbouring countries, Romania and Ukraine, on information exchange and mutual collaboration during a crisis, including a 24-hour notification system for communicable diseases. The Republic of Moldova is a transit country for the transport of fuel, gas, chemicals and pesticides, so that these agreements are also an important asset for IHR implementation. Strengthening institutional agreements and partnerships, for example between public health institutes, would further benefit IHR implementation in the future.

The Republic of Moldova has not yet designated points of entry as required by the IHR. The district Preventive Medicine Centre in Cahul has assigned four staff members to deal with health issues around the (only) sea port (which was under construction on the river Danube in the south of the district and due to open on 4 July 2008). The Aeronautic Hygiene Section at Chisinau Airport (under the authority of the National Preventive

Medicine Centre) is responsible for IHR implementation. At the airport, the capacity required for the designated points of entry (in accordance with Annex 1 of the IHR) is already in place. Although the Aeronautic Hygiene Section has no in-house laboratory facilities, it has access to the reference laboratories at the National Preventive Medicine Centre.

For the time being, Chisinau Airport does not function as a transit airport and the transport of cargo is minimal, comprising mainly vaccines, seeds, humanitarian goods, and, occasionally, animals and dead bodies. It was stated that, so far, no dangerous goods had been transported. The Customs Services function as gatekeeper and involve the relevant sections for clearance purposes.

The Aeronautic Hygiene Section attends daily multisectoral meetings held at the airport and is involved in developing emergency plans and standard operating procedures but was not aware of the National Emergency Plan. The Section was involved in the process of revising the IHR both at national and international levels and is of the opinion that the IHR are a great improvement of the old version. However, since the IHR entered into force in June 2007, no major changes in the work of the Section have been necessary. The health part of the Aircraft General Declaration, as revised by the International Civil Aviation Organization (Annex 9 of IHR), which globally entered into force on 15 July 2007, has been adopted for use in the Republic of Moldova.

Organizational structures and systems for crisis preparedness and response are already in place across many of the sectors and need little adaptation for implementation of the IHR. Moreover, capacity that is not directly related to emergencies may also be available for IHR implementation in the future. For example, the Ministry of Agriculture and Food Industry is planning to designate four ground crossings (out of the 96 that are currently functioning) with special equipment and staff for routine and emergency operations. It might be prudent to consider designating these four ground crossings as points of entry with respect to the IHR.

Although the development of the national plan of action for implementation of the IHR was a consultative process involving 15 ministries, more awareness-raising action is indicated. To this end, a national workshop on the IHR was conducted by the National IHR Focal Point in collaboration with WHO, at the time of the WHO assessment mission. The workshop was multisectoral and involved key personnel responsible for emergency preparedness planning.

The National IHR Focal Point identified the need to train staff involved in emergencies, especially those related to the chemical and radio-nuclear fields. At the airport, all airlines staff, customs personnel, staff of the medical care unit, veterinarians, etc., participate in an annual training programme. Details of the content and timeframe of the programme were not available.

CLIMATE CHANGE AND HEALTH

Background

The Republic of Moldova has a moderate, continental climate with a mean annual temperature of 8–10 °C and approximately 450–620 mm annual precipitation *(20)*. The coldest month is January and the warmest July, with a mean temperature range of between 2.8–5.3 °C below zero and 19–22 °C. The Republic of Moldova enjoys a relatively high number of warm and sunny days, i.e. 160 to 190 annually.

Many of the environmental hazards in the country are weather-related and could potentially be exacerbated by climate change in the years to come. This includes droughts, windstorms, extreme precipitation and floods, and heat-waves. Scarce and poor-quality water (55% of the population have access to piped water; 45% rely on wells) are particular problems related to drought and flooding.

Studies carried out in the Republic of Moldova utilizing three different climate change models *(14)* have projected that climate change will have an effect not only on the intensity and frequency of heat-waves and heavy precipitation events, but also on the intensity of droughts. The warming process is likely to be most pronounced during the winter months, while in the summer a moderate rate of warming is expected (15–20% by the end of the century). As an increase in precipitation in the winter months is also projected, warmer and wetter winters and drier summers can be expected.

Health effects of climate change

It is clear that climate change and extreme weather events have a direct impact on health. However, they can also affect forestry, agriculture and the economy resulting in problems related to food security and poor sanitary conditions that can, in turn, lead to serious mid- to long-term health effects.

The health effects of drought could, for example, cause a decrease in food production and result in nutritional problems in the population, making them more vulnerable to disease. In a UNICEF survey conducted in the Republic of Moldova *(14)*, local leaders anticipated that the most severe impact of the 2007 drought would be its effect on the health of the population. In fact, eight out of ten respondents (and 91% of the medical personnel interviewed) considered that it had already done so. However, the long-term affects of drought may be even more devastating. The increasing competition for arable land may eventually result in mass population movement and conflict as resources dwindle.

Climate change can have various (positive and negative) effects on the incidence of infectious diseases, such as malaria, tick-borne diseases and gastrointestinal disease.

Increased or decreased precipitation and changes in the seasons, such as warmer winters and earlier springs, can affect insects and animals that transmit or act as hosts for communicable diseases. Periods of very hot weather may increase the incidence of gastro-intestinal and water-washed diseases, such as scabies, resulting from poor food hygiene and insufficient and/or contaminated water supplies.

The First National Communication of the Republic of Moldova *(20)* to the United Nations Framework Convention on Climate Change mentions the following risk factors to human health from changes in air temperature and precipitation:

1. Heat stress that increases the morbidity and mortality from respiratory and cardiovascular diseases;
2. Extreme climate-related events (e.g. floods, windstorms, hail) that can cause death and trauma and increase the risk of infectious diseases;
3. Deterioration of natural and artificial systems that can lead to poor sanitary conditions and the emergence of infectious diseases and problems with food safety.

Adapting to climate change

Methods of adapting to climate change, such as installing flood barriers, improving land use and irrigation systems and, in particular, upgrading water supplies, can be very cost-effective in the long-term. As only 45 % of the Moldovan population has access to piped water, improving water supplies may be a good investment for the future (Table 9).

Table 9. Cost-benefit analysis of climate change adaptation measures, 2000-2010 (US$ millions)

Sectors	Costs	Benefits	Net benefits
Protection of ecosystems, flora and fauna	0.32	–[a]	–[a]
Water supply	8.4	438.5	430.1
Irrigation	57.5	39.5	– 18
Flood danger prevention	4.4	17.5	13.1
Total	70.6	495.5	425.2

[a] Not estimated.

Source: Ministry of Environment and Territorial Development, UNDP Moldova. First National Communication of the Republic of Moldova under the United Nations Framework Convention on Climate Change, Chisinau, 2001 (20).

A range of measures can be taken to strengthen health systems and protect population health from the impact of climate change. Options are listed at the end of this sub-chapter.

Findings of the assessment with respect to climate change

The following findings are based on the interviews with key stakeholders.

Natural disasters

High temperatures and heat-waves

The Republic of Moldova experienced a heat-wave during the summer of 2007. Spring had come unusually early and cases of viper bites had been seen in May at a time when vipers are normally still in hibernation. Rates of cardiovascular and chronic diseases are high in the Republic of Moldova and, at the start of the heat-wave, emergency departments recorded increases in the number of calls related to people with these diseases, and to the elderly and infants. However, over the course of the summer, the observation was made that people had become acclimatized to the heat, an observation that corresponds to the findings of European research projects on the health effects of heat and heat-waves *(21)*.

Currently, there are no criteria for the identification and notification of people dying from heat-related illnesses in the Republic of Moldova, although the Ministry of Health does provide guidance on how best to protect health during a heat-wave. The Health Promotion Department at the National Preventive Medicine Centre considered that a heat-related health warning system was strongly indicated. A proposal to this effect had been made but funding had not been received.

Relevant personnel in the Preventive Medicine Centre felt that it was still too early to foresee the type and extent of weather-related health effects overall but that there was a need for the health sector to sensitize central government to these new challenges for health security and advocate for more resources.

The health sector mounted a series of emergency interventions during the heat-wave in 2007, including:

- two extraordinary meetings of the Health Commission for Emergency Situations (21 and 31 July);
- a request to all medical facilities to provide emergency medical assistance to the affected population (Disposition No. 300 of the Ministry of Health of 17 July);
- the establishment of mobile units (22 in Chisinau, 6 in Balti and 1 in every district) offering health care services between 10.00 and 18.00 hours;

- the purchase and installation of air-conditioning in operating theatres, delivery rooms and intensive care units;
- a large public information campaign comprising a press conference, two press releases, 138 radio broadcasts, interviews and reports, 64 television shows, interviews and reports, and 21 articles;
- telephone consultations (especially for the elderly, pregnant women and people suffering from chronic diseases);
- the provision of free emergency health care to those affected by the heat wave (by private medical institutions);
- visits of working groups (comprising personnel from the Ministry of Health and medical institutions) to all districts to provide relevant medical and practical advice and monitor the implementation of the ministerial dispositions.

Droughts

Respondents reported noticeable changes in weather conditions, including a general increase in temperature variations and the heat-wave and drought of 2007, when temperatures peaked at 42 °C. The drought resulted in a dramatic reduction of safe water in wells and the number of livestock (due to lack of fodder), and a consequent lack of milk and meat, making importation of meat necessary.

At the national level, the National Commission for Emergency Situations held two meetings on the 2007 drought, one of which was called by the President. The Ministry of Health also organized two meetings of the Commission for Emergency Situations to address the extreme weather conditions. A public information campaign was conducted to advise the public to use alternative sources of drinking water where necessary. Drinking water was provided to affected households and made available at health facilities. Recreational water facilities were tested for contamination and closed to the public, if necessary, and monitoring activities were intensified to ensure the quality of drinking water.

The high temperatures during the summer of 2007 also interfered with the vaccination of cattle against anthrax. As the vaccine is particularly heat-sensitive, it was necessary to carry out the vaccinations during cooler periods of the day. It was noted that, whereas floods could be devastating, they were usually fairly localized, whereas the drought affected the whole country. One positive effect of the very dry conditions was that the rodent populations diminished due to lack of food.

During a survey carried out by UNICEF *(14)*, 80% of the people interviewed considered that the reduced access to potable water (particularly in rural areas) and the poor nutrition caused by the drought had adversely affected their state of health.

The specific health effects of droughts, such as the longer-term effects on nutritional status, could be more systematically investigated and respective preventive measures designed, as was done in respect to heat-waves.

Floods

No specific health effects as a result of recent flood events were reported in any of the interviews.

Infectious diseases

Public Health in the Republic of Moldova – Annual Statistical Report lists several climate-sensitive infectious diseases, including dysentery, salmonella, cholera, hepatitis A and helminthiasis. Malaria is no longer endemic in the Republic of Moldova; only imported cases are reported (about 40 per year).

Emergencies related to the environment

The Ministry of Environment and Natural Resources is responsible for monitoring the water bodies. Seven cases of pollution (levels 100 times higher than the norm) were detected in 2007 in the river that passes through Chisinau. During the summer, oxygen levels are low, resulting in increased levels of ammonium and nitrates, particularly in the smaller rivers. Longer, hotter summers may exacerbate this problem, which is also the case for air pollution, particularly in industrial cities (including three in Transnistria).

The Children's Environment and Health Action Plan for Europe *(22)* seems to be a living document in the Republic of Moldova and the revised version of the National Environment and Health Action Plan (NEHAP) for 2008–2020, includes a chapter on climate change and health.

Weather forecasting

Weather forecasts and alerts for extreme weather events are handled by Hydromet, which is under the authority of the Ministry of Environment and Natural Resources.

Hydromet is a member of the World Meteorological Organization (WMO). Organized in three departments (meteorology, hydrology, and monitoring the environment – air, water, soil and radioactivity), it has established special warning systems for exceptional weather situations, such as extreme temperatures and heat-waves, strong winds, storms and hurricanes. On the approval of the Director of Hydromet, these warnings are sent to the President, the state institutions (including the Ministry of Health) and the media (television and the press). These links are officially established. Conflicting information was received from Hydromet and the Ministry of Health about the temperature at which a heat-alert is triggered; one quoted > 30 °C and the other >35°C. Further clarification is necessary.

Weather forecasts for five-day periods are based on data from 18 meteorological stations across the country that report every two hours. Up-to-date information is published on the Hydromet website, of which many of the health personnel seemed to be aware.

Adaptation to climate change

The Republic of Moldova signed the United Nations Framework Convention on Climate Change (UNFCCC) and an office was created in the Ministry of Environment and Natural Resources to deal with carbon dioxide (CO_2) emissions. The results of a national study on the effects of climate change on soil, water ecosystems and public health were reported in the First National Communication to UNFCCC *(20)*.

According to the office responsible for CO_2 emissions, the Japanese Government bought emissions quota in 2006 (Lei 400 000) and 2007 (Lei 900 000). The Ministry of Environment and Natural Resources has suggested that national climate predictions should be the task of a research institution, such as the Institute of Geography and Ecology. The Ministry could provide data for the climate predictions, such as those from the Dniester (Nistru) River, for example that are available for the last 30-year period. The latest annual report on environmental protection in the Republic of Moldova, describing the status of ecology (including chemicals and climate change), was published in 2007[26]. A national review was carried out of the impact of climate change on agriculture, health and the economy, including possible adaptation and prevention measures. The results were published in a number of articles and conference proceedings. This constitutes a national risk assessment for climate change, but no formal national assessment has so far been published.

Most of those interviewed considered it appropriate that the Ministry of Health take the leading role in addressing the possible health effects of climate change and, in fact, this is already the case for certain issues. The National Preventive Medicine Centre and the Ministry of Environment and Natural Resources, that have responsibilities in environmental monitoring, work together on environmental problems but the relationship was said to be better at the local rather than the national level. Improvement is needed in adapting medical services; involving local authorities; raising the awareness of the general public[27]; and developing regional heat-health warning systems. However, the main barrier to the implementation of prevention and adaptation measures was seen to be lack of funding.

[26] http://www.mediu.gov.md/file/rapoarte/Raport%202006%20rom%20.pdf, accessed 8 September 2008.
[27] During the assessment visit, information material prepared for World Health Day was awaiting the approval of the Ministry of Health.

Conclusions and recommendations

Strengths of the system

- The equivalent of a national assessment of the health risks related to climate change exists;
- An early warning system for extreme events is in place and official links between Hydromet and the Ministry of Health exist;
- There is institutional capacity for hydro-meteorological issues, environment and health, climate change.

Weaknesses of the system

- A lack of calculated heat thresholds based on temperature-mortality relationships;
- Prioritization by the health sector of health risks other than those related to climate change.

