

Assessment of  
health-system  
crisis preparedness

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Kyrgyzstan

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October 2009

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# Abstract



This report describes the level of preparedness of the health system in Kyrgyzstan and evaluates the arrangements in place to deal with crises, regardless of cause. It also examines the risk prevention and mitigation initiatives in the country. While the main focus is on the national level, some attention has been paid to crisis management capacity at the regional level and to the links between the various levels of government.

## **Keywords**

Process assessment (health care)  
Disaster planning  
Emergencies  
Risk management  
Health systems plans  
Delivery of health care – organization and administration  
Kyrgyzstan

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## Abbreviations

ACTED	Agency for Technical Cooperation and Development
CIS	Commonwealth of Independent States
DPEC	Disaster Prevention and Elimination Commission
DRCU	Disaster Response Coordination Unit
DSSSES	Department for State Sanitary Epidemiological Surveillance
EMS	emergency medical services
GDP	gross domestic product
IHR	International Health Regulations
(MDR) TB	(multidrug-resistant) tuberculosis
NGO	nongovernmental organizations
PHEP	public health emergency preparedness
REACT	Rapid Emergency Assessment Coordination Team
SDPK	Social Democratic Party of Kyrgyzstan
SOP	standard operating procedures
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VRAM	vulnerability and risk analysis and mapping
WFP	World Food Programme

# Foreword



The number of emergencies and disasters and the severity of their impact have increased in recent decades, particularly in low- and middle-income countries, those of the WHO European Region being no exception. This development emphasizes the importance of the role of health systems in the overall cycle of disaster preparedness, risk mitigation, response and recovery.

Strengthening the preparedness of a health system to deal with crises is not a trivial undertaking. Bolstering stewardship; implementing preparedness planning as a continuous process with a multihazard approach; and establishing sustainable crisis management and health risk reduction programmes, to name but a few tasks, require a clear understanding of the country's situation.

There is strong evidence that by anticipating the health needs of the population in a crisis and taking the necessary steps to be prepared, a health system will be able to respond effectively should the situation arise, and thus save lives and alleviate suffering. This report is an important contribution to the evidence being collected on the preparedness of health systems for crises.

This health-system crisis preparedness assessment was carried out as part of the activities of the Disaster Preparedness and Response Programme of the WHO Regional Office for Europe and the WHO Country Office in Kyrgyzstan in 2009. The Disaster Preparedness and Response Programme started its work in Kyrgyzstan in 2005. Before the assessment report could be finished violence broke out in April 2010 in Bishkek and the president was ousted; this was followed by further violence in June in the oblasts of Osh and Jalalabat. An update of the 2009 assessment report was undertaken in late 2012.

The WHO Regional Office for Europe works closely with Kyrgyzstan's Ministry of Health to help local communities prepare for disasters, deal with their health consequences and mitigate their long-term effects. WHO leads the Health Sector within the United Nations Disaster Response Coordination Unit and coordinates health-related disaster preparedness and response activities of different stakeholders in the country.

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# Background

## 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<sup>1</sup> 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, multidrug-resistant tuberculosis (MDR 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 health status in both the short and long terms. This is often aggravated by economic loss, which also has a negative impact on health status and, therefore, on the economic burden on the health sector as a whole.

Increasingly, disaster management is becoming a priority in countries for several reasons.

- The economic and political implications of public health crises, including 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.
- States Parties to the revised International Health Regulations (IHR) of 2005 (2), 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 underinvest 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 WHO European Region

Between 1990 and 2010 approximately 47 million people in the WHO European Region were directly affected by natural disasters. These included 719 accidents, 442 floods, 159 events of extreme temperature, 315 storms, 107 earthquakes, 36 droughts, 77 wild fires and 59 landslides and avalanches, resulting in over 132 000 deaths. This does not include the wars and violent

<sup>1</sup> 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.

conflicts that have killed over 300 000 people in the Region over the last 20 years. Other severe events of the recent past include the Chernobyl nuclear power plant accident in 1986, which the United Nations estimates affected several million people, and the Marmara earthquake that killed nearly 18 000 people and injured close to 45 000 people in Turkey in 1999.

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 Kosovo (in accordance with United Nations Security Council resolution 1244 (1999)), 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 breakup 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 15 years, including those that occurred in France (Paris, 1995), Spain (various ETA bombings; Madrid train attack, 2004), Turkey (various) and the United Kingdom (London, 2005). Reportedly, 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 (4).

## **IHR**

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 (such as the United Nations International Strategy for Disaster Reduction and Commission on Human Security and the WHO Health Action in Crises Programme) 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 IHR by the 58th World Health Assembly in May 2005 (2). 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, affect human health negatively and interfere with international trade and travel.

The revised IHR have a much broader scope than the first edition of 1969, which focused on the international notification of specific communicable diseases. States 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) were 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.

## **Cross-cutting issues related to disaster preparedness and response**

Effective crisis preparedness and response is governed by a number of cross-cutting (strategic) principles that WHO encourages Member States to adopt. These relate to the all-hazard approach, the whole-health approach, the multidisciplinary (intrasectoral) approach, the multisectoral approach and the comprehensive approach.

### ***The all-hazard approach***

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

### ***The whole-health approach***

The whole-health approach promotes the concept that the emergency preparedness planning process, the overall coordination procedures, and the surge and operational platforms should be led and coordinated by emergency coordination bodies at the central and local levels, involving all the relevant disciplines of the health sector and dealing with all potential health risks.

### ***The multidisciplinary (intrasectoral) approach***

Health systems are defined as comprising all the organizations, institutions and resources that are devoted to improving, maintaining or restoring health. This includes public and private initiatives (for example, by nongovernmental organizations (NGOs) and international agencies) and action at the 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 all 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, ministries of health need 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 government 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 the reduction, prevention and mitigation of the related risks are priority areas that increasingly need to be taken into consideration in national preparedness planning. Therefore, WHO encourages Member States to develop and implement strategies for the different aspects of crisis preparedness, bearing in mind that they are not separate entities but overlap with each other in scope and timeframe. They can be summarized as follows.



- *Prevention, reduction and mitigation* activities 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* 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.
- *Response and recovery* action 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.

To better support Member States in strengthening preparedness and response to all hazards, the WHO Regional Office for Europe is coordinating the development of a standardized assessment tool to evaluate priority health risks, the status of generic preparedness plans and the interoperability of public health emergency plans in selected countries.

In 2007, the European Commission's Directorate General for Health and Consumer Affairs (DG SANCO) and the Regional Office embarked on a joint project to develop a standardized tool with which an assessment team could objectively evaluate the preparedness capacities of the health sector to respond to natural and man-made disasters. A multidisciplinary team consisting of disaster preparedness, communicable disease and environmental health experts worked together in elaborating, refining and piloting the tool. Baseline assessments were conducted in Armenia, Azerbaijan, the Republic of Moldova, Ukraine and Poland. Comprehensive reports were delivered to the beneficiary countries highlighting strengths, weaknesses and gaps in organizational, legal and policy frameworks for national health-system preparedness planning. Further, in collaboration with the ministries of health and key stakeholders, an implementation framework for strengthening health-system preparedness was developed.

Agreement to conduct a health-system crisis preparedness assessment was set out in the Biennial Collaboration Agreement for 2008–2009 between the Regional Office and the Ministry of Health of Kyrgyzstan.

# Country overview

Official name: Kyrgyzstan  
Capital city: Bishkek  
Main languages: Kyrgyz and Russian  
Main religion: Islam (Sunni)  
Monetary unit: 1 som (KGS) = 100 tiyin

## Map of Kyrgyzstan



Source: Map No. 3770, Rev. 6, United Nations, Department of Field Support, Cartographic Section, January 2004.

## Geography and history

Kyrgyzstan is a landlocked country bordered by Kazakhstan, China, Tajikistan and Uzbekistan. It covers an area of 199 900 km<sup>2</sup>, of which 80% consists of the Tian Shan mountain range. The climate is dry to polar cold in the Tian Shan region, depending on altitude. An area known as the Fergana valley in the south-west is subtropical and can reach 40 °C in the summer months.

The Kyrgyz people are believed to be of Turkic descent, with a history dating back to 200 BCE when they lived in north-eastern Mongolia. With the rise of the Mongol empire they migrated, eventually settling in the territory now known as Kyrgyzstan. In the 12th century Islam became the region's predominant religion and the majority of the Kyrgyz population are Sunni Muslims.

## **Timeline**

- 1876 The Kyrgyz territory was formally incorporated into the Russian Empire.
- 1918 Soviet power was established in the region.
- 1924 The Kara-Kyrgyz Autonomous Oblast was created within the Russian Federal Socialist Republic.
- 1926 It became the Kyrgyz Soviet Socialist Republic.
- 1936 On December 5, the Kyrgyz Soviet Socialist Republic was established as a full union republic of the USSR.
- 1991 On August 31, the country declared independence from the USSR.
- 1991 On December 21, Kyrgyzstan formally entered the new Commonwealth of Independent States (CIS).

## **Political changes in Kyrgyzstan, 2010–2011**

On 7 April 2010, President Kurmanbek Bakiev was overthrown. During the revolution in Bishkek 90 people died and an estimated 500 more were injured. Following the uprising, power was transferred to a provisional government headed by Roza Otunbaeva.

In June 2010, civil clashes resulting in bloodshed with over 400 casualties and 2500 injuries occurred in the southern oblasts of Osh and Jalalabat. Thousands of homes were burned and destroyed and the number of refugees was estimated to be in the hundreds of thousands. Thanks to the efforts of the international community and huge donor assistance, homes and infrastructure in the affected areas have gradually been restored and inter-ethnic dialogue and fragile peace are being rebuilt in the south of the country.

In the face of these difficult and critical situations the Kyrgyz Government, led by Roza Otunbaeva, held a referendum in June 2010 on a new constitution to institutionalize a presidential-parliamentary form of government, which would envisage severe restrictions against usurping power. It also adopted the Transition Programme to legitimize the new form of government in accordance with the provisions of the new constitution.

In October 2010 parliamentary elections were held, following which 120 parliamentarians took office according to the corresponding vote percentage, based on party lists. As a result, five parties were elected: Ata-Jurt, the Social Democratic Party of Kyrgyzstan (SDPK), Ar-Namys, Respublika and Ata-Meken. Two months later, a coalition of parliamentary majority parties and a new government, headed by Prime Minister Almazbek Atambaev, were formed.

On 30 October 2011 presidential elections were held, won by now ex-Prime Minister Almazbek Atambaev. It was the first time in the history of Kyrgyzstan that power was transferred peacefully. Roza Otunbaeva fulfilled her historic mission, completing the transitional period and establishing a legitimate government.

## **Government**

Until 2010 Kyrgyzstan was a presidential republic. Its government was regulated through a division of power into executive, legislative and judicial branches. The president<sup>2</sup> was elected for a five-

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<sup>2</sup> Mr Kurmanbek Bakiev, Head of the Executive Branch at the time of the assessment in 2009.

year term and appointed the prime minister<sup>3</sup> and other senior members of the government. The president also appointed the heads (akims) of local government bodies for a period of four years.

According to the latest constitution, adopted by national referendum on 27 June 2010, Kyrgyzstan is a presidential-parliamentary republic with a separation of power among each of the legislative, executive and judicial branches. All power is exercised by the parliament (Jogorku Kenesh) and the government is accountable to the parliament.

