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ANALYSIS OF PUBLIC HEALTH OPERATIONS, SERVICES AND ACTIVITIES IN THE REPUBLIC OF MOLDOVA

MINISTRY OF HEALTH OF THE REPUBLIC OF MOLDOVA

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Abstract

The public health system in Republic of Moldova has undergone various reforms since 1992, as a part of wider health sector reform. The inherited sanitary-epidemiological services were transformed into a broader public health service. Reorganization of the public health system will continue in the coming years, both at national and regional levels, in order to strengthen the institutional framework, building a system that can address and respond to both communicable and noncommunicable diseases. To evaluate the current Public Health Services and activities and to make recommendations for strengthening their capacities, an overall assessment was carried out during 2011–2012, using the WHO European Region self-assessment tool. This report presents the results of that assessment of Moldovan Public Health Services, carried out as a joint effort of the WHO Regional Office for Europe, the WHO Country Office in Moldova, the Moldovan Ministry of Health, the National Centre of Public Health, and representatives of Centres of Public Health and health institutions within the country. The report addresses the major challenges in the health sector, including demographics, the low level of public health service financing, and the significant burden of noncommunicable diseases and social and health inequalities. It also argues in favour of promoting public health governance and a "Health in all policies" approach through multi- and intersectoral collaboration, including the coordination of public health activities within the health sector and beyond it. The main conclusions and recommendations of the report will serve as a base for the development of the National Public Health Strategy 2013–2020; a policy document for effective interventions to reduce health inequalities and improve population health.

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Disclaimer

The authors' views expressed in this report do not necessarily reflect the views of WHO, the European Union and the Ministry of Health of the Republic of Moldova.

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List of abbreviations

ACP	Agency for Consumer Protection
ASPHER	Association of Schools of Public Health in the European Region
CPESS	Civil Protection and Emergency Situations Service
CVD	cardiovascular disease(s)
DALY	disability-adjusted life years
DHS	Demographic Health Survey
ECDC	European Centre for Disease Prevention and Control
EIA	Environmental Impact Assessment
ENHIS	environmental health information system
EU	European Union
GAVI	Global Alliance for Vaccines and Immunization
GDP	gross domestic product
GYTS	Global Youth Tobacco Survey
HIF	Health Insurance Fund
ICD	International Classification of Diseases
IHR	International Health Regulations
ILO	International Labour Organization
IMF	International Monetary Fund
ISO	International Organization for Standardization
IT	information technologies
KAP	knowledge, attitudes and practices
MDR-TB	Multidrug-resistant TB
MICS	Multiple Indicator Cluster Survey
MMR	measles, mumps and rubella
NAACH	National Assessment and Accreditation Council for Health
NBS	National Bureau of Statistics
NCD	noncommunicable disease
NCHM	National Centre of Health Management
NGO	nongovernmental organization
NCPH	National Centre of Public Health
NEHAP	National Environment Health Action Plan
NHIC	National Health Insurance Company
NHP	National Health Policy
NIP	National Immunization Programme
NNOLC	National Network of Observation and Laboratory Control
OECD	Organisation for Economic Co-operation and Development
PCV	pneumococcal infection

PHC	primary health care
PHS	State Public Health Surveillance Service
PM	Particulate matter (pollution)
SARS	Severe Acute Respiratory Syndrome
SDR	Standardized death rate
SEA	Strategic Environmental Assessment
SEEHN	South-eastern European Health Network
SEI	State Ecological Inspectorate
SMU	State Medical University
SOP	standard operational procedures
STI	Sexually transmitted infection
SVASFAO	Sanitary-Veterinary Agency for Safety of Food of Animal Origin
TB	Tuberculosis
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

Grouping of WHO Member States into regions and subregions by mortality rates among children and adults

Eur-A (very low child and adult mortality): Andorra, Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom.

Eur-B (low child and adult mortality): Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Kyrgyzstan, Poland, Romania, Serbia and Montenegro, Slovakia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Uzbekistan.

Eur-C (low child but high adult mortality): Belarus, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Ukraine.

Executive summary

The Republic of Moldova is a small, landlocked country in south-eastern Europe. It became independent from the former Soviet Union on 27 August 1991 and has since gone through a series of difficult transitions. Currently, the country is engaged in a complex political, economic, social and cultural change, embarking on an ambitious programme of economic reform. After achieving better macroeconomic indicators and higher gross domestic product in the years 2010–2011 the Republic of Moldova became a "lower middle-income" country. This trend of economic growth is supported by the new Government Action Plan for the years 2012–2015.

At present, the Republic of Moldova faces serious demographic challenges – low natural growth, an ageing population and migration of the working-age population. According to unofficial data, more than 30% of the Moldovan population has left to work abroad, which has created a shortage of qualified staff, including in the health care system. However, since 2009 there has been some improvement in certain demographic indicators; for example, the birth rate stabilized at 10.2 per 1000 population, and a reduction in general mortality was registered, from 11.7 cases per 1000 in 2009 to 10.5 cases per 1000 in 2011. Another indicator that confirms positive changes in Moldovan society and in the health system in particular is the infant mortality rate, which fell from 12.1 per 1000 live births in 2009 to 11.0 per 1000 in 2011.

Noncommunicable diseases are the leading cause of death and disability in the Republic of Moldova. They are estimated to account for 87% of all deaths. The main causes of deaths[1] are as follows (WHO Regional Office for Europe, 2012): diseases of the circulatory system (731.1 per 100 000), malignant neoplasms (165.3), diseases of the digestive system (126.2), chronic liver diseases and cirrhosis (102.7), and diseases of the respiratory system (71.8). Along with noncommunicable diseases, incidence rates for communicable diseases, such as TB and HIV/AIDS are quite high compared with European Union countries. Particularly the increasing number of multidrug-resistant tuberculosis cases – is also a significant public health issue. Tobacco consumption and harmful use of alcohol are among the top leading risk factors causing loss of health and premature death in the country.

The Ministry of Health addresses the major challenges in the health sector and promotes the principle of "Health in all policies" through multi- and intersectoral collaboration, including the coordination of public health activities within the health sector and beyond it.

1 Standardized death rate per 100 000, all ages, for the year 2012.

Provision of public health services

Moldova's Public Health Services are offered by an extended network of 37 public health institutions, including the National Centre of Public Health, two municipal and 34 district (*rayon*) Centres of Public Health. Although this arrangement makes services closer and more accessible for the population, it makes uniform development and cost–effectiveness of district Centres of Public Health very difficult.

In 2010, radical reform of public health began in the Republic of Moldova in order to transform the inherited sanitary-epidemiological services in a broader public health service that was better equipped to deal with the current epidemiological profile of the Moldovan population. The new State Public Health Surveillance Service has retained the communicable disease control functions but more emphasis has been placed on noncommunicable disease control, health promotion and disease prevention. The basic structures are now in place, but full implementation is a long-term project. Other public health initiatives currently under way within the Ministry of Health include national programmes on immunization, tuberculosis, HIV, sexually transmitted infections and tobacco control (the latter as part of efforts to follow the WHO Framework Convention on Tobacco Control (WHO, 2003)). A national alcohol control programme was approved in June 2012.

Despite of high burden of noncommunicable and communicable diseases, the budget allocated for the public health service remained unchanged; moreover, its weighting decreased as a proportion of the total budget allocated to the health care system. Inadequate funding of the public health system contributes to slow progress in terms of reforms in this sector.

Surveillance activities in the field of public health are divided among several health institutions and are focused on collecting and analysing data in order to evaluate population health status and activity of health institutions. The existing system does not respond to the current requirements. The system is characterized by data generated to excess at the operational level, and lack of adequate analytical capacity to convert data into relevant and timely information in order to inform the decision-making process at the operational and policy-making levels. Quality control of data is another important issue that have to be highlighted. Collected data do not contain all the necessary background characteristics (such as education levels, ethnic origin, wealth, or income level) in order to identify health inequities and to take into account the health needs of different population groups. Improving quality of data and including categorization by social-economical

characteristics at institutional, regional and national levels will contribute to improve the quality of decision making.

Paper-based reports are still the most common method of reporting data on population health status for most hospitals, primary health and public health centres in the Republic of Moldova. Exception is the surveillance system of communicable diseases. The functional indicator-based surveillance system in the Republic of Moldova is well developed, collecting data regarding communicable diseases. The event-based surveillance system is still in its implementation phase, but it will eventually provide data regarding public health events of a chemical, biological and radiological origin.

Identification of priority health problems and health hazards in the community. Surveillance and control of communicable diseases and public health events are the responsibility of Public Health Services and is done accordingly national legislation. Surveillance encompasses activities relating to the gathering of information relevant for routine detection of biological threats using a nominal case-based and event based system. A weekly and sentinel surveillance systems are set up for monitoring of trend evaluation and forecasting of epidemiological situation. Cases, events and outbreaks are reported in accordance with approved standard definitions. The electronic surveillance system facilitates standardized reporting and yearly notification of cases and events and automatically exchange of data, including with Veterinary Service under the Ministry of Agriculture. Assessment of events at local and national levels is done by the special established rapid response team. No community and hospital surveillance systems for antibiotic resistance and antibiotic usage are in place.

Control of environmental hazards is divided between different authorities with lack of coordination and cooperation. Each authority has its own laboratory network doing analysis of environmental health hazards. Public health laboratory network carries out investigations for the detection and confirmation of public health threats. Equipment in these laboratories is not sufficiently up to date; there is also a lack of human resources, including qualified personnel. Political will to harmonise national legislation with EU legislation and public health sector reforms are the main opportunities to strengthen capacities in health surveillance system, including laboratories and staff.

Preparedness and planning for public health emergencies. Preparing the health system and planning response activities for public health emergencies are the competence and duty of the state. The system for preparedness and response in the event of public health emergencies is structured across three levels – local (community), intermediary (rayon,

municipality) and national levels. The National Extraordinary Public Health Commission is responsible for an integrated approach, applying prevention and management measures, multisectoral mobilization and coordination response in public health threats and emergencies. At rayon level, Centres of Public Health are the designated coordinators for emergency preparedness and response to public health emergencies. Preparedness assessment of the institutional, rayon, and national levels represents a continuous processes, performed by the Ministry of Health and the Civil Protection and Emergency Situation Service.

The system for surveillance of communicable diseases and monitoring of health determinants includes a network of laboratories (National Centre of Public Health and rayon/municipal Centres of Public Health) for the detection and confirmation of radioactive, toxic and biological agents. The capacity of the laboratory network to investigate health threats was improved in the last years, but is still weak, especially in terms of detection and confirmation of toxic and radioactive agents. In terms of legislative and normative aspects the existing system for preparedness, planning and response to public health emergencies needs to be adjusted to international requirements, and in terms of intervention capacities in public health emergencies (human, laboratory, mobile rapid response teams, and so on) it needs to be strengthened.

Health protection operations (environmental, occupational, food safety and other areas). Health protection is an important public health focus, contributing to ensuring the health and welfare of the population. It is an inter- and multisectoral area, requiring the involvement and cooperation of all authorities and interested stakeholders at national and local levels. Strategic programmes on the development of services involved in risk assessment and legislation enforcement – including for laboratories – have been developed and approved by the Government during recent years. The development and harmonisation of legislation is conducted by the responsible authority in cooperation with other interested authorities. Many of the provisions of the newly adopted/approved normative acts lag behind in the area of enforcement.

The main areas of health protection are operational and the system for hazard monitoring in food and goods, in the environment and workplace is functional. The Public Health Service carries out risk assessments of environmental and workplace factors, foods and goods for human health. Insufficient equipment of laboratories and limited training of laboratory staff impede the implementation of the reforms and of the new methods of testing.

Ministries and their subordinated institutions involved in health protection activities cooperate amongst themselves and with local authorities, but the collaboration needs to be improved, both at the level of policy development and at the level of enforcement, monitoring and surveillance of public health protection measures. Improving the collaboration with producers, the private sector and nongovernmental organizations (NGOs) is also crucial.

Disease prevention. The Republic of Moldova has in place a efficient immunization programmes for vaccine-preventable diseases, including vaccination coverage at over 95% against nine infections (tuberculosis; polio; measles, mumps and rubella; viral hepatitis B, diphtheria, tetanus, pertussis), and over 90% for the infection caused by Haemophilius influenzae type b. In 2012 vaccination against rotavirus infection was introduce, and for 2013 the introduction of pneumococcal vaccine is planned.

National strategies on Noncommunicable Disease Prevention and Control, on micronutrient deficiencies prevention and relating to risk factors (alcohol and tobacco) were approved in 2012, and opened up new opportunities for intersectoral collaboration and public involvement in promoting healthier lifestyles, including healthy nutrition and food fortification. Iron and Folic Acid supplementation are provided free of charge for pregnant women, but the efficiency is low.

The screening systems for congenital malformations in pregnant women and newborns are in place. Population screening programmes for cancer and cardiovascular diseases are provided as part of special annual campaigns, supported by the National Health Insurance Company. However, these cover only a small proportion of the population due to the insufficient capacities of medical institutions for secondary prevention measures. Prevention services do not target health inequalities and poor people and people from rural areas have limited access to such services.

Health promotion. The strategic framework on health promotion consists of a national program on health promotion and specific activities within various health programmes and action plans. Information materials on health education are developed sporadically, to an insufficient extent, by organisation implementing individual national and regional projects. These materials address only few public health problems (TB, HIV/AIDS, and reproductive health, for example). International organisations and donor countries to Republic of Moldova are important contributors to health promotion activities. At the local level, health promotion activities such as lectures, training sessions, and competitions and so on are organized by health education specialists from rayon and municipal Centres of

Public Health on World Health Events (Days/Weeks/Months). Resources provided for health promotion are insufficient and health workers are less motivated to promote health.

One of the highest priorities in the reorganization of the Public Health Services is to strengthen health promotion capacities in all Centres of Public Health, including staff training, establishing collaboration with civil society and media, and involving specialists from different sectors (education, local authorities).

Assuring a competent public health and personal care workforce. Human resources development is one important component for providing public health services and quality health care. The Republic of Moldova has long faced the problem of ensuring competent staff in public health – broadly speaking; there are an insufficient number of health professionals, in particular certain specialists. The number of physicians and nurses working in public health and health care institutions dropped dramatically from 1994 to 2012, posing a major challenge for the health system.

In the same time, centralised education and postgraduate continuous education system secures uniform standards for public health and health care education and specialisation. The School of Public Health Management under the State Medical and Pharmaceutical University contributes to the further education of highly skilled public health professionals, including medical and non-medical professionals, offering a Master's degree in Public Health Management and "train the trainer" courses. Health and Pharmaceutical Education Strategy was approved by the Government and the related action plan has been approved by the Ministry of Health in 2012. Further improvements in strategic planning of human resources for health and human resources management, as well as curricula development for public health workforce are priorities for the Ministry of Health.