Opportunities for the system

- The existence of a draft heat-health action plan and a heat alert system;
- Recognition of the importance of preparing for high temperatures and heat-waves;
- The inclusion in the second communication to UNFCCC of a specific chapter on climate-related health effects and adaptation measures;
- The current implementation of ten projects related to Clean Development Mechanisms[28];
- The UNICEF report, *Drought after-effects upon the population of the Republic of Moldova (14)*;
- Strong Government interest.

The connection between the projected climate change and the possible impact on human health has not yet been formally established in the Republic of Moldova. Studies need to be carried out to establish a temperature threshold or recording health effects in the population, particularly in vulnerable groups. This threshold could then be used to trigger timely responses to heat-warnings. Guidance in developing a heat-health action plan can be provided by WHO *(23)*.

There is awareness in the health sector of the necessity to consider the health effects of climate change in health care preparedness plans and long-term planning. There is also a strong interest in climate change in the Ministry of Environment and Natural Resources, which has departments for hydro-meteorology and climate change and ozone. These departments, together with the National Centre for Preventive Medicine, could serve as a

[28] http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php, accessed 7 September 2008, and http://cdm.unfccc.int/index.html, accessed 7 September 2008.

strong starting point for collaboration between the health and other sectors on the protection of human health from climate change.

In its recent publication, *Protecting health in Europe from climate change (24)*, the WHO Regional Office for Europe states that the prevention of and response to the health effects of climate change require a portfolio of action at different levels: from health system preparedness coordinated with meteorological early warning systems to timely public and medical advice and improvements to housing and urban planning. In general, health systems need to strengthen their stewardship functions and capacity to work with other sectors on a proactive, multidisciplinary and multisectoral approach to the protection of human health from climate change.

Action within the health system could include: (1) strengthening health security; (2) advocating health to other sectors; (3) sharing good practices in intersectoral action; (4) building capacity in the health workforce; (5) providing intelligence; and (6) setting an example by "greening" the health services.

In summary, action by the health sector to improve adaptation to climate change in the Republic of Moldova could be to:

- translate earlier conference proceedings into a structured national assessment of the health risks of climate change and bring it to the attention of relevant policy-makers;
- discuss and design adaptation strategies for use by the health sector in identifying climate-related health risks in the country;
- agree on a lead body to coordinate the public health preparedness for and response to climate change;
- define roles and responsibilities;
- review and strengthen existing disease surveillance systems with a view to including further climate-related health outcomes, such as heat-related morbidity and mortality;
- identify, monitor and target risk groups and vulnerable populations;
- develop treatment protocols for climate-related health problems;
- raise the awareness of medical professionals and the public;
- provide training and guidance for medical professionals and advice for the public on measures to be taken during extreme weather events, such as heat-waves, flooding and drought;
- set up a monitoring system and evaluation mechanism to assess the effectiveness of preparedness and response measures;

- consider the cost (and amount) of the energy and CO_2 emissions used by air-conditioning and advocate alternative cooling methods to the public;
- maintain international and regional cooperation.

In connection with many of the above recommendations above, experience and guidance are available in countries of the European Region *(23)*.

Many of the recommendations related to climate change are in line – or even overlap – with the general recommendations made in this assessment report. One of the main pillars of adaptation to climate-related health risks is a strong health system (health services, capacity, facilities and intersectoral collaboration). It is therefore important to develop prevention and response measures related to the health effects of climate change and integrate these into existing structures, such as the National Disaster Preparedness Plan, the IHR or the Protocol on Water and Health.

CHEMICAL SAFETY

Background

Chemical safety came into focus when the United Nations Conference on the Human Environment endorsed the *Declaration of the United Nations Conference on the Human Environment* (Stockholm, 1972) *(25)*, advocating the need for a common outlook and common principles on the preservation and enhancement of the human environment. Since then, there have been several landmark developments in the global response to the emerging threat of chemical risks and the need to promote chemical safety.

Chemical safety involves issues relating to the environment, health, agriculture, industry, trade, etc., that come under the responsibility of different sectors of government. Coordination and cooperation among the different government agencies is essential if a successful national chemical safety programme is to be achieved. Although the prevention of risk to human health is one of the key components of such a programme, the involvement of the health sector has been limited in many cases. The successful implementation of a chemical safety programme depends on the active and effective participation of the health sector.

Findings

General management of chemicals

In 1997, the Republic of Moldova adopted laws on hazardous substances and product management, as well as a law on waste. With the aim of modernizing these laws and improving institutional capacity, new laws on toxic chemicals and waste have recently

been drafted within the context of the Global Environment Facility–World Bank project, "Sustainable Persistent Organic Pollutants (POPs) Stockpiles Management". A Danish consultant company, COWI, has been assisting the Ministry of Environment and Natural Resources in preparing the laws[29].

The draft law on toxic chemicals provides for the Stockholm, Basel and Rotterdam Conventions *(19,26,27)*. Another aim is to harmonize the Moldovan laws with the EU regulation on the registration, evaluation, authorisation and restriction of chemical substances (REACH) *(28)* and with the Globally Harmonized System of Classification and Labelling of Chemicals. The establishment of a chemicals agency is provided for under the law which will be discussed between the national authorities and other stakeholders before being forwarded to the Parliament.

The preparation of the National Profile for Chemicals is one of the seven activities of the national Strategic Approach to International Chemicals Management project, "The Republic of Moldova and UNEP partnership on capacity-building for improving the environmentally sound management of chemicals in the Republic of Moldova and the implementation of the Strategic Approach to International Chemicals Management". Completion of the project is expected by the end of September 2008.

The National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants *(29)* was prepared and approved in 2004. It provides a policy framework, sets priorities and describes the interventions needed to reach the national objectives on the management of POPs and on meeting the obligations of the Stockholm Convention.

Preparedness for and response to a chemical crisis

Details on the general legislation that regulates crisis, disaster and emergency preparedness and response in the Republic of Moldova, also with regards to chemical emergencies, can be found in Section B: Legal Framework.

The Civil Protection and Emergency Situations Service is a multisectorial agency under the authority of the Ministry of the Interior. They are responsible for overall coordination in emergency situations and have the authority to mount a public health response requiring the involvement of other sectors. The Service is also responsible for monitoring and evaluating the health sector.

The Ministry of Health has a Commission for Emergency Situations that includes representatives of the National Preventive Medicine Centre and the National Emergency Medicine Centre.

[29] The first drafts were discussed at a stakeholders' meeting on 8 July 2008.

The National Preventive Medicine Centre deals with issues of biological, chemical and radiological safety that are put forward for discussion by the Sanitary Epidemiological Council. The Departments of Toxicology and Environmental Hygiene of the Centre are involved with chemical safety. They deal with toxic substances and pesticides residues, and provide toxicological expertise with respect to new chemicals. Areas covered by sub-divisions of the Central Hygiene Laboratories include air quality, food quality, water quality, occupational environment, heavy metals, and pesticide residues.

Chemical incidents and industrial accidents

A set of laws and other regulations related to chemical incidents and industrial accidents exists in the Republic of Moldova. The most important of these are the following:

- Law on hazardous substance (being updated);
- Law on action to be taken in emergency situations;
- Law on the safety of hazardous industrial installations;
- Regulation Act defining the activities of the State Department of Emergency Situations in case of an industrial accident;

The Republic of Moldova is party to the Convention on the transboundary effects of industrial accidents *(30)*. Hydromet (under the Ministry of Environment and Natural Resources) and the State Department of Emergency Situations are the designated authorities responsible for the implementation of the Convention.

Poison Centre

The Republican Centre of Toxicology is situated in the Municipal Hospital No III in Chisinau. The facilities of the Centre were recently renovated and beds donated by Norway, but the wards do not have the necessary medical equipment. Support is expected from the World Bank project.

Rooms have been allocated in the Centre for the establishment of a poisons information service, which is not available in the country. A small room has also been allocated for toxicological analyses but there are no instruments or equipment. A draft decree on strengthening the Toxicology Centre, including the establishment of a poisons information unit has been prepared.

Alcohol, drugs, pesticides, mushrooms, corrosives, and carbon monoxide are the main causes of poisonings. Poisons information is to be provided to all health personnel and to the public. The Head of the Toxicology Centre foresees awareness-raising programmes for the public, especially about the health effects of chemicals used in the home.

Specific chemical issues

Persistent Organic Pollutants (POPs) – obsolete pesticides

The POPs inventory prepared under the National Implementation Plan identified extremely high amounts of obsolete stocks of pesticides. Over 4000 tons have been stored in a landfill in the Gagavuz region in the south of the country. In addition, the Republic of Moldova has an unusually high level of pesticide contamination because of an intensive use of pesticides in the past.

The POPs inventory identified approximately 26 300 transformers, 17 000 capacitors and other electro-energetic equipment that might contain printed circuit boards, with dielectric oils amounting to 23 920 tons. Much of this equipment is no longer in use; for example, only 1000 of the capacitors are being used, the remainder being kept primarily at one location (Vulcanesti).

One of the sub-components of the GEF–WB project, "Sustainable Persistent Organic Pollutants (POPs) Stockpiles Management" includes activities, such as the establishment of an inventory of equipment containing or contaminated by printed circuit boards and the destruction of the stockpile of obsolete capacitors, as well as a feasibility study on the site clean-up at the Vulcanesti Sub-station. Other components include: the environmentally-safe repackaging of stockpiles; management of POPs stockpiles, including the strengthening of institutional capacity; inventorization; monitoring; enforcement activities; training and capacity-building; public awareness-raising and education on POPs; and project management.

Collaboration with the North Atlantic Treaty Organization (NATO) was launched in 2006 and funding was received through a NATO Partnership for Peace Trust Fund project on the clean-up and destruction of hazardous chemicals[30].

The second phase of the project involves the establishment of an analytical laboratory with equipment for the analysis and characterization of pesticides. The laboratory is located at the Phytosanitation Product Test Centre in Chisinau.

National laws and regulations on chemicals

Chemicals

The most relevant laws on chemicals management are the following:

- *Law on the environmental protection (1993)* that establishes the legal foundation for developing normative acts and regulations applicable to different environmental

[30] Since the time of the assessment, 3245 tons of obsolete pesticides and hazardous chemicals have been repackaged and safe storage (in 1000 locations in 15 districts) was completed in June 2008.

media in order, *inter alia*, to protect land and subterranean resources, water bodies and the air from chemical, physical and biological pollution, and other impacts.

- *Law on civil protection (1994)* that stipulates that civil defence is a system of countrywide measures and activities implemented during times of peace and war to protect the population from natural and environmental disasters, accidents and catastrophes, natural hazards and fires, as well as from weapons of mass destruction.
- *Law on hazardous products and substances (1997)* that establishes the legal basis for activities related to the production, storage, transportation and use of hazardous and toxic products and substances, as well as their import and export, in order to avoid, reduce or prevent their negative effects on the population and environment.
- *Law on wastes from industrial production and consumption (1997)* that aims to foster efficient management of wastes in order to reduce the amount, increase recycling and reuse, and prevent environmental pollution and degradation.
- *Law on health protection (1995)* that stipulates that public administration shall take every necessary social and medical measure to prevent illness, improve the environment, and maintain safe and hygienic living and working conditions.
- *Law on licensing certain types of activity (2001)* that aims to define the legal, organizational and economic foundations, and the scope of licensing activity. The list of activities subject to licensing under the law includes the storage of toxic chemical substances and products.
- *Law on the industrial safety of hazardous industrial facilities (2000)* that establishes the legal, economic and social foundations for the safe operation of hazardous installations. The law stipulates that hazardous activities shall be conducted in accordance with industrial safety requirements and shall ensure the protection of the population and territories from emergency situations, in accordance with sanitary-epidemiological, environmental, fire, sanitary-hygiene and construction norms and requirements.
- *Regulation on the national monitoring and the laboratory control network for monitoring environmental pollution by radioactive, poisonous, highly toxic substances and bacteriological (biological) substances (Government Decision No 477 of 19 May 2000)* that sets the objectives and defines the structure of this system and designates the implementing agencies, namely: the Ministry of Health, the Preventive Medicine Centres, the Ministry of Agriculture and Food Industry and its subordinate centers and laboratories, Hydromet and the Ministry of Environment and Natural Resources.

Pesticides

- *Regulation on the management of phyto-sanitary products and fertilizers in the national economy (approved by the Ministry of Agriculture and Food Industry Ordinance No. 231 of 28 November 2003)* establishes the mandatory sanitary, environmental and hygienic requirements for all aspects of agricultural chemical management.

International chemical conventions and agreements

The *Convention on Transboundary Effects of Industrial Accidents (30)* was ratified in 1993. It is designed to protect human beings and the environment from industrial accidents by preventing them as far as possible, reducing their frequency and severity, and mitigating their effects. The Ministry of Environment and Natural Resources and the State Department of Emergency Situations are responsible for the implementation of the Convention.

The *Convention on Long-Range Transboundary Air Pollution (31)* was ratified in 1995. The Convention aims at protecting human health and the environment from air pollution and to endeavour to limit and – as far as possible – gradually reduce and prevent air pollution, including long-range transboundary air pollution.

The *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* was ratified in 1998 *(26)*. The Convention aims to protect human health and the environment from the adverse effects of the generation, management, transboundary movement and disposal of hazardous and other wastes. The Ministry of Environment and Natural Resources is the focal point for the Convention.

The Republic of Moldova ratified the *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade* in 2004 *(27)*. The purpose of this Convention is to promote shared responsibility and cooperation in the international trade of certain hazardous chemicals. The Ministry of Environment and Natural Resources is the focal point for the Convention.

The *Stockholm Convention on Persistent Organic Pollutants* was ratified in 2004 *(19)*. The overall objective of the Convention is to protect human health and the environment from POPs that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissues of living organisms and are toxic for humans and wildlife. The Ministry of Environment and Natural Resources is the focal point for the Convention.

The *Strategic Approach to International Chemicals Management* is a global policy framework to support the achievement of the goal of the World Summit on Sustainable Development (2002) that, by the year 2020, chemicals are produced and used in ways

that minimize significant adverse impacts on the environment and human health. The Ministry of Environment and Natural Resources is the focal point for the Convention.