Under the terms of the 2010 constitution the president is the head of state, restricted to a single six-year term. The new constitution has partly restricted the power of the president; however, the president remains the head of national defence and security, can declare an emergency status (although parliament must be informed immediately), and can initiate a part or complete mobilization of the country. The president puts forward proposals to the parliament related to the appointment and removal of the chairmen for the National Bank and Prosecutor General's Office, and nominates candidates amounting to one-third of the Chamber of Accounts Auditors, as well as the chairman of the Centre for Elections Committee. All final decisions to hire are made by the parliament, which is responsible for legislative power and control in the framework of its allocated authority.

Previously the parliament consisted of 90 members; under the new constitution it has 120 deputies, elected under the party-list system for five-year terms. The parliamentary majority forms a coalition and nominates candidates for the prime minister's position.

The Constitutional Court and the Supreme Court are the highest judicial bodies. Judges are appointed by the parliament upon the recommendation of the president, based on nominations by the Judges Selection Council, and have 10-year tenure. The Constitutional Court was reorganized into the Constitutional Chamber in 2010. At the time of this report, the judicial system of Kyrgyzstan has been undergoing a process of reform.

## Administrative levels

Kyrgyzstan's administrative divisions consist of seven provinces (oblasts) subdivided into districts (rayons) and two cities (shaar), which are administered separately and considered to have the same status as provinces. There is one exclave: the village of Barak, which is entirely surrounded by Uzbek territory. This exclave is administered by the provincial authorities of Osh. There are also four Uzbek enclaves and two Tajik enclaves in Kyrgyzstan.

## Population

The last population count was undertaken in March 2012, using United States Census Bureau figures. In 2011, the population of Kyrgyzstan was estimated at 5 451 000; this shows a slight increase compared to the last two/three years. However, the annual growth rate fell by 0.59% compared to 2009.

**Table 1. Population of Kyrgyzstan**

Population	2000	2003	2007	2009	2011
Midyear population (thousands)	4937	5059	5256	5358	5451
Growth rate (%)	0.9	1.0	0.7	1.3	0.8

Source: United States Census Bureau: International Data Base [online database] (5).

<sup>3</sup> Mr Igor Chudinov at the time of the assessment in 2009.

## Economy

Kyrgyzstan has abundant hydropower, as well as other energy resources such as coal, oil and natural gas. Agriculture is an important section of the economy and accounts for 35% of GDP (see Table 2) and about half of employment. The country exports hydropower, cotton, wool, meat, tobacco, gold, mercury, uranium and machinery.

After the breakup of the Soviet Union, Kyrgyzstan's economy experienced great difficulties due to the loss of markets (over 90% of Kyrgyz exports were to the Soviet Union). However, the government was committed to transition to a market economy, and through economic stabilization and reform the country was able to accede to the World Trade Organization on 20 December 1998.

**Table 2. Overview of the economy of Kyrgyzstan**

Indicators	2000	2004	2006	2008	2009	2010
<b>GDP (current US\$)</b>	1 369 691 904	2 211 535 360	2 833 343 232	5 139 957 785	4 690 029 461	4 616 164 825
<b>GDP per capita growth (annual %)</b>	5	7	3	8.4	2.9	-1.4
<b>Gross national income per capita, Atlas method (current US\$)</b>	280	400	500	780	870	840
<b>Inflation, GDP deflator (annual %)</b>	27	5	9	22.2	4.04	6.9
<b>Foreign direct investment, net inflows (balance of payments, US\$)</b>	-2 360 125	175 460 000	182 020 000	376 992 152	189 377 400	437 586 100
<b>External debt stocks, total (debt outstanding and disbursed, current US\$)</b>	1 827 411 000	2 111 102 000	2 346 266 000	3 497 719 000	3 986 109 000	3 983 988 000
<b>Net official development assistance and official aid received (current US\$)</b>	214 710 000	260 880 000	311 220 000	359 930 000	314 690 000	— <sup>a</sup>

<sup>a</sup>No data available.

Source: The World Bank: World DataBank [online database] (6).

## Environment

Most environmental problems in Kyrgyzstan are related to water pollution. Many people get their water directly from streams and wells that can be contaminated; as a result, water-borne diseases are prevalent. In addition, soil salinity is increasing as a result of faulty irrigation practices (7).

Kyrgyzstan is a major source of water to neighbouring countries because of its rivers, lakes and underground reserves. No rivers flow into Kyrgyzstan; all flow out to Tajikistan, Uzbekistan and Kazakhstan, which rely heavily on this water resource for consumption, agriculture, industry and power production. Any pollution to the water emanating from Kyrgyzstan will have an adverse effect on its neighbours.

There are significant mine dumps containing cyanide, radio nuclides and other toxic substances left over from mining. These pose a significant threat due to the high number of mudslides, earthquakes and flooding the country regularly experiences, any one of which could destabilise a mine dump and contaminate rivers.

Consumption of electricity per capita has significantly decreased over the last decade. Energy use increased by 69 kg of oil equivalent per capita from 2000 to 2009. However, the area of land dedicated to agricultural use has slightly decreased (see Table 3).

**Table 3. Environmental factors of Kyrgyzstan**

Indicators	2000	2004	2006	2008	2009	2010
CO <sub>2</sub> emissions (metric tons per capita)	1	1	1	1.2	— <sup>a</sup>	— <sup>a</sup>
Access to water source (% of population)	82	— <sup>a</sup>	89	90	— <sup>a</sup>	— <sup>a</sup>
Agricultural land (% of land area)	56	56	55.95	55.93	55.35	— <sup>a</sup>
Energy use (kg of oil equivalent per capita)	497	548	542	518	566	— <sup>a</sup>
Electric power consumption (KWh per capita)	1904	1651	2015	1449	1402	— <sup>a</sup>

<sup>a</sup>No data available.

Source: The World Bank: World DataBank [online database] (6).

## Health system

Before Kyrgyzstan became independent, the country's health system was highly centralized and controlled from Moscow. The strengths of the health system of the Soviet Union were wide coverage of the population, expanded programmes of immunization, the availability of primary care facilities even in the smallest villages and remote areas, an emphasis on free care with strong governmental support (in the form of subsidies) for drugs and highly specialized health services.

The collapse of the system of the former Soviet Union and consequent economic hardship placed a strain on the government as it struggled to maintain an extensive network of health facilities with limited resources. After independence, Kyrgyzstan entered a long transitional period of political, economic and social change, accompanied by sharp economic recession and deepening social inequalities. Poverty, unemployment and migration are new challenges to the health of the population and the performance of the health system.

As a result, the health of the population has deteriorated in the last 15 years. Kyrgyzstan suffers the burden of mixed epidemiological patterns of diseases (morbidity and mortality): the re-emergence of mainly vaccine-preventable communicable diseases, new global and local threats and the HIV/AIDS pandemic, as well as high levels of preventable chronic noncommunicable diseases and increasing negative changes in lifestyles.

## Main hazards and health threats in Kyrgyzstan

The geography of Kyrgyzstan makes it a high-risk country for natural disasters, such as earthquakes, floods, mudslides, mudflows, avalanches, squalls, downpours, icing, frosts, droughts, destructive glacier fluctuation, breakthrough of mountainous lakes and rise of subsoil waters (8).

In 2011, 255 emergencies, including traffic accidents, were registered. In total, 31 powerful earthquakes, 22 avalanches and 61 mudflows were registered in southern Kyrgyzstan alone, and an additional 12 landslides were registered. Disasters in 2011 claimed 140 lives. The economic damage inflicted on the affected areas topped KGS 940 million (US\$ 20.17 million) (9).



**Table 4. Health indicators of Kyrgyzstan**

Indicators	2000	2005	2006	2008	2009	2010	2011
Life expectancy at birth (total, years)	68.5	67.7	67.8	68.4	69.1	69.3	69.6
Under-5 mortality rate (probability of dying by age 5 per 1000 live births) both sexes	33.2	35.1	35.3	31.5	29.3	26.5	24.5
Maternal mortality ratio (per 100 000 live births)	46.5	61	53	58.9	75.3	50.6	47.5
Total fertility rate (per woman)	2.7	— <sup>a</sup>	2.5	2.8	2.9	2.73	
Births attended by skilled health personnel (%)	98.6	98.4	98.4	98.5	98.5	98.3	98.6
Malnutrition rate of children under 5 years per 100 000 population	— <sup>a</sup>	522.0	375.1	312.6	308.0	291.8	260.5
Prevalence of HIV (per 100 000 population)	0.08	15.8	— <sup>a</sup>	10.2	12.8	10.5	10.8

<sup>a</sup>No data available.

Sources: Centre for Health Promotion of the Ministry of Health

### **Earthquakes**

Kyrgyzstan is classified as the most seismically dangerous territory in central Asia and over 3000 earthquakes are registered annually. Devastating seismic catastrophes occur every 5–10 years.

### **Landslides, mudslides and avalanches**

Decreasing forest coverage in many mountainous areas due to grazing and logging has made floods and mudslides more common. Mudslides and floods are frequent and dangerous, causing widespread human and material damage. The number of emergency situations caused by floods increased during the period 1994–2006. Avalanches damage vital communication systems such as roads and electricity power lines, and kill a number of people every year.

In 2010, 112 irrigation facilities were damaged by landslides and floods in Kyrgyzstan, resulting in a total economic loss of US\$ 10 million.

### **Technological hazards**

In recent years, sudden mudslides, mudflows and erosion in MailuuSuu city have created a potential threat to the uranium tailings, which if damaged could result in hazardous waste spreading not only into the MailuuSuu valley but also into the densely populated Ferghana valley. Further, radioactive elements carried by the Syrdarya River would end up in the already environmentally degraded Aral Sea and lead to long-term radioactive pollution.

### **Epidemiological health threats**

The most vulnerable category for infectious diseases is still children under the age of 5. Human brucellosis and typhoid are widespread and there are also several endemic zones of malaria in Kyrgyzstan. The upward trend in the prevalence of these diseases has continued (see Additional annex 1).

Kyrgyzstan reported its first two laboratory-confirmed cases of pandemic (H1N1) 2009 virus infection (swine influenza) on 25 August 2009. 27 confirmed cases were reported by 10 November 2009. Four cases of H1N1 were registered in 2010, but in 2011 no incidence of the disease was reported. H5N1 (avian influenza) was not registered in 2010 and 2011.

In 2011 poliomyelitis was not registered; 5355 cases of TB and 492 cases of MDR TB were registered.

# Mission objective and methodology

## Objective

The objective of the assessment was to support the Ministry of Health of Kyrgyzstan in identifying the strengths, weaknesses and gaps in the preparedness of the health system for crises.

Deliverables to the Ministry of Health included:

- a comprehensive report highlighting strengths, weaknesses and gaps in the health security and crisis management capacity framework in Kyrgyzstan;
- recommendations and an implementation framework for strengthening Kyrgyzstan's health system for disaster preparedness and response over the next three to five years, highlighting any technical support that may be required.

## Methodology

A multidisciplinary team of six international experts carried out the assessment in Kyrgyzstan from 6 to 16 October 2009 in cooperation with local counterparts from the WHO Country Office (see Annex 1). The team members' areas of expertise included generic disaster preparedness planning and response, hospital disaster preparedness planning, mass-casualty management and public health, and communicable diseases surveillance and response.

Semi-structured and informal interviews were carried out with key stakeholders (see Annex 2), which in this context included:

- the Ministry of Health and related departments;
- other government ministries with responsibility for disaster preparedness and response;
- United Nations agencies and donor organizations;
- international and national NGOs.

The team adopted an all-hazard, multisectoral approach, using the standardized *Toolkit for assessing health-system capacity for crisis management* (updated in 2010) (10), developed by the Disaster Preparedness and Response Programme of the WHO Regional Office for Europe, to conduct the assessment. This incorporates the main components considered essential by WHO for a country to be prepared to meet the challenges of a future health crisis. Each component is further broken down into its key elements and essential attributes; these are the indicators used to assess the status of the health system's crisis preparedness and response capacities.