Core governance, financing and quality assurance for public health. Good governance in public health that is aiming to bring together administrative stakeholders and society (citizens, NGOs, industry, etc) to plan, develop and implement policies directed to improve health and living conditions for all people is one of the main public health operations. Some steps have been done to improve the governance in public health such as establishing intersectoral working groups for the development of national policies, public consultations of the drafted documents, creating coordination councils for implementation national programs, but still deficits were identified during the evaluation. Among them are weak coordination and collaboration between different institutions and agencies, weak analytical capacity, lack of valid data on population health, lack of information regarding health inequities that are key elements for decision making process. To strengthen the

role of public health and permanently establish a system for assessing the impact of policies on health, it is necessary to provide adequate human and financial resources. This would improve monitoring and evaluation of policies and programmes, and create "expert starting points" for decision-makers.

Communication for public health. Communication, information and education activities for public health are fragmented and not well developed. Some activities are implemented by the Ministry of Health through health institutions, other communication activities are implemented in partnership with other ministries and departments, NGOs, educational institutions, local authorities, and so on. Communication strategies in specific fields are developed and implemented with the financial support of international organizations. There are limited capacities (financial and human) at national level to develop, monitor and assess such strategies. Currently the country has no well-developed curriculum for communication in health areas, for initial and continuous training of medical workers and other categories of specialists (such as mass media, community leaders, teachers, and so on), exception is module on communication for health that is taught in the SMU's School of Public Health Management, but the number of trained individuals is limited. To start improving the communication in public health, incorporation of public health communication discipline and training of health promotion specialists and other groups of specialist have to be considered.

Public health related research. The active use of research evidence in the design of policy and the public sector's capacity to collect, analyse and disseminate health information are important in this respect. In recent years, the national authorities have become more aware of the importance of research for rapidly developing public health. Nevertheless, shaping and targeting policy are not among the explicit or specific aims of research, and population health is not a specified research area in these fields.

Although many research projects are implemented by different institutions and across various sectors of public health and a broad range of health fields, insufficient coordination and collaboration between major national health institutions limits the actual utilization of such projects. Strategic planning is needed to foster efficiency of research in public health.

1. Aim and methods

1.1 Aim

The aim of this report is to present results of the evaluation of the Public Health Services in the Republic of Moldova based on essential public health operations, and thus to contribute to developing a conceptual framework for strengthening public health capacity in the country. According to the Law on State Surveillance of Public Health of 2009 (10/2009), the Public Health Services are defined as activities carried out by the health sector, designed to promote population health, prolong life and prevent disease.

The evaluation results enabled the system's strengths and weaknesses to be identified, and priorities to be established for the public health system. As such, the process contributed to the development of a National Public Health Strategy for the Republic of Moldova.

1.2 Methodology of the evaluation

The evaluation of the Public Health Services in the Republic of Moldova was a joint effort between the WHO Regional Office for Europe, the Moldovan WHO Country Office, and many actors from health care and public health institutions.

As a basis for the evaluation of the activities of the Public Health Services, a comprehensive self-assessment tool was used, comprising 10 essential public health operations (see list at the end of this section). A Task Force Group created by the Moldovan Ministry of Health was responsible for evaluating public health across all operations during 2011. The Task Force Group members were trained on how to apply the self-assessment tool. Findings were presented and discussed within the framework of two workshops that were carried out in April and December 2011 and reviewed by an expert group. International experts were convened at both workshops to discuss the evaluation results and agree on the recommendations. Outcomes of the evaluation of the Public Health Services will be used as a basis for developing the National Public Health Strategy for the Republic of Moldova.

The 10 essential public health operations used in the Republic of Moldova evaluation are listed here.

1. Surveillance of diseases and assessment of population health
2. Identification of priority health problems and health hazards in the community
3. Preparedness and planning for public health emergencies
4. Health protection operations (environmental, occupational, food safety and others)
5. Disease prevention
6. Health promotion
7. Assuring a competent public health and personal care workforce
8. Core governance, financing and quality assurance for public health
9. Core communication for public health
10. Public health-related research

2. Country description

2.1 Political background

Moldova is a parliamentary republic consisting of 32 districts, two municipalities and two autonomous territories. The Parliament is made up of 101 members who are elected every four years. The Cabinet of the Government consists of 21 members, including the Prime Minister who is the head of the Government, four deputies and 16 ministers (of Economy; Finance; Justice; Internal Affairs; Foreign Affairs and European Integration; Health; Education; Environment; Transport and Road Infrastructure; Agriculture and Food Industry; Labour, Social Protection and Family; Culture; Youth and Sport; Information Technologies and Communications; Defence; and Regional Development and Construction). Administrative issues in the Government are conducted by the State Chancellery. The new Government, which formed on 14 January 2011 declared membership of the European Union (EU) as a priority.

Moldova is a fairly centralized country. Financial mechanisms at the local level are lacking and the majority of government activities are implemented with central budget support. Health and social policies are developed by the Ministry of Health and the Ministry of Labour, Social Protection and Family, approved by Parliament and Government and implemented by central and regional (municipal and *rayon*) institutions. All institutions of the State Public Health Surveillance Service (PHS, which includes the National and *rayon*/ municipal Centres of Public Health) are financed mainly from the state public budget (70%) and partially from paid services (30%), including services supported by the National Health Insurance Company (NHIC). These institutions do not receive any contribution from local budgets. Medical primary health care (PHC) institutions and hospitals are financed mainly by the Health Insurance Funds (HIFs) under the NHIC. Local public authorities are responsible, as co-founders, for supporting the maintenance of PHC institutions and hospitals (in terms of infrastructure) and they are fully responsible for the functioning of social institutions, including schools, preschools, social centres and hospices.

2.2 Socioeconomic conditions

According to the World Bank ranking (World Bank, 2012a), the Republic of Moldova remains one of the "poorest countries in Europe", even after the slight economic growth that has been achieved since 2010. According to data from the National Bureau of Statistics (NBS), nominal gross domestic product (GDP) in 2010 was 71 849 million Moldovan lei (around US$ 1487 million), and has increased in real terms by 6.9% since 2009 and 64.8% since 2000. GDP per capita in 2010, according to the International Monetary Fund (IMF), was US$ 2959. Indicators for both public finance and external trade have improved during recent years, but inflation persists and is highly influenced by external factors such as food, gas and energy price increases. The indicators related to industrial goods and agricultural production, volume of investments in fixed capital, retail sales volume, services volume, and so on have registered continuous growth since 2000.

A significant reduction was recorded in poverty levels in 2010 compared with previous years, but poverty is still rife. The share of poor people with consumption below the absolute poverty line (on average 1015.9 lei per month per person) was 21.9%. About 80% of all poor people live in rural areas.

Income is unequally distributed among the various social groups and regions. Significant differences were established in terms of the incidence of poverty by regions. The poorest region in the Republic of Moldova in 2010 was the centre, followed by south and then the north. Inequality in consumption expenditure, which can be measured by the Gini coefficient,[2] declined slightly from 0.380 in 2000 to 0.309 in 2009, but remains high (Ministry of the Economy, 2011).

Poverty continues to affect the most vulnerable categories of the population: large households of five or more members; households with three or more children; households living on income from agricultural activities; people lacking higher education or professional skills; and the elderly.

Average monthly wages in the Republic of Moldova increased from 1318 lei (US$ 110) in 2005 to 2972 lei (US$ 247) in 2010. Most income is used to fund basic household consumption, consumer durable goods, purchases relating to housing, and debt repayment. Although the labour market is improving, unattractive working conditions and low wages are still the main push factors encouraging people to migrate for work.

2 The Gini index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution (World Bank, 2012b).

Table 2.1. Unemployment and employment rates, 2000–2011

Year	Unemployment rate (%)	Employment rate (%)
2000	8.5	54.8
2001	7.3	53.7
2002	7.3	53.3
2003	7.9	47.5
2004	8.1	45.7
2005	7.3	45.4
2006	7.4	42.9
2007	5.1	42.5
2008	4.0	42.5
2009	6.4	40.0
2010	7.4	38.5
2011	6.7	39.4

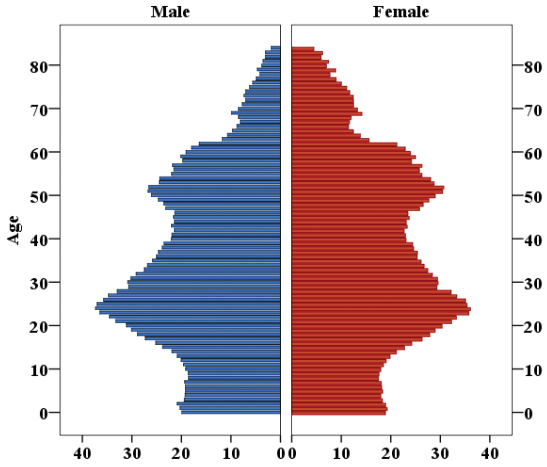
Source: NBS, 2012.

According to NBS data (see Table 2.1) the rates of both unemployment and employment are decreasing, with the exception of unemployment rates since 2010. This can be explained by an increasing number of people who are looking for work abroad or working informally.

2.3 Demographic characteristics

NBS data show that the population of Moldova in 2011 was 3 560 430, comprising 48.1% men (1 712 106) and 51.9% women (1 848 324). The population density is 111.2 people per square km. The population has declined since 1989 due to high emigration and a low birth rate. The population age structure (Fig. 2.1) shows the characteristic process of demographic ageing, which is the predominant trend in most countries in Europe and in particular in eastern Europe. This is mainly due to the decreasing birth rate, which has caused a reduction in the absolute and relative young population and, to a lesser extent, by increases in average life expectancy. Urbanization is lower than in Europe as a whole. NBS data show that in 2010, 58.6% of the population lived in rural areas and 41.4% urban. This proportion has not changed since the early 2000s.

Fig. 2.1. Population structure of the Republic of Moldova, 2010

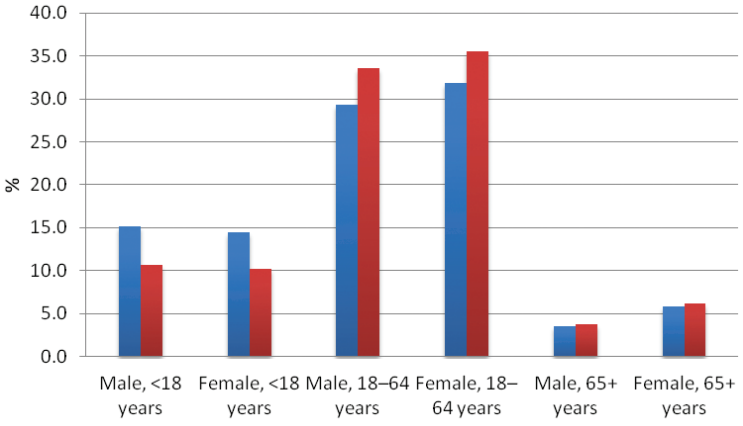


Source: NBS, 2011b.

The ethnic composition of Moldova in 2004 (latest census data) reveals that the majority of the population is Moldovan or Romanian (78%), followed by 8% Ukrainian, 6% Russian, 4% Gagauz, 2% Bulgarian and 1% other. The overwhelming majority of Moldovans are affiliated to the orthodox religion.

Compared with the year 2000, the share of young population (0–18 years) in 2011 has fallen from 29.6% to 20.9% and the proportion of elderly people (65 years and over) has slightly increased from 9.3% to 10.0% (Fig. 2.2). If the trends continue, the proportion of elderly individuals will increase and eventually exceed the proportion of young people; the migration process of people of working age will enhance the ageing process.

Fig. 2.2. Distribution of Moldova's population by age and sex, 2000 and 2011



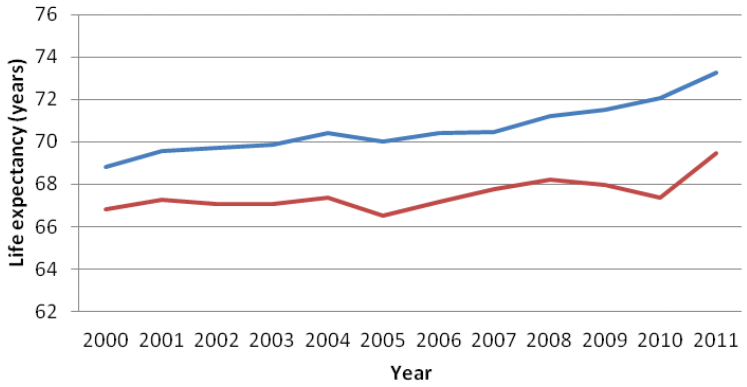
Source: NBS, 2012b.

2.4 Life expectancy

Life expectancy in Moldova is one of the lowest in Europe. During recent years a small improvement has been registered in life expectancy, for both men and women.

Average life expectancy at birth in 2011 was 65.0 years for men and 73.4 years for women. It increased in 2011 compared to 2000 by only 1.7 years. There is a significant disparity in life expectancy between both men and women, and between urban and rural areas (Fig. 2.3 and Fig. 2.4). The average life expectancy at birth in 2010 in urban areas was higher by five years than in rural areas and the trend indicates that this discrepancy is likely to increase in the near future, if no action is taken to counter it.

Fig. 2.3. Life expectancy at birth in the Republic of Moldova by area, 2000–2010



Source: NBS, 2012.

Fig. 2.4. Life expectancy at birth in the Republic of Moldova by sex, 2000–2010

Source: NBS, 2012.

3. Health status of the population

As a country in transition, Moldova has the double epidemiological burden of communicable and noncommunicable diseases (NCDs). Since becoming an independent country, a constant decrease in the incidence of communicable diseases has been noted due to the implementation of disease control and health promotion measures. An exception to this trend is the case of tuberculosis (TB) and HIV/AIDS, for which incidence rates remain high. Incidence rates for NCDs have remained consistently high since the early 2000s (Table 3.1).