Internationally supported projects in the Republic of Moldova

The following are the main chemicals-related projects that receive international support:

- The National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants *(29)*: financed by the World Bank through the Global Environment Facility (GEF) (2002–2004); implemented by the Ministry of Environment and Natural Resources.
- Persistent Organic Pollutants (POPs) Stockpiles Management and Destruction: GEF Project (2005–2010); implemented by the Ministry of Environment and Natural Resources.
- Clean-up chemicals in the Republic of Moldova: NATO Science for Peace project (SfP 981186) (2005–2009).
- The Republic of Moldova–UNEP partnership on capacity building for the environmentally-sound management of chemicals in the Republic of Moldova and the implementation of the Strategic Approach to International Chemicals Management. Financed by the SAICM Quick Start Project Trust Fund programme (2007–2009); implemented by the Ministry of Environment and Natural Resources.

Chemical analysis laboratories

Ministry of Health

The National Preventive Medicine Centre works on biological, chemical and radiological safety. The Department of Toxicology and the Department of Environmental Hygiene of the Centre are involved with chemical safety. The former deals with toxic substances and pesticides, provides toxicological expertise on new chemicals, pollutants in the air, food and non-food items, and conducts animal experiments.

The Central Hygiene Laboratory, which is currently being restructured, has laboratories for pesticides (residues in food, air, water, soil) and toxicology. It is the only institution that deals with biological, chemical, radiation and bio-terrorism. There are sub-divisions for air quality, occupational environment, food quality, heavy metals, pesticide residues, water quality (potable water) and soil.

The Laboratory has three atomic absorption spectrometers, gas chromatographs with EC, FID, P, N, mass detectors and UV-VIS spectrometers. The instruments that were provided through participating projects are not very new but they are in working order.

They carry out analyses of heavy metals in food and packaging material, as well as of cosmetics and plastics, and monitor water, mineral water and bottled water from source to table.

The methods used by the Laboratory are officially approved by the Ministry of Health and compatible with the EU regulations, especially those on food products. They have national and Russian Federation accreditation. EU accreditation is underway.

Ministry of Environment and Natural Resources

Hydromet are responsible for monitoring environmental quality. In accordance with the *Regulation on National Monitoring and Laboratory Control Network for Monitoring Environmental Pollution by Radioactive, Poisonous, Highly Toxic Substances and Bacteriological (Biological) Substances (Government Decision No 477 of 19 May 2000)*, there is a national network for monitoring the quality of the environment. The Ministry of Health, the National Preventive Medicine Centre, the district Preventive Medicine Centres, the Ministry of Agriculture and Food Industry and its subordinate centres and laboratories, Hydrometeorological Centre and the Ministry of Environment and Natural Resources are the implementing agencies.

The network comprises 42 laboratories for monitoring the quality of surface water, 11 for the quality of soil, and 17 for the quality of air (only one of which is automatic).

Forty-eight hydrochemical indicators are analysed in water in accordance with the EU directives on water and the Danube River Protection Convention *(32)*. There is a trans-national agreement with Romania and joint monitoring.

Soil in the agricultural areas is monitored twice a year. One central laboratory analyses all the samples (only simple analyses are carried out in the districts). Samples for PCB analysis are collected from around the electrical stations. The hydro-meterological laboratory was upgraded for PCB analysis within the context of the WB–GEF POPs project. The POPs laboratory was accredited in 2005 (ISO 17025).

In the Ministry of Environment and Natural Resources there is gas chromatography (GC) with electron capture (EC) and nitrogen phosphorus detectors (NPD). Around 500 samples are analysed in a year. Gas chromatography–mass spectrometry (GC–MS) instrumentation was expected through the GEF project. The physical condition of the laboratories was not good but they would be moving to new premises in September 2008.

In case of an industrial accident both the hydro-meteorological laboratory and the Civil Protection and Emergency Situations Service take samples but the testing is done by the former.

Air quality is monitored at 17 points in 5 cities. Detection is automatic at only one point. Basic and specific pollutants are analysed (suspended particles: SO_2, CO, NO_2; specific pollutants: phenol, formaldehyde, NO, soluble sulphates). The National Preventive Medicine Centre used to analyse benzopyrene but this is no longer the case.

The pollutant analysis results are sent to the National Preventive Medicine Centre that, in turn, sends them to the Ministry of Environment and Natural Resources for inclusion in their daily bulletin. If the pollution is high, industries are requested to reduce the level of their emissions.

Ministry of Agriculture and Food Industry

The analytical laboratory at the Phyto-sanitation Product Test Centre was established within the framework of the NATO Science for Peace Project. It is equipped with gas chromatography-mass spectrometry (GC-MS), and high pressure liquid chromatography (HPLC) instrumentation for pesticides analysis. The personnel of the laboratory have been trained in the use of the instrumentation and in the general aspects of sampling and methods of analysis.

More than 3000 samples from the storages were tested and the composition of the pesticides determined. The results were provided to the Ministry of Defence and NATO.

Conclusions and recommendations

The Republic of Moldova is preparing its new toxic chemicals and waste laws within the framework of the GEF-WB project on POPs elimination. A first meeting to discuss the draft laws has been held with the participation of all the stakeholders and two experts from the Ministry of Health. The draft law discussed is quite broad. It provides for the requirements of the conventions adopted by the Republic of Moldova (REACH, GHS) and foresees the establishment of a chemicals agency. Experts from the Ministry of Health and the Ministry of Agriculture questioned its overlapping with existing laws, regulations and responsibilities. This aspect will be discussed between the national authorities and other stakeholders and should be clarified before the draft laws are forwarded to the Parliament.

The Ministry of Environment and Natural Resources is the focal point for most of the international chemicals conventions and for the SAICM. It has been successful in securing funding for projects through the financial mechanisms available under these conventions, as well as in implementing them to meet the needs of the country.

The Ministry of Health is aware of the on-going projects and is represented on their steering committees. However, the Ministry could play a more active role in the implementation of these projects and benefit from them, especially in relation to health assessments. For example, the POPs project could include a component on the bio

monitoring of human milk for POPs. In general, cooperation among the institutions is good and this can be attributed, though not limited, to regulations, such as those relating to the National Monitoring and Laboratory Control Network for Monitoring Environmental Pollution by Radioactive, Poisonous, Highly Toxic Substances and Bacteriological (Biological) Substances. With respect to the registration of pesticides, the Ministry of Health and the Ministry of Environment and Natural Resources are not only represented on the Registration Committee but their approval is also sought before registration.

The World Health Assembly Resolution WHA59.15 *(33)* urges the WHO Member States to nominate a national focal point for the Strategic Approach to International Chemicals Management (SAICM) from the health sector, in order to maintain contact with WHO. It would be useful to have a contact point for the SAICM and chemical safety in the Ministry of Health so that they could be better informed about the ongoing activities at international level.

The Republican Centre of Toxicology needs financial and technical support. Russian translations of the WHO IPCS INTOX data management system and other relevant documents, including the minimum criteria for poisons centres, will be provided by the WHO Regional Office for Europe. The Republic of Moldova does not have a poisons information centre, which could play an important role in chemical emergencies, providing up-to-date information to health professionals on the treatment of poisonings and raising the awareness of the public on the health effects of chemicals. Other countries in the region, for example, the former Yugoslav Republic of Macedonia, are interested in establishing a poisons information centre. Joint projects could be prepared and submitted to SAICM Quick Start Trust fund programme and or to other donors.

SECTION C: HEALTH SYSTEMS FRAMEWORK – ANALYSIS AND RECOMMENDATIONS

LEADERSHIP AND GOVERNANCE

Policy and legislation

Rationale

Health security is an issue of national concern and disaster prevention, mitigation and response are key elements. Hence, political commitment and a clear legal framework are necessary not only within the health sector, but also within the context of a broader, national framework (legal and institutional) that encompasses all sectors and creates an environment for the development of appropriate public health policy. To avoid confusion, ambiguity and unnecessary friction with other health providers, such as the military, national policy should clearly recognize the Ministry of Health as the body responsible for leading the overall medical and public health response, and should provide not only for the implementation of activities related to mounting a response during a crisis, but also of those related to prevention, reduction and mitigation.

The national legislation also needs to provide for the implementation of the current IHR. In addition, there are a number of international conventions and agreements related, for example, to climate change, the environment and chemical safety, to which national governments with a political commitment to effective disaster management normally adhere.

As well as an overall national policy document, specific laws, decrees, orders and regulations should be available to allow the health sector to regulate and ensure the effectiveness of multi-disciplined, all-hazard crisis preparedness planning and response at all levels, which includes the private sector, NGOs and other health-related agencies. Crisis prevention and mitigation activities (except for those related to infectious diseases) are not usually the direct responsibility of the Ministry of Health. There should also be a policy advocating the implementation of risk-reduction and mitigation measures by all sectors to reduce the overall impact on health status.

Key findings

1. The two civil protection laws, No. 271 of 9 November 1994 and No. 93 of 5 April 2007, appear to establish an adequate legal framework for crisis preparedness and response. However, it must be noted that no English translations of these laws could be provided. Therefore, the reviewers were unable to ascertain how well-defined these laws are or the responsibilities of the Ministry of Health in relation to them. The degree to which this civil protection framework constitutes a legal basis for

formulating new health legislation that mandates activities in crisis management is therefore questionable.

2. The Civil Protection and Emergency Situations Service has, by law, certain responsibilities related to the health sector (and other sectors), including monitoring and evaluation, and the quality control of the public health laboratory network, as well as being involved in public health interventions, particularly when these involve other ministries. Although the Government's rationale for this is clear in theory, the fact that the Civil Protection and Emergency Situations Service is involved in what might be viewed as normal health sector activities that are not related to a national crisis seems to give rise to some problems in practice.

3. The Ministry of Health has demonstrated a strong political commitment to crisis management by passing ministerial decrees to establish the Disaster Medicine Service and appointing a main specialist in disaster medicine. However, there does not appear to be any health sector legislation, other than the two main laws relating to basic health care and sanitary-epidemiological safety, which constitutes the necessary legal framework for crisis preparedness and response.

4. The Republic of Moldova has made remarkable strides in implementing the IHR and has already drafted a national plan of action. Only a few other countries in the European Region have made similar progress to date. However, the draft plan provoked extensive debate within the Ministry of Justice on the legal basis for implementation of the IHR within the country. Subsequently, a Governmental Decree to approve the plan was rejected by the legal experts at its primary hearing in February 2008[31].

5. The National Preventive Medicine Centre has been nominated as the National IHR Focal Point but currently it has no legal basis. This cannot be achieved before the national plan of action has been approved and the Government has decided where the National Focal Point is to be situated. It should be noted that, by law, the Civil Protection and Emergency Situations Service already has certain powers in the health sector and are responsible for chemical and nuclear safety. Thus, roles and responsibilities need to be clearly defined.

6. A review of the impact of climate change on agriculture, health and the economy has already been conducted by the Ministry of Environment and Natural Resources; in cooperation with the National Emergency Medicine Centre, and the equivalent of a national assessment on climate change exists. The drought experienced in 2007 highlighted the possible long-term effects on a large proportion of the population that

[31] After the assessment visit, on 26 March 2008, the Government issued Decision No 475 "*On approval of the plan of action for the implementation of IHR in the Republic of Moldova*", which establishes a formal national framework for planning and conducting concerted multisectoral activities in the period 2008–2012.

relies heavily on agriculture. However, there is no official programme or clear policy direction in the health sector regarding climate change.

7. The Republic of Moldova is updating its chemicals and waste laws as a component of the Global Environment Facility (GEF) –World Bank (WB) project on Persistent Organic Pollutants (POPs) Elimination. The new draft law is quite broad and includes other international chemical conventions, such as the Basel Convention *(26)* and the Rotterdam Convention *(27),* as well as REACH *(28)* and GHS. In addition, it foresees the establishment of a chemicals agency. It is being discussed among governmental departments and there is some concern about its overlapping with existing laws.

Recommendations

- The Ministry of Health could consider establishing framework legislation specific to crisis management and response. However, as the existing framework is undoubtedly sufficient to support new policy formulation, a practical alternative would be to define crisis preparedness and response at policy level (see "Institutional framework" below).

- The WHO Regional Office for Europe might be advised to clarify with Member States the legal situation regarding implementation of the IHR to minimize unnecessary debate and ensure timely implementation.

- The Ministry of Health may wish to take a more active role in the ongoing debate on climate change and develop a clear strategy for preparing for and responding to the health effects of extreme weather conditions.

- The Ministry of Health may wish to take the lead in establishing an official policy for climate change and health and a more pro-active role in the development of a multisectoral adaptation strategy.

- The Ministry of Health may wish to take a more active role in discussions on the chemicals and waste laws, and secure close collaboration on health aspects.

Institutional framework

Rationale

The EU and WHO strongly support the existence of an officially-recognized national (health sector) programme for crisis preparedness and response with the key functions and dedicated budget required to meet international standards (Annex 6: Model terms of reference). This means having an institutional framework in place that allows for effective implementation through a comprehensive, all-hazard, multi-disciplinary

approach. In the best case scenario this would include: a health crisis management unit; a health crisis coordinator; and a mechanism of involving other key departments or disciplines of the Ministry of Health in the planning process. This is often best achieved through a multidisciplinary or interdepartmental disaster preparedness and response committee/working group/task force at central/national level.

It is recognized that these requirements are not always economically viable, politically possible or even appropriate in countries with small populations and relatively low levels of risk. Also, many low-income countries are undergoing extensive public sector reform, which may restrict the expansion or functions of the Ministry of Health, or require the Ministry to downsize.

The current IHR also require that every country has a National IHR Focal Point – a department or institution (not an individual person) – with the capacity to meet certain responsibilities as per Article 4 of the Regulations. The National IHR Focal Point is generally located within the Ministry of Health and subordinate to it, but could in fact be under the authority of a different ministry if this were considered more appropriate.

Hence, how each individual country decides to establish its national programme for crisis preparedness and response and meet the core capacity requirement of the IHR depends very much on the country context with respect, for example, to population, potential hazards and associated risks, and current organizational structures. However, in the absence of a dedicated health crisis management unit, the existence of a full-time and permanent health crisis coordinator, institutionalized within the Ministry of Health, is considered a minimum standard. The health crisis coordinator should have an all-hazard function, be responsible for overseeing the implementation of the national health crisis programme, and have the necessary background, experience and authority to steer overall policy and represent the Ministry of Health at a multisectoral level.

Key findings

1. The current Advisor to the Minister of Health on Disaster Medicine is extremely well qualified and in an excellent position to influence policy and augment change in the near future. However, he does not fulfil an all-hazard role, nor does he occupy a permanent civil servant position within the Ministry. His nomination as Main Specialist for Disaster Medicine is a personal honour which cannot be passed on to his successor. Changes in personnel and/or national policy could therefore result in the loss of the priority status of crisis management and response within the health sector.