## Structure of the report

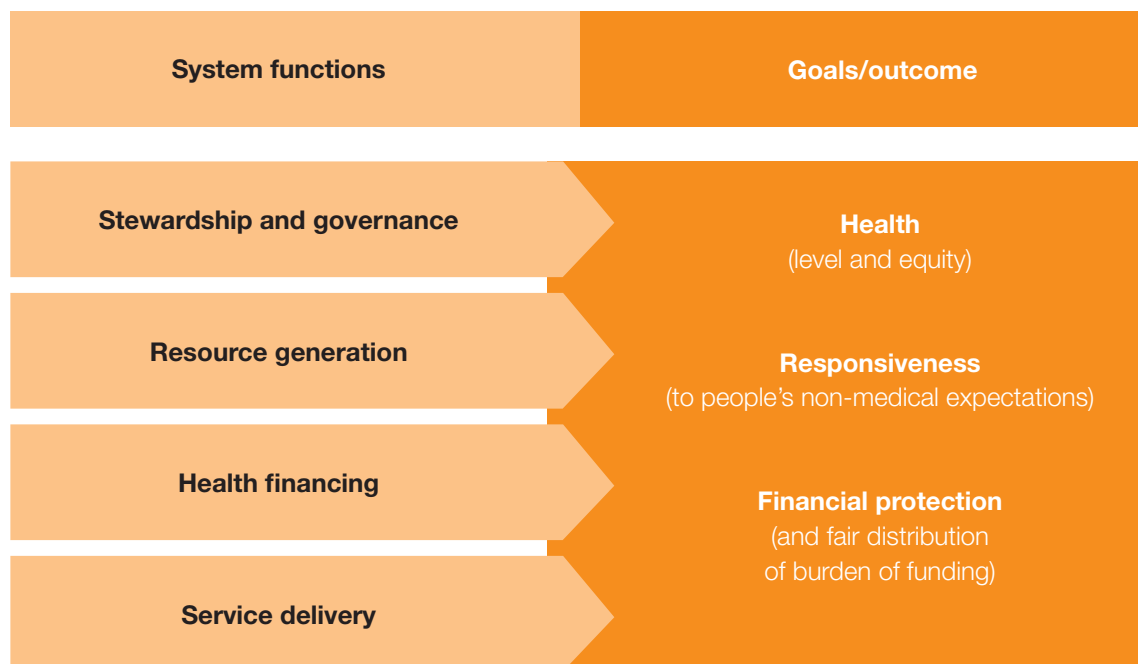
The WHO Regional Office for Europe health-system framework (as endorsed by all Member States in the WHO European Region in *The Tallinn Charter: health systems for health and wealth* (11)) was used as the conceptual basis for describing and analysing the elements of the health sector crisis management system in Kyrgyzstan (see Fig. 1).

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. They are made up of four key functions: stewardship (or leadership) and governance; resource generation (including human resources, supplies and equipment, and health information); health financing; and delivery of health services.

**Fig. 1. The WHO health-system framework**



**Stewardship and governance** is the careful and responsible management of the health system by influencing policies and actions in all the sectors affecting population health. Preparedness planning means ensuring that national policy incorporating health-system crisis preparedness exists. It also involves effective coordination structures, partnerships, advocacy, ensuring the availability and use of relevant up-to-date information for decision-making, public information strategies, and monitoring and evaluation.

**Resource generation** defines all the health workers engaged in actions whose primary intent is to protect and improve the health of a population. Preparedness planning ensures that, given available resources and circumstances, there are sufficient qualified staff – with a correct skills mix – to respond to a crisis and that relevant continuous education and training programmes are in place. Resource generation also includes management of supplies and equipment needed as a reserve in case of crisis, as well as the development and application of appropriate technologies. Data collection, analysis and reporting – including hazard and vulnerability assessments – early warning systems and overall information management issues are also included in this category.

A good **health financing** system ensures adequate funds for the health system and financial protection in case of a crisis. In addition to providing funds for essential crisis preparedness processes it ensures that crisis victims have access to essential services and that health facilities and equipment are adequately insured for damage or loss.

**Service delivery** is the combination of inputs into a service production process that delivers effective, safe, quality health interventions to individuals or communities that need them, in an equitable manner as and when needed, with minimum waste of resources. The crisis preparedness planning process affords the opportunity to review how services are organized and managed in

order to ensure access, quality, safety and continuity of care across health conditions and health facilities during a crisis.

Each of the four functions of the crisis preparedness planning process has several key components (see Fig. 2).

**Fig. 2. Main components by function**

Stewardship and governance	Resource generation	Health financing	Service delivery
<p><b>Policy and legislation</b></p> <p><b>Institutional framework</b></p> <p><b>Health sector risk reduction and crisis management programme</b></p>	<p><b>Human resources strategy for health-crisis management</b></p> <p><b>Pharmaceuticals, medical supplies, equipment and infrastructure</b></p> <p><b>Health information management</b></p>	<p><b>Preparedness financing</b></p> <p><b>Contingency funding</b></p>	<p><b>Mass-casualty management</b></p> <p><b>Management of health care facilities</b></p> <p><b>Continuity of essential health services</b></p>

Structuring the assessment according to the key components of the four functions allows the reader to identify tasks that need to be performed; establish responsibilities for undertaking specific tasks; determine how a task is interrelated with other partners, sectors and disciplines; and verify that the task is completed.

## Recording and analysis of results

Transcripts were prepared as soon as possible after the interviews and on-site assessments and shared with the other interviewers present to allow for additions and corrections and to ensure a common understanding of the facts. The WHO Country Office in Kyrgyzstan was asked to clarify, where possible, any contradictory information and to provide additional information where necessary. The team met when possible at the end of each day to share information, discuss the findings of the day and plan future interviews.

A further analysis of the information was carried out following the mission, once all the transcripts had been received by the report writer. Using a triangulation system, the responses were compared for differences in viewpoint of those interviewed on the key issues of the WHO health-system 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. In 2012 a national consultant was hired to update the report, keeping the main structure but adding new developments, trends and figures.

# Findings and recommendations

## 1. Stewardship and governance

### 1.1. Policy and legislation

#### 1.1.1. National crisis management policy and legislation

The legal framework of Kyrgyzstan contains several different policies and laws on national disaster management. Law 239 “on civil defence” was formally adopted by the parliament on 28 May 2009 and came into effect on the date of its formal publication in the *Erkin-Too* newspaper on 31 July 2009. It calls for prevention, preparedness, response and rehabilitation measures to be taken for all potential emergencies. This law was still in force at the time of the report’s 2012 update.

The law “on protection of the population and territories from natural and man-made disasters” was used to establish an Inter-Ministerial Commission on Disaster Management, which is a high-level Commission consisting of different ministries and agencies of the government. The Ministry of Emergency Situations, established by Government resolution on 16 May 2007, is the national crisis management entity, responsible for the operational functions related to disasters. The original resolution was invalidated by the reorganization of the government in 2009, but a new regulation concerning the Ministry and its subordinate departments was approved by Government resolution 130 on 5 March 2010, keeping the objectives and functions similar. This defines the Ministry’s goals, objectives and functions to manage crisis situations. The Ministry has three major structural departments: the Department of Emergency Prevention and Elimination, the Department of Emergency Monitoring and Forecasting, and the Hydrometeorology Agency (see Additional annex 2). These entities have defined roles, responsibilities and respective authorities. The Kyrgyz Government has allocated funding for Ministry of Emergency Situations staff, equipment and a contingency fund.

Government resolution 746 “on the single state system for disaster prevention and elimination” of 23 October 2006 requires all government bodies to work together in disaster management. It instructs government bodies, local state administrations, local authorities and other organizations to plan and prepare for emergencies and to pre-stock resources. It also mandates international cooperation on disaster protection of population and areas. Resolution 746 is no longer valid in 2012, as it was replaced by the newly adopted Government resolution 475 “on approval of the regulation of the state system of civil protection” of 22 August 2011. In contrast to the original resolution, this document presents a control scheme for the state civil protection system and procedures for its organization and operation, including emergency preparation, general population training, mitigation and financial losses. Resolution 475 describes the functions of the civil protection system, including its role and participation in emergency situations, population education, information and financial resource support for the system (see Additional annexes 3a and 3b).

The policy for declaring a state of emergency was formulated in Article 46, paragraph 7 of the 2007 constitution:

The President shall give warning, on grounds specified by constitutional law, of the possibility of introducing a state of emergency, and where necessary shall introduce a state of emergency in individual localities without prior declaration, providing prompt notification to the Jogorku Kenesh.

As of 27 July 2010, the new constitution (Article 64, paragraph 9.2) kept this function unchanged, confirming that the president:

shall give warning, on grounds specified by constitutional law, of the possibility of introducing a state of emergency, and where necessary shall introduce a state of emergency in individual localities without prior declaration, providing prompt notification to the Jogorku Kenesh.

Kyrgyzstan is a State Party to the IHR of 2005 (2) and has adopted *The Hyogo Framework for Action 2005–2015: building the resilience of nations and communities to disasters* (12), under which framework the country regularly submits progress reports.

Although the national laws, policies and regulations give a strong foundation and legal framework enabling different stakeholders and partners to operate and interact, it must be highlighted that the Ministry of Health is not formally or legally designated as the lead for the health sector in national disaster management planning. This omission was partially corrected by Government resolution 327 of 17 December 2010, signed by the president, which defines the ministries and their departments' roles in the civil protection mechanism. It defines the role of the Ministry of Health in disaster preparedness, crisis management and recovery and its specific responsibilities on response, emergency preparedness, prevention of emergencies and spread of mass infectious diseases (see Additional annex 4a). Within the framework of this resolution, a block diagram of information flows in emergencies was developed, according to which the Ministry of Health submits information to the Ministry of Emergency Situations, while at the same time the Ministry of Health's structures at district level submit information to district offices of both the Ministry of Emergency Situations and the Ministry of Health (see Additional annex 4b).

On 3 January 2011 the Kyrgyz Government adopted resolution 1 “on a single information management system in emergency and crisis situations in Kyrgyzstan”. Under this programme, a unified duty and dispatch service (EGDDS-101) was established. Additionally, under the national integrated system of information and public notification (OKSION), a guide for civil protection, prevention and emergency response in Kyrgyzstan was disseminated. Management of these systems will be carried out by the national and oblast emergency management centres of the Ministry of Emergency Situations. However, this programme is underfinanced (see Additional annex 5). This policy document does not describe the Ministry of Health's role in communication and information provision.

#### *1.1.2. Health-sector crisis management policy and legislation*

There is a Ministry of Health policy delegating responsibility for crisis preparedness planning to the Disaster Preparedness and Response Coordination Department, but the Ministry has no policy/legislation that mandates an all-hazard, whole-health, multidisciplinary approach to a risk reduction and crisis management programme. Instead, individual activities are designated to be undertaken by different departments based on specific policies and legislation.

The Ministry of Health's decree 91 “on improving the preparedness of the Ministry of Health for emergencies and disasters” of 9 March 2011 is aimed at organization, provision and planning of rapid response of the Ministry of Health State Security Service. This decree establishes the Ministry of Health Civil Protection Command Post, Civil Protection Headquarters and Evacuation Commission (see Additional annex 6).

Several decrees describe the civil defence (protection) system and coordination mechanism with different ministries under the Ministry of Emergency Situations. However, the Ministry of

Health does not have a clear policy document with a description of a public health emergency preparedness (PHEP) strategy and health-crisis management algorithm. PHEP should include a full range of prevention, mitigation and recovery activities, not just standard operational responses to crisis events. It should cover health care system capabilities, including the ability to quickly fulfil preparedness tasks and operational capabilities (infrastructure, personnel, plans, and so on).