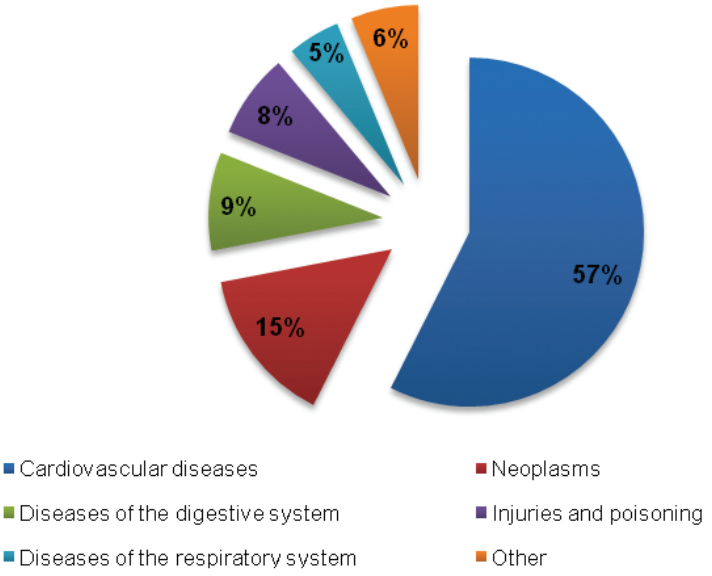
Table 3.1. Selected health indicators in the Republic of Moldova, 2002–2010

	2002	2003	2004	2005	2006	2007	2008	2009	2010
NCDs, SDR per 100 000, all ages									
Diseases of the circulatory system	855.7	857.5	805.2	858.4	786.4	849.3	716.5	715.2	731.1
Malignant neoplasms	153.3	155.5	158.4	161.24	166.2	161.9	164.7	168.4	165.3
Diseases of the respiratory system	91.7	96.7	81.2	92.6	83.6	78.8	74.3	69.6	71.8
Diseases of the digestive system	126.7	129.4	130.9	143.1	134.2	127.4	118.5	120.7	126.2
Chronic liver diseases and cirrhosis	100.9	103.8	104.7	114.25	107.1	103.0	96.7	96.1	102.7
Diabetes	10.6	11.7	9.9	11.6	12.1	11.4	10.1	9.6	10.7
External causes, SDR per 100 000, all ages									
Transport accidents	14.8	15.2	15.5	14.4	13.6	15.9	15.2	12.9	12.4
Injuries and poisoning	106.1	110.6	107.6	113.8	109.0	103.7	100.2	97.2	103.0
Selected alcohol-related causes	217.2	223.0	221.6	239.0	227.1	219.2	207.4	205.2	217.9
Selected smoking-related causes	922.3	930.8	862.4	917.2	838.7	791.9	755.1	748.2	764.4
Communicable diseases, incidence per 100 000, all ages									
TB	88.9	100.1	133.3	143.0	139.1	135.7	124.4	121.9	115.7
HIV	4.9	7.1	9.9	14.8	17.3	20.4	22.2	19.7	-
Viral hepatitis B	14.5	13.4	12.5	11.4	-	6.6	5.5	4.3	2.9

Source: WHO Regional Office for Europe, 2012.

NCDs are estimated to have accounted for 87% of all deaths in 2011. The main causes of death are cardiovascular diseases (CVD) (57%), cancer (15%), chronic gastrointestinal diseases (9%), chronic respiratory diseases (5%), injuries and poisoning (8%), diabetes (1%) and others (5%) (see Fig. 3.1). A specific feature of the mortality structure of the Moldovan population is extremely high mortality from cirrhosis (8% out of the 9% of chronic gastrointestinal diseases), without difference by sex. Low incomes, alcohol and tobacco are the key health determinants in this regard, and mortality and morbidity from these factors account for a sizeable burden on society.

Fig. 3.1. Distribution of the leading causes of death in the Republic of Moldova, 2011



Source: NBS, 2012.

The principal health concerns include low life expectancy, along with diseases associated with ageing and with demographic trends in the population. Future changes in the structure of the population will lead to an increase in the elderly populations requiring health and social care. It is also expected that there will be an additional need for health services responding to cardiovascular, chronic gastrointestinal diseases and cancer diagnosis and treatment. A large preventive potential for cardiovascular and respiratory diseases – as well as accidents – is also foreseen.

The disability-adjusted life years (DALY) index measured by WHO in 2002 presents the 10 top risk factors that contribute to disease burden (WHO, 2006). For men the three main risk factors that account more than half of the total DALYs (53.4%) are: alcohol consumption, tobacco use and arterial hypertension. For women, the top three risk factors are arterial

hypertension, high cholesterol and alcohol consumption, accounting for 41% of the total DALYs.

The infant mortality rate rose in the early 1990s from a low of 18.3 per 1000 live births in 1992 to 22.9 per 1000 in 1994. The trend has since been reversed, and in 2011 it reached 11.0 per 1000 live births (see Table 3.2). Since 2010, the infant mortality rate has shown a tendency towards reduction and during the period 2011–2012 it is lower compared to that of CIS countries, but higher compared to the 27 EU countries.

Table 3.2. Infant mortality rate per 1000 live births by main causes of death in the Republic of Moldova, 2003–2011

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Infant mortality rate	14.4	12.2	12.4	11.8	11.3	12.2	12.1	11.8	11.0
Main causes of death									
Certain conditions originating in the perinatal period	4.5	3.8	4.2	3.9	3.9	4.6	4.9	4.7	4,6
Congenital and chromosomal malformations	3.9	3.9	3.8	3.6	2.8	3.9	3.3	3.5	3,0
Diseases of the respiratory system	3.0	2.1	2.0	2.2	1.8	1.8	1.6	1.6	1,3

Source: NCHM, 2011.

The maternal mortality rate fell from 52.9 deaths per 100 000 live births in 1993 to 15.8 per 100 000 in 2007; however, two peaks in growth rates were registered in 2008 and 2010 (see Table 3.3). In 2010 maternal mortality as an indirect obstetrical risk was identified in a half of the deaths, while five of them were reported as a consequence of pandemic influenza. The difference between maternal mortality rates in urban and rural areas is almost 2-fold; it can be explained partially by the provision (and quality) of essential services and the unequal distribution of resources.

Table 3.3. Maternal mortality rate per 100 000 live births by main causes of death in the Republic of Moldova, 2003–2011

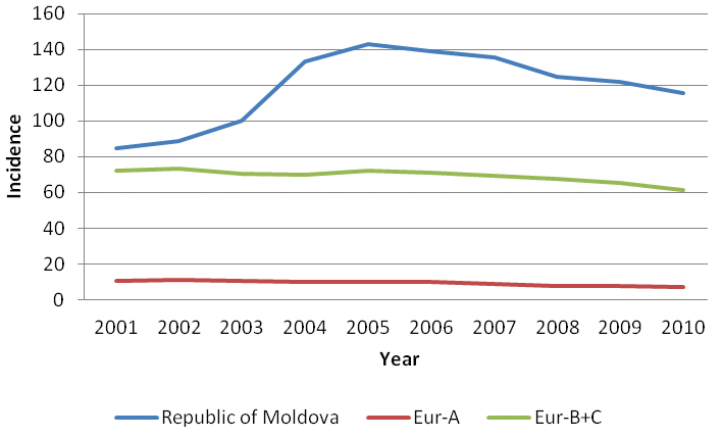
	2003	2004	2005	2006	2007	2008	2009	2010	2011
Maternal mortality rate	21.9	23.5	18.6	16.0	15.8	38.4	17.2	44.5	15.3

Source: NCHM, 2011.

3.1 Control of communicable diseases

Along with NCDs, incidence rates for communicable diseases, such as TB and HIV/AIDS are quite high compared with EU countries. Since the mid-2000s, the TB incidence rate has dropped, but the Republic of Moldova still has one of the highest incidence rates in Europe (115.7 in comparison with 61.2 in Eur B+C countries and seven in Eur A countries) (2010 figures; see Fig. 3.2). [3] The Republic of Moldova is among 18 "high-burden" countries globally for in terms of multidrug-resistant TB (MDR-TB) incidence; it was estimated that in the year 2010, 44% of TB patients are infected with MDR-TB (WHO Regional Office for Europe, 2012). TB treatment in the Republic of Moldova shows a negative trend, whereby only half of patients complete their treatment.

Fig. 3.2. TB incidence per 100 000 population in the Republic of Moldova and various European countries, 2001–2010



Note: Eur-A and Eur-B+C countries are defined according to WHO groupings (see List of abbreviations for further details).

Source: NBS, 2012.

There has been a steady increase in the number of newly reported HIV cases since the mid-2000s and a slight decrease in 2009 (see Table 3.4). More than half of the newly reported cases are sexually transmitted, and women account for the majority of these.

Table 3.4. Communicable diseases, incidence per 100 000 population, all ages, 2002–2010

	2002	2003	2004	2005	2006	2007	2008	2009	2010
TB	88.9	100.1	133.3	143.0	139.1	135.7	124.4	121.9	115.7
HIV	4.9	7.1	9.9	14.8	17.3	20.4	22.2	19.7	-
AIDS	0.44	1.27	1.61	1.67	2.59	6.09	2.55	7.32	-
Viral hepatitis B	14.5	13.4	12.5	11.4	-	6.6	5.5	4.3	2.9

Source: WHO Regional Office for Europe, 2012.

3 See the List of abbreviations at the start of the report for the grouping of WHO Member States into regions and subregions.

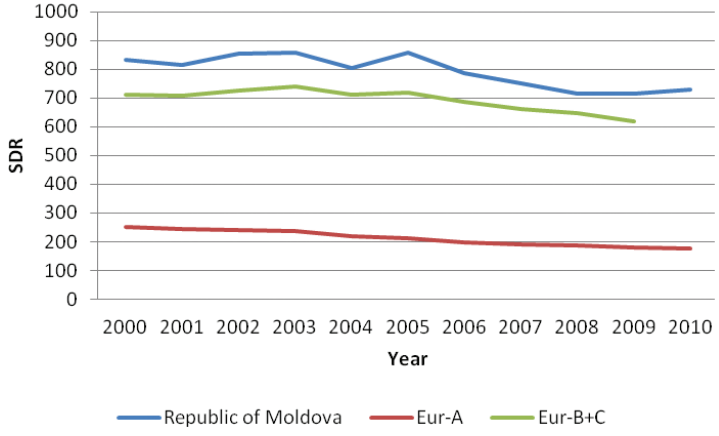
According to national data, the rate of hospital infections is very low. Of the overall number of nosocomial infections, 51.2% are recorded in maternity departments, 44.6% in hospitals with a surgical profile and 4.2% in those with therapeutic profiles.

3.2 CVD

CVDs are the leading cause of death in the Republic of Moldova, comprising around 57% of total mortality. Among the countries of the WHO European Region, the Republic of Moldova takes second place after Ukraine for having the highest standardized death rate (SDR) from diseases of the circulatory system (WHO Regional Office for Europe, 2012). People of working age (18–62 years) account for 26% of deaths related to circulatory system diseases. The most frequent cause of death resulting from CVD is myocardial infarction (heart attack), which constitutes 6.3% of the total number of deaths caused by CVD across all age groups, and 20% among the population aged 18–62 years.

Since the mid-2000s a small decrease in the deaths from CVDs has been recorded (see Fig. 3.3). It can be partly explained by active intervention in hypertension control, such as implementing screening measures, and the NHIC's coverage of a proportion of the cost of hypertension treatment medications.

Fig. 3.3. SDR per 100 000 population from diseases of the circulatory system, all ages, in the Republic of Moldova and various European countries, 2000–2010 (or latest available year)



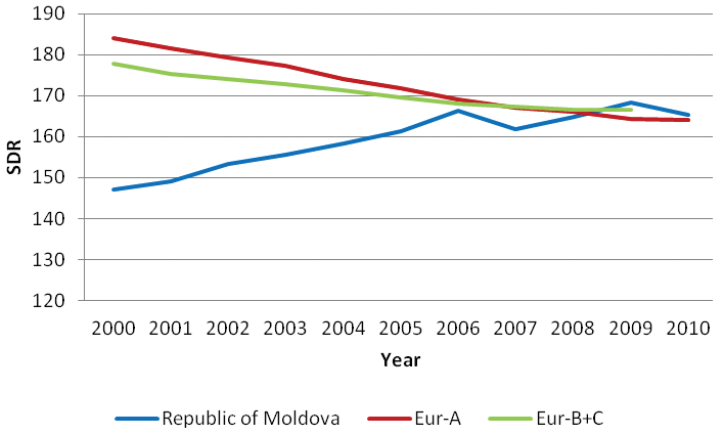
Note: Eur-A and Eur-B+C countries are defined according to WHO groupings (see List of abbreviations for further details).

Source: WHO Regional Office for Europe, 2012.

3.3 Cancer

Cancer is the second leading cause of death after CVDs, accounting for 15% of overall mortality in the Republic of Moldova. The SDR from malignant neoplasms in 2010 (165.34 per 100 000 population) was in the mid-range among the countries of the WHO European Region; it was almost equal to those from group Eur-A (164.02 per 100 000). Nevertheless, the general trend tells a different story (see Fig. 3.4). Whereas the SDR from malignant neoplasms in Eur-A countries is decreasing, in the Republic of Moldova it is increasing.

Fig. 3.4. SDR per 100 000 population from malignant neoplasms, all ages, in the Republic of Moldova and various European countries, 2000–2010 (or latest available year)



Note: Eur-A and Eur-B+C countries are defined according to WHO groupings (see List of abbreviations for further details).

Source: WHO Regional Office for Europe, 2012.

According to the data from the National Institute of Oncology the most frequently diagnosed types of cancer in females are breast cancer (22.1%), followed by colorectal cancer (11.1%); in men these are respectively lung (17.7%) and colorectal cancer (14.2%).

3.4 Smoking

Traditionally, smoking has not been widespread in the Republic of Moldova. However, probably because of fashion, relatively low prices of cigarettes and aggressive marketing by tobacco companies, access to tobacco products and their consumption have increased. The results of the Moldova Demographic and Health Survey 2005 show that there is a significant difference in smoking prevalence among men and women: 51% of men and 7%

of women stated that they smoke. Smoking is more common among men in rural areas (53%) than in urban areas (49%) (NCPM Moldova & ORC Macro, 2006). In the case of women, however, the situation is reversed: 2% smoke in rural areas and 14% in urban areas. In 2010, there was a decline in tobacco consumption among adults: male consumption decreased from 51% to 34% and female from 7% to 2% (NBS, 2011a).

The share of smokers correlates with socioeconomic status, but the influencing factors differ for men and women. A higher prevalence of smoking is recorded among men from poor households (60%) and those with a lower level of education (54.1%), while in the case of women, the situation is reversed: smoking prevalence is higher among women from wealthier households and those with a higher level of education. In terms of the number of cigarettes smoked per day, 85% of men and 40% of women smoke 10 or more cigarettes per day (NCPM Moldova & ORC Macro, 2006). The results of the Moldova Demographic and Health Survey 2005 show that there are significant differences in the inequality index with regard to smoking, assessed by level of education and economic welfare.

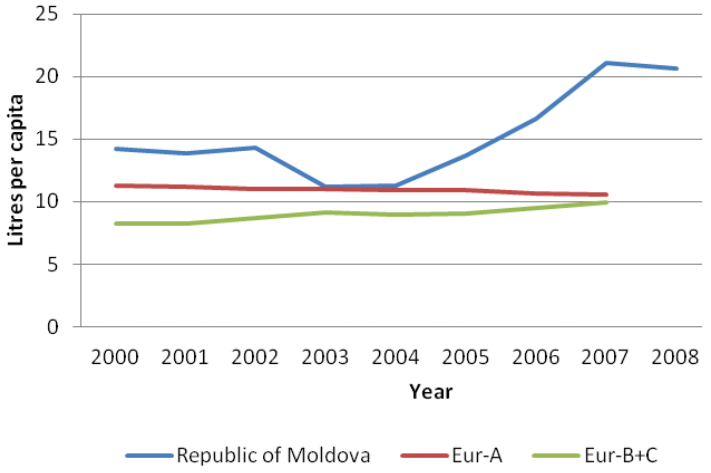
3.5 Harmful alcohol consumption and cirrhosis

Hazardous alcohol use is one of the most important social and health concerns at national level. A fairly large proportion of the adult population of the Republic of Moldova consumes alcohol. According to data recently published by WHO, the adult population (aged over 15 years) of the Republic of Moldova consumes the highest quantity of pure alcohol per capita globally (WHO, 2011), amounting to 18.22 litres per capita.