2. The existence of a dedicated Disaster Medicine Centre is good in theory but there appear to be extensive difficulties in establishing it as a functional and effective unit within the Ministry of Health, mainly as a result of the ongoing public health sector reforms. It is currently responsible to the National Emergency Medicine Centre,

which is itself a semi-autonomous institution, subordinate to the Ministry of Health. In order to provide the Centre with the necessary authority to adopt an all-hazard role, coordinate the activities of the other stakeholders in the health sector, or represent the Ministry of Health at multisectoral level, the Centre would need to be located within the Ministry. It is currently understaffed and under-funded and is mainly involved in the coordination of emergency response at district (rayon) level. Access to decision-makers is mainly through the Advisor to the Minister of Health on Disaster Medicine and, therefore, there is no guarantee of long-term sustainability.

3. The inter-departmental Health Sector Commission for Emergency Situations is responsible for crisis management in the health sector and meets at least twice a year to develop and review annual plans. However, unlike the Government Commission for Emergency Situations, it has no operational body or secretariat and functions purely through its representative members and their relevant departments or organizations in the health sector. In addition, each health institution and health facility also has its own Commission for Emergency Situations, and is often involved in multisectoral commissions at district level. There is no health sector commission at district level.

4. It is the National Extraordinary Anti-Epidemic Commission and not the Ministry of Health that has the power to establish quarantine procedures and initiate public health interventions. This may have implications for the implementation of the IHR.

5. The National Preventive Medicine Centre has been provisionally nominated as the National IHR Focal Point but institutional arrangements can first be finalized when the national plan of action has been approved. Although the Civil Protection and Emergency Situations Service does not view the IHR as part of their responsibility, they seemed reluctant to involve the National Focal Point in emergencies in sectors others than health. The Ministry of Environment and Natural Resources continues to be uninvolved in the IHR.

6. At the district level, the organization of health services is complex and fragmented with both vertical and horizontal financial coordinating mechanisms in place. While hospital infrastructure is financed by the local (public) authorities, and the provision of health services is financed through the Health Insurance Fund, the Emergency Ambulance Stations and Preventive Medicine Centres are both under the authority of (and funded by) autonomous institutions subordinate to the Ministry of Health. As primary health care is also the responsibility of the local (public) authorities, the director of the hospital nominated to act as the health crisis coordinator does not have authority over or the financial control of a large proportion of the health sector, making it difficult to deal effectively with a crisis. Representation of the National Emergency Medicine Centre and the National Preventive Medicine Centre on local (district) emergency commissions is at the discretion of the local authority.

7. There is no officially-nominated body in the health sector to lead and coordinate public health preparedness and response to climate change.

8. The Republic of Moldova does not have a poisons information service. The Republican Centre of Toxicology has drafted a decree on strengthening the Centre and establishing a poisons information service, for which they have allocated space.

Recommendations

- The Ministry of Health may wish to formulate a strategic policy document for crisis preparedness and response defining the overall requirements, current institutional framework and related responsibilities and including a continuing programme of activities. This could include a strengths, weaknesses, opportunities and threats (SWOT) analysis and an options appraisal (defining policy options and analysing the consequences from each of them).

- There is a very sophisticated management structure with a network of emergency commissions at all levels within the health sector and across the sectors. It is important to ensure that capacity is available to effectively implement the plans and recommendations of these commissions. This is particularly important with respect to the IHR. Monitoring activities and outputs would ensure that the system functions effectively.

- Detailed consultation with the districts is indicated to identify key problems in the current institutional structures and funding mechanisms and to strengthen coordination. This may best be achieved through workshops involving the key stakeholders, including the local authorities and national representatives of the autonomous institutions. Regular coordination meetings in the health sector may also help to better define roles and responsibilities, which – together with the development of guidelines and protocols for the various stages of crisis preparedness and response – may help to resolve many of the problems.

- The standard operating procedures of the National IHR Focal Point should provide clear lines of responsibility and collaboration with the Civil Protection and Emergency Situation Service.

- The Ministry of Health is advised to consider officially nominating a department or institution in the health sector to lead and coordinate the public health response to climate change.

Essential leadership functions

As part of its leadership and governance role, the Ministry of Health is expected to perform the following key functions in relation to crisis preparedness and response: (a) health crisis preparedness planning; (b) public communication; and (c) monitoring and evaluation.

(a) Health crisis preparedness planning

Rationale

The modern disaster management approach is multi-hazard. It recognizes that, regardless of the cause of a disaster or crisis, the managerial challenges are similar: dissemination of proper information, coordination, sharing information, ensuring that roles are clearly defined, etc. Some aspects will vary at the operational or technical level according to the type of disaster and the country context. Therefore, as well as an all-hazard generic plan, it is necessary to have more detailed technical plans (or guidelines) for specific issues, such as:

- incidents leading to the displacement of populations or the loss of access to services;
- mass casualty management;
- outbreaks of communicable diseases with epidemic potential (e.g. dengue, cholera, avian influenza or influenza pandemic) and zoonoses;
- emergencies related to hazardous materials;
- incidents of terrorism (biological, chemical, radionuclear) and other acts of violence.
- other specific major hazards (natural, technological and social) to which the country is vulnerable;

All plans should be based on a comprehensive risk assessment that identifies the hazards and vulnerabilities of different populations at national, provincial, municipal and community levels.

The EU and WHO promote the need for transparency and sharing of plans (except where this may threaten national security) to ensure interoperability within sectors, between sectors and across borders. Also, in order to nurture a sense of common purpose and ownership, it is important that those in charge of implementing the plans are fully familiar with their roles and responsibilities, have the opportunity to fully participate in the planning process and to review and comment on the feasibility of proposed activities.

Key findings

1. A national multi-hazard, health sector plan is available which appears to cover the main components necessary to initiate a crisis response, with the notable exception of a communications strategy. Similar generic plans exist for each district and detailed plans specific to avian influenza and influenza pandemic have also been developed. Detailed plans (or guidelines) for other scenarios were not readily available. As the plans presented were not available in English, it was not possible to establish their exact content.

2. Health sector planning focuses mainly on emergency services and the emergency response phase. Mitigation and preventive public health activities (except for national programmes on, for example, vaccination, TB, and HIV/AIDS) are not prominent.

3. Health sector plans are transparent and openly available but multisectoral district plans – prepared by the local public administration and civil protection services – are confidential.

Recommendations

- A detailed review of the generic plan is indicated to ensure that it contains all the relevant components. The reader is referred to the following document published by the European Commission for further information and support: *Interim document: technical guidance on generic preparedness planning for public health emergencies, April 2005 (34).*

- The Ministry of Health may wish to consider establishing working groups comprising technically-competent personnel to develop plans for crisis preparedness and response in situations specific to the Republic of Moldova. The mechanism utilized for developing the avian influenza and influenza pandemic plans would be appropriate.

- The public health aspects of crisis preparedness and response warrant more attention.

(b) Public communication

Rationale

The role of the mass media in disasters is critical. This is particularly true in the event of sudden disasters that have a dramatic impact on the population. Timely and consistent information can minimize the economic consequences of unforeseen social disruption and panic, and maximize the effectiveness of the response.

Policies are therefore required that establish:

- procedures for providing information, such as media releases, newsletters, websites, networks of people, pre-prepared advertisements;
- responsibility within the Ministry of Health for issuing public information;
- procedures for determining the value and use of information provided to the public;
- the capacity required to generate periodic situation reports, events reports, and post-disaster reports;
- a network of communications managers in the Ministry of Health and other health sector institutions to coordinate the development of consistent information for the public;
- procedures and templates for generating and/or disseminating early warnings about epidemics, hazardous material and other threats.

Key findings

1. The press section of the Ministry of Health regularly organizes press conferences to issue key health messages but procedures for divulging information to the public during a crisis are not included in the generic health sector crisis plan.

2. A dedicated health promotion unit exists as part of the National Preventive Medicine Centre and of its branches at district level. It is responsible for preparing health education materials and developing key messages related to communicable diseases. However, there is no mechanism that monitors the effectiveness of these messages or guarantees their consistency.

3. The Civil Protection and Emergency Situations Service also develop and issue public information, often using pre-prepared messages that are broadcast on television or over the radio when necessary. Although it was recognized that consistency is a key element and that messages should be sent out as "one single message from all institutions", there seems to be little in the way of multisectoral cooperation with regard to public communications.

4. The Ministry of Health provides guidance to the public on how they can best protect their health during a heat-wave but there is a general lack of awareness, across the health sector in particular, of the effects of climate change on health.

Recommendations

- The Ministry of Health is advised to oversee the development of a public information strategy for health-related issues (including climate change) in conjunction with technical experts and other sectors, in particular the Civil Protection and Emergency Situations Service, the Ministry of Environment and Natural Resources and the Ministry of Agriculture and Food Industry. The authority to disseminate materials should be predetermined at all levels of government.

- The Ministry of Health may wish to advocate the adverse health effects of climate change at a higher political level.

- It is recommended that all health promotion materials and key messages are field tested and approved before being distributed to the public.

(c) Monitoring and evaluation

Rationale

As part of the leadership and governance role of any ministry, monitoring and evaluation is usually viewed as a key function and this holds true for crisis preparedness and planning. In the best case scenario, it would be one of the responsibilities of a health crisis unit or health crisis coordinator to ensure that monitoring and evaluation were regularly carried out and appropriately reported, and that lessons learnt were reflected in revised plans. How monitoring and evaluation is implemented and by whom may depend on a number of factors, including national policy, organizational structures and the size of the country. Monitoring and evaluation for crisis preparedness and response usually take the form of simulation exercises, either through a desktop exercise or, more often, a real-live scenario field exercise. It is important to ensure that these simulation exercises do not become merely public relations exercises but that they are designed to identify problems in the system before, rather than when, a crisis occurs.

Key findings

1. The Civil Protection and Emergency Situations Service is responsible for conducting multisectoral simulation exercises in six or seven districts a year, and for reporting on the status of the health sector to the Prime Minister. The Disaster Medicine Centre takes an active role in this process.

2. The Disaster Medicine Centre has been delegated by the Ministry of Health to be responsible for monitoring and evaluation in the health sector. The generic, all-hazard health sector plans at the district level that are based on a national template are reviewed and coordinated by the Disaster Medicine Centre on a yearly basis and approved by the governor of the district. Currently, apart from what is implemented in cooperation with the Civil Protection and Emergency Situations Service, the Ministry

of Health does not have a strategy for monitoring the effectiveness of district health sector plans or the crisis plans of individual medical facilities.

Recommendations

- If the Ministry of Health decides to establish a disaster preparedness and response programme, it might wish to incorporate the requirement to carry out simulation exercises for different scenarios in individual medical facilities, for example, evacuating patients during a fire alert, dealing with an armed raider, dealing with an unidentified infectious disease with a high mortality rate. The last-mentioned simulation exercise could be extended to involve the National Preventive Medicine Centre and the national reference laboratories. Exercises simulating various crises on municipal, regional and national levels should be considered, as well.

- If the Ministry of Health establishes an official programme for crisis preparedness and response, a monitoring and evaluation programme should be developed as an integral part of the process.

- It is recommended that a clear mechanism be established whereby lessons learnt are incorporated in future crisis preparedness and response plans.

Partnerships and coordination

Rationale

Coordination, cooperation and collaboration between key partners, both national and international, are essential in ensuring the best use of often scarce resources and in preventing duplication of effort. A number of cross-cutting issues (e.g. food and water safety, environmental monitoring – including pollution and radiation, communicable diseases control and chemical safety) often necessitate the involvement of more than one ministry or agency. Furthermore, in a number of countries, the Ministry of Health is not the only entity responsible for delivering health care. The military, certain other ministries, public enterprises, the private sector and NGOs (local and international) may augment health care delivery at primary, secondary and tertiary levels. During a crisis this kind of overlapping can often lead to confusion, an uncoordinated response and wasted resources. Therefore, it is important that the Ministry of Health is recognized as being overall responsible for health-related issues in a crisis and that there is good coordination, cooperation and collaboration between the Ministry of Health and other key agencies at all times, particularly in relation to prioritizing potential risks, implementing risk reduction strategies and planning preparedness, as well as during the actual crisis response phase.

Both the EU and the WHO actively encourage cross-border planning mechanisms and information exchange to ensure the interoperability of national plans. This is particularly

important for reporting in accordance with the IHR, and for implementing the necessary measures at points of entry (border crossings) to prevent and control the spread of communicable diseases and hazardous materials, with minimum interference to global trade.

Key findings

1. The Government Commission for Emergency Situations is chaired by the Prime Minister and all ministries and key organizations are represented. It is, by definition, a high-level, political committee attended mainly by ministers and/or their deputies. Although all ministries, districts, hospitals and institutions have similar commissions of their own for emergency situations, there is currently no technical committee or working group to create a forum for multisectoral coordination, cooperation and collaboration between the technical and scientific institutions responsible for implementing the various components of the national crisis policy.

2. The Civil Protection and Emergency Situations Service constitutes the national multisectoral agency responsible for crisis preparedness and response at national level and acts as the secretariat (implementing body) of the Government Commission for Emergency Situations. By government regulation, the Medical-Biological Protection Division of the Civil Protection and Emergency Situations Service is required to participate in the control of outbreaks of communicable diseases and epidemics, and is responsible for monitoring and evaluating the health sector. There is, however, little direct contribution to outbreak investigations. Collaboration between the Civil Protection and Emergency Situations Service and the Ministry of Health takes place mainly on an official basis, as defined in the laws and regulations of the country. One respondent in the Ministry of Health expressed the view that though the Civil Protection and Emergency Situations Service is not always able to take the necessary action due to lack of budget, they have a lot of information and know exactly what resources are available across the country. According to another view from the health sector, the past involvement of the Medical-Biological Protection Division of the Civil Protection and Emergency Situations Service in outbreak investigation and control activities has created more confusion than added value to the process.

3. Other key partners to the Ministry of Health are the Ministry of Agriculture and Food Industry and the Ministry of Environment and Natural Resources. The latter-mentioned has official lines of communication to the President, the Civil Protection and Emergency Situations Service, all state institutions (including the Ministry of Health) and the media in the event of a crisis. At the national level, contact between the Ministry of Agriculture and Food Industry and the Ministry of Health is mainly on a higher political level, for example, between the directors of the involved national institutions, and there is no framework for interministerial coordination and collaboration at technical level. Reportedly, the situation is better at the district level.

4. Developing the national IHR implementation plan has been a very effective tool for raising the awareness of and involving the key stakeholders at national level, although much of the communication has been at interministerial level and technical staff has not yet been fully involved. The role of the Ministry of Environment and Natural Resources in chemical safety, however, remains unclear and the Civil Protection and Emergency Situations Service has voiced concern about the roles and responsibilities of the National IHR Focal Point with regard to issues not directly related to health.