### *1.1.3. Recommendations - policy and legislation*

The lack of legislation or policy that formally identifies the Ministry of Health as responsible for all the health aspects of a crisis has caused unclarity with the Ministry of Emergency Situations on their respective responsibilities for risk reduction and crisis management in the health sector. The government should ensure both that national policy and legislation is revised to recognize the Ministry of Health as the lead agency in all matters on the health aspects of crisis; and that the Ministry of Emergency Situations, as the leading multisectoral coordinator of preparedness and response activities in Kyrgyzstan, recognizes this and accepts it in planning activities.

The government should develop a more comprehensive plan for the Ministry of Health and Ministry of Emergency Situations on a communication strategy for emergency situations and crisis preparedness to avoid confusion with many other government resolutions and decrees and to prevent delay of coordination in crisis response.

The Ministry of Health should consider introducing a PHEP health-system policy to delineate the structure for decision-making, coordination and resource allocation to prepare for and respond to a health crisis. This policy should:

- advocate a whole-health and all-hazard approach to the risk reduction and preparedness planning process, including requirements for comprehensive preparedness, response and recovery planning;
- outline goals, direction and spending priorities for risk reduction and preparedness planning as part of long-term national development objectives, with the stated aim of mitigating the possible negative effects of health crises underpinned by commitments to human rights, gender equality and groups with specific vulnerabilities;
- authorize a formal health-sector multidisciplinary crisis management committee and outline its role, responsibility and authority;
- require risk assessment to be used as tool to formulate policies and require that all phases of the crisis management cycle (anticipation, prevention, reduction, mitigation, preparedness, response and recovery) are given due consideration.

## **1.2. Institutional framework**

### *1.2.1. National multisectoral high-level crisis management committee*

The Inter-Ministerial Commission on Disaster Management is the high-level management body in the government of Kyrgyzstan responsible for providing political and strategic leadership for all crisis-related processes. Its terms of reference are specified in the national plan of disaster response and in Kyrgyzstan's civil defence law. The Commission is chaired by the prime minister, with the head of the Ministry of Emergency Situations as the vice-chairman. Other members include government ministries and agencies, United Nations organizations, telecommunication and utility companies and NGOs. It meets regularly and its secretariat documents and follows up on decisions and recommendations. There are also mechanisms for acquiring outside technical/scientific advice.

The National Platform for Disaster Risk Reduction was created by the government of Kyrgyzstan in 2011 and announced at the Third Session of the Global Platform for Disaster Risk Reduction in Geneva. Participating authorities were the Scientific and Technical Council of the Inter-Ministerial

Commission for Civil Protection and the United Nations Disaster Response Coordination Unit (DRCU). The Commission's secretariat conducts the daily work of the National Platform and serves as the body responsible for the coordination of all stakeholder activities in its framework. There are also expert and technical groups within the National Platform, responsible for specific issues on disaster risk reduction.

The DRCU is a high-level forum with a mandate to coordinate the efforts of United Nations agencies, the Red Cross and Red Crescent movement, and local and international NGOs in disaster preparedness and response. The DRCU is a member of Kyrgyzstan's Inter-Ministerial Commission on Disaster Management. Seven sector groups and two Rapid Emergency Assessment Coordination Teams (REACTs) were established under the DRCU in northern and southern regions of the country.

#### *1.2.2. National multisectoral operational crisis management body*

The Ministry of Emergency Situations is the multisectoral operational crisis management body of Kyrgyzstan. It has a mandate from the national government to cover all crisis management activities. There are clear terms of reference that define the mandate, responsibilities and authority of the Ministry of Emergency Situations and its relationship with the Inter-Ministerial Commission on Disaster Management. The government allocates resources for funding of staff and equipment. There is also a contingency fund that the Ministry can draw from in case of crisis.

At the oblast and rayon levels there are Disaster Prevention and Elimination Commissions (DPECs) led by the highest-ranking government official in that respective area. There are also village DPECs established under the law "on protection of the population and territories from natural and man-made disasters". Each DPEC is responsible for risk assessment, prevention, preparedness and response in its area of control. Territorial offices of the Ministry of Emergency Situations provide strategic planning and support to the DPECs, thus ensuring that the different levels of coordination are complementary.

Following the change in government the DPEC functions remain unchanged, but the Ministry of Emergency Situations has drafted a National Strategy for Comprehensive Safety of the Population and Territories of Kyrgyzstan from Disasters and Emergencies: 2012–2020. This gives details of the priority measures to improve all phases of preparedness and emergency response at all levels (see Additional annex 7).

Leadership in preparedness planning and response of the health sector is not provided by the Ministry of Health. The Medical Department of the Ministry of Emergency Situations is responsible for the health-related aspects of crisis response planning. In 2010 this department underwent a name change to the "Medical Sector" and staff numbers were reduced. At the time of the 2012 report update two people work in the Medical Sector; their duties have not changed.

There is a formal link between the Ministry of Emergency Situations and the Ministry of Health, but this is used not for planning; only for response. Some small positive changes have occurred in cooperation between Ministry of Health and the Ministry of Emergency Situations within the framework of the National Platform for Disaster Risk Reduction. Technical Working Groups have been created with the engagement of representatives from various ministries, which conduct research and have taken action based on the results. The DRCU, together with WHO, has supported their research on the preparedness of medical institutions for emergency situations. Results were reported, training sessions conducted and guidelines developed "on the organization of medical civil protection services in health care facilities of Kyrgyzstan under the threat and occurrence of emergency situations of natural and anthropogenic causes" (see Additional annex 8).

The Ministry of Emergency Situations has good multisectoral links with NGOs; for example, ACTED (Agency for Technical Cooperation and Development) has an office within the Ministry of Emergency Situations to coordinate crisis response.

There is a State Multisectoral Coordination Committee on socially important and extremely dangerous diseases. It was established to coordinate ministries, international organizations, civil society and NGOs to control infectious diseases. The Committee comprises a chairman and three deputies from the Ministry of Health, the Ministry of Agriculture, and an NGO respectively. It has approximately 29 members drawn from various government ministries, international organizations and representatives of civil society. The Committee meets at least once every three months but can meet on an ad hoc basis if there is an emergency with public health implications. It bases its plans on surveillance (including an arrangement between CIS countries) and compliance with the IHR.

#### *1.2.3. Health-sector multidisciplinary crisis management committee*

The Ministry of Health does not have a formal health-sector multidisciplinary crisis management committee responsible for providing political and strategic leadership on the health aspects of crisis management-related processes.

#### *1.2.4. Health-sector operational crisis management entity*

Responsibility for crisis preparedness planning and development of crisis management capacities in the health sector is delegated to the Disaster Preparedness and Response Coordination Department of the Ministry of Health. However, other departments of the Ministry of Health have their own policies for delivering assistance in case of emergencies and their own respective preparedness plans.

The United Nations DRCU, in cooperation with the Ministry of Emergency Situations, has developed the detailed joint project Enhancing Coordination for Disaster Response, 2008–2010. This identifies disaster-prone areas and gives detailed action plans, but does not include any operational recommendations for the Ministry of Health.

The Disaster Preparedness and Response Coordination Department is a functional department of the Ministry of Health, operating in compliance with the Ministry's decree 91 "on improving the preparedness of the Ministry of Health for emergencies and disasters" of 9 March 2011, which identifies all members of this department by name, but does not define their roles and responsibilities. National and international organizations are also not included. The Ministry plans to change the functional status of this department (Civil Protection Command Post of the Ministry of Health) by opening a separate department with full time staff to respond to all emergency-related issues (the number of staff is not yet determined).

The Disaster Preparedness and Response Coordination Department is not replicated at subnational levels as it has few staff and a small budget.

In case of disasters and emergencies, the Ministry of Health coordinates disaster preparedness and response plans with managers and chief physicians of oblast hospitals by phone and maintains a vertical controlling approach for all oblasts. Oblast hospitals and medical institutions do not participate in health risk assessments.

#### *1.2.5. Recommendations - institutional framework*

To provide leadership and oversight for a health-system risk reduction and crisis management programme, the Ministry of Health is urged to create a formal health-sector multidisciplinary committee, responsible for providing political and strategic leadership on the health aspects of



crisis management-related processes. Committee members should be senior managers from departments within the Ministry. They should:

- contribute substantively (technically and operationally) to the health-sector risk reduction and crisis management planning process;
- have the authority in their departments to commit to decisions by the committee;
- have their roles, responsibilities and authority clearly delineated to ensure operational effectiveness in the event of a health crisis;
- also be selected from other ministries and from national and international organizations involved in health crises (such as the Ministry of Emergency Situations and WHO).

### **1.3. Health-sector risk reduction and crisis management programme**

#### *1.3.1. Risk reduction initiatives*

The Ministry of Emergency Situations has responsibility for all risk reduction and crisis management activities in Kyrgyzstan. A risk assessment is annually reported by each DPEC at the oblast, rayon and village level and this is used to create a register of risks from which preparedness plans can be produced. However, different interviewees reported that these assessments are not comprehensive and this is especially the case with regard to the health sector. The situation has not changed in early 2012: the Ministry of Health and the Department for State Sanitary Epidemiological Surveillance (DSSSES) have pointed out that they did not receive this risk assessment report from the Ministry of Emergency Situations.

The DSSSES conducts assessments of communicable diseases and passes the information to the Ministry of Emergency Situations. Despite this, communication between the Ministry of Health and Ministry of Emergency Situations is not well established. Epidemiological functions (such as maintaining and improving health care systems to monitor, detect and investigate potential hazards – particularly environmental, radiological and toxic hazards) are not monitored or assessed by the Ministry of Emergency Situations, Ministry of Health or DSSSES for health risks.

#### *1.3.2. Crisis preparedness planning*

The Ministry of Emergency Situations bases its national preparedness programme and response plans on risk assessments. These plans delineate the roles and responsibilities of all staff from all ministries and other government entities. Training and simulation exercises are conducted at least twice a year and the results are then discussed by the Inter-Ministerial Commission on Disaster Management, which then decides on a plan of action (including new drills and exercises) for the coming year. This plan is given to the Ministry of Health, but is classified.

The Ministry of Health has reportedly developed some plans; for example, there is a strategic plan for the prevention of avian influenza, a strategic plan for malaria and a national pandemic crisis preparedness plan. The Republican Antiepidemic and Antiepzootic Emergency Commission was set up for the purpose of timely organization of actions to prevent infectious diseases; to localize and liquidate epidemics and mass poisonings in the population; and to prevent the outbreak and spread of particularly dangerous animal infectious diseases, including those endangering the health of the population. Commission activities are approved by resolution 152 “on the establishment of the Republican Antiepidemic and Antiepzootic Emergency Commission under the Government of Kyrgyzstan” of 16 March 2010.

In its development of emergency medical care the Ministry of Health is guided by the programme on Medical Emergency Assistance and Care Development in Kyrgyzstan for 2008–2017. This is aimed at improving the quality of emergency medical care to patients and victims in everyday life, emergency situations and disasters (see Additional annex 9).



At the time of the 2009 assessment there was no emergency coordination centre to establish an incident command system in the Ministry of Health: this function was the responsibility of the Ministry of Emergency Situations. The Ministry of Health Civil Protection Command Post, Civil Protection Headquarters and Evacuation Commission were created by Ministry of Health decree 91 “on improving the preparedness of the Ministry of Health for emergencies and disasters” of 9 March 2011 (see Additional annex 6). The Civil Protection Command Post is headed by the Minister of Health as the Chairman and the Head of the Medical Civil Protection Service.