Within the period 2000–2008, alcohol use in the Republic of Moldova remained at a high level in comparison with countries from the group Eur-A, as well as Eur-B+C [4] (see Fig. 3.5), registering a decrease during the period 2003–2004 and an increase in alcohol use since 2004.

4 See the List of abbreviations at the start of the report for the grouping of WHO Member States into regions and subregions.

Fig. 3.5. Pure alcohol consumption at age 15+ years in selected countries, 1996–2008 (or latest available year)



Note: Eur-A and Eur-B+C countries are defined according to WHO (see List of abbreviations for details).

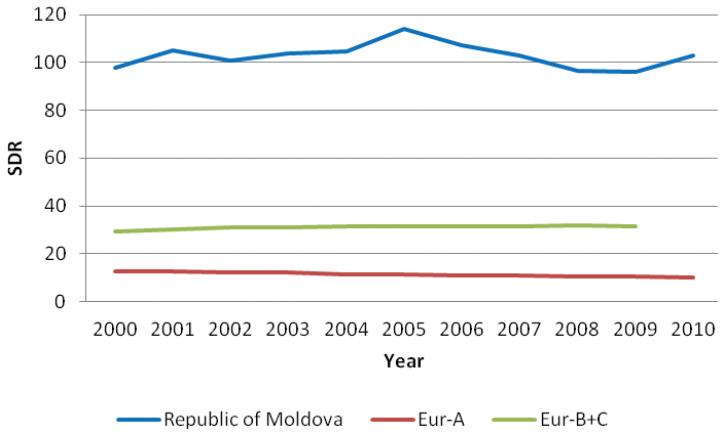
Source: WHO Regional Office for Europe, 2012.

The results of the Moldova Demographic and Health Survey carried out in 2005 (NCPH Moldova & ORC Macro, 2006) revealed that 59% of women and 81% of men had consumed at least one alcoholic drink [5] during the month preceding the study. Of the 81% of men who reported consuming at least oone alcoholic drink during the month preceding the survey, only 7% of men consumed alcohol once a month and none did it less frequently than once a month. In total, 17% of men reported daily or almost daily consumption of alcohol and 41% consumed alcohol at least once a week.

The Republic of Moldova has the highest rate of deaths from chronic liver diseases and cirrhosis in Europe (see Fig. 3.6). Chronic hepatitis and cirrhosis caused 3533 deaths, or 99.2 deaths per 100 000 population in 2010, constituting almost 10% of total deaths.

5 A standard alcoholic drink was considered a bottle or a pint of beer (330–500 ml), a glass of wine (50–200 ml), a glass of liqueur, rachia or whiskey (50 ml).

Fig. 3.6. SDR per 100 000 population from chronic liver diseases and cirrhoses, all ages, 2000–2010 (or latest available year)



Note: Eur-A and Eur-B+C countries are defined according to WHO (see List of abbreviations for details).

Source: WHO Regional Office for Europe, 2012.

3.6 Health equity

Health and health equity are important to a nation's sustainable economic, social and human development. Differences in health status and in the distribution of health resources between different population groups lead to health inequities.

The major challenges Moldovan society is facing include poverty and a lack of access to health education, quality health care services and decent public services. Low incomes, alcohol consumption and tobacco use are the key health determinants, and morbidity and mortality from these factors account for a sizeable burden on society.

The Government addresses health and the social determinants of health in the Governance Programme for 2011–2014 entitled "European integration: freedom, democracy and welfare".

The health priorities, including their social determinants are:

- carrying out multisectoral activities to influence the determinants of health (reducing discrepancies between rural and urban areas, intensifying community efforts in promoting a healthy lifestyle, reducing the risks of occupational, living and social environments, and so on);

- upgrading PHC for family and community;
- reorganizing and reorienting hospital health care to the needs of the population;
- implementing programmes to reduce the impact on health of micronutrient deficiencies, tobacco consumption, harmful alcohol consumption and illicit drug use by undertaking complex cross-sectoral measures;
- supporting the development and implementation of national public health programmes to reduce the burden of NCDs;
- wide participation of all health sector partners in order to improve population health.

4. The institutional structure of public health

Before independence in 1991, the Republic of Moldova inherited the Semashko health care system model from the former Soviet Union. Since then, the country has experienced ongoing reform of the health system. Fig. 4.1 presents an overview of the health system. Mandatory health insurance was introduced nationwide and has been operating since 1 January 2004. The health care system is funded mainly through the NHIC. All service providers for emergency, primary, secondary and tertiary levels contract directly with the NHIC for funding, whereas the state PHS – which includes the National Centre of Public Health (NCPH) and *rayon*/municipal Centres of Public Health – are subordinate to and directly financed through the Ministry of Health.

Primary and secondary health care, as well as the state PHS have been reorganized and consolidated. At present, PHC is based on the general practice model, with family doctors. At *rayon*/municipal levels there are 49 centres of family doctors (35 in districts, one in Balti and 13 in Chişinău municipality). Depending on the number of population at the community level, there are health centres with 3–4 family doctors, offices of family doctors with one family doctor, and health offices without physicians. Population coverage by family doctors is insufficient in rural areas. The ratio of family doctors per 1000 people is 10 times lower in rural areas, with 15% of villages having no family doctor at all.

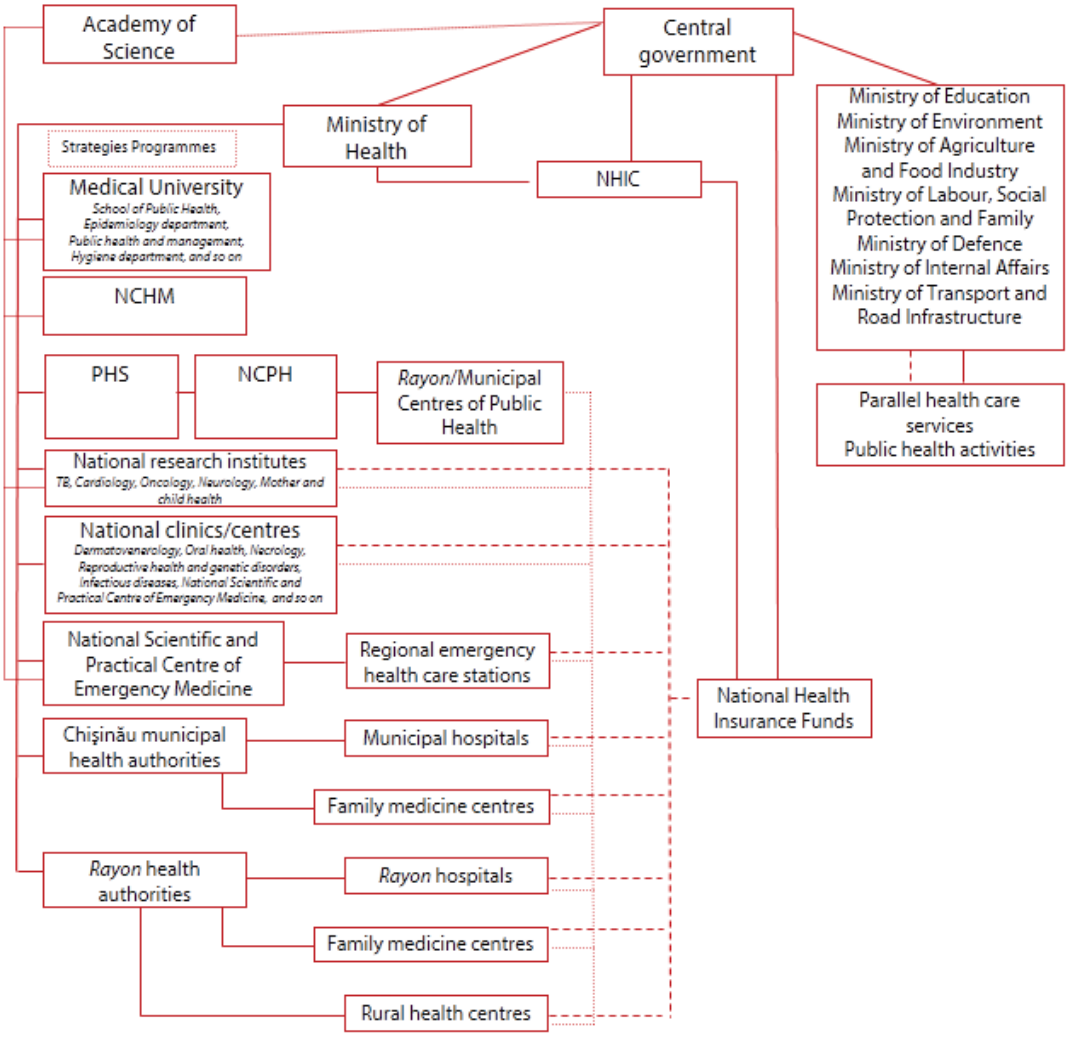
In Moldova there are 82 hospitals, almost half of which are in Chişinău municipality (56% of all beds). The distribution of beds by type of hospital is as follows: national hospitals, 8283 beds (36.4%); municipal hospitals, 3550 beds (16.0%, including 12.0% in Chişinău municipality); district hospitals, 8005 beds (37.6%); departmental hospitals, 1979 beds (9.0%); private hospitals, 204 beds (1%). There is duplication and overlapping of services and insufficient use of existing beds, resulting in increased maintenance costs. For these reasons, hospital services are being reorganized.

In 2011, the Government of the Republic of Moldova approved the "Regulations on structure and operation of the Ministry of Health, framework and personnel limit of the central staff". One of the main tasks of the Ministry is to oversee public health, including setting priorities, promoting the inclusion of health-related action in all (non-health)

public policies ("Health in all policies" approach) and supporting efficient implementation thereof.

The Ministry is headed by the Minister of Health, aided by three Deputy ministers who coordinate (based on duties assigned by the Minister) the activities of the various divisions, devolved public services and institutions subordinated to the Ministry.

Fig. 4.1. Organization chart of the health system (overview)



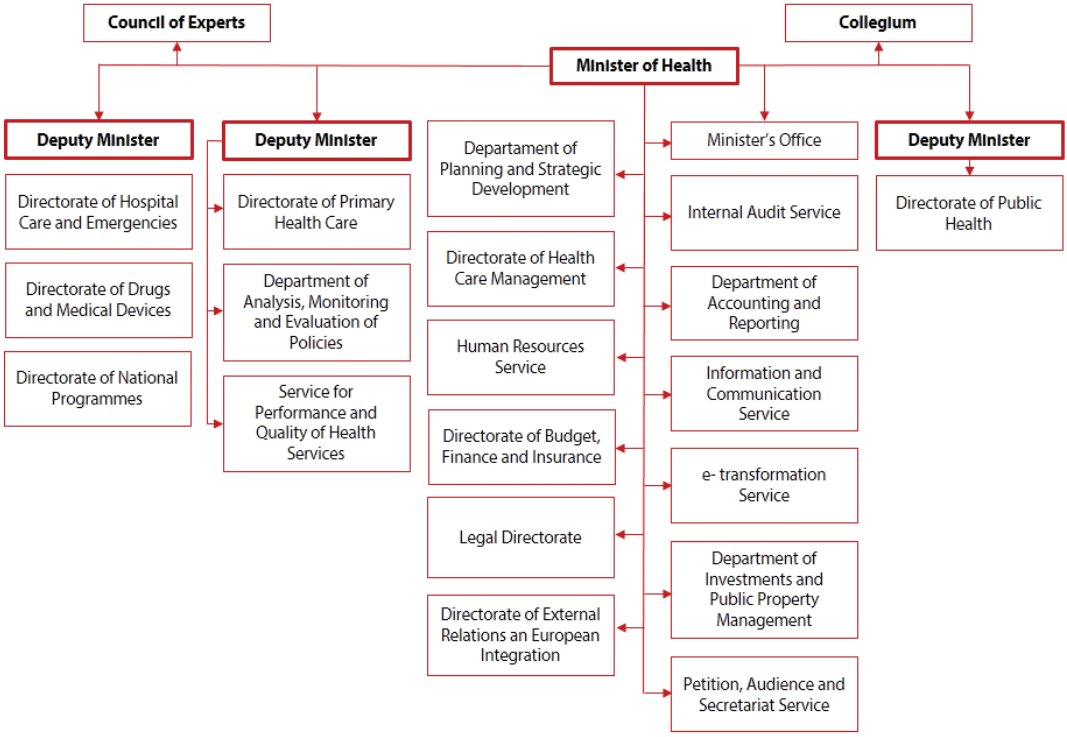
Source: Authors' own compilation.

4.1 Public health institutional framework

The public health system of the Republic of Moldova is very complex and multidimensional, the functionality of which involves a number of state authorities. The main role in coordinating and administrating the system belongs to the Ministry of Health, which is responsible for developing and monitoring the implementation of public health policies, normative acts, and regulations in the health field, promoting the inclusion of health-related action in all (non-health) public policies ("Health in all policies" approach), and supporting their efficient implementation in other sectors.

The PHS is headed directly by the Deputy Minister of Health who is also the main state sanitary doctor, according to the Law No. 10-XVI (3 February 2009) on state surveillance of public health. It is also coordinated by the Ministry through the Directorate of Public Health (see Fig. 4.2).