5. The Ministry of Health indicated that collaboration with the Red Cross organizations needs to be improved. Other potential sources of support to the health sector, such as national and international NGOs, were not clearly identified.

6. The Republic of Moldova has bilateral and multilateral agreements with both Romania and Ukraine for all emergency situations, including information exchange and assistance. Agreements also exist on exchange of communicable disease data, although the National Preventive Medicine Centre was not fully satisfied about how well this works in practice, particularly as regards the timeliness and completeness of the data they receive. Basic health and demographic data for the population of Transnistria (around 0.6 million inhabitants) have not been available since 1997.

7. The 2007 drought initiated a multilateral donor response, with a total estimated budget of approximately US$ 12 million, mainly for the agricultural sector and emergency social assistance to vulnerable groups. Poor health was seen by many people as a key issue related mainly to poor nutrition, increased vulnerability to disease and reduced access to potable water (45% of population rely on wells as their main water source).

8. The Ministry of Environment and Natural Resources and other sectors have several international projects on chemicals, such as the Global Environment Facility–World Bank project on the elimination of persistent organic pollutants, the Republic of Moldova–United Nations Environment Programme partnership on capacity building for the environmentally-sound management of chemicals in the Republic of Moldova, and the implementation of the Strategic Approach to International Chemicals Management. The Ministry of Health participates in the steering committees of projects such as these but does not benefit much from their resources.

Recommendations

- The Ministry of Health is advised to establish mechanisms – such as technical committees or working groups to create a forum for multisectoral coordination – and to strengthen technical cooperation between partners involved in health, particularly at the national level. Possible agencies to involve include: the Civil Protection and Emergency Situations Service (Medical-Biological Protection Unit); the National

Emergency Medicine Centre; the Disaster Medicine Centre; the National Preventive Medicine Centre; the National Agency for the Regulation of Nuclear and Radiological Activities; the Ministry of Environment and Natural Resources; the Ministry of Agriculture and Food Industry; university departments; and NGOs.

- The Ministry of Health might benefit from developing an inventory of potential nongovernmental partners (including the private sector) and their resources with a view to establishing collaborative agreements, depending on what each organization has to offer (human resources, technical support, training, supplies and equipment) in the area of crisis preparedness and response. In this way, an under-utilization of the existing resources can be avoided, as well as a possible duplication in planning their use.

- Despite some ongoing problems, the implementation of the IHR has already brought about better understanding and awareness in the different sectors involved. Further consultation is required to strengthen and broaden the process and to ensure that relevant information reaches those responsible for the implementation of the IHR and stimulates informed debate amongst partner institutions at both the technical and the political levels.

- The threat of further periods of drought is very real as the Republic of Moldova is facing increasingly hot summers and changes to the normal weather patterns. The Ministry of Health is advised to conduct a thorough risk assessment to identify the key areas for intervention to prevent and/or reduce the health effects of drought and to use the assessment in approaching potential donors.

- The Ministry of Health could strengthen their current position by developing joint projects and strengthening collaboration with national and international partners.

- The Ministry of Health could benefit from the international chemicals management projects that exist in the country by playing a more active role and proposing sub-projects on health aspects, such as the bio-monitoring of human milk for POPs, under the POPs elimination project.

- The World Health Assembly Resolution WHA59.15 *(33)* urges Member States to nominate a national focal point for the Strategic Approach to International Chemicals Management from the health sector in order to maintain contact with WHO. In addition, it would be useful for the Ministry of Health to have a contact point for chemical safety to be better informed about ongoing activities at international level.

CREATING RESOURCES

The existence of a crisis plan is in itself worthless unless there are resources available to identify hazards and risks and implement timely and effective response. This requires access to timely and accurate information, trained personnel, appropriate medical equipment and pharmaceuticals, and the identification and effective management of all the resources available. It is important to note that these resources may not be generated by the health sector or even available at the national level; the international community can be a key source of material resources and technical expertise when there is insufficient capacity in a country. More importantly, clear procedures for and guidelines on accessing and managing these resources need to be available when needed.

Human resources

Rationale

It is clear that an adequate number of readily available (and contactable) staff, with the right skills and knowledge, is absolutely essential during a crisis. This requires good management and planning, taking into consideration the need for surge capacity and bearing in mind that, in certain instances, for example in the event of an earthquake, the staff may be personally affected and, therefore, not available for work. Resources outside the public sector, including private hospitals, national and international NGOs, the military and volunteers, should be considered during the planning process.

Technical skills need to be continuously updated and strengthened, preferably through workshops and seminars, supported by practical training. The relevant training materials should be in the appropriate language. The first step towards achieving this is to establish a strategy for human resource development, specifically for disaster preparedness and response, based on a training needs assessment and the priorities of the health sector. This strategy should adopt a broad public health approach and address the need, not only for emergency medical services, but also for technical, medical and managerial staff. Hence, there should be an ongoing, multidisciplinary programme of courses and/or workshops, supported by technical (on the job) training, available at all levels. These would include topics such as:

- generic disaster management, including the coordination of external assistance;
- rapid needs assessment following disasters other than outbreaks of disease;
- establishment of emergency surveillance systems;
- mass casualty management and disaster planning for hospitals;
- communicable diseases control and water/sanitation;
- management of supplies;
- mental health and nutrition;
- management of dead bodies.

Disaster management should also be increasingly included the pre- and post-graduate curricula of health professionals (doctors, nurses and paramedics). It is also an essential topic for any postgraduate training in public health.

Key findings

1. The need to contact staff during a crisis is well recognized and rosters of staff and key personnel are included in the generic and health facility plans. The round-the-clock communications office has contact numbers for all key personnel and health facilities in the country. However, recent health sector reforms have dramatically reduced the number of health personnel in the sector. In general, the emphasis is on personnel needed for mass casualty management and the rescue phase and inadequate consideration is given to maintaining normal services during a crisis. This is of particular concern in relation to vulnerable groups.

2. The establishment of specialist teams to provide surge capacity during a crisis response is governed by national and local regulations. The teams are designed to supplement or substitute the emergency and routine services and mainly comprise personnel not already involved in the response, such as primary health care staff, staff from other districts, specialists from Chisinau and non-medical personnel.

3. There is no overall strategy for training health personnel and no regular budget to develop an ongoing, continuing professional development programme to ensure adequate numbers of competent staff for crisis preparedness and response. Present training is focused mainly on emergency medicine and no courses are available on disaster management or the broader public health issues.

3. Both the Civil Protection and Emergency Situations Service and the National Emergency Medicine Centre provide training in emergency response and mass casualty management but there is no standardized curriculum. The training courses organized by the latter-mentioned seem to be ad-hoc and rely on external donor funding. There is no ongoing national programme.

4. In connection with training in emergency medicine received abroad, participants are selected on their ability to speak English rather than according to their expertise and potential to put the knowledge gained into practice or pass it on to others. However the language barrier will disappear over time as more and more of the younger generation in the country are able to speak English.

5. It was said that the formal laboratory training does not meet the standards of the previous system of the former Soviet Union and that there are no high-level courses available for specific diseases. Most new personnel require intensive "on-the-job" training.

Recommendations

- The need for the development of a clear training strategy based on a comprehensive training needs assessment is strongly indicated. This could be combined with an audit of the skills and experience of all health personnel (public and private) and of their current and potential involvement in crisis preparedness and response. The assessment should include doctors, nurses, paramedics, technicians, laboratory staff, drivers, communications experts, etc. in the Ministry of Health and the wider health sector, as well as in other ministries, NGOs, private sector and international organizations.

- Training programmes need to include not only emergency medicine and mass casualty management but also a broad range of topics related to disaster management and public health (including climate change). In addition, these topics should be progressively included in the pre- and post-graduate training curricula.

- The curriculum for the basic training of laboratory technicians might be reviewed to ensure that key topics, such as biosafety and biosecurity, are adequately covered and that training provides a firm grounding in good laboratory practices. Opportunities for sending specialists abroad for advanced training could be considered, in coordination with WHO.

- The Ministry of Health may wish to consider investing in English-language training to improve the abilities of key managerial staff to enable them to participate in international courses and seminars and make use of up-to-date literature and information on the Internet.

- WHO may wish to consider translating key literature on crisis preparedness and response into Russian and to ensure that it is freely downloadable from the Internet. It is important that Member States be made fully aware of the information available and how to access it.

Medical supplies and pharmaceuticals

Rationale

Maintaining adequate medical supplies and pharmaceuticals during a crisis depends on good management and clear administrative procedures. It is particularly important to ensure a balance between introducing flexibility, speed and effectiveness and preserving accountability. Procedures and guidelines should be in place for establishing critical stock levels, maintaining lists of suppliers, conducting inventories, rotating supplies according to shelf life, and ensuring scheduled maintenance of equipment. They should also include information relating to:

- agreements on resource-sharing with the private sector and volunteer organizations;
- procedures for emergency contracting (including pre-identified technical specifications of goods), tracking supplies/services from contractors and reporting discrepancies;
- authority and procedures required for requesting, accepting/refusing and coordinating external resources (medicines, personnel, field hospitals) provided by international partners or NGOs.

Key finding

1. The purchase of medical supplies for crises is not the responsibility of the Ministry of Health but of the State Agency for Material Reserves, Public Acquisitions and Humanitarian Aid, a government agency responsible for central procurement and storage and for the coordination of international material aid. Recent regulations have been introduced to ensure that any imported drugs have an expiry date of at least one year (with the exception for certain vaccines, for which a 6-month expiry date is accepted).

Recommendations

- The Ministry of Health may wish to ensure that they, as well as the State Agency for Material Reserves, Public Acquisitions and Humanitarian Aid, are familiar with the *WHO guidelines for drug donations (35)* and to consider incorporating selected parts of the guidelines in the national legislation. This would ensure high-quality drug donations that are appropriate to the needs, as well as the rapid and efficient importation and distribution of the drugs in a crisis situation (for example, by the controlled waiving of certain time-consuming importation procedures, etc.). It would be essential to involve the National Medicines Agency in adapting the importation and quality assurance procedures for crisis situations.

- The Ministry of Health might consider using of the United Nations Logistics Support Systems (LSS)[32], including the Humanitarian Supply Management System (SUMA) software[33], for tracking international aid donations. Alternatively, the Ministry of Health could work with the State Agency for Material Reserves, Public Acquisitions and Humanitarian Aid to develop their existing stock management software solution to accommodate the supply management needs in crisis situations.

[32] http://ochaonline.un.org/AboutOCHA/Organigramme/EmergencyServicesBranchESB/LogisticsSupportUnit/LogisticsSupportSystem/tabid/1434/Default.aspx, accessed on 27 August 2008.
[33] http://www.sumasoftware.com/, accessed 27 August 2008.

- While it does not appear to be cost-effective, necessary or feasible that the Ministry of Health establishes their own reserves for crisis situations, they need to be fully informed about all existing emergency stocks of drugs and medical supplies in the country.

- It is not quite clear how the responsibility for coordinating health-related humanitarian assistance in a crisis situation is shared between the Ministry of Health and their Commission for Emergency Situations, the State Agency for Material Reserves, Public Acquisitions and Humanitarian Aid, the Government's Interdepartmental Commission for Humanitarian Aid and possible other central, regional and local authorities. It would be useful to clearly define the lines of command and control in this respect, preferably having the Ministry of Health and their crisis coordinator as the highest authority.

Data collection, analysis and reporting

(a) Risk assessment and early warning

Rationale

All planning of health sector activities related to disaster preparedness and response should be based on national risk assessment data. Other than that for communicable diseases, these national data are usually under the authority of other ministries and organizations. However, they need to be regularly updated and readily available to the Ministry of Health in an appropriate format. Similarly, it is important that the Ministry of Health receives all relevant early warnings of potential risks in the community, such as extreme weather conditions, seismic activity, landslides and floods, to ensure that the necessary measures can be promptly taken to prevent and reduce resulting health effects.

Key findings

1. There is no single collection point for health data either in the Ministry of Health or in one of its subordinate institutions. Data collected by a variety of sources are ultimately used for policy development by the Department of Health Protection and Preventive Medicine (data on communicable diseases) and the Centre for Health Management (all other health statistics).

2. Comprehensive risk assessment data on seismic areas, power lines, dams, nuclear power plants, radiation levels and land-slide areas are available from the Civil Protection and Emergency Situations Service. They are in the process of implementing geographic information system (GIS) mapping systems and this is also one of the priorities for the future, although securing the necessary funding has been a problem in the past. The Ministry of Environment and Natural Resources provides risk assessment

data on seismic activity and pollution levels (air, soil, water), as well as five-day weather forecasts through Hydromet.

3. Procedures have been established whereby the Civil Protection and Emergency Situations Service and the Ministry of Environment and Natural Resources issue warnings to the Prime Minister, and key ministries (including the Ministry of Health) and institutions in the event of a possible crisis, including extreme weather conditions. The Civil Protection and Emergency Situations Service and other relevant ministries can contact the Ministry of Health at all times for early warning purposes by telephone (no. 721010). This office is open 24-hours a day and ensures that the information received is forwarded to the appropriate person or division in the Ministry. This system was familiar to all respondents and seems effective. However, as the decision about whom to contact at higher level, and when to do so, rests with the individual manning the telephone, concerns were raised that the system might have some inherent weaknesses.

4. A review on climate change and its impact on agriculture, health and the economy, as well as adaptation and prevention measures, was published in a series of scientific articles and conference proceedings, and constitutes a national risk assessment for climate change. Heat alerts (temperatures above 35 °C) are issued by Hydromet but, as yet, there are no criteria for the identification of and notification about people dying from heat-related illnesses. Despite anecdotal evidence of a higher number of deaths among chronically ill people and vulnerable populations during the increasingly hot summers, the Ministry of Health has no official programme and there have been no studies on the link between temperature and mortality. A lack of resources has prevented interested parties in the Ministry of Health from obtaining retrospective data from Hydromet that charges for this service.

5. The drought in 2008 caused serious economic problems and affected the quality of the drinking water, particularly in rural areas where people rely on wells as their main source of potable water. Although the Ministry of Health was involved in some activities related to improving the quality of the water, in general the overall health effects that could be precipitated by further droughts do not seem to have been fully considered. In a survey carried out by the United Nations Children's Fund (UNICEF) *(14)*, 80% of those interviewed considered that drought had adversely affected their state of health.