### *1.3.3. Coordination and partnerships*

The Ministry of Emergency Situations has good strategic planning and response capacities and is responsible for coordinating different actors, managing information, assigning tasks and responsibilities, evaluation and follow-up. However, health-related activities are not well coordinated with the Ministry of Health. For example, if there is a radioactive, chemical or biological incident the Ministry of Emergency Situations is not obliged to report this to the Ministry of Health.

There is a Medical Care Sector in the Ministry of Emergency Situations, with two staff. In emergency situations, they are responsible for contacting the Head of the Medical Civil Protection Service of the Ministry of Health. Communication is conducted by phone. The Ministry of Health’s Head of the Medical Civil Protection Service takes part in emergency meetings organized by the Ministry of Emergency Situations at crisis situation management centres.

There is a special coordination unit in the Ministry of Emergency Situations to improve relationships with international groups, which has a legal framework for working with NGOs; there are also intergovernmental agreements. These functions fall within the remit of the International Cooperation Department.

The Ministry of Health has received training to strengthen the health sector for pandemic preparedness from the Centre for Disease Control. This was undertaken in conjunction with other ministries, including the Ministry of Emergency Situations.

### *1.3.4. Health education, public information and communication*

The Ministry of Health’s Centre for Health Promotion has city health centres in Bishkek and Osh, oblast health promotion centres and health promotion units at the rayon level. Small offices are in primary health care clinics close to local communities.

The Centre conducts health promotion, health education and advocacy strategies using evidence-based principles. These are designed in conjunction with donors and stakeholders; for example, WHO has assisted in a National Population Health and Development Programme, which has an intersectoral strategy for health promotion. The communities can choose their priorities and receive training assistance. The goal of the unit is to maintain continuous communication with local populations.

Each year the campaigns on communicable diseases are approved by the Ministry of Health, but the Centre for Health Promotion has no government funding except for salaries: all funding for creating, printing and distributing health education messages comes from donors. ACTED and the Red Crescent are involved in health education and have strategies to prepare communities for crises. All health-related material is approved by the Ministry of Health and any educational material is also cleared through the Ministry of Emergency Situations and the Ministry of Education. The Centre does not deliver public health information during a crisis.

There is a press centre in the Ministry of Health, but it does not have the capacity or procedures to deliver public health information during a crisis. Organization of the dissemination of public

information in a crisis is ad hoc and usually becomes the responsibility of the department most concerned with the response; it is not pre-formulated as it is usually designed at the time of the emergency and poorly coordinated with other ministries (including the Ministry of Internal Affairs, Ministry of Emergency Situations, and so on). There are no procedures in place to evaluate the effectiveness of public information in crises.

#### *1.3.5. Evidence-based guidance and monitoring and evaluation*

The process for a health-sector risk reduction and crisis management programme is still being developed; so far there is no monitoring and evaluation system in place for all aspects of the health-crisis preparedness programme to learn from experience and provide evidence to assist in further planning, programming and policy development.

The Republican Centre for Health Care Development and Information Technologies of the Ministry of Health and the Resource and Policy Exchange conducted an evaluation of hospital preparedness when medical care was provided to the victims of emergency situations in April and June 2010. Results and recommendations were presented during a round table session on 9 November 2010 and reported to the Ministry of Health. The results of the evaluation have been used to develop clinical protocols for triage; these are under development and are at the discussion stage.

Simulation exercises are conducted regularly by the Ministry of Emergency Situations, but the quality of these exercises has not been evaluated in depth by the Ministry of Health as this is not their responsibility. The Ministry of Health team is not trained and does not have indicators to evaluate exercise activities. Once exercise indicators are developed, local health professionals can evaluate these exercises.

#### *1.3.6. Recommendations - health-sector risk reduction and crisis management programme*

The Ministry of Health is not a full partner in national risk assessments and therefore cannot ensure that the health aspects of different hazards (floods, earthquakes, pandemics, food or water-borne diseases, extreme weather events, and so on) are included. It is therefore recommended that the Ministry of Health should conduct an assessment that will form the basis for development of several key areas:

- educating and training stakeholders on PHEP definitions and training a Ministry of Health team with Ministry of Emergency Situations participation on the concept, ideology, coordination and development of plans for PHEP;
- contributing to the development of national and local vulnerability and risk maps (which might be developed jointly with the Ministry of Emergency Situations) by compiling and providing information on health-related aspects of identified hazards – it is important that the Ministry of Health contributes its expertise to the process of vulnerability and risk analysis and mapping (VRAM), since vulnerabilities within the community and how far community readiness may counteract the interaction between the hazard and vulnerabilities need to be taken into consideration in the development process;
- developing monitoring mechanisms for all threats identified as realistic by the risk assessment, at the national and international levels;
- identifying health facilities that are critical to crisis response and assisting them to develop response and recovery plans based on identified risks;
- determining the vulnerabilities, capacity equation and human element of risk to develop community-based initiatives to enhance awareness and practices contributing to a risk reduction and disaster prevention culture;
- assisting the national multisectoral planning process led by the Ministry of Emergency Situations to ensure that health aspects are fully included and addressed in emergency preparedness, response and recovery plans.

The Ministry of Health might consider approaching these issues by integrating the VRAM process – which is promoted by WHO as a tool for building health-sector risk assessment capacity in Member States – into the assessment process. VRAM assists countries in developing capacities to assess health risks and incorporate the results in preparedness and response planning. The VRAM process provides baseline data to make evidence-based decisions on health-crisis preparedness strategies and action plans to assist the decision-making process. The baseline data can be used to advocate for better emergency preparedness and contingency planning; and as a baseline for both needs assessments during emergencies and for monitoring the effectiveness of emergency operations (13).

The Ministry of Health is urged to place a high priority on determining the responsibility for developing and issuing high-quality public information to the populace in times in crisis.

- Training should be provided on PHEP information preparation, communication and dissemination (including methods of developing, delivering and improving capabilities to provide accurate and reliable information to the public rapidly in culturally appropriate ways).
- Consistent and effective public information should be developed in advance and coordinated with representatives of the different health departments and other health-sector partners.
- The responsibility and authority for disseminating information before and during health crises should be clearly delineated.
- Feedback mechanisms to evaluate the effectiveness of public communications should be developed to gauge public reception and absorption of public health information so that communications can be made more efficient.
- There should be a contingency budget to produce and disseminate urgent health education messages in crisis: relying on donor funding will create delays.

The Ministry of Health should seek assistance in terms of resources and technical expertise to develop protocols for crisis management issues based on best international practices.

## **2. Resource generation**

### **2.1. Human resources strategy for health-crisis management**

#### *2.1.1. Development of human resources*

The Ministry of Health has a database of staff employed in the public health sector. This was designed to meet the requirements of the law “on protection of people’s health” of 1992, which makes provision for the number and type of specialists required by the health system. At the time of the 2009 assessment the skills and capabilities of staff needed for health crises were not included in the database; nor has there been a formal audit of the available skills and capabilities for health crises of health staff. At the time of the 2012 update no actions have yet been taken to evaluate knowledge and skills to provide emergency health care. Standard operating procedures (SOPs) have not been developed and there are no referral points for skills and capabilities evaluation.

However, hospitals that have preparedness plans for health crises have, at least partially, outlined the roles, responsibilities and authorities of different staff for crisis situations. There are also rosters, contact details and SOPs for different scenarios for all key personnel in case further capacity is required. As a matter of course these data need to be updated regularly.

In general, there is no comprehensive system of human resources management in the Ministry of Health. Human resources are unevenly distributed, with a shortage in rural parts; in particular, rural areas lack feldshers (paramedical practitioners) and general practitioners. The Hospital Association and the Association of Family Group Practitioners can provide more accurate information on human resources and their skills and competencies.

There are informal arrangements to use volunteers; for example, the Red Crescent has an arrangement with some hospitals to provide staff in case of need. However, Red Crescent staff report that they are not included in any simulation exercises, so their role is unclear should there be a crisis.

The Ministry of Emergency Situations is responsible for responding to any crisis situations and maintains 24/7 capability to respond, with specific teams that can be dispatched to a crisis immediately. Some hospitals can dispatch medical teams to support the Ministry of Emergency Situations; however, their equipment is meagre and their transportation is unreliable.

### *2.1.2. Training and education*

The State Medical Institute of Postgraduate Medical Education provides postgraduate education, training and career development to Kyrgyzstan's medical staff. It is required to fulfil state requirements for medical specialists. Medical staff receive training each year, including a course on medicine in disasters. The Institute cooperates with the government and other ministries. In compliance with Ministry of Health regulations, all medical workers should upgrade their qualification or competence every five years. Programmes providing emergency care instruction and medical first aid can be opted into by the trainee; they are not mandatory. Emergency health response training and emergency medicine training is not systematic and does not target all health staff. Many doctors did not have emergency health response and emergency medicine training at all.

The medical diplomas issued by the Institute are approved by a state board and are recognized internationally by the CIS countries through interstate agreements and contracts. The Institute is accountable to the Ministry of Health, although the Ministry of Science and Education is responsible for its methodology.

Training courses are open to health partners. The Institute has trained staff from the Ministry of Emergency Situations, the Ministry of Defence and the Ministry of Internal Affairs. It regularly trains different groups in the health sector; for example, ambulance crews in Bishkek regularly receive training in communicable diseases. Training of managers for health crises is provided within the framework of emergency medical services (EMS) strategies, which focus on emergency medicine. The Institute trained 384 people in 2011, within the framework of the Strengthening of Emergency Medical Services in the Kyrgyz Republic project, supported by the German development bank KfW Entwicklungsbank. Several training manuals on delivering first aid have been developed in 2010–2012. In addition, three regional public health and emergency management courses were carried out by the WHO Regional Office for Europe, in which leading health care managers participated. However, without a skills audit it is not possible to determine what additional courses are needed to fill gaps in crisis management training. The Institute is willing to provide disaster preparedness and response training as part of its terms of reference.

While there is a course on emergency assistance training (first aid), training modules on emergency assistance, preparedness and response in disasters have not been developed, and major hazard responses (such as PHEP for floods, landslides, earthquake and other of the most frequent disasters in Kyrgyzstan) are not included in this course.

The Red Crescent, via a memorandum of understanding with the Ministry of Emergency Situations, Ministry of Health and Ministry of Internal Affairs, has developed first aid training courses for communities and learner drivers, as well as training courses on how to behave in crisis (such as an earthquake) and on disease prevention. These courses are first approved by the Ministry of Health.

The United Nations Office for the Coordination of Humanitarian Affairs has provided training on rapid health assessments to the government and NGOs. The Ministry of Health has conducted simulation exercises using the assessment tools provided, in conjunction with the Ministry of Emergency Situations.

### *2.1.3. Recommendations - human resources strategy for health-crisis management*

The State Medical Institute of Postgraduate Medical Education has indicated that it is willing to take on the task of providing disaster preparedness and response training as part of its terms of reference. The Institute is prepared to develop a syllabus, plans and projects according to international standards for emergency situations. Nevertheless, it must be noted that the Institute's capacity and faculty are limited. Therefore, to base disaster preparedness and response training on a broad approach, which both involves all key stakeholders and disciplines of the health sector and ensures that disaster preparedness and response capacity building is included in undergraduate and postgraduate studies, establishment of an inter-ministerial working group on this issue should be considered. This working group might include the Ministry of Science and Education, the Ministry of Emergency Situations and other relevant stakeholders, but should be led by the Ministry of Health. Several essential steps should be coordinated and implemented by the working group.