Fig. 4.2. Organization chart of the Ministry of Health of the Republic of Moldova

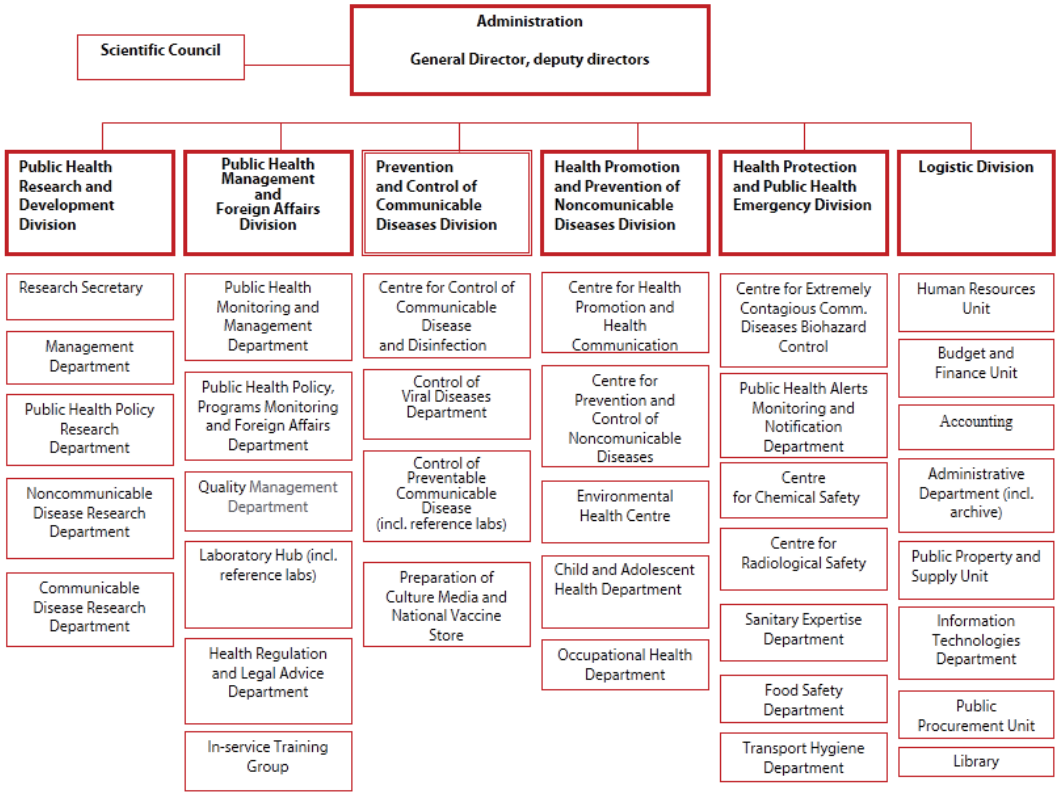


Source: Ministry of Health, 2012.

The **NCPH** is directly subordinated to the Ministry of Health. The Centre monitors and assesses public health and the health care system, and aims to enhance public health, providing an expert basis for adopting policies favourable to health. It also provides data and reports on principal health indicators; prepares programmes and measures for the prevention of disease; works on the professional development of public health experts, and performs research on public health. In addition, the NCPH recognizes threats to health and draws up measures for their mitigation; provides the expert basis that supports the decisions of the Government that directly or indirectly influence health at national and local levels; offers technical and methodological support to *rayon* and municipal Centres of Public Health; and serves as a training centre, assessing and reporting on implementation of the national public health policies (laws, strategies, plans, programmes). The NCPH bears responsibility for most of the public health core functions at the national level.

In 2010 the structures of the national as well as the district/municipal Centres of Public Health were reorganized. New divisions have been established at the NCPH to deal with: NCD control, nutrition and physical activity, health promotion and disease prevention, public health emergencies monitoring, surveillance and control of addictions, control of health determinants, toxicology and chemical safety, continuous training (see Fig. 4.3). The reorganization in the public health system is intended to continue.

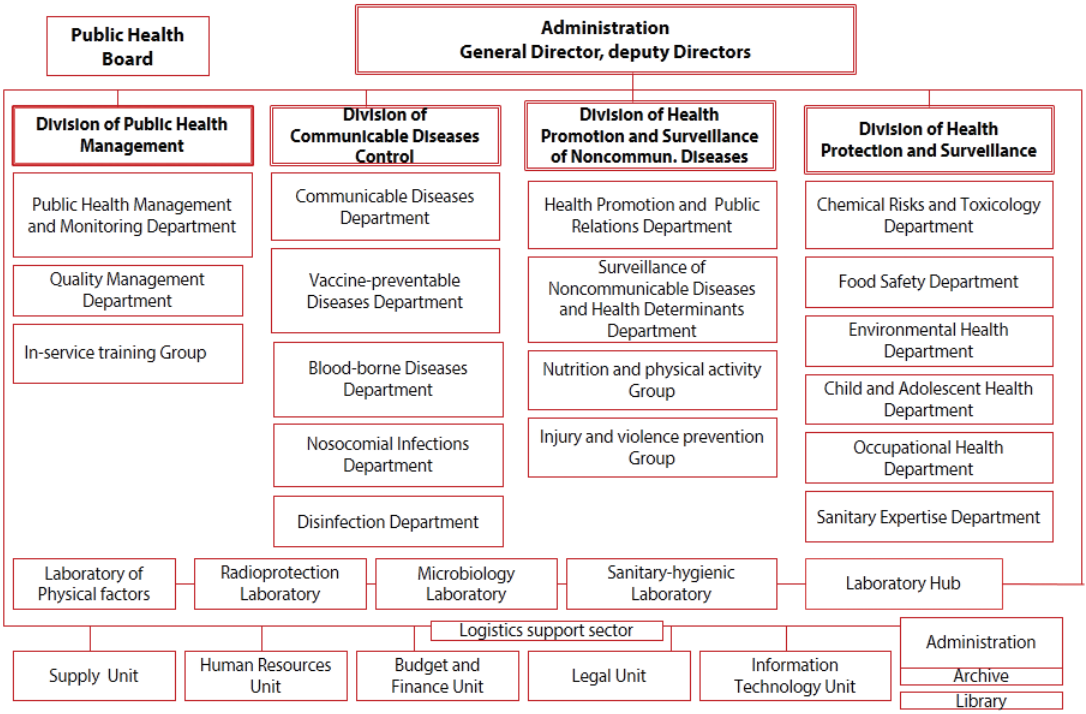
Fig. 4.3. Organization chart of the NCPH



Source: Authors' own compilation.

***Rayon*/municipal Centres of Public Health** are subordinated – like all Centres of Public Health – directly to the Ministry of Health and indirectly (as methodological support) to the NCPH. The structure of regional Centres of Public Health can differ from centre to centre, along with the number of staff and divisions, depending on the number of population in the region that they serve. Centres are divided into three categories; the 1st-tier category centres have the most complex structure (see Fig. 4.4) and the 3rd-tier category ones have the simplest structure.

Fig. 4.4. Organization chart of a 1st-tier Centre of Public Health



Source: Authors' own compilation.

Regional Centres of Public Health coordinate the implementation of national public health policies at district or municipal levels. They assume core public health functions, including monitoring, prevention, health protection and promotion. They report periodically – on a trimestral or annual basis – to the NCPH regarding the main health indicators and the implementation of national programmes and ministerial orders.

The **National Centre of Health Management** (NCHM) is an entity subordinated to the Ministry of Health, mandated with participation in setting the roles, objectives and activity procedures of the providers of health services at different levels. In addition, it is responsible for: carrying out analysis surveys/studies of impact factors causing diseases

(including those of social nature); maintaining and managing the national health statistical database; coordinating the collection, processing and analysis of statistical information on population health and of the medico-sanitary institutions' activity results; and developing and implementing assessment systems for national health programmes (for example, HIV/AIDS programme, TB programme).

The **Ministry of Environment** is responsible for developing and promoting state policies in the area of environment protection and relating to the rational use of natural resources, waste management, biodiversity conservation, geological research, use and protection of underground sites, water and sanitation supply, and the regulation of nuclear and radiological activities. The Ministry of Environment participates in planning and implementing measures for avoiding occurrence of natural disasters (floods, droughts) and management of their consequences. Among other duties, the authority regulates human activities relating to the environment, whereby the results of these activities have a direct impact on public health.

The **State Ecological Inspectorate** (SEI) is an entity subordinated to the Ministry of Environment, responsible for monitoring the implementation of state policies in the area of environmental protection. The tasks of the institution include: monitoring environmental factors and organizing ecological control activities; ensuring the rules related to the use of harmful substances and hazardous products and waste are observed; and overseeing the enforcement of environmental protection standards when locating, designing and building sites and leveraging new technologies. In addition, the SEI ensures that the necessary ecological expertise is applied in order to prevent negative impact of economic activities on the environment, ecosystems and public health; and assures that the limits set for the use of natural resources' are observed, along with the boundaries relating to discharge and emission of harmful substances into the environment and the parameters for storing industrial, domestic, toxic and other waste.

The **Ministry of Labour, Social Protection and Family's** public health responsibilities include developing and promoting policies in the area of social protection, health and labour security at workplaces.

The **Labour Inspectorate** is in charge of ensuring labour health and security norms are observed; issuing endorsements for the introduction into manufacturing prototypes of technical equipment and individual equipment for work and protection; and investigating work accidents. The institution is subordinated to the Ministry of Labour, Social Protection and Family.

The **Ministry of Agriculture and Food Industry** ensures through its policies the development of the agro-food product market, including the marketing of ecological products. It also works towards increasing food safety, ensuring the country's food security in terms of quality, quantity and accessibility of food products, as well as regulating the alcoholic and non-alcoholic beverages market, and determining the activity of the tobacco industry.

The **Agency for Consumer Protection** (ACP) is an entity subordinated to the Ministry of Economy, responsible for organizing and implementing market supervision, ensuring compliance of the products placed on the market (and that of the services provided) with prescribed and/or declared requirements, including controlling all stages of the life-cycle of the product or service delivery. It also undertakes activities to inform and educate citizens regarding the rights they have as consumers.

The **NHIC** is an autonomous entity responsible for managing compulsory HIFs.[6] The main tasks of the NHIC include: establishing and managing the mandatory health insurance system (including applying the appropriate procedures and mechanisms for creating financial funds to cover the health care costs, in accordance with the unique mandatory health insurance programme), quality control of the health care provided, and implementing the regulatory framework for mandatory health insurance.

4.2 Health budget

The main source of financing for the Moldovan health system is currently funds from the NHIC, raised through payroll contributions for employees, transfers from the national budget to cover the non-working population (14 categories of people, for example pensioners, students, children and registered unemployed, and so on), direct payments from self-employed workers, state budget allocations and a small amount from paid services.

The Ministry of Health is in charge of planning and executing the state budget in the health sector, taking into account needs of its subordinated institutions. Once the budget is approved by Parliament, the Ministry of Health can reallocate the resources based on current priorities or emerging needs. Table 4.1 presents the main financial allocations to the health care system in the Republic of Moldova over a 10-year period.

6 The funds are organized as follows: (1) main fund for payment of medical services; (2) reserve fund; (3) fund for prevention measures; (4) administrative fund; and (5) fund for development and modernization of public service providers.

Table 4.1. The main indicators of financial allocations to the health care system in the Republic of Moldova, 2000–2012

Indicator	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total health expenditure as % of GDP	4.0	4.0	4.2	4.2	4.7	4.9	5.4	6.4	5.6	5.2	5.0
National health budget (public) (million lei)	904.9	1105.2	1339.2	1572.4	2111.8	2628.4	3391.3	3846.8	3996.5	4261.1	4590.6
State budget centralized funding for health (million lei)	370.2	451.7	349.1	425.8	540.1	641.8	670.3	702.4	514.2	568.1	563.0
State budget contribution to NHIC (million lei)	-	0.9	651.3	839.5	1001.6	1195.0	1477.2	1456.6	1926.4	1984.3	2158.9
Local authorities health budget (million lei)	534.7	641.2	53.1	38.6	86.3	92.0	149.0	73.0	114.6	77.3	45.4
NHIC budget (million lei)	-	12.3	937.0	1108.0	1485.4	1894.6	2572.0	3071.4	3367.7	3615.7	3982.2
Government share (%) of the NHIC funds	-	7.3	69.5	75.8	67.4	63.1	57.4	47.4	57.2	54.9	54.2
Public health budget (million lei)	-	-	-	-	86.6	95.7	109.5	127.9	128.9	104.1	109.2
Public health budget as a % of total health budget	-	-	-	-	4.1	3.6	3.2	3.3	3.2	2.3	2.38

Source: Drawn from unpublished data.[7]

Over recent years the budget allocated for the PHS remained unchanged; moreover, its weighting decreased as a proportion of the total budget allocated to the health care system. Inadequate funding of the PHS contributes to slow progress in terms of reforms in this sector.

7 Mission report provided by the Ministry of Health in March 2012, entitled Moldova graduating from GAVI support: situation analysis and transposition plan.

5. Core public health operations in the Republic of Moldova

Operation 1: Surveillance and assessment of the population's health and well-being

Definition

> "Establishment and operation of surveillance systems to monitor the incidence and prevalence of diseases and of health information systems to measure morbidity and population health indexes. Other elements of this operation comprise community health diagnosis, data trend analysis, identification of gaps and inequalities in the health status of specific populations, identification of needs, and planning of data-oriented interventions." (Marks, Hunter & Alderslade, 2011)

Establishing and maintaining broad-based surveillance systems and registries of diseases and measures related to health

The NBS is a central public administration body subordinated directly to the Government and is in charge of organizing and coordinating the collection, compilation and analysis of a range of demographic, economic, social and other statistics; building a national data bank that is regularly updated; monitoring, coordinating and supervising the national statistical system; conducting Censuses and other surveys; and producing and publishing a range of statistical information and reports.

NBS collects information from the following sources in the health care system:

- NCHM (indicators on professional activity and health indicators);
- NCPH (indicators on communicable diseases, vaccine coverage, etc.);
- all medical institutions (on their economic activity);
- district Statistical Offices, which are part of the NBS hierarchy (statistical reports filled in based on birth or death certificates registered with the Civil Registry);
- other ministries and agencies.

The management of information on vital statistics is collaboratively carried out between the Ministry of Health (NCHM), Ministry of Justice (Civil Registry), the NBS and the Ministry of Information Technology and Communications. In compliance with the common Orders issued by the Ministry of Health, the NBS and the Ministry of Information Technology and Communications in 2004 were authorized to issue the medical certificate (No.106-2e) ascertaining death, the medical certificate (No.103/e-2002) ascertaining birth, and to manage registries and regulations on completing and issuing those certificates. Information on the natural growth of the population is stored in a single data record. The annual demographical data of the NBS and the Ministry of Health are therefore identical, due to constant control on the movement of data (from the moment of filling in birth/death certificates until the statistical processing thereof). Due to the lack of an information system, records in the field of vital statistics are kept in hard copy (statistical forms).

The NCHM operates under the Ministry of Health and is responsible for collecting and processing statistical data on mortality, morbidity, health care facilities, financing, and human resources in the health sector. It is setting up a national medical statistics database, improving means and methods of statistical analysis of medical institutions' activity, and researching and analysing demographic processes and population morbidity. Data on mortality and morbidity for priority diseases (according to the WHO International Statistical Classification of Diseases (ICD), 10th revision) are collected by the NCHM from statistical reports. Data on mortality are classified based on age, sex, cause of death, territory and area (urban/rural). Classification of morbidity data is based on age (but not all age groups are included), area (urban/rural) and sex only. Classification based on other criteria is carried out only in the framework of specific research or surveys.

The NCPH under the Ministry of Health is responsible for surveillance in the field of public health. This includes surveillance on communicable diseases, NCDs and risk factors (occupational, environmental and behavioural). The NCPH runs the automated information system for surveillance of communicable diseases, which affords real-time monitoring of communicable disease incidence, as well as of unusual and unexpected events related to public health (in terms of place, time and population groups), and assesses public health risks, taking steps to respond where possible. Lists of notifiable communicable and priority NCDs have been identified by the Ministry of Health, and standard case definitions for communicable diseases determined, based on EU recommendations. The NCPH sends data on communicable diseases and risk factors to the NCHM, and the NCHM sends data on NCDs to the NCPH.