6. Although, on the advice of the IAEA, a national atomic agency was established (Law 111), which regulate the activities of the five institutions involved in radionuclear monitoring, there continues to be a degree of overlap, poor cooperation and variations in standard.

7. A specific procedure for meeting the core capacity for implementation of the IHR, and for reporting potential public health events of international concern within 24

hours, has not yet been established. However, current official reporting mechanisms seem more than adequate and would require little adaptation to meet the IHR requirements.

Recommendations

- It is important that the available risk assessment data, including the short-, medium- and long-term effects of climate change on public health, be thoroughly reviewed and considered before developing a national programme and plans for crisis preparedness and response. Although emergency medical services are a key issue in crisis preparedness, they are only one of a broad range of issues that require serious consideration.

- It is important that all health statistics (data on communicable diseases, noncommunicable diseases, ambulance call-out, hospitals, etc.) be utilized in risk assessment and in identifying vulnerabilities in the health sector.

- The Ministry of Health may wish to translate past conference proceedings and scientific articles on the climate change into an official assessment of the risks associated with climate change and to establish criteria for developing a heat–health action plan, including a heat–health warning system. The following publications are useful reading in this connection: *Heat health action plans – a guidance document (23)* and *Protecting health in Europe for climate change (24)*.

(b) Communicable diseases surveillance

Rationale

The Ministry of Health is responsible for early warning surveillance and the control of communicable diseases. In accordance with the IHR, States Parties are now obliged to report, within 24 hours, any outbreak of communicable disease that could spread across borders and thus have implications on an international scale. Routine surveillance systems are often not sensitive or timely enough to meet these requirements and many countries are broadening the sources of information, including other sectors and informal sources. As well as establishing complementary surveillance frameworks, such as syndromic surveillance for the rapid identification of, for example, avian influenza, the Ministry of Health also collects information from other ministries (in particular the Ministry of Agriculture and the Ministry of Environment and Natural Resources), and from laboratories, the police, the military, the media, the ambulance services and the population themselves.

To meet IHR core capacity requirements, States Parties must also have access to quality national laboratory diagnostic facilities (within the health sector, other ministries or the private sector, if appropriate), and/or international laboratories for further confirmation of diagnoses or for an initial diagnosis if the national facilities are inadequate. Quality

assurance of public health reference laboratories is best regulated though an internationally-recognized accreditation scheme, such as the European co-operation for Accreditation[34] or the International Accreditation Laboratory Cooperation[35]. Such a scheme should be able to certify that laboratories meet the International Organization for Standardization[36] (ISO) standard 17025 (General requirements for the competence of testing and calibration laboratories) or, preferably, ISO standard 15189 (Particular requirements for quality and competence in medical laboratories). Procedures need to be in place for taking samples correctly, storing them appropriately and transporting them quickly and safely to the most appropriate laboratory in or outside the country.

Key findings

1. The National Preventive Medicine Centre is responsible for communicable disease surveillance and control. The current surveillance system is under development. With 78 diseases under surveillance, and 24-hour reporting procedures for most diseases, the surveillance system has the attributes to ensure the early warning function. However, the administrative burden of the system seems excessive and there is no information available on the timeliness and completeness of the data received.

2. Information exchange and contacts with international sources of technical support are mainly restricted to WHO. There is some collaboration with other countries, mainly for virus testing, including Lithuania, Poland, Romania and the Russian Federation. However, there did not appear to be any information on designated reference laboratories/WHO Collaborating Centres for specific diseases other than for those dealing with measles and polio. The Republic of Moldova is a member of the WHO Global Salm-Surv (GSS) but not of any other international or European disease specific networks, as required by the European Commission Decision 2003/542/EU[37] (Annex 7).

3. In general, laboratories are poorly equipped with out-of-date equipment lacking modern safety features. There are no Level II safety cabinets for the protection of staff and there is no Category 3 facility available in the country. Methodologies employed are mainly classical and, therefore, confirmation of a diagnosis may take days rather than hours. Virology diagnostic services are only available in Chisinau and although polymerase chain reaction (PCR) is now available, the unit is dedicated specifically for avian influenza and has low throughput. The laboratory capacity for the diagnosis of vector borne diseases, such as West Nile Fever, is currently low. There is no national system, or standard procedures, for the safe transport of laboratory and environmental samples.

[34] http://www.european-accreditation.org/default_flash.htm, accessed 23 August 2008.
[35] http://www.ilac.org/, accessed 23 August 2008.
[36] http://www.iso.org/iso/iso_catalogue.htm, accessed 23 August 2008.
[37] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:185:0055:0058:EN:PDF, accessed 22 August 2008.

4. There is an exchange of data on communicable diseases with the bordering countries of Romania and Ukraine. However, although Ukraine now sends monthly morbidity data, links need to be strengthened. This applies to an even greater degree to links with Romania.

5. The Civil Protection and Emergency Situations Service runs an annual external quality control scheme and there is a national laboratory accreditation body but it is not recognized by the European co-operation for Accreditation[38] or by the International Laboratory Accreditation Cooperation (ILAC)[39]. There is, however, ongoing contact with the WHO Lyon Office for National Epidemic Preparedness and Response[40] on reviewing laboratory legislation and developing standard operating procedures. A plan of action has been drafted to establish a national framework for laboratory support with a view to meeting ISO standards.

6. A reference laboratory network for crisis situations exists under Government Decision No. 961 of 21 August 2006, which includes the reference laboratories within the health sector. Maintaining the quality of the network is the responsibility of the Civil Protection and Emergency Situations Service.

Recommendations

- A review of the timeliness, completeness and accuracy of communicable disease surveillance data would provide a good indication of the effectiveness of the current system. It may be useful to consider establishing event based surveillance to complement and triangulate the data.

- Strengthening links with the European Centre for Disease Prevention and Control[41] and becoming members of relevant disease-specific networks would provide further sources of scientific advice and support.

- The ability of the Republic of Moldova to rapidly identify unusual (unknown) pathogens is relatively low. Therefore, well-functioning systems are required for identifying appropriate laboratories abroad to which laboratory samples can sent for analysis when required.

- Funding is required for general upgrading laboratory diagnostic facilities and improving safety and quality assurance.

[38] http://www.european-accreditation.org/default_flash.htm, accessed 27 August 2008.
[39] http://www.ilac.org/, accessed 27 August 2008.
[40] http://www.who.int/csr/ihr/lyon/en/index.html, accessed 27 August 2008.
[41] http://ecdc.europa.eu/, accessed 27 August 2008.

- To ensure that the laboratories meet EU standards, the current National Accreditation Scheme might be advised to seek membership of ILAC.

- The WHO Country Office should work in cooperation with the Ministry of Health and the Communicable Diseases and Response Programme of the WHO Regional Office for Europe to establish contacts with appropriate international (WHO) reference laboratories.

HEALTH FINANCING

Preparedness financing

Rationale

A large number of priorities are competing for funding from the health sector budget allocation and disaster preparedness (as opposed to response) is often neglected for more pressing and immediate needs. However, effective risk reduction, early warning systems and preparedness planning could ultimately save millions of dollars, amounting not only from losses of, for example, possessions and agriculture, but also from those associated with trade and tourism. Implications for the health sector and the extra burden imposed by any crisis on the already fragile health system can be enormous. Therefore, not only is the allocation of a dedicated budget for crisis preparedness and response within the health sector a good investment for the future but it is also a good indicator of the level of political commitment.

Key findings

1. The commitment of the Government of the Republic of Moldova to health expenditure is reflected in the fact that the percentage of the gross domestic product (GDP) spent on health is in line with or slightly higher than the average for the EU Member States in eastern Europe. However, with the GDP purchasing power parity (PPP) currently so low, the Republic of Moldova actually spends less on health than any other country in the WHO European Region.

2. The Ministry of Health has shown a commitment to crisis preparedness and response by establishing the Disaster Management Centre, with a projected staff quota of four management/technical personnel plus the five staff members working in the Ministry's Operative Service for round-the-clock communication. However, the Disaster Management Centre does not currently have an adequate budget or the staff and facilities necessary to fulfil its terms of reference.

3. The Biennial Collaborative Agreement between the Republic of Moldova and WHO for 2008–2009 has a total budget allocation of US$ 1.8 million, of which

approximately 50% is allocated to crisis preparedness and response in the wide sense (14% for crisis management and 35% for communicable disease control).

Recommendations

- As in many countries of the Commonwealth of Independent States, there are financial constraints within which ministries must work. It is clearly recognized that the Ministry of Health of the Republic of Moldova has a limited budget and, therefore, when establishing a national programme for crisis preparedness and response and the necessary institutional framework, it is important to ensure that it is appropriate (based on main priority areas) and affordable (within the budgetary limits).

- It might be of interest for the Ministry of Health to compare the health sector budget allocation for crisis preparedness and response to the allocations of other ministries, and to explore possible models that could be used to promote increased funding. International donor funding and technical support could also be a means of strengthening services in the short- to mid-term.

Contingency funding

Rationale

The availability of a contingency fund for crisis preparedness and response, either in the Ministry of Health or at national level is highly desirable. There should be clear procedures for submitting requests.

Key findings

1. There is a government contingency fund and clear procedures to be followed by ministries in requesting funding in the event of a crisis. Further information regarding the total budget and how often requests for finance are submitted and/or approved by the National Commission was not available.

2. Contingency funding, at both national and territorial levels, can be released by the national/local authorities following an official 'Decision' by the Extraordinary Anti-Epidemic Commission. An anti-epidemic fund managed by the National Preventive Medicine Centre has been established at national level for emergency response to crises related to communicable diseases, covering expenses for transport, fuel, per-diems, consumables, disinfectants, personal protective equipment, etc.

3. Hospitals are required to keep 5% of their regular budgets in reserve for unexpected expenditure (including that related to crisis preparedness and response) and to have access to the budgets of the local authorities for buildings and facilities. Local authorities are also required by law to allocate up to 2% of their budgets for

unexpected expenditure. However, semi-autonomous, vertical institutions, such as the Preventive Medicine Centres, have reserves of consumables but no direct access to contingency funds per se. It was reported that the variation in funding sources often caused delays and made it difficult to mount a coordinated and timely response at sub-national level.

Recommendation

- The Ministry of Health may wish to consider ensuring that the district Preventive Medicine Centres allocate a percentage of their regular budgets for crisis preparedness and response and/or that the procedures are in place for the rapid allocation of funds from the national budget to the district Preventive Medicine Centres in a crisis situation.

SERVICE DELIVERY

Guidelines and protocols

Rationale

As well as being able to respond to the immediate health effects of a crisis by providing first aid in relation to search and rescue operations and ensuring the provision of life-saving and emergency medical services for the crisis-affected population, guidelines and protocols need to be in place to guarantee:

- a rapid health needs assessment;
- emergency surveillance and control of communicable diseases;
- maintenance of the essential health services for the general population (health sector business continuity planning);
- response in relation to:
  - treatment of chronic diseases;
  - mental health and psychosocial support;
  - nutrition and food security;
  - treatment for climate-related heath problems;
  - mother and child health problems;
  - reproductive health/gender-based violence and HIV/AIDS;
  - physical rehabilitation services;
  - adequate and safe blood transfusion services;
  - health education;
  - safe water and sanitation;

- treatment for patients suffering from extremes of heat, cold etc.;
- health consequences of other specific hazards according to local risk assessment.

Key findings

1. In general, there was an emphasis on providing emergency medical services rather than on maintaining basic health services. No guidelines or protocols are currently available on providing specific services or addressing key public health issues.

2. Recent health sector reforms have reduced the numbers of hospitals, doctors and other health personnel, and a proportion of health service delivery does not come under the authority of the Ministry of Health. Although, there are procedures for transferring patients and mobilizing doctors from other districts to provide support in the affected area(s), this reduction may affect the ability of the system to respond in a crisis and may seriously limit the amount of surge capacity available, particularly when more than one district is adversely affected.

3. Demographic changes and migration to other countries for work has reduced the number of young healthy adults in the population, leaving a relatively high number of vulnerable populations, such as children of less than 14 years of age and chronically-ill adults. This poses the challenge of maintaining adequate critical services in both the emergency and rehabilitation phases, particularly for vulnerable groups.

Recommendations

- The Ministry of Health may wish to consider developing national protocols and guidelines for critical services, which could then be adapted to local situations.

- The Ministry of Health may wish to ensure that more attention is given to the public health aspects of a crisis, particularly in the post-crisis and rehabilitation phases, and that all hospitals have plans to ensure the continuity of care, particularly for those who are chronically ill (health sector business continuity planning).

- Demographic changes and the number of available skilled health personnel may need to be taken into consideration when planning critical services.

Mass casualty management

Rationale

Timely and effective mass casualty management can greatly reduce morbidity and mortality in the aftermath of a crisis. This requires well-trained and disciplined personnel, clearly-defined lines of authority and excellent coordination between the different players. If these factors are not in place, chaos may ensue and aggravate an already difficult situation.

Key findings

1. Although the National Emergency Medicine Centre and the Civil Protection and Emergency Situations Service coordinate on planning ambulance, fire, rescue and police services for mass casualty management, currently all of these services operate under different 'call-out' numbers. Plans to introduce a universal emergency number (112) are underway.

2. Roles and responsibilities seem to be clearly defined under the law. For example, fire fighters are not allowed to administer first aid, and ambulance crews are not allowed to take casualties out of buildings. However, this means that excellent communication is essential if unnecessary delays in awaiting the arrival of key partners at the scene of the accident are to be avoided.

3. In total, 1015 volunteer emergency teams can be mobilized by local authorities to assist the ambulance services when necessary. It is not clear how these teams are trained or how they are coordinated once mobilized.

4. Some respondents reported poor coordination and the need for further, standardized training. The capacity to respond was said to be greater in the towns than in the rural areas.

5. The Red Cross organizations do not appear to be key partners in mass casualty management.

Recommendations

- The Ministry of Health is advised to advocate strongly for the introduction of a universal emergency number and GIS systems to ensure a more rapid, coordinated and timely response to crises.

- In more isolated rural areas, where the capacity for providing emergency services is less optimal, the Ministry of Health may wish to consider providing training in basic

first aid to local populations. This might be achieved through improved cooperation with the Red Cross organizations.

- The concept of recruiting volunteers is one way of providing surge capacity and assisting normal services during a crisis. However, unless they are well-coordinated, such initiatives can lead to chaos. The Ministry of Health may wish to review the procedures for recruiting and mobilizing volunteers and ensure that the management capacity needed to coordinate them effectively is in place. Red Cross organizations have wide experience in utilizing volunteers.