- Check and develop SOPs for crisis preparedness skills: it is impossible to evaluate skills without clearly defined required indicators.
- Undertake an extensive audit of the crisis and preparedness skills and experience of all health-sector personnel, including doctors, nurses, paramedics, medical technicians, drivers, administrative staff, laboratory technicians, dispatchers, and specialists in media and communications. The results of this audit could be added to the existing human resources database and include geographical location and skill types.
- Perform a comprehensive training and education needs analysis. This will allow identification of the skills required for the performance of specific tasks in health-crisis preparedness and response as well as the gaps in skills that could be dealt with through training or recruitment.
- Ensure that identified training courses are integrated in undergraduate and postgraduate education and include all health disciplines.
- Use the knowledge accreditation system already in place and include emergency and first aid skills in annual skills accreditation.

Once these needs are identified, a national public health emergency management course for key staff with responsibilities for health-crisis management can be established with the assistance of WHO, alongside other training courses. This will ensure that training courses comply with internationally accepted standards. Furthermore, the Institute should, with help from WHO and interested donors, establish international cooperation with universities and international organizations to share lists of key subjects and curricula for disaster preparedness and response training.

The emergency medical services project supported by KfW Entwicklungsbank is one possible partner for these steps; it could incorporate specific crisis preparedness and emergency management training courses into the programme (including mass-casualty planning, emergency telecommunications, coordination, and so on). International consultants could also help to develop these training programmes in the early stages, but consideration must be given to the sustainable development opportunity of sending staff from the Institute to attend international courses so that skills and knowledge can be retained.

## **2.2. Pharmaceuticals, medical supplies, equipment and infrastructure**

### *2.2.1. Essential pharmaceuticals, medical supplies and equipment*

Within the Ministry of Health, the Department of Pharmaceuticals, Medical Supplies and Equipment is the key regulatory agency in the pharmaceutical sector and has responsibility for carrying out the national drugs policy, which includes the registration and licensing of drugs, vaccines and medical products. Additionally, national legislation instructs pharmaceutical companies to give essential drugs in case of crisis and to accept payment later as part of the licensing requirements. The Department also administers the Central Analytical Control Laboratory, which is tasked with examining the quality of drugs. However, despite having a humanitarian aid unit, Department staff do not attend any meetings for emergency preparedness, so they play no part in procurement for crisis preparedness.

Based on the results of national risk analyses conducted by the Ministry of Emergency Situations, warehouses have been set up, containing strategic reserves of essential supplies (pharmaceuticals, medical supplies and equipment) that can be made available to medical staff for crisis management. The location and contents of these warehouses are classified; therefore it was not possible to determine if there is periodic testing, rotation and disposal (as required) of pharmaceuticals, medical supplies and equipment stockpiles.

The Ministry of Emergency Situations is responsible for providing security to health facilities and the warehouses. However, it does not have enough capacity to provide adequate security. The Ministry of Emergency Situations and the Ministry of Internal Affairs are working together to strengthen security under the umbrella of the Inter-Ministerial Commission for Civil Protection. During the events of June 2010 in Osh the Ministry of Emergency Situations warehouse was broken into and all supplies were stolen.

Territorial hospitals are instructed to have three days of reserves of supplies in case of emergency; however they have a lack of resources to replenish these reserves when they are used. In a large-scale emergency there will be serious difficulties.

Many hospitals in the country do not have a list of the basic equipment they need for emergencies. Hospitals (especially tertiary) do not have hospital formularies, vitally needed pharmaceuticals or supplies and equipment for health-crisis or emergency situations. In addition, hospital staff do not have the necessary skills for forecasting pharmaceutical quantities and needs in crisis situations, as recommended in *The Interagency Emergency Health Kit 2006 (14)*.

In 2010, under the EMS project supported by KfW Entwicklungsbank, health care facilities of Bishkek city and Osh oblast were supplied with € 2.8 million of equipment. In 2011, the National Hospital of the Ministry of Health was provided with modern operational microscopes, anesthetic and respiratory devices, cardio-monitors, functional beds, medical tools, and so on. The total cost of the project was € 6.4 million. In addition, five reanimobiles (equipped to provide both first aid and patient transportation) and five Mercedes ambulances (used for patient transportation only) at a total cost of € 987 266 were procured and delivered to the first aid stations of Bishkek and Osh city (four reanimobiles and two ambulances and one reanimobile and two ambulances, respectively).

The admission departments of the National Hospital, Bishkek Research Centre of Traumatology and Orthopaedics, Osh Inter-Oblast Hospital and Osh Tuberculosis Hospital were restructured into emergency departments within the project (see Additional annex 10). The Ministry of Health plans to improve the communication and emergency assistance systems of Jalalabat oblast during the second phase of the project (see Additional annex 11).



The United Nations Children’s Fund (UNICEF) is responsible for getting vaccines in a crisis and has fast-track procedures to clear vaccines to enter the country. If necessary, the Department of Extremely Dangerous Diseases will ask the government to release reserves of vaccines. Procedures are in place to transport vaccines by air to crisis areas in case of emergencies; qualified personnel manage the logistical aspects and there is a computerized system for managing and tracking the items (including expiry date, items in stock, and so on). Although there is cold storage and a cold chain at the national level, the subnational level is not as well equipped; health facilities in the rural areas do not have the necessary equipment and there are electricity constraints.

### *2.2.2. Disaster resilient health facilities*

During the Soviet era health facilities were constructed to withstand earthquakes of up to 6.0 point magnitude on the Richter Scale. There are more than 1500 health care facilities in Kyrgyzstan. The National Agency for Construction and Architecture has requested a list from the Ministry of Health of all health facility premises older than 30 years. The Agency has a national research institute that will conduct a structural vulnerability assessment, review the data to decide on priorities and then undertake a costing exercise to determine the budget required to effect structural changes.

The Hospital Association (comprising 87 members – all are inpatient stationary hospitals) works in close collaboration with the Ministry of Health and other international organizations on disaster preparedness of health facilities. The Hospital Association recently conducted a survey of 19 health facilities in Kyrgyzstan using the WHO-recommended *Hospital Safety Index (15)* and reported that the non-structural and – to a lesser degree – functional safety of all assessed hospitals was poor. The overall result of the assessment placed the health facilities in Category B (0.36–0.65) on the index, signifying reduced hospital resilience and safety performance. Furthermore, the Hospital Association reports that there is insufficient training of staff and not enough equipment for crisis preparedness in all hospitals. This implies that intervention measures are needed urgently.

In addition, the Hospital Association, with the support of WHO, has developed guidelines for improving hospitals’ safety index score, methodology on reducing non-structural risks, and a manual on “organization of medical civil protection service in health care facilities”. Workshops on reduction of non-structural risks were also conducted.

There are agreements with electricity supply companies to ensure that hospitals are not affected during the power cuts that occur regularly in Kyrgyzstan, but there is a general lack of back-up systems in many hospitals; for instance, in the National Paediatric Hospital in Bishkek there are no back-up systems for electricity (no generator) or provision of water, although the hospital is a referral hospital of more than 375 beds. When hospitals do have generators they only have the capacity to supply the intensive care unit should electricity supplies be disrupted.

In November 2008 a Flash Appeal was launched by the United Nations Country Team in Kyrgyzstan at the request of the government. One of the reasons for the Flash Appeal was to alleviate the severe energy shortages being experienced by health facilities. Donors responded through the sector-wide approach system that coordinates donor inputs to Kyrgyzstan’s health care system, giving 60 generators to maternity clinics. The United States Agency for International Development (USAID) also donated 59 generators to hospitals to use for emergency care and surgery. However, hospitals with generators face problems with increasing patient referrals from hospitals without generators.

### *2.2.3. Service delivery support functions, logistics and infrastructure*

No emergency telecommunications are available at the health facilities. A few telephone landlines are sometimes available. There is no training on emergency telecommunications equipment. There are vehicles and supplies of fuel in most large health facilities, but the vehicles are old and the fuel supply is low.

#### 2.2.4. Recommendations - pharmaceuticals, medical supplies, equipment and infrastructure

The Department of Pharmaceuticals, Medical Supplies and Equipment should be part of the health-crisis preparedness planning process with a range of responsibilities, including:

- developing and using *The Interagency Emergency Health Kit (14)* to identify the pharmaceuticals, supplies and equipment needed by all health facilities;
- training hospital staff in stock management, forecasting and procurement;
- overseeing inventory and database management of all medical supplies and equipment held in reserve for crisis situations;
- conducting assessments to ensure compliance with quality requirements of all health-crisis-related stocks at the national and subnational levels;
- overseeing a vulnerability analysis of the storage areas, with a focus on ensuring their resilience: sustainability of access to items and supplies should be considered a priority;
- developing strategies to pre-position disaster stocks for potential crises (determined by risk assessment) where capacity surge may be needed at short notice;
- implementing a logistics software package (such as the United Nations logistical support system, LSS) to monitor the flow of medical supplies; this could be installed with the help of WHO.

The Drug Department of Humanitarian Assistance (part of the Department of Pharmaceuticals, Medical Supplies and Equipment) should use *The Interagency Emergency Health Kit* for emergency crisis applications and assistance in coordination with donors. All humanitarian assistance should be available in electronic format upon Ministry of Health or hospital request.

The Ministry of Health should establish a national programme to reduce the vulnerability of health facilities to the effects of natural disasters. In part this could be achieved by building on the initiative of the National Agency for Construction and Architecture and partaking in assessment of health facilities to determine which are the most vulnerable and most in need of strengthening or repair.

The Ministry of Health is encouraged to work with the Hospital Association to:

- ensure the systematic nationwide use of the *Hospital Safety Index(15)*;
- develop urgent action plans for hospitals to ensure the continuity of essential health services at all times and in any circumstances (including maintaining power and water supplies, telecommunications, building safety, and so on);
- review and correct hospital administrative and functional vulnerabilities.

### **2.3. Health information management**

#### 2.3.1. Continuous health risk assessment, surveillance and early warning

Continuous risk assessment is conducted by the Ministry of Emergency Situations; however, the country profile for emergencies and disasters is not yet complete (for example, hazard maps are not complemented by vulnerability maps). Standardized reporting systems between ministries are not well coordinated. The Ministry of Health does not have access to data compiled by the Ministry of Emergency Situations, which is needed to develop a comprehensive health-sector preparedness programme.

The DSSSES operates at all levels across the country. In addition to the national office there are seven oblast centres and 50 rayon and city offices. It has its own vertical reporting system on the epidemiological situation in the country, with information flows from rayon to oblast to national level. The system focuses mainly on communicable diseases and poisons; nutritional problems



and noncommunicable diseases are not systematically taken into consideration (although these are key issues in the country and may become even more important during disasters). Communicable diseases, such as HIV/AIDS and influenza, are monitored by sentinel surveillance.

The IHR requirements for communicable diseases are mostly met, but those for noncommunicable diseases are not. Noncommunicable diseases are the responsibility of the Centre for Health Promotion, but there are no institutionalized working relationships between the DSSSES and the Centre for Health Promotion.

There is no system to simultaneously send an alert to each hospital. In some cases the information and communication capabilities of a rural hospital are so poor that it may not be possible to send an alert. There is no 24/7 information centre in the Ministry of Health and this is an obstacle to information management.

There is early warning system capability, but there is a lack of information exchange between the different agencies (especially between the Ministry of Emergency Situations and the Ministry of Health). Furthermore, the IT and network infrastructure to adequately service the early warning system is weak, especially at the subnational levels.

In 2012, the duty dispatcher service is provided by the air ambulance (sanaviaciya), which works 24/7. Any incident at district or regional level is passed to the duty officer, who in turn reports it to the Head of the Command Post. A mobile platform is available for simultaneous notification of all health care facilities.