Surveillance system and disease registries in the areas of communicable diseases, NCDs and foodborne diseases

In the Republic of Moldova the surveillance of communicable, noncommunicable and foodborne diseases is carried out and regulated in accordance with Law No. 10-XVI on state surveillance of public health.

Surveillance of communicable diseases is carried out pursuant to the existing legislative and normative framework, as follows:

- Law No. 10-XVI (3 February 2009) on state surveillance of public health (art. 51 (3));
- Order No. 52 (16 March 2000) on submitting to the Ministry of Health of urgent and mandatory information on cases of communicable diseases, mass poisonings, emergencies and natural disasters;
- Order No. 368 (13 December 2004) on submitting to the Ministry of Health of urgent and mandatory information on emergencies and natural disasters;
- Order of the Ministry of Health No. 171 (20 June 1990) on improving the record system of certain infectious and parasitic diseases in the Republic of Moldova;
- Order No. 385 (12 October 2007) on approving case definitions for surveillance, and reporting of communicable diseases in the Republic of Moldova;
- Order of the Ministry of Health No. 13 (11 January 2011) on approving the notification form (emergency notification data sheet) on reporting case identification of communicable diseases, poisoning, foodborne diseases, occupational acute poisoning, and/or side-effects after administration of immunobiologic products.

The functional indicator-based surveillance system in the Republic of Moldova is well developed, collecting data regarding communicable diseases. The event-based surveillance system is still in its implementation phase, but it will eventually provide data regarding public health events of a chemical, biological and radiological origin. Collected data are summarized in weekly, monthly and annual reports, such as statistical evidence form no. 2 entitled "Statistical report on communicable and parasitic diseases". For vaccine-preventable diseases there is a database to collect data regarding distribution of vaccines and vaccine coverage (statistical evidence form no. 5-san, entitled "Report on preventive vaccinations" and form no. 6 entitled "Report on coverage of children vaccinated against infectious diseases").

There is an approved list of notifiable communicable diseases, as well a procedure for submitting to the Ministry of Health urgent and mandatory information within the first 24 hours should a public health event occur. Likewise, there is a procedure for submitting an emergency notification data sheet in order to organize provision of emergency and medical aid in severe situations, undertake public health measures to contain and properly manage outbreaks of infectious diseases, food poisoning and other mass poisonings. The regional (*rayon* and municipal) Centres of Public Health are notified of information regarding outbreaks by the PHC, the emergency medical services or other medical institutions. The centres must then urgently notify the Ministry of Health and the NCPH, decide on measures to control outbreaks and carry out an epidemiological investigation.

Upon the establishment of the PHS, the matter of NCDs was defined and the list of NCDs for priority surveillance and control was approved by means of the Order of the Ministry of Health (No. 869 of 27 December 2010) on surveillance and control of priority NCDs in the Republic of Moldova. There is no systematic monitoring and reporting of NCDs; currently, primary care physicians are only able to report the number of people that present with NCDs for medical attention. There is only one National Registry (cancer) in the NCD field. It includes data collection and processing of new cases of cancer, in order to produce statistics on incidence and prevalence of cancer in Republic of Moldova. The registry is kept by the Institute of Oncology. Some medical institutions keep their own registries on NCDs but at national level this is in an initial phase of development.

Ongoing surveys on attitude regarding health (including nutrition)

Surveillance of nutritional status, food consumption and attitude regarding health is carried out through periodic nationwide surveys. However, there is no plan to coordinate the year-on-year collection of the main variables through population surveys. The basic national nutritional surveillance system is still under development and implementation is intended in three pilot regions in 2013.

Surveillance system and registries of diseases in the areas of maternal health and infant health

Data collection and submission in the fields of maternal health and infant health is regulated by:

- Ministry of Health Order No. 139 (28 May 2002) on approving primary care record forms in medical institutions;
- Ministry of Health Order No. 782 (9 November 2010) on performing voluntary interruption of pregnancy in safe conditions;
- Ministry of Health Order on compiling and submitting of annual medical statistical reports by medical-sanitary institutions (No. 904 (23 November 2011), updated annually).

There is a national system for collecting data on maternal and infant health. Records on the health status of population are kept by family doctors, who maintain registries of the health status of population, including general data (Registry No. 166/e), records on health status of women aged over 15 years (Registry No. 166-2/e), records on the health status of children (Registry No. 166-3/e). Based on primary care medical records, reports on maternal and infant health status are drawn up by the NCHM.

Information systems on provision of maternal and infant health care are not well developed. Evaluation of indexes related to maternal and infant health are carried out in hard copy (statistical forms), based on monthly records on infant mortality, maternal mortality and births; quarterly reports on pregnancy outcomes, abortions, deaths by cause and period of hospitalization; and annual reports on perinatal care. Currently, a database management system on congenital malformations is being developed with the support of the European Centre of Congenital Malformations.

Surveillance system and registries of diseases in the area of environment and health

Implementation of special measures for health and environmental protection are required by Law No. 10-XVI (3 February 2009) on state surveillance of public health and in the National Environment Health Action Plan 2011 (NEHAP). The NEHAP provides development of the Environmental Health Information System (ENHIS).

The Environmental Health Section of the Division of Public Health within the NCPH is responsible for surveillance of environmental factors related to health. Data collection on environmental factors is carried out as part of the organization's "socio-hygienic monitoring". The NCPH prepares an annual report on the environment and health. The results of air quality monitoring are made public quarterly through the joint monitoring system of the PHS and the Hydrometeo Service under the Ministry of Environment. Monitoring of water quality is also carried out jointly by the PHS, the State Hydrometeo Service and the Ministry of Environment's SEI. The PHS is responsible for monitoring the quality of drinking water, surface water and water in recreational areas.

The biannual National Report on the Environment and Health is prepared jointly by the Ministry of Health and the Ministry of Environment. All pertinent survey data on relevant health indicators are presented, including on access to water and sanitation, quality of the environment, living conditions, and so on. There is no established list of specific diseases attributable to environment risk factors to be recorded and reported by medical institutions. These are partially reflected in the annual PHS reports, and there is no priority list of diseases influenced by water, air, soil and so on. Monitoring data are classified based on certain criteria, with the exceptions of ethnicity and income level.

Surveillance system and registries of diseases in the areas of occupational health and injury surveillance

The surveillance of occupational health and workplace safety is carried out by the PHS in collaboration with the Labour Inspectorate under the Ministry of Labour, Social Protection and Family. The PHS monitors the implementation of occupational health legislation, and evaluates temporary disability and occupational health-related conditions. The Labour Inspectorate verifies compliance with occupational safety legislation and maintains a registry of accidents in the workplace. The NCPH maintains a registry of occupational diseases. Information provided by occupational health services is periodically monitored and an annual report on workers' health in relation to risk factors at the workplace is published in the Bulletin *Occupational safety and hygiene* on the web site of NCPH. It is also sent to the National Office of Social Insurance of the Republic of Moldova.

All reports on injuries from various sources within the health care system are stored and analysed by the NCHM. No classification of injuries is carried out (not even by origin, that is, home, workplace and so on), and no records are kept of unintentional children's injuries.

Data integration and analysis (including community health diagnosis), identifying population needs and risk groups and monitoring progress towards health-related objectives

Data integration within the health sector and with other sectors represents one of the priority problems with health data management in the Republic of Moldova. Some surveillance electronic systems collect similar data. For efficient management of data in the field of public health, it is necessary to integrate data from certain sources, for example from the following surveillance systems: communicable diseases surveillance system, TB monitoring and evaluation system, and information system for monitoring and evaluation of HIV infection and sexually transmitted infections (STIs). Integration of surveillance systems will facilitate the efficient use of existing human resources and time.

A large volume of data is collected but not used by medical institutions or the Ministry of Health. In-depth and detailed analysis of data is difficult due to a lack of relevant factors included in the data, such as socioeconomic factors, education, and the ethnic origin of the population. It is also difficult to identify the risk groups and health needs of population.

A system exists for publishing and distributing data. The NBS distributes information by publishing the *Statistical yearbook of the Republic of Moldova*, which includes over 500 tables comprising a large volume of complex statistical information in various fields, including the health care system. It also publishes operative information bulletins (monthly, quarterly and annually) which are also accessible on the Internet via the NBS web site (NBS, 2012).

The responsible institutions – the NCHM and NCPH – submit on a monthly or annual basis information regarding:

- morbidity, relating to notifiable communicable diseases and NCDs – to the Ministry of Health and WHO;
- activity of medical institutions – to the Ministry of Health and the NBS;
- vital statistics (overall mortality rate, infant mortality rate, mortality rate of children aged under five years, rate of maternal mortality and birth rate) – to the NBS, and international agencies (upon request), including WHO.

Dissemination of information is carried out through:

- submission of preliminary data necessary for drafting annual activity results for the previous year;
- submission of information on medico-sanitary institutions' activity, which comprises the main indicators necessary for monitoring and evaluating the activity of the health care system;
- submission of information regarding the epidemiological situation;
- publication of issue-specific leaflets, information bulletins describing and analysing specific health-related issues in detail;
- analytical reports outlining the achievement of objectives included in national health programmes.

An electronic version of annual reports is posted on the web site of the Ministry of Health (Ministry of Health, 2010), on the NCHM web site (NCHM, 2008), and on the NCPH web site (NCPH, 2010).

Publication of the statistical yearbook entitled "Public Health in Moldova" was discontinued in 2010 due to a lack of financial resources. A report on state surveillance in the field of public health is published annually and posted on the web site of the NCPH (2010).

Conclusions

Surveillance activities in the field of public health are divided among several health institutions and are focused on collecting and analysing data in order to evaluate population health status and the activity of health institutions. The existing system does not respond to the current requirements. The system is characterized by data generated to excess at the operational level, and collected by several institutions, but there is a lack of adequate analytical capacity to convert data into relevant and timely information in order to inform the decision-making process at the operational and policy-making levels. Collected data do not contain all the necessary background characteristics (such as education levels, ethnic origin, wealth, or income level) in order to identify health inequities and to take into account the health needs of different population groups.

Strengths

- Good quality of information in terms of vital statistics.
- Existence of the legal framework on surveillance of communicable diseases and NCDs.
- Well-trained staff in terms of good recording practices, timely reporting and processing of notifiable communicable diseases.
- Existence of an electronic information system for surveillance of communicable diseases and public health events.
- Periodical population surveys carried out (Demographic and Health Survey (DHS), Multiple Indicator Cluster Survey (MICS 4), survey on smoking among teenagers, and so on).

Weaknesses

- Weak analytical capacities at national and *rayon* levels.
- Poorly coordinated system of data collection in terms of health indicators. Data collection is fragmented and only recorded in hard copy, with uncertain links between different sets of data. Transfer of data from one database to another and the integration thereof are carried out manually.
- An oversized volume of indicators and data sets; their necessity should be assessed, to bring them in line with internationally common indicators.
- Information on causes of diseases is incomplete, in particular as regards NCDs. There is no systemic collection of data regarding lifestyle, behaviour and other factors influencing health. Data collected are based only on those patients that present for treatment.
- Collected data are not categorized based on socioeconomic criteria, income, ethnicity, education and so on.
- Lack of registries for priority NCDs (CVD, mental health etc.).

Opportunities

- Launching public health system reforms.
- Bringing data collection technology in line with the relevant international data frameworks.
- Developing programmes to control social factors influencing health, related to: infant health, women's health, health of disadvantaged rural populations, financing, and equal access to PHC.

- Carrying out periodical surveys (MICS 4, survey on smoking among teenagers).
- Reporting data to different international organizations, opening up the possibility to compare data within countries at regional and global levels.

Recommendations

- Develop and increase analytical capacities to generate information at national and *rayon* levels.
- Integrate the communicable diseases surveillance systems into a single system.
- Develop an information system for surveillance of NCDs and risk factors (currently there is only a flow of general information, omitting health indicators).
- Revise the number of indicators and their definitions, and introduce categorization based on socioeconomic criteria, income, ethnicity, education, and so on.
- Implement a nutritional surveillance system and periodically evaluate the results.

Operation 2: Identification of priority health problems and health hazards in the community

Definition

> Monitoring, identifying and predicting priorities in biological, chemical and physical health risks in the workplace and the environment; risk assessment procedures and tools to measure environmental health risks; release of accessible information and issuance of public warnings; planning and activation of interventions aimed at minimizing health risks (Marks, Hunter & Alderslade, 2011).

Control of communicable diseases

Surveillance and control of communicable diseases and public health events, including outbreaks of infectious disease investigation are the responsibility of the PHS in accordance with Law No. 10-XVI (3 February 2009) on state surveillance of public health.

The national surveillance system for communicable diseases contained 72 notifiable communicable diseases based on standard case definitions. In fact the list of diseases that must be reported has been extended to 102 infections, in accordance with international

requirements (for example, *E. coli,* giardiasis, avian influenza, severe acute respiratory syndrome (SARS)). Surveillance of communicable diseases encompasses activities relating to the gathering of information relevant for the routine detection of biological threats using a nominal case-based and event-based system. For selected diseases with seasonal manifestation (diarrhoeic diseases and respiratory infection, for example) a weekly surveillance system is set up, which allows specific indicators to be monitored for trend evaluation and forecasting epidemiological situations. The sentinel surveillance system provides specific information for influenza (epidemiological and virological data), rotavirus infection (hospital surveillance) and cholera (monitoring the circulation of vibrio cholera strains within the environmental sentinel sites).

Primary care physicians at the local/community level and emergency medical care specialists are required to detect events early, including diseases or deaths under or above expected levels for the particular time, place and population group. Data relating to nominal infectious diseases and outbreaks must be reported within 12–24 hours, using the standard approved channels. These are also reported through the national electronic surveillance system. Detection of and intervention in outbreaks are ensured by medical care specialists using standard national protocol (diarrhoeic diseases, foodborne diseases, and so on). The Ministry of Health Order No. 368/2004 (13 December 2004) established the algorithm for detection and reporting of outbreaks at early stages. The electronic surveillance system facilitates standardized reporting and early notification of cases of infectious diseases and public health events. This electronic tool allows specialists from Centres of Public Health at *rayon* and national levels to automatically notify about outbreaks (the programme summarizes the number of reported cases within the incubation period for selected diseases and compares with a threshold for a selected site). Outbreak notification or electronic alert allows risk assessment to be initiated at community/*rayon* and/or national levels, as well as epidemiological investigation. At the national and regional Centres of Public Health rapid response teams have been established, which consist of an epidemiologist, a microbiologist, a hygienist and so on. Cases of outbreaks are reported in accordance with approved standard case definitions and the nominal case counts are applied. Public health events are evaluated by an epidemiologist at *rayon* level, using "decision instruments" for the assessment and notification of events that may constitute a public health emergency of international concern (WHO, 2005). At the national level, assessment of public health events is provided by a national rapid response team within 48 hours of notification.