Risk management of health facilities

Rationale

Reducing the structural and non-structural vulnerability of the hospitals to natural disasters is an international priority for the 2008–2009 biennium and the subject of Hospitals Safe from Disasters[42] [43], a joint venture of the United Nations International Strategy for Disaster Reduction, the World Bank and WHO. Hundreds of hospitals and heath facilities are destroyed or damaged every year by disasters caused by natural hazards, such as earthquakes, hurricanes and floods. The consequences are devastating: on top of losing their homes and physical shelter, people are left without even basic emergency care.

Incorporating mitigation measures into the design and construction of a new hospital is estimated to account for less than 4% of the total initial investment. Retrofitting a hospital to make it more resilient costs only 1% – but this small investment protects up to 90% of the value. It is of paramount importance to ensure that expensive and vital medical equipment is secure from the danger of being damaged by floods, storms and earthquakes.

Key findings

1. Almost all hospitals in the Republic of Moldova were built more than 20 years ago and therefore meet the building standards of the former Soviet Union for resisting earthquakes (between 7 and 8 on the Richter scale). Nevertheless, for example the Cahul District Hospital reported having problems with electricity supplies during the 1977 earthquake and that fire regulations were in need of urgent review.

2. Some respondents were concerned that there were no mobile hospitals in the country that could be made available in events, such as an earthquake, if the local health services were inoperable or unable to cope.

[42] www.unisdr.org/wdrc-2008-2009, accessed 27 August 2008.
[43] http://www.who.int/hac/techguidance/safehospitals/en/index.html, accessed 27 August 2008

Recommendations

- The Ministry of Health is advised to ensure that building standards for new health facilities meet the EU standards for construction.

- Adopting and promoting the 2008–2009 Hospitals Safe from Disaster initiative could be a good way of advocating to the Government the need to ensure that health facilities, utilities and medical equipment are all resilient to damage from earthquakes, floods and storms, so that services can be maintained in the event of a disaster.

- Rather than investing in mobile hospitals that are expensive, difficult to maintain and may never be utilized, it may be more cost-effective to invest in strengthening routine services, which would enable the health services to deal with any crisis event.

- The State Reserve may wish to investigate possible sources of international humanitarian aid. They should be made aware of the WHO *Guidelines for the Use of Foreign Field Hospital in the Aftermath of a Sudden-Impact Disaster (36),* which is available from the WHO Country Office.

Lifelines, logistics, telecommunication and security

Rationale

There is a difference between a generic Ministry of Health plan for response and that of a specific facility, such a hospital or laboratory. The latter are much more concrete (technical) and operational and can rather easily be evaluated and tested objectively. Hospital plans need to consider:

- planning for both internal and external emergencies, including fire and evacuation procedures;
- maintaining essential infrastructure systems, such as those for water, sanitation, energy and telecommunications;
- ensuring transportation and refuelling capabilities;
- ensuring adequate medical supplies and drugs;
- establishing hospital security systems for use, for example, against armed intruders and in case of civil unrest.

Key findings

Health facilities

1. All hospitals are required to have an internal emergency plan (including evacuation procedures) and to be part of the community crisis plan. In large facilities, a civil protection plan is supposed to be available on every floor.

2. As a result of problems with the electricity supply during the earthquake in 1977, the Cahul District Hospital[44] has installed three different sources of electricity and emergency stocks of fuel.

Recommendations

- The WHO Regional Office for Europe has issued the following document to assist Member States in developing comprehensive hospital plans: *A practical tool for the preparation of a hospital crisis preparedness plan, with special focus on pandemic influenza (6)*. The Ministry of Health may wish to consider translating this document into Moldovan and distributing it to all hospital facilities.

- The Disaster Management Centre may wish to ensure that all hospital plans contain the key elements and that regular simulation exercises, based on a variety of scenarios, are carried out to monitor the effectiveness of the plans.

[44] The findings in Cahul District may not be representative of all districts in the country.

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Annex 1

Schedule of interviews

Monday, 25 February 2008 (Day 1)		
Time	**Activity**	**Persons met**
09:00 – 09:30	Briefing in the WHO Country Office Discussions on the agenda, organizational and logistical issues	Dr Pavel Ursu, Head, WHO Country Office Dr Silviu Domente, National Professional Officer, Disaster Preparedness Office, Health Systems Dr Silviu Ciobanu, National Professional Officer, HIV/AIDS, Sexually-transmitted Infections
09:30 – 10:30	Briefing in the Ministry of Health Discussions on the objective of the mission and the assistance required	Professor Ion Ababii, Minister of Health; Dr Sergiu Rata, Deputy minister, Chief Sanitary Doctor Dr Ion Bahnarel, Director, National Scientific and Practical Centre of Preventive Medicine Dr Gheorghe Ciobanu, National Scientific and Practical Centre of Emergency Medicine Dr Rodica Gramma, Chief, Office of the Minister Dr Eugenia Berzan, Head, Department of International Relations and European Integration; Ms.Angela Prisacari, Head, Legal Department; Dr Sergiu Oglinda, Deputy Head, Department of Health Protection and Preventive Medicine Dr Mihai Pisla, Main Counsellor, Office of the Minister, Health Crisis Coordinator
10:30 – 12:30	Individual meeting	Dr Mihai Pisla, Main Counsellor, Office of the Minister, Health Crisis Coordinator
14:00 – 14:30	Individual meeting on IHR	Dr Sergiu Oglinda, Deputy Head, Department of Health Protection and Preventive Medicine
15:00 – 17:00	Visit to the Department of Aeronautic Hygiene, Chisinau Airport (Thomas Hofmann)	Ms Corina Manole, Head of Department of Aeronautic Hygiene, Chisinau Airport

Tuesday, 26 February 2008 (Day 2)		
Time	**Activity**	**Persons met**
09:00 –12:30	Visit to the Civil Protection and Emergency Situations Service	Mr Vasile Buza, Head, Department of Civil Protection
14:00 – 16:00	Meeting at the Ministry of Agriculture and Food Industry	Mr Veaceslav Stamati, Chief Veterinary Doctor of the country
Wednesday, 27 February 2008 (Day 3)		
Time	**Activity**	**Persons met**
09:00 – 11:30	Visit to the National Scientific and Practical Centre of Emergency Medicine	Dr Gheorghe Ciobanu, Director of the Centre, Head, Chair of Emergency Medicine, State Medical and Pharmaceutical University; Dr Ieronim Ciumas, Deputy-Director, Pre-hospital emergency health care (ambulance service) Dr Dumitru Moldovanu, Deputy-Director, Organizational Issues
12:00 – 14:00	Meeting at the Ministry of Ecology and Natural Resources and the Republican Hydro Meteorological Station	Ms Eugenia Verlan, Deputy-Head, Department for Monitoring the Quality of the Environment Ms Lidia Cozari, Department for Monitoring the Quality of the Environment, Hydro-Meteorological Service Ms Diana Olaru, Department for Prevention of Pollution
14:00 – 17:30	Visit to the National Scientific and Practical Centre of Preventive Medicine	Dr Ion Bahnarel, General Director of the Centre, IHR Focal Point Dr Varfolomei Calmic, Deputy Director, responsible for health promotion, public education and outbreak communication Professor Nicolae Opopol, Department of Socio-Hygienic Monitoring Dr Anatol Melnic, Head of Department of General Epidemiology Dr Oleg Benes, Head. Department for Extremely Contagious Diseases and Bio-terrorism Dr Ion Salaru, Head, Department of Environmental Health

Thursday, 28 February 2008 (Day 4)		
Time	**Activity**	**Persons met**
Whole day	Field visit to the Cahul district (in the South) Visit to the Cahul District Hospital, Zonal Emergency Station, and District Preventive Medicine Centre	Dr V. Chistruga, Chief Doctor of the Cahul District Dr D. Bzovii, Director, Cahul District Emergency Department Dr N. Gaisan, Director, Preventive Medicine Centre, Cahul District
Friday, 29 February 2008 (Day 5)		
Time	**Activity**	**Persons met**
09:00 – 15:00	IHR workshop at the Ministry of Health (Roberta Andraghetti, Thomas Hofmann)	Dr Sergiu Rata, Deputy Minister, Chief Sanitary Doctor Dr Ion Bahnarel, Director General, National Centre of Preventive Medicine Dr Sergiu Oglinda, Deputy Head, Department of Health Protection and Preventive Medicine Dr Oleg Benes, Head, Department of Extremely Contagious Diseases and Bio-terrorism; Other responsible persons from the Centre Representatives of other ministries, departments and services
15:00 – 16:30	Meeting with representatives of the Delegation of the European Commission to the Republic of Moldova	Ms Speranta Olaru, Project Manager, in charge of agriculture and trade
Saturday, 1 March 2008 (Day 6)		
Time	**Activity**	**Persons met**
09:00 –12:00	Work at the WHO Country Office Wrap-up session on the results of the meetings and visits during the week Identification of gaps; planning of additional visits/meetings	Dr Pavel Ursu, Head, WHO Country Office Dr Silviu Domente, National Professional Officer, Disaster Preparedness and Response, Health Systems
Afternoon	Team meeting to discuss findings and develop presentation for wrap-up meeting on Tuesday, 4 March	

Sunday, 2 March 2008 (Day 7) – Free		
Monday, 3 March 2008 (Day 8)		
Time	**Activity**	**Persons met**
09:00 – 11:00	Meeting with representatives of the State Reserve, Public Acquisition and Humanitarian Aid Agency	Mr Mihai Malic, Head of Humanitarian Aid Department Mr Mihai Sterpu, Head of State Reserve Department
11:00 – 12:00	Meeting with UNDP	Mr Ignacio Artaza Zuriarrain, Deputy Resident Representative
14:00 – 16:00	Meeting at the Ministry of Health Discussions on the actual and future role of the Disaster Medicine Centre	Dr Mihai Pisla, Main Counsellor, Office of the Minister, Health Crisis Coordinator
16:00 – 18:00	Work at the WHO Country Office Preparation for round-table meeting	
Tuesday, 4 March 2008 (Day 9)		
Time	**Activity**	**Persons met**
09:00 – 11:00	Round-table meeting at the Ministry of Health with involvement of key persons from all relevant ministries/departments/institutions Presentations and discussions on the preliminary findings of the mission and potential short- and long-term actions	Professor Ion Ababii, Minister of Health Dr Sergiu Rata, Deputy Minister, Chief Sanitary Doctor Dr Ion Bahnarel, Director, National Scientific and Practical Centre of Preventive Medicine Dr Gheorghe Ciobanu, National Scientific and Practical Centre of Emergency Medicine Dr Rodica Gramma, Chief, Office of the Minister Dr Eugenia Berzan, Head, Department of International Relations and European Integration Ms Angela Prisacari, Head, Legal Department Dr Sergiu Oglinda, Deputy Head, Department of Health Protection and Preventive Medicine Dr Mihai Pisla, Main Counsellor, Office of the Minister, Health Crisis Coordinator
11:00 – 12:00	Individual meetings with relevant staff of the ministry	Dr Ghenadie Turcanu, Head, Department of Policy Analysis, Monitoring and Evaluation

Tuesday, 4 March 2008 (Day 9) (continued)		
Time	**Activity**	**Persons met**
14:00 – 17:00	Final wrap-up meeting at the WHO Country Office Discussions on follow-up action and next steps	Dr Pavel Ursu, Head, WHO Country Office Dr Silviu Domente, National Professional Officer, Disaster Preparedness and Response, Health Systems Dr Silviu Ciobanu, National Professional Officer, HIV/AIDS/Sexually Transmitted Infections
Wednesday, 5 March 2008 (Day 10)		
Time	**Activity**	**Persons met**
11:00 – 12:00	Meeting with UNICEF	Mr Ray Virgilio Torres, Representative Mr Sergiu Buruiana, Chief, Social Policy Programme
12:30 – 13:30	Meeting with World Bank	Mr Anatol Gobjila, Senior Operations Officer, Rural Sector
15:00	Departure	WHO Driver

Annex 2

Round-table meeting
Ministry of Health of the Republic of Moldova, Chisinau, 25 February 2008

List of participants

Republic of Moldova

Professor Ion Ababii
Minister of Health

Dr Ion Bahnarel
Director General, National Scientific and Practical Centre of Preventive Medicine

Dr Eugenia Berzan
Head, Department of Foreign Relations and European Integration, Ministry of Health

Dr Elena Boleac
Deputy-Head, Department of Public Medical Services, Ministry of Health

Dr Mircea Buga
Deputy Minister of Health

Ms Mihaela Cibotaru
Head, Press Services, Ministry of Health

Dr Gheorghe Ciobanu
Director, National Scientific and Practical Centre of Emergency Medicine

Dr Oleg Galbur
Head, Department of Human Resources, Ministry of Health

Dr Boris Golovin
Deputy Minister of Health

Dr Boris Gorosenco
Head, Administrative Department

Dr Rodica Gramma
Head, Office of the Minister of Health

Dr Galina Morari
Deputy-Head, Department of Women's and Child's Health, Ministry of Health

Dr Sergiu Oglinda
Deputy-Head
Department of Health Protection and Preventive Medicine, Ministry of Health

Dr Mihai Pisla
Main Counselor, Office of the Minister of Health

Ms Angela Prisacaru
Head, Legal Department

Dr Sergiu Rata
Deputy Minister of Health

Dr Mihai Rotaru
Head, Department of Quality Management and Treatment Standards, Ministry of Health

Dr Valeriu Sava
Head, Department of Health Insurance, Ministry of Health

Mr Victor Stasiuc
Head, Department of Economy, Finances and Book-keeping, Ministry of Health

Dr Ludmila Topchin
Head, Department of Medical Technologies, Ministry of Health

Dr Ghenadie Turcanu
Head, Department of Policy Analysis, Monitoring and Evaluation, Ministry of Health

Dr Ana Volneanshi
Deputy Director, National Scientific and Practical Centre of Emergency Medicine

Dr Tatiana Zatic
Deputy-Head, Department of Individual Medical Services, Ministry of Health

World Health Organization Regional Office for Europe

Dr Silviu Domente
National Professional Officer for Health Systems and Preparedness
WHO Country Office, Chisinau

Mr Thomas Hofmann
Technical Officer, Communicable Disease Surveillance and Response

Ms Barbara Pearcy
Short-Term Consultant, Disaster Preparedness and Response Programme

Dr Jukka Pukkila
Desk Officer, Disaster Preparedness and Response Programme

Dr Pavel Ursu
Head, WHO Country Office, Chisinau

Annex 3

Debriefing meeting, Ministry of Health of the Republic of Moldova, Chisinau, 4 March 2008