The Ministry of Emergency Situations has developed a National Platform for Disaster Risk Reduction in Kyrgyzstan and prepared documents for the unified state duty and dispatch service "112". This will replace the current system where dialling 101 reaches the fire brigade, 102 the police and 103 the paramedic service. Implementation will start in Bishkek and Osh city in 2012. The main objective of this information management system is to ensure close collaboration of republican authorities, local administrations and organizations in emergency and crisis situations.

There is an agreement between the different countries of the CIS to notify one another in case of an emergency or a problem. These systems are, though, not well implemented or applied in most central Asian countries. IHR supports information exchange, but this is not put into effect in all the countries yet.

The Ministry of Health of Kyrgyzstan does not monitor laboratory functions, maintenance or capacity to test potential hazards, particularly environmental, radiological, toxic or infectious hazards. Laboratory surveillance does include water quality and contamination monitoring after floods and landslides, but the information is not available for people after disasters (an average of 43 floods/mudslides annually).

The Ministry of Health and Ministry of Emergency Situations do not monitor food security in disaster-prone areas, even among vulnerable populations and patients who have long stays in health care institutions.

There is an ongoing initiative to improve the reference laboratory capacity in Bishkek and Osh, but problems have been encountered.

- New equipment is being used but there is no sustainability (no guarantee of a continuous supply of reagents, laboratory tests and medical supplies) because of a lack of funding and planning.
- There is a lack of training in new laboratory methods.

- Quality assurance procedures are weak.
- The shipment of samples is difficult because of a lack of agreement with airlines to transport infectious material.
- Laboratory equipment does not always meet the European co-operation for Accreditation or International Organization for Standardization standards.
- Laboratories have not developed SOPs for many bacteriological or toxicological tests. Without SOPs it is difficult to organize training or skills and cost evaluations.

Laboratories in the system have a low level of capability. For example, the laboratories were unable to identify melamine in milk (Kyrgyzstan gets baby food and formula from China); the laboratories learned of the melamine contamination problem through the Internet.

The DSSSES laboratory takes three to four days to identify pathogens in food. Furthermore, this Department reports that there are insufficient staff and resources for crisis situations.

### *2.3.2. Rapid health assessment*

Procedures for rapid health assessment exist on an ad hoc basis. If a crisis occurs, someone from the disaster response coordinator's department is dispatched to the crisis area. There is no system in place for collecting data during disasters. As a result, much information is unavailable, including:

- what data to collect in different types of disaster;
- how and when it should be collected;
- the reporting systems to be used, including specific forms;
- the coordination mechanism to ensure reliability and sustainability of sources of information during disasters.

Not all epidemiological institutions are included in a rapid health assessment; for example, the Centre for Health Promotion is not involved, although this centre could contribute efficiently if used.

### *2.3.3. Recommendations - health information*

The Ministry of Health needs a global and whole-health approach for data management in emergencies. It is important to strengthen the national monitoring system and the early warning mechanism to ensure an early response to any health threat. It is therefore recommended that the DSSSES and the Centre for Health Promotion should work together to establish a surveillance system for communicable and noncommunicable diseases.

Good health information management requires the capacity to acquire, process and disseminate information to all relevant stakeholders at all times. The Ministry of Health is strongly urged to develop this capacity as soon as possible as part of its responsibilities nationally and internationally to facilitate a rapid exchange of information in the event of a crisis. A new 24/7 information management centre should:

- be linked with that of the Ministry of Emergency Situations to ensure a constant and reciprocal exchange of information between ministries;
- be autonomous, in that it should be equipped to operate independently of any outside requirements (such as electricity, telecommunications, and so on) that may be affected in a crisis;
- be linked to multiple information sources (including ambulance dispatch centres, the Meteorological Office, the Ministry of Agriculture, the Ministry of Internal Affairs) to ensure a constant flow of information about any potential crises – international information sources should also be included as appropriate;

- have SOPs to ensure that information management is coordinated in a consistent manner with all partners;
- have standard formats and templates to generate reports for officials in the Ministry of Health and other partners as needed.

The surge and early warning capacity of the DSSSES's laboratories should be strengthened by:

- improving the data management system;
- training of personnel;
- putting in place procedures for diagnosing samples to establish their nature quickly and accurately – these procedures must also be tested regularly;
- establishing protocols to effect a rapid exchange of information with laboratories, including procedures for the rapid sharing of specimens;
- sourcing and installing appropriate modern equipment;
- implementing quality control mechanisms.

The Disaster Preparedness and Response Coordination Department should develop its capacity to perform rapid health assessments through:

- development of rapid health assessment policy, implementation guidelines and investigation procedures;
- systematic training of rapid health assessment teams;
- development of information processes and templates for damage and health needs assessment;
- provision for integrating international damage assessment teams;
- integration of the Centre for Health Promotion as an active partner in building up a national team for rapid health assessment (providing background information, collecting new key data, and so on);
- creation of activation procedures;
- establishment of teams with the appropriate equipment and tools to carry out their tasks in different locations;
- development of a cooperation mechanism for the key stakeholders (especially the Disaster Preparedness and Response Coordination Department, the Centre for Health Promotion and the DSSSES).

WHO can assist in building capacity to perform rapid health assessments.

### **3. Health financing**

#### **3.1. Preparedness financing**

##### *3.1.1. Budget for health-crisis preparedness*

Although there is no set budget for a risk reduction and crisis preparedness programme within the Ministry of Health, funds are allocated on an ad hoc basis each year, based on different requirements for training, planning, simulation exercises, and so on. There is a budget for the Disaster Preparedness and Response Coordination Department that covers staff salaries. Funds can also be reallocated from other budgets as needed. Budgets are not based on risk assessment.

There is no budget for the following areas of risk reduction and crisis preparedness:

- a 24/7 coordination centre;
- staff development;
- monitoring and evaluation (although if a commission is organized through the Ministry of Health and by decree of the Minister then funds can be allocated for monitoring and evaluation);
- structural vulnerability assessment and risk reduction for critical health facilities;
- staff insurance for working in crisis situations;
- critical health facilities insurance.

The Construction Department within the Ministry of Health does not have a budget for reducing the structural and non-structural vulnerability of key health facilities through renovations or repairs. Each hospital has its own budget from which it can make repairs and renovations as deemed necessary by the respective hospital director.

### *3.1.2. Recommendations - preparedness financing*

It is recognized that Kyrgyzstan is a low-income country in transition and under very tight fiscal constraints. Thus, finding additional resources and/or re-prioritizing budgets from other areas will be a challenge.

The Ministry of Health should consider allocating funds from the national health budget to risk reduction and crisis preparedness planning. This should cover expenses relating to human resources, coordination, staff training, information management, simulation exercises, public awareness, supplies and equipment, and monitoring and evaluation.

In addition, funds are needed for a structural and non-structural vulnerability analysis of existing health facilities (including hospitals, laboratories, blood banks and warehouses) and to improve them according to a plan based on the critical importance of the facility. Funding to reduce the vulnerability of health facilities should be a budget priority, as vulnerability reduction has an impact which goes beyond the area of disaster preparedness and response.

## **3.2. Contingency funding**

### *3.2.1. Contingency funds*

There is a contingency fund and its budget is based on a performance analysis of crises from the previous three years. The results of this analysis are evaluated to determine how much is required in the annual budget for the next year – this is called the reserve fund. It takes only one day to allocate resources for crises, as a decree (necessary to release them) can be signed within 15 minutes. Signatures can be obtained from the Minister of Health, the Head of the DSSSES, or the Secretary of State.

If further funds are required there is a mechanism by which financial resources can be accessed from the Mandatory Health Insurance Fund in case of crisis. There is also a system to access resources from the national government's reserve fund and from the president's administration budget.

No survey has been undertaken to determine the availability and suitability of international contingency funds.

### *3.2.2. Recommendations - contingency funding*

The Ministry of Health should conduct a survey to establish the international contingency funds available in case of a health crisis. This can be done in conjunction with the United Nations and

international donors. It is necessary not only to know where such funds exist but also to pre-determine a method to apply for and receive such resources.

## 4. Service delivery

### 4.1. Mass-casualty management

#### 4.1.1. Capacity and capability to respond to health consequences of mass-casualty incidents

Strategic planning for all crises is the responsibility of the Ministry of Emergency Situations. These plans are classified but it is clear that there is a general awareness of the requirement to be prepared for mass-casualty incidents. The Ministry of Emergency Situations can activate these plans and provide surge capacity through its response teams and strategic stores of equipment and supplies (including drugs and medical equipment). However, the assessment team was unable to verify this as both the plans and the store locations are classified.

Although there is some planning for mass casualties in hospitals, which is clearly intended to ensure compatibility with the national disaster plan, the practical aspects of these plans are not fully considered. For example, hospitals in Kyrgyzstan have several admission areas and these are normally small rooms not capable of accommodating more than a few patients; they are not equipped for resuscitation or life-saving procedures (they are mainly used for administrative purposes); there is no plan or system to adapt the rooms for mass-casualty situations; there are no job action sheets<sup>4</sup> or SOPs for the most important procedures; and there is no internal traffic flow management system.

When patients arrive at a hospital, triage to determine which admission area they go to is decided by the ambulance crew. Hospital staff then determine which department or ward the patient should be transferred to. For patients with life-threatening injuries this could be fatal, as other wards and departments can be far from the admission area and, if on a different floor, there could be further complications as elevators often do not work. Furthermore, outside the admission areas traffic can quickly become a problem as there is no system for managing vehicle flow outside the hospital to secure the access roads and signal the triage reception area.

Capacities for extended life-saving procedures are limited, as functioning intensive care units are not available throughout the country. Infection prevention and control practices that protect patients and health care workers from infection risks were recently strengthened in health facilities and referral hospitals.

The history of threat of chemical and radioactive material in this region has strengthened the capacity to respond, but technical equipment and procedures are old.

The system for managing the dead and missing is under review as there are no clear guidelines and no specific equipment or special forms for the management of dead bodies in mass-fatality situations, whether:

- for body recovery and information gathering at that stage;
- for body storage and preservation of evidence;
- for the identification process (especially for visual identification and organization of the viewing area);
- for psychosocial support of relatives.

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<sup>4</sup> These are the written descriptions that provide a checklist for responding personnel in an emergency situation, outlining what they are going to do, when they are going to do it, and who they will report it to after they have done it.

There is a lack of capacity (such as a computerized system) in data management of the dead and missing. There is no system of occupational health for those involved in body handling or in the identification process. No institutionalized coordination mechanism with stakeholders such as the Ministry of Foreign Affairs exists. There is, however, a National Forensics Centre with dedicated staff who are fully aware that the situation needs to be improved. There is also surge capacity for storing bodies.

During 2007–2011 several study tours and training seminars for national EMS specialists were organized within the framework of the Strengthening of Emergency Medical Services in the Kyrgyz Republic, supported by the German development bank KfW Entwicklungsbank. This included development of a training of trainers curriculum on hospital management and emergency care.

During and after the civil unrest in June 2010, Kyrgyzstan also received financial and technical assistance from international partners such as the Russian Federation and WHO to support the management of the health consequences of the conflict. This included providing mental and psychosocial support to affected populations by establishing mental health centres, mobile outreach teams and community-based services, as well as supporting primary health services in the Osh and Jalalabat regions.

#### *4.1.2. Surge capacity for health-system response*

There are plans to scale up operations in case of a crisis. Wards can be assessed quickly to determine which patients should be sent home. Extra beds are available and hospitals are required to have enough essential supplies to last three days. Roles, responsibilities and contact details of the different personnel are part of hospital preparedness plans. Personal protection equipment against communicable diseases is stored at the hospital.