The Ministry of Agriculture and Food Industry is responsible for the regulatory framework of the agriculture sector, including national food safety. The veterinary service of the

Ministry of Agriculture and Food Industry is responsible for animal health, zoonotic and vector-borne diseases (rabies, anthrax, brucellosis, salmonellosis, influenza A (H5N1) and so on) and food safety of animal products that can affect human health. In the case of zoonotic diseases, specialists from veterinary service report data through an electronic surveillance system for animal traceability, which automatically exchanges data with the public health electronic surveillance system and/or informs local public health authorities (by letter/'phone). At the regional (*rayon* and municipal) level, investigation of zoonotic and foodborne diseases are conducted by epidemiologists in conjunction with specialists from veterinary services. Clinical and environmental (food, water, vector) samples are tested in public health microbiological laboratories.

In all hospitals there is a committee and a system in place for surveillance and control of **nosocomial diseases**. Each hospital has an operational plan for the surveillance and control of nosocomial infections developed in accordance the national plan approved by the Ministry of Health. National guidelines for surveillance and control of nosocomial infections – including a section on protecting the health of care workers – have been developed and are in the process of being implemented. Hospitals have certain facilities for isolation of infectious patients in accordance with national standards and National Clinical Protocols. Hospital epidemiologists carry out investigations, data analysis and reporting of nosocomial cases and outbreaks according to the standard protocols of the *rayon*/municipal Centre of Public Health.

No community and hospital surveillance systems for antibiotic resistance and antibiotic usage are in place. A monitoring system for antibiotic resistance was set up in limited number of hospitals. At the national level, for scientific research purposes, aggregated data regarding drug-resistant pathogens in hospitals are collected. Neither national coordinated surveillance nor national data are available.

Control of environmental health hazards

Control of environmental health hazards come under the responsibility of the following ministries: Ministry of Environment, Ministry of Internal Affairs (Civil Protection and Emergency Situations Service (CPESS)), Ministry of Health.

Subsidiary institutions of the Ministry of Environment include the State Agency for Geology and Mineral Resources, the National Agency for the Regulation of Nuclear and Radiological Activities, and the State Hydrometeo Service. These are mainly involved in

risk assessment and early warning for other ministries about natural and environmental hazards. The Ministry of Environment and all state institutions (including the Ministry of Health) have official methods and established criteria for communication with the CPESS (Governmental Decree 1076/2010) in the event of a potential emergency situation, such as extreme weather conditions, increased seismic activity, high levels of pollution or a chemical accident. Meteorological stations across the country report daily weather forecasts to the relevant authorities (for example the NCPH) and information is available on official web sites. The Ministry of Environment works closely with Centres of Public Health at *rayon* and national levels to carry out investigations related to environmental hazards.

The CPESS is in charge of protecting people and property, conducting rescue operations, mitigating the effects of crises, and ensuring preparedness for emergency situations. It carries out activities related to risk assessment, crisis planning, monitoring and evaluation, prevention and reduction, early warning, training and so on. The Service's channel of communication with the Ministry of Health is through the Civil Protection Directorate, which has three divisions: (1) the Medical-Biological Protection Division; (2) the Radiological and Chemical Protection Division; and (3) the Engineering Protection Division. The CPESS carries out risk assessments and collects information from a number of sources. This includes hazard maps showing areas of seismic activity, power lines, dams, nuclear power plants and so on.

The Ministry of Health is responsible for the development and promotion of specific regulations and normative acts on water, soil and air quality, safety of children's toys, and on biocides. The PHS is in charge of monitoring environmental factors – health determinants, including occupational health – for their compliance to approved norm and standards. The whole network of public health laboratories (chemical, toxicological, microbiological and radiological which test water, soil, biological substrates and other samples) is required to notify any activity that exceeds the standard requirements established in national regulations.

International Health Regulations (IHR) (WHO, 2005) represent the legal framework for strengthening surveillance and response capacity and protecting the public against acute health threats with the potential to spread at the international level, affect human health and interfere with international trade and travel. For successful implementation of IHR the Republic of Moldova developed and approved a National Action Plan in light of the national legal and governance system, and within the relevant legislative framework. The Ministry of Health coordinates activities relating to IHR implementation. Information (early-warning indicators) regarding public health threats from official and unofficial sources

are analysed and assessed. In the event of identifying a public health risk, information is provided by the National Focal Point (NCPH, Ministry of Health) to the relevant authorities, for a coordinated response. Annually, the Ministry of Health organizes training at all levels of the health sector in order to consolidate the capacity for early detection of public health threats, assessment and appropriate response. Intersectoral table-top exercises and drills for rapid response teams and the national laboratory network are provided annually by the CPESS and the Ministry of Health.

The Republic of Moldova has signed bilateral and multilateral agreements with Romania and Ukraine for all emergencies, including exchanging information and assistance. The Republic of Moldova is a member of the Stability Pact for South Eastern Europe (South-eastern Europe Health Network (SEEHN)), through which a number of projects are being implemented and more are planned for the future. These include strengthening the surveillance and control of communicable diseases, strengthening institutional capacity, intersectoral collaboration and developing integrated emergency medical services.

Laboratory support for investigation of health threats

The ministries (of Environment, Health, Agriculture and Food Industry) involved in risk assessment have a laboratory network. The Ministry of Health manages its public health laboratory network and clinical-diagnostic laboratories. The health sector's laboratories are part of the national public health electronic surveillance system, as part of which laboratories report data in real time regarding confirmed etiological agents; these are available for clinicians and epidemiologists.

The public health laboratory network includes microbiological, sanitary-hygiene and radiological laboratories. The core function of the public health laboratory network is to provide investigations for the detection and confirmation of public health threats (biological, chemical, radiological).

The testing of environmental samples collected with the purpose of monitoring risk factors is carried out mainly by three laboratories: the NCPH lab, and those of the Centres of Public Health in Chişinău and Balti municipalities.

Public health laboratories are accredited by the national authority (the National Council for Evaluation and Accreditation in Health) every five years and some of them – particularly those at national level – are certificated by the international regulatory authority (WHO),

including checking compliance with the requirements of the International Organization for Standardization (ISO). Quality management systems are in place in accredited laboratories. The NCPH organizes annually the National External Quality Control Programmes for microbiological, sanitary-hygiene and radiological laboratories. The health sector laboratories evaluate their performance by comparing inter-laboratory results.

Guidelines and standard operational procedures (SOPs) are developed by each laboratory to address the handling, analysis and evaluation of samples. Guidance on Regulations for the Transport of Infectious Substances and Biosafety was approved in 2011 and is applied in practice.

Financial resources are lacking for environmental monitoring and laboratory testing of samples taken from the environment and from humans (screening programmes, and so on).

The capacity of laboratory network for investigation of health threats can be improved with the foundation of national reference laboratory for communicable diseases, of food safety, and toxicology. Studies involving exposure to individual risk factors from the environment, including surveys and laboratory tests on which risk can be assessed are critical.

Conclusions

Identifying health problems and health hazards in the community requires a multisectoral approach, using standard protocols for early detection, assessment, reporting and appropriate coordinated response. Monitoring and evaluation of health hazards in the community require professional skills, good laboratory capacity, a standardized reporting system, and a trained and equipped intersectoral response team.

Strengths

- The national surveillance system, including electronic reporting for communicable diseases is comprehensive, well-defined and functional; it is in the process of harmonization with WHO recommendations, and with EU-level directives and regulations.

- The public health laboratory network, including microbiological, chemical and radiological accredited laboratories carries out investigations for the detection and confirmation of public health threats (biological, chemical, radiological) regarding communicable diseases, food, air and water safety, and occupational health.
- The public health surveillance system – in the context of IHR implementation (WHO, 2005) – is strengthening capacities for integrated early warning and rapid response in public health events, including coordinating activities at regional and national levels.

Weaknesses

- Limited human capacity (lack of health lawyers, trained specialists) and lack of financial resources to develop the supportive legislative and normative documents and to advocate for their approval.
- Occupational and environmental health protection; food, water and air safety is divided between different institutions, with a lack of exchange of information and coordination.
- Public health response to threats is weak, due to insufficient knowledge and skills and limited number of specialists involved in risk assessment (epidemiologists, hygienists, public health specialists) at community, *rayon* and national levels.
- Equipment in public health laboratories is not sufficiently up to date; there is also a lack of human resources, including qualified personnel.
- Surveillance systems on nosocomial infections and antibiotic resistance are weak, and there is a lack of trained personnel.
- The integration process of the database management system into the health and non-health sectors is slow.
- No national authority responsible for developing and monitoring the implementation of biosecurity and biosafety standards in laboratories exists.

Opportunities

- Political will to harmonize national legislation with EU requirements and IHR (2005) implementation.
- Public health sector reform can promote networking and consolidation of public health laboratories.
- Development of protocols and standards for surveillance, assessment and response.

Recommendations

- Continue the process of harmonization of national legislation with EU requirements relating to health hazards.
- Develop a national concept for the development of public health laboratories.
- Improve intersectoral collaboration on public health issues.
- Strengthen the system for surveillance and control of nosocomial infections.
- Develop a national strategy on the prudent use of antimicrobial agents in human medicine and containment of antimicrobial resistance.

Operation 3: Preparedness and planning for public health emergencies

Definition

> "Preparedness for management of emergency events, including formulation of suitable action plans; development of systems for data collection; control and prevention of morbidity; and application of an integrative and cooperative approach with various authorities involved in management" (Marks, Hunter & Alderslade, 2011).

Preparedness for management of emergency events

Preparing the health system and planning response activities for public health emergencies are the competence and duty of the state. At national level, in accordance with Government Decision No. 1340/2001, the Commission for Emergency Situations of the Government of the Republic of Moldova is responsible for implementing preventive measures, verifying emergency preparedness and managing emergency situations, generated by natural disasters, large-scale accidents, fires, epidemics, epizootics, and so on. The Commission is headed by the Prime Minister and includes representatives from all ministries and departments. The national authority for implementation of policies in emergency situations is the CPESS, which is responsible for development of the National Multisectoral Plan for Civil Protection that includes components from the sector plans of the ministries and government agencies.

The system for preparedness and response in the event of public health emergencies is structured across three levels – local, intermediary and national – involving PHC, emergency care, hospital care, and PHS-level involvement, in cooperation with the local and central public authorities. The National Extraordinary Public Health Commission is responsible for an integrated approach, applying prevention and management measures, multisectoral mobilization and coordination response in public health threats and emergencies. At *rayon* level, Centres of Public Health are the designated coordinators for emergency preparedness and response to public health emergencies.

National legislation (Government Decision No. 1076/2010) provides definitions, classifications and evaluation criteria for emergency situations, as well as methodology for data collection and information flow. Law No.10-XVI/2009 on State Public Health Surveillance defines the notions of risk and public health emergency, and delineates the health system's functions and duties (by levels), not only as a prevention measure, but also in order to: ensure an adequate level of preparedness for and management of public health emergencies; detect, assess and notify risks; and declare (and/or cancel) public health emergencies. In the context of IHR (2005) (WHO, 2005), the law sets out special "empowerment" clauses concerning persons and goods, for specific actions that can be required to be taken during public health emergencies (articles 60 and 61).

The unified plan for emergency situations of the Ministry of Health takes into consideration country-specific risks and sets out the basic measures to be followed, including health care for the population in the face of certain dangers and triggers; for example, in such situations as earthquakes, outbreaks of communicable disease, epidemics, radioactive contamination, transport accidents, and accidents and incidents caused by chemical agents. This plan is uploaded to the official web site of the Ministry of Health. *Rayon*/ municipal and institutional plans for prevention, preparedness and management of public health emergencies are annually adjusted and approved.

For certain public health events, specific operational specific plans have been developed for preparedness and response (such as for the avian/pandemic influenza, cholera and outbreaks of acute diarrhoeal diseases). The Ministry of Health creates and maintains at national level the Epidemiological Fund, which, if needed, covers some financial expenditure when public health events occur. However, these financial resources are limited, and in the event of an emergency situation being declared, other funds could be mobilized at *rayon*/municipal and central levels.

According to the (2005) IHR provisions (WHO, 2005) the Republic of Moldova approved in 2008 the National Action Plan, which includes 31 actions applying to 10 ministries and services.

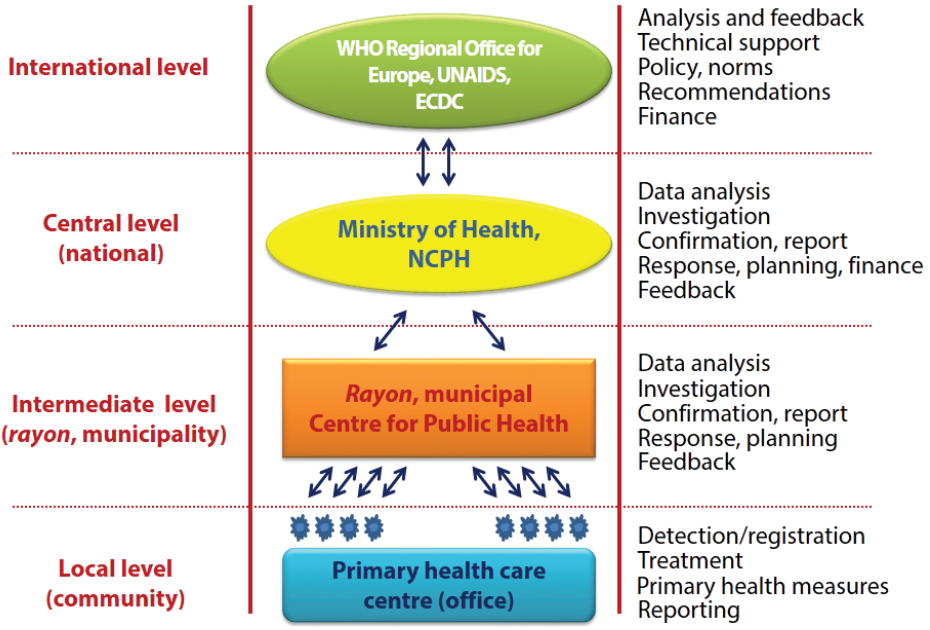
The NCPH was designated as a National Focal Point for IHR (2005), the basic functions of which include permanent contact (24 hours a day, seven days a week) in order to: receive information from the surveillance and reporting system (points of entry into the country, as well as informal sources); disseminate the aggregated information and temporary or permanent recommendations of the Ministry of Health to relevant sectors of the government administration (including those responsible for surveillance and reporting, Public Health Services, clinics and hospitals, and other government departments). During the influenza A (H1N1) pandemic period (2009–2010) and in cases of other public health threats, the National Focal Point maintains permanent contact with WHO in accordance with the (2005) IHR provisions (WHO, 2005).