Participants

Republic of Moldova

Professor Ion Ababii
Minister of Health of the Republic of Moldova

Dr Ion Bahnarel
Director General, National Scientific and Practical Centre of Preventive Medicine

Dr Oleg Benes
Head, Department of Extremely Contagious Diseases and Bio-terrorism,
National Scientific and Practical Centre of Preventive Medicine

Dr Eugenia Berzan
Head, Department of Foreign Relations and European Integration, Ministry of Health

Mr Leonid Chetrari
Head, Department of Disaster Medicine
National Scientific and Practical Centre of Preventive Medicine

Ms Mihaela Cibotaru
Head, Press-Services, Ministry of Health

Dr Gheorghe Ciobanu
Director, National Scientific and Practical Centre of Emergency Medicine

Dr Stefan Gheorghita
First Deputy-Director
National Scientific and Practical Centre of Preventive Medicine

Dr Rodica Gramma
Head, Office of the Minister of Health

Dr Anatol Melnic
Head, General Epidemiology Department,
National Scientific and Practical Centre of Preventive Medicine

Dr Sergiu Oglinda
Deputy-Head, Department of Health Protection and Preventive Medicine
Ministry of Health

Dr Mihai Pisla

Main Counselor, Office of the Minister of Health

Dr Sergiu Rata
Deputy Minister of Health

Dr Mihai Rotaru
Head, Department of Quality Management and Treatment Standards, Ministry of Health

Dr Ion Salaru
Head, Department of Environmental Health
National Scientific and Practical Centre of Preventive Medicine

Dr Vasile Sohotchi
Deputy-Director, National Scientific and Practical Centre of Preventive Medicine

Dr Tatiana Stratulat
Senior Researcher, Department of Toxicology
National Scientific and Practical Centre of Preventive Medicine

Dr Maria Tarus
Head, Department of Woman's and Child's Health, Ministry of Health

Dr Ghenadie Turcanu
Head, Department of Policy Analysis, Monitoring and Evaluation, Ministry of Health

Dr Ion Ursuleanu
Head, Centre of Radiation Hygiene
National Scientific and Practical Centre of Preventive Medicine

Dr Tatiana Zatic
Deputy-Head, Department of Individual Medical Services, Ministry of Health

World Health Organization Regional Office for Europe

Dr Silviu Domente
National Professional Officer for Health Systems and Preparedness
WHO Country Office, Chisinau

Ms Barbara Pearcy
Short-Term Consultant, Disaster Preparedness and Response Programme

Dr Jukka Pukkila
Desk Officer, Disaster Preparedness and Response Programme

Dr Pavel Ursu
Head, WHO Country Office, Chisinau

Annex 4

Legal and regulatory framework related to crisis preparedness and response in the Republic of Moldova

Law of the Republic of Moldova no. 1513 of 16 June 1993 on the sanitary-epidemiological safeguarding of the population
Law no. 1513 establishes the basic principles of safeguarding the sanitary-epidemiological health of the population. It represent a complex system of intra- and interdepartmental measures to be implemented at the state and territorial levels, involving the national economy, with the aim of maintaining health; preventing and combating the emergence and spread of communicable, noncommunicable and work-related diseases; preventing poisonings related to environmental, industrial and domestic hazards; and promoting health education and healthy behaviour.

Law of the Republic of Moldova no. 267 of 9 November 1994 on the protection against fires
Law no. 267 establishes the legal, economic and social framework related to insurance against and protection from fires in the country; it regulates relationships in the field of fire-fighting.

Law of the Republic of Moldova no. 271 of 9 November 1994 on civil protection
Law no. 271 establishes the fundamental principles of civil protection at national level, and the tasks and legal framework related to the activities of public authorities, enterprises, institutions and organizations, as well as of the population.

Law of the Republic of Moldova no. 411 of 28 March 1995 on health care
Law no 411 establishes the fundamental principles of health care for the population.

Decision of the Government of the Republic of Moldova no. 1340 of 4 December 2001 on the Commission for Emergency Situations of the Republic of Moldova
Decision no. 1340 determines the main tasks, organization and functioning of the Commission for Emergency Situations of the Republic of Moldova.

Law of the Republic of Moldova no. 1384 of 11 October 2002 on the requisition of public goods and provision of services of public interest
Law no 1348 establishes the grounds, mode and conditions according to which the designated public authorities may oblige public institutions, economic agents and citizens to temporarily surrender material goods or implement certain activities in the interest of the public or to defend the country.

Law of the Republic of Moldova no. 1491 of 28 November 2002 on humanitarian assistance provided to the Republic of Moldova
Law no. 1491 regulates the administration of humanitarian assistance provided to the Republic of Moldova from abroad.

Law of the Republic of Moldova no. 212 of 24 June 2004 on the states of emergency situation, siege and war
Law no. 212 establishes the grounds and conditions for, as well as the mode of declaring a state of emergency, siege or war; the competency of authorities that can make the declaration; measures to be applied during the state of emergency, siege or war; and the rights, duties and responsibilities of the legal an physical entities involved.

Law of the Republic of Moldova no. 93 of 5 April 2007 on Civil protection and Emergency Situations Service
Law no. 93 establishes the legal framework, principles of activity, and rights of the staff of the Civil Protection and Emergency Situations Service and its sub-units.

Annex 5

International Treaties and Conventions

- Convention on long-range transboundary air pollution, Geneva, 1979 (adhered 1995).
  - Protocol on heavy metals (ratified 2002).
  - Protocol on persistent organic pollutants (ratified 2002).

- Convention for the protection of the ozone layer, Vienna, 1985 (adhered 1996).
  - Protocol on substances that deplete the ozone layer, Montreal, 1987 (adhered 1996).

- Convention on the control of transboundary movements of hazardous wastes and their disposal, Basel, 1989 (adhered 1998).

- Convention on the environmental impact assessment in a transboundary context, Espoo, 1991 (adhered 1993).

- Convention on the transboundary effects of industrial accidents, Helsinki, 1992 (adhered 1993).

- Framework Convention on climate change, New York, 1992 (ratified 1995).

- Convention on the protection and use of transboundary waters and international lakes, Helsinki, 1992 (adhered 1993).

- Convention on biological diversity, Rio de Janeiro, 1992 (ratified 1995).
  - Protocol on biosafety, Cartegena, 2000 (ratified 2002).

- Convention on cooperation for the protection and sustainable use of the Danube River, Sofia, 1994 (ratified 1999).

- United Nations Convention to combat desertification, Paris, 1994 (adhered 1998).

- Rotterdam Convention concerning hazardous chemicals and pesticides in international trade, 1998 (adhered 2004).

- Convention on persistent organic pollutants, Stockholm, 2001 (ratified 2004).

- The Republic of Moldova is party to 14 bilateral and multilateral agreements related to the protection of the environment and transboundary water resources (e.g. the Danube Delta, the River Prut and the Dniester River Basin) with neighbouring countries, including Azerbaijan, Belarus, Czech Republic, Latvia, Poland, Romania and Ukraine.

Annex 6

Model terms of reference for a Ministry of Health crisis management programme

1. Mandate of the crisis management programme

The crisis management programme, in the context of a dedicated programme for emergency management and disaster risk reduction, will lead, coordinate and support the efforts of the Ministry of Health and of the entire health sector in reducing the impact, specifically that on health, of:

- natural and human-made disasters with particular emphasis on the management of extreme weather events related to climate change;
- conflicts or other forms of collective violence, and displacement of populations;
- the accidental or deliberate use of chemical, biological and radio-nuclear substances.

The programme will promote and undertake activities in prevention, mitigation, preparedness, response, rehabilitation and early recovery related to public health, including – but not limited to – hazard and vulnerability analyses and monitoring, the establishment of early warning mechanisms, the provision of medical care, the surveillance and control of diseases, the availability of safe water, sanitation, and nutrition.

2. Areas of responsibility

The programme will have a multi-hazard scope, including all large-scale emergencies regardless of their etiology (natural disasters, chemical accidents, radiation accidents, conflicts, terrorism or other forms of violence).

It will be inter-disciplinary, cutting across all technical programmes, divisions or units of the Ministry.

It will extend beyond immediate medical response and reflect the modern and wide-ranging public health approach of disaster risk management (reduction).

The functions of the programme will be promotional, normative, educational, coordinative and operational in nature.

Promotional functions

- Promotion of the health and social aspects and benefits of disaster risk reduction and management in other sectors, including the private sector.
- Promotion of disaster reduction measures/activities for inclusion in the developmental activities of other programmes/divisions of the Ministry of Health and the health system, in particular the adoption of mitigation measures for existing and new hospitals and health facilities or water/sewage and other essential supply lines and support systems.
- Promotion of equitable access to health services in case of emergencies, irrespective of wealth, gender, age or ethnicity.
- Promotion of public awareness and health preparedness by means of the mass media and health education.

Normative functions

- Establishment of safety norms and standards for hospitals and health facilities in disaster-prone areas.
- Establishment of norms and standards for contingency planning, simulation exercises and other preparedness measures in the health sector.
- Establishment of disaster preparedness and safety criteria for the accreditation of hospitals.
- Development of specific guidelines and establish norms for disaster response, including evaluation of damages and assessment of needs.
- Establishment of lists of the drugs, equipment and supplies essential in emergencies.
- Development of protocols for telecommunication (Internet, radio, etc.).
- Establishment of standards or norms for the operation and registration of national or foreign humanitarian organizations (NGOs, medical services, etc.).

Educational functions

- Provision of in-service training for health personal (from prevention to response).
- Inclusion of disaster management in the curricula of pre- and post-graduate schools in health-related sciences.
- Inclusion of health-related topics in the training programmes of other sectors (planning, engineering, foreign affairs, etc.).

Coordination –liaison functions

- Effective coordination of the health sector in its capacity as the "lead agency".
- Coordination with the authorities for civil protection and civil defence, as well as with national emergency committees or other national agencies with multisectoral responsibilities in disaster management.
- Coordination with counterparts, such as disaster focal points, units or commissions in other public sectors (social security, congress or parliament, foreign affairs, public works, etc.) or in the private or nongovernmental sector.
- Coordination and collaboration with disaster programmes in the health sectors of neighbouring countries.
- Technical liaison with humanitarian or developmental organizations at national or international level (bilateral, UN agencies, etc.) that are of potential relevance to the health sector.

Operational functions

- Provision of assistance in the mobilization and operational coordination of the immediate health response in case of large-scale emergencies resulting from natural, technological or human-made disasters.
- Coordination of health needs assessments and provision of advice on the formulation of priorities and the assignment of resources.
- Provision of assistance in the mobilization of external resources.
- Contribution to the formulation of rehabilitation plans with special attention to the adoption of mitigation measures to reduce the vulnerability in future disasters.
- Compilation and dissemination of lessons learnt from emergencies with a view to improving and adjusting future preparedness and mitigation activities of the sector.

3. Reporting Channels

The crisis management programme of the Ministry of Health should report directly to the cabinet of the Minister and organizationally not set up under or as part of a specific technical division. In view of the scope of its cross-cutting responsibilities, it should have equal access to all technical and administrative areas or departments of the Ministry.

Direct access to the highest decision-making levels of the Ministry is essential.

4. Personnel and Budget:

Full-time professional staff proportionate to the identified vulnerability to priority hazards is essential, taking the economic capacity of the country into consideration. The professional qualifications of the staff will reflect the public health requirements in the national context.

A special line item should be assigned in the Ministry of Health budget and the national budget dedicated for disaster risk reduction and the management of the public health aspects of crises.

Annex 7

European and International Network Resources

European Disease Networks

DIPNET: European Diphtheria Surveillance Network and the European Laboratory Working Group on Diphtheria (ELWGD)
http://www.hpa.org.uk/hpa/inter/elwgd_menu.htm

EUVAC-NET: A Surveillance Community Network for Vaccine Preventable Infectious Diseases
http://www.euvac.net/

EISS: European Influenza Surveillance Scheme
http://www.eiss.org/

EU-IBIS: The European Union Invasive Bacterial Infections Surveillance Network – (Neisseria meningitidis and Haemophilus influenzae)
http://www.euibis.org/

ENTER-NET: International surveillance network for the enteric infections Salmonella and VTEC O157
http://www.enter.net/

EuroTB: Surveillance of Tuberculosis in Europe
http://www.eurotb.org/

EuroHIV: HIV/AIDS Surveillance in Europe
http://www.eurohiv.org/mainframe_eng.htm

ESSTI: European surveillance of sexually transmitted infections in Europe.
http://www.essti.org/

EWGLI: European Working Group for Legionella Infections
http://www.ewgli.org/

ENIVD: European Network for Diagnostics of "Imported" Viral Diseases
http://www.enivd.de/

EARSS: European Antimicrobial Resistance Surveillance System
http://www.rivm.nl/earss/

Other European Resources

IRIDE: Inventory of Resources for Infectious diseases in Europe
http://iride.cineca.org/

EFSA: European Food Safety Authority
http://www.efsa.eu.int/

ESAC: European Surveillance of Antimicrobial Consumption
http://www.esac.ua.ac.be/main.aspx?c=*ESAC2

IPSE - Improving Patient Safety in Europe. IPSE aims to resolve persisting differences in the variability of preventive practices and outcomes with respect to nosocomial infection and antibiotic resistance in Europe.
http://helics.univ-lyon1.fr/

Eurosurveillance: Peer reviewed European information on communicable disease surveiaillance and control.
http://www.eurosurveillance.org/

EPIET: European Programme for Intervention Epidemiology Training
http://www.epiet.org/

DIVINE-NET: An EU funded research project under the"Health and Consumer Protection Directorate General" surveillance of outbreaks due to Noroviruses,
http://www.eufoodborneviruses.co.uk/

CISID: Centralized Information System for Infectious Diseases.
http://data.euro.who.int/cisid/

FluNet: WHO Global Influenza Programme
http://gamapserver.who.int/GlobalAtlas/home.asp

GOARN: Global Outbreak Alert & Response Network
http://www.who.int/csr/sars/goarn/en/

GPHIN: Global Public Health Intelligence Network (Canada) a secure, Internet-based "early warning" system that gathers preliminary reports of public health significance in seven languages on a real-time, 24/7 basis.
http://www.phac-aspc.gc.ca/media/nr-rp/2004/2004_gphin-rmispbk_e.html

INFOSAN: The International Food Safety Authorities Network which provides a mechanism for the exchange of information on both routine and emerging food safety issues.
http://www.who.int/foodsafety/fs_management/infosan/en/

Salm-Surv: WHO Global Programme for salmonella and shigella.
http://www.who.int/salmsurv/en/