However, the surge capacity of the health facilities is probably largely overestimated; for example, in the National Paediatric Hospital in Bishkek it is supposed that 60% of the total inpatients could be evacuated within two hours, but there is no provision for transport, no formal agreement with the receiving institutions and no system for contacting the families. Contacting relatives is difficult as there are few available telephones in the health facilities. Moreover, although there are simulation exercises once a year there is high staff turnover, so at different times of the year many staff are not trained.

#### *4.1.3. EMS system*

Ambulances are dispatched through a central system and the service can be contacted with a free call by dialling 103. Triage for directing patients is accomplished by the senior dispatcher in conjunction with a doctor; they determine which hospital should receive the patient.

The ambulance service in Bishkek has reserve stocks of material for 100 people and an annual budget to replenish the stocks. Ambulances and dispatch centres are equipped with radios; however, there is no back-up telecommunication system to ensure communication with health facilities, the Ministry of Health or other government agencies in cases where a crisis has neutralised the landline and cellular telephone systems. Furthermore, ambulance dispatch centres around the country communicate with one another by telephone only. The Ministry of Health can issue decrees to other dispatch centres instructing them to work together. This also applies to private ambulance companies.

The German development bank KfW Entwicklungsbank is funding an emergency medical services development programme under the auspices of the Ministry of Health's decree 32 "on measures to improve ambulance and emergency medical care to the population of Kyrgyzstan" of 28 January 2004. The project will improve the organizational structure and management of EMS by establishing

competent emergency departments at territorial and referral hospitals, developing a national and regional coordination and consultation system, and upgrading the medical equipment of emergency departments and specialized units involved in emergency care. The project will also upgrade the EMS information and communication system. Within the framework of the project nine fully equipped Mercedes-Benz Sprinter ambulances have been supplied to the Bishkek and Osh city ambulance stations. After the Osh 2010 events eight ambulances were also donated to hospitals in remote districts of Osh and Jalalabat oblasts through a financial grant from the Government of the Russian Federation.

#### *4.1.4. Recommendations - mass-casualty management*

The Ministry of Health is urged to conduct a hospital vulnerability analysis, in the context of risk management, as a contribution to increasing surge capacity in emergencies and to enhance the coping capacity of hospitals to manage more frequent and more common emergencies (including routine activities for essential hospital services and continuity of delivery of essential health services). Vulnerability analysis should not be conducted as a theory exercise or as a goal per se. The identification of vulnerabilities should be undertaken under the more generic concept of “risk reduction”; thus the vulnerability analysis should aim at identifying not only the existing vulnerabilities but also the “risk treatment options” for taking the appropriate measures (including prevention, mitigation, readiness to counteract or to respond and early rehabilitation).

The Ministry of Health should create a national strategy on hospital vulnerability:

- to identify training needs for conducting vulnerability analysis
- to develop training for assessment teams
- to identify action plans for risk reduction
- to ensure monitoring.

In conjunction with the EMS project to establish competent emergency departments at territorial and referral hospitals, hospitals need to ensure they can respond efficiently to health problems in mass-casualty incidents. Hospital staff should be trained in life-saving techniques such as basic life support, advanced life support, advanced trauma support, and so on. WHO can assist the EMS project in identifying the necessary training courses.

To provide extended life-saving procedures for severely injured victims, designated hospitals need to strengthen their intensive care capacities. This includes the provision of trained staff and adequate equipment to ensure a functioning intensive care unit.

The National Forensics Centre could better develop the national capacity for the management of the dead and the missing by creating disaster victim identification teams. WHO could assist by organizing a national workshop dealing with all key issues for the management of the dead and missing during disasters. This could also be planned as a subregional workshop for several countries of central Asia.

## **4.2. Management of health care facilities**

### *4.2.1. Health facility preparedness*

A committee of senior staff in each hospital works closely with a representative of the civil defence and city health authorities to draw up plans that are compatible with the strategic plans of the Ministry of Emergency Situations. These plans are updated annually, based on simulation exercises, and are classified.



#### 4.2.2. Hospital crisis management (functional capacity)<sup>5</sup>

The Ministry of Emergency Situations is responsible for initiating and executing a hospital evacuation and has developed contingency plans. The assessment team was informed that alternative underground or reinforced hospitals are available – at classified locations – to which hospitals can be evacuated. The Ministry of Emergency Situations has conducted several simulation exercises with the participation of different local authorities at the oblast level, including joint oblast hospitals in Issyk-Kul, Chui and Osh oblasts.

Contingency plans for pandemic are developed and being delivered to other ministries and to subnational levels to involve them in preparedness activities. However, some hospitals believe they do not need pandemic preparedness as they are not communicable diseases hospitals.

The concept of hospital networking is still not yet fully developed (for example, sharing of staff and equipment or dispatching of patients is organized on an ad hoc basis); any redirecting of patients is managed by the Ministry of Health. Communication between health facilities is poor: there is no e-mail, no Internet, and no back-up for telecommunications. Information exchange is always top down; there is no system for hospitals in rural areas to communicate with each other to share ideas.

There is some planning for hospital business continuity but this is unlikely to be effective in a major crisis; some hospitals do not have generators or water storage and there is no emergency telecommunications capability in any hospital. There are no provisions to assess the structural and functional safety of health facilities immediately after any impact.

#### 4.2.3. Recommendations - management of health care facilities

Hospitals need to develop and test their own emergency response plans for different kinds of disaster situations. The Ministry of Health should:

- organize training workshops for hospital emergency planners (at the national level) with the support of WHO – the hospital emergency response plan must be developed through a thorough emergency planning process by each individual institution and according to a well-validated process (under the guidance of the Ministry of Health);
- ensure that hospital plans are based on best international practices and are as transparent as possible to ensure that all personnel are fully aware of their roles and responsibilities and the available support systems;
- instruct hospitals to develop preparedness plans to provide surge capacity to assist other hospitals (for example, noncommunicable disease hospitals are not currently required to have plans to respond to a pandemic);
- ensure that hospital plans will be effective during crises and continue to provide services in worst case scenarios, such as in the case of a failure of electricity or water supply, sewerage system or telecommunications.

Although plans exist to evacuate hospitals, the Ministry of Health should organize – with the Ministry of Emergency Situations and critical hospitals – simulation exercises to test these plans and determine if there are any weaknesses or gaps.

A hospital networking and information system linking hospitals with each other and the Ministry of Health needs to be developed within cities and nationwide, as this will be invaluable during crises.

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<sup>5</sup> A hospital's functional capacity is described as "general organization of hospital management, implementation of disaster plans and programmes, resources for disaster preparedness and response, level of training and disaster preparedness of the staff, and the safety of the priority services that allow the hospital to function" (15).



### **4.3. Continuity of essential health services**

#### *4.3.1. Preparedness planning for essential health services*

There is an ongoing system to monitor public health but there are no specific disaster-related preparedness plans for monitoring specific programmes (such as reproductive health, special nutritional programmes or management of the dead and missing) that could be put into effect during the response. The communicable diseases surveillance and early warning system is robust enough to continue in crisis.

There is no specific plan for HIV patients for pandemic – no antiviral stock and no policy on vaccination. Although training programmes (such as awareness-raising among health care workers and medical staff) are prepared, they have not been conducted since 2008. The HIV programme is not part of the emergency preparedness process.

The ongoing blood service reform is working towards optimizing the quality and safety of blood services performance, and enhancing effective communication between the blood centre and the clinical site. Existing equipment is often obsolete and insufficient, reflecting on preparation, storage and transportation of collected blood. The commitment of blood service staff needs to be supported by updated training, including dedicated personnel for conducting an advocacy campaign for safe blood donation.

Nutrition is not included in the surveillance system. The number of nutritionists and dieticians in the country is low and training is not adequate for crisis situations. A World Food Programme (WFP) survey determined that food insecurity is found in 21% of the Kyrgyz population. There is an agreement between the Ministry of Emergency Situations and WFP that food will be provided by WFP if needed in an emergency. WFP has considered starting its own nutritional monitoring as government data are usually 6–8 months late.

#### *4.3.2. Recommendations - continuity of essential health services*

The country's blood services need to be reorganized on a nationally coordinated basis, fostering the regionalization of processing and testing capacities for collected blood and the subsequent refurbishment needed. There is a need to strengthen quality and safety requirements from donor to recipient (as part of capacity building), as well as implementing close monitoring of patient outcomes. Developing cooperation mechanisms is part of the integration process between the blood service and the various levels of disease prevention and health care. The Centre for Health Promotion could, for example, support the blood transfusion centres with awareness-raising and advocacy campaigns to recruit and retain voluntary non-remunerated regular blood donors.

Training courses for nutritionists are needed to ensure that they are trained to develop nutritional programmes during emergencies, such as intensive feeding programmes or nutritional surveys. WHO could assist in this matter.

# Concluding remarks



While disaster preparedness can be carried out effectively with limited financial resources, this requires strong and effective planning, priority setting and leadership. The WHO multidisciplinary team's assessment of Kyrgyzstan's capacity to respond to public health emergencies highlighted several key areas of focus and recommendations.

Although at the national level policies, procedures and equipment for crisis preparedness and response are well established, the same could not be said for the Ministry of Health of Kyrgyzstan, which is in dire need of funding to modernize and improve overall health-system functions in order to be prepared for crises.

The Ministry of Health faces significant challenges as many of the procedures and systems established for health-crisis preparedness and response have become eroded and/or outdated since the collapse of the Soviet Union. The leaning towards autonomous, vertical command and control mechanisms, coupled with secrecy at many levels of government over crisis preparedness and response, needs to change and become more inclusive and transparent.

The Ministry of Health should cooperate more closely with the Ministry of Emergency Situations, United Nations agencies and other (including local) organizations on disaster preparedness activities. It should also identify and address training needs and gaps among the country's health care workers. Hospital emergency response plans should be developed, and regular updates and drills should be undertaken to maintain a high level of preparedness and response capability.

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# List of annexes

Annex 1 Members of assessment team

Annex 2 List of interviewees

## Additional annexes

(Additional annexes are available on request)

Additional annex 1	Epidemiological situation in Kyrgyzstan 2010–2011
Additional annex 2	Legislation changes in regulation of the Ministry of Emergency Situations
Additional annex 3a	Government resolution 746 “on the single state system for disaster prevention and elimination” of 23 October 2006, replaced by Government resolution 475 “on approval of the regulation of the state system of civil protection” of 22 August 2011 (2011)
Additional annex 3b	Scheme of early warning and response system (2011)
Additional annex 4a	Government resolution 327 “on civil defence” of 17 December 2010
Additional annex 4b	Structure chart of information submission flow
Additional annex 5	Government resolution 1 “on a single information management system in emergency and crisis situations in Kyrgyzstan” of 3 January 2011
Additional annex 6	Ministry of Health decree 91 “on improving the preparedness of the Ministry of Health for emergencies and disasters” of 9 March 2011
Additional annex 7	National Strategy for Comprehensive Safety of the Population and Territories of Kyrgyzstan from Disasters and Emergencies: 2012–2020
Additional annex 8	Guidelines on the organization of medical civil protection services in health care facilities of Kyrgyzstan under the threat and occurrence of emergency situations of natural and anthropogenic causes
Additional annex 9	EMS developments in Kyrgyzstan: programme for 2008–2017
Additional annex 10	Pictures of reconstructed emergency department of the national hospital
Additional annex 11 (2010)	Ministry of Health decree 551 “on emergency department development” (2010)

# Annex 1.

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# Annex 2.

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The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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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.”

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