Preparedness assessment of the institutional, *rayon*, and national levels represents a continuous processes, performed by the Ministry of Health and the CPESS. Health sector managers are trained regularly on the management of public health risks and emergency situations. In the context of the 2005 IHR, implementation specialists within the health system (in PHC, emergency and hospital care, and public health settings) have been trained in early detection, assessment of the event, notification and application of response measures at all levels of health system (local, *rayon*/municipal and national). The complexity of public health events determines the format and scope of training for specialists from other state authorities involved in the management of public health emergencies. Specialists within the competent authorities at the points of entry to the country (customs service and border police) have been trained according to special programmes. In order to prepare a coordinated response to public health events of a chemical, biological and/or radiological origin, annual practical and table-top exercises are conducted, involving specialists from the health sector, veterinary services, environmental protection, and so on, including the National Network of Observation and Laboratory Control (NNOLC).

The system for surveillance of communicable diseases and monitoring of health determinants includes a network of laboratories (NCPH and *rayon*/municipal Centres of Public Health) for the detection and confirmation of radioactive, toxic and biological agents. The sentinel surveillance system for selected diseases includes monitoring the circulation of agents of cholera, influenza and acute respiratory viral infection, poliomyelitis, leptospirosis, and so on in the environment, reservoirs (micromammals), vectors (ticks and mosquitoes) and the human population (screening programme for risk groups).

Surveillance of communicable disease is structured by levels (Fig. 5.1) and includes collecting and analysing data on infectious morbidity, identifying early-warning indicators of worsening of the epidemiological situation (increase above the threshold of the number of cases recorded for a given period, time and locality; unique cases of unusual and/or unexpected diseases and so on) and organizing a response to mitigate the impact on public health.

Fig. 5.1. Levels and activities of the communicable disease surveillance system



Source: Authors' own compilation.

The early detection of the public health event (early-warning indicators) is provided in real time by the national electronic surveillance system for communicable diseases and public health events.

In emergency situations the health sector mobilizes rapid response teams, including first aid, paramedical, medical, specialized epidemiological/sanitary-hygienic, toxicological and radioprotection teams that are equipped with protection and intervention equipment and are trained annually. However, it is essential to supplement and renew the equipment necessary for conducting environmental assessments, collecting specimens (standard kits) and for rapid tests.

In order to manage public health events of a biological and radiological origin, SOPs were developed and remain in place (methodological guidelines and recommendations, orders of the Ministry of Health, and so on).

Conclusions

The existing system for preparedness, planning and response to public health emergencies in the Republic of Moldova needs to be adjusted to international requirements in terms of legislative and normative aspects and to be strengthened in terms of intervention capacities in public health emergencies (human, laboratory, mobile rapid response teams, and so on).

Strengths

- National multisectoral and sectoral/district-level plans are in place to manage emergency situations, and committees are appointed to coordinate activities.
- Rapid response teams at all levels of the health system are designated and trained.
- The communicable disease surveillance system continuously monitors infectious morbidity and highlights unusual and unexpected health events for certain places, time periods and population groups, allowing early detection, risk assessment and response actions.
- For management of public health events caused by biological (outbreaks, poisonings and so on) and radiological agents, specific intervention plans, operation procedures are developed and approved.
- IHR (2005) is in the process of being implemented, and the National Focal Point for IHR is in constant contact with national and international partners.

Weaknesses

- Regulatory framework is not fully adjusted to encompass EU legislation, in terms of an early-warning system and rapid response to public health emergencies.
- Lack of SOPs for intervention in the event of chemical incidents, accidents, and bioterrorism.
- Insufficient financing of plans for prevention, preparedness and management of public health emergencies.
- Limited capacities for surveillance and control of public health events at point of

entry to the country, along with the existence of part of the border which is not under Moldovan control in the east part of the country.

- Insufficient human resources in the *rayon* and municipal Centres of Public Health to provide complete and prompt reporting.
- Public health laboratories are not sufficiently equipped for rapid identification of biological, chemical and radiological threats.
- Deficiencies exist in rapid response teams in terms of equipment and training in public health emergencies (planning, preparedness, needs assessment, risk assessment, risk management and communication, and so on) in accordance with international standards.

Opportunities

- Political will to harmonize national legislation with EU requirements.
- Further reform of the PHS.
- Develop the concept of regionalization of the health care system.
- Participate in the implementation of international documents, and develop operating standards for chemical health emergencies and bioterrorism.
- Existence of a mechanism for implementation of IHR (2005) and other international documents for strengthening the surveillance system, including the normative framework, laboratory network, early intervention and so on.
- Integration into regional and global surveillance networks to provide the opportunity for standardization of data and rapid exchange of information at national and international levels.

Recommendations

- Further improve the legal framework on biological, chemical and radiological emergencies, as well as bioterrorism, in accordance with national and international standards.
- Assess and develop capacities for maintenance and continuous improvement of the health emergency management system in the event of biological, chemical and/or radiological threats.
- Develop and adjust the undergraduate and postgraduate curriculum and training plans relating to public health emergencies.
- Further improve intra-sectoral, intersectoral and international cooperation in preparing for and managing public health emergencies.

Operation 4: Health protection operations (environmental, occupational, food safety and other arenas)

Definition

> "Risk assessment and actions needed for environmental, occupational and food safety. Public health authorities supervise enforcement and control of activities with health implications. It includes the institutional capacity to develop the regulatory and enforcement frameworks that protect public health and monitor compliance with accepted norms; capacity to generate laws and regulations aimed at improving public health and promoting healthy environments" (Marks, Hunter & Alderslade, 2011).

Risk assessment

Ministries and other central public administration authorities – directly or via subordinated institutions – are responsible for risk assessment activities, for the development of legislation and regulations on health protection, as well as for their implementation. Public health authorities supervise actions that have implications for population health.

Laboratories of the PHS are an integral part of the NCPH and *rayon*/municipal Centres of Public Health. Physical, chemical, microbiological, parasitological and radiological laboratories of the NCPH and Centres of Public Health investigate environmental factors, including the workplace factors, food and goods. Microbiological and virology laboratories investigate biological samples collected from patients for the diagnosis of infectious diseases, and for epidemiological surveillance purposed. Laboratories carry out sample testing according to ISO and other national and international standards. All laboratories follow internal quality control programmes, and testing procedures are described in the quality manuals. Central laboratories participate in the international proficiency testing.

However, a general problem exists in terms of the lack of laboratory capacity and resources necessary to carry out tests for new regulated parameters, both at national and district levels. Insufficient equipping of laboratories and the limited training of laboratory personnel impede implementation of the reforms and implementation of new methods of testing.

In addition to the aforementioned problems, ageing laboratory staff (along with almost all staff in the institutions involved) and lack of young specialists also negatively influence the testing capacities of laboratories.

Strategic programmes on the development of services involved in risk assessment and legislation enforcement (including for laboratories) have been developed and approved by the Government during recent years.

Enforcement of laws and regulations by public health authorities

The harmonization of national legislation with international agreements of which the Republic of Moldova is part – as well as with EU legislation – is one of the general mandatory conditions to be met by the new normative (and legislative) acts proposed for approval. The development and harmonization of legislation is conducted by each responsible authority in accordance with the annual National Plan for Legal Approximation.

Many provisions of the newly adopted/approved normative acts lag behind in the area of enforcement. The implementation of normative acts is conducted with difficulty, in the absence of implementation guidelines, both for entrepreneurs and for the staff of state surveillance and control institutions. During the inspection, monitoring and enforcement of legislation, outdated procedures are applied, which are not based to a sufficient extent on risk and risk assessment procedures.

Environmental health protection

Environmental impact assessments (EIAs) are carried out in accordance with the Law on Environment Protection of 1993, and health impact assessments in accordance with the Law on State Public Health Surveillance of 2009 (10/2009). Both assessments include potential direct or indirect effects of activities on health and human welfare, environment, cultural heritage or property.

The environmental and health impact assessments are applied to all business activities that may have an impact on the environment and/or health. Strategic assessment of the impact on the environment and on human health is conducted during the development of strategic planning documents. The environmental and health impact assessments for individual enterprises or institutions are carried out during the process of positioning and designing buildings. These assessments are performed by the SEI under the Ministry of Environment and by the PHS under the Ministry of Health.

The health protection aspects – including those concerning the protection of the environment and of health in relation to the environment, disease prevention and health promotion, by means of the aforementioned normative acts – fall under the competence of local public administration authorities. The final draft of the new Law on Environmental Protection was submitted to the Government for approval; it was harmonized with EU regulations and will substitute some policy documents in this field, such as the Law on Environment, the Law on Ecological expertise and the Law on Environmental Impact Assessment.

Air quality

Monitoring of air quality in the Republic of Moldova is carried out in accordance with the Law on State Surveillance of Public Health of 2009 (10/2009) and the Law on Quality of Atmospheric Air of 1997. A new draft normative act, harmonized with the relevant EU legislation – the Sanitary Regulation on Air Quality – has been developed and submitted to the Government for approval.

The main goal of the air quality monitoring is to maintain and improve ambient air quality, prevent and reduce the harmful effects of physical, chemical, biological, radioactive and other factors on the atmosphere, where they have adverse consequences for the population and/or the environment. Detailed data on air quality are reported on an annual basis. Air quality is evaluated on a daily basis by the State Hydrometeo Service under the Ministry of Environment and some indicators are produced by the PHS (such as particulate matter (PM), carbon monoxide, formaldehyde, SO2 and NOx). In case of emergencies related to high levels of air pollution, the State Hydrometeo Service provides information to the Ministry of Health in order to plan common interventions. Both laboratory networks – of the State Hydrometeo Service and of the PHS – still use outdated laboratory equipment for air sampling and analysis; for example, such pollutants as PM10 and PM2.5 are not tested.

Water and sanitation

The Ministry of Health is responsible for the development of national legislation for drinking water and, together with the Ministry of Environment, for the development of legislation for sanitation and the disposal of wastes and residues. Quality of drinking water is regulated by Government Decision No. 934 (15 August 2007), which is harmonized with EU legislation. Waste collection and disposal are regulated by the Law on Waste Management (1347/1997). This regulates production of waste and household waste

management, aiming to reduce and prevent environmental pollution, and to maximize waste recycling as economically as possible.

The PHS is responsible for evaluating population access to improved drinking water supply and sanitation, monitoring drinking water quality (from underground and ground-level resources and from the distribution network), and for groundwaters, waters in recreational areas and water used for irrigation purposes. Monitoring data are published in the PHS annual activity reports and biannually for environment and health status matters.

In recent years, the Government has been responsible for investment in water and sanitation projects, which resulted in increased population access to improved drinking water supply from 53% in 2005 to 59% in 2011. However, 65% of rural population are still using shallow wells as their main water source for drinking and domestic purposes, and they continue to be exposed to health risks due to high nitrate (77% of samples contained higher than normal levels of nitrates) and microbial pollution (34% of samples) (NCPH, 2010).

As a Party to the WHO/UNECE Protocol on Water and Health, the Republic of Moldova established national targets in order to reduce water-related health impacts, through improved water management, and set targets for 20 specific areas, such as drinking water quality, the quality of discharges, and the performance of water supply and wastewater treatment (Bernardini et al., 2011).

Both the PHS and the SEI are responsible for monitoring and enforcement of legislation on sanitation and waste disposal.

Food safety and nutrition

The Ministry of Health and the Ministry of Agriculture and Food Industry are the responsible authorities for the development of food safety legislation. The Food Law of 2004 and most other related regulations are in compliance with EU legislation, including regulations on food hygiene, food contaminants and residues, and those relating to microbiological criteria for food safety. A "from farm to fork" approach has recently been approved in regulations on food safety. The General Rules of Food Hygiene facilitate the implementation of the Hazard Analysis in Critical Control Points system in the food processing industry.

However, the implementation of the regulations is problematic due to lack of resources (both human and financial); inadequate management; lack of laboratory equipment; and inadequate horizontal and vertical communication among stakeholders.

The existing food safety system is intersectoral, with responsibilities for inspection, monitoring and enforcement divided between the PHS under the Ministry of Health, the Sanitary-Veterinary Agency for Safety of Food of Animal Origin (SVASFAO) under the Ministry of Agriculture and Processing Industry and the ACP under the Ministry of Economy.

The PHS is responsible for inspecting, monitoring and enforcing legislation related to food of non-animal origin; the SVASFAO is responsible for inspecting, monitoring and enforcing legislation related to the safety of food of animal origin; and the ACP is responsible for inspecting, monitoring and enforcing legislation related to consumer protection. Each of the mentioned bodies acts according to its own annual plan on surveillance and monitoring of microbiological and chemical contaminants (including residues in the food chain) and has its own laboratory service. A traceability system is currently being established in order to ensure proper and efficient traceability of food and to make possible the recall of unsafe food. A Rapid Alert System for Food and Feed is to be established.

The data required for risk assessments are provided via the surveillance activities and sample testing. Monitoring programmes for chemical, physical and microbiological hazards are yet to be implemented, and should be harmonized with those applied in the EU. Procedures and guidelines concerning food safety risk assessment should be revised.

Surveillance of the environmental contamination of the food chain includes identification, tracing, monitoring and control of the environmental hazards in air, water and soil.

Goods

The Ministry of Health together with the Ministry of Economy are the responsible authorities for the development of legislation related to goods, cosmetic products and toys.

The production, labelling, sale and use of consumer goods are regulated by the Law on General Safety of Products of 2006, which transposed into national law the EU Directive 2001/95/CE, and by the Technical Regulation on Toys (22 December 2006) that transposed into national law the EU Directive 88/378/EEC (3 May 1988). The production, labelling, sale and use of cosmetic products are carried out in accordance with national legislation, which

is not yet harmonized with EU legislation. A draft Government Decision that transposes the EU law in the area of cosmetics into national law has been developed and is expected to be approved.

The monitoring and enforcement of legislation are carried out by the PHS and the ACP. Both institutions have their own monitoring plans.

The responsibility for risk assessment lies with the producers and the importers of goods. The authorization procedure, prior to it being placed on the market, as well as the market supervision of products (with direct and indirect impacts on health) includes laboratory tests. A rapid alert system in cases of hazardous products – similar to the EU Rapid Alert System (RAPEX) – is yet to be developed and implemented.

The production, labelling and placing on the market of biocides is conducted in accordance with the Government Decision (No. 564, 10 September 2009) that transposed into national law the EU Directive 98/8/CE (16 February 1998). Risk assessment for biocides is carried out by the intersectoral Expert Commission on Registration of Biocide Products under the Ministry of Health. Monitoring of biocides placed on the market is the responsibility of the PHS, the SVASFAO and SEI.

Occupational health

The Ministry of Labour, Social Protection and Family is the leading authority for the development of legislation related to occupational security and health. The Ministry of Health is responsible mainly for monitoring and evaluation of occupational health. The Labour Code of 2003 and the Law on Occupational Safety and Health of 2008 are the main legislative acts relevant to this field. According to these laws, the employer must provide safe conditions in the workplace, taking into account the context-specific hazards (such as working with carcinogenic substances, working in noisy conditions, vibrations, and so on). Specific legislation transposing International Labour Organization (ILO) recommendations and EU legislation have been approved.

Occupational health is assessed in terms of temporary inability to work, professional diseases, and health statistics that are analysed on a yearly basis. Employers are in charge of assessing occupational hazards in the workplace, evaluating the workplace and ensuring measures to reduce the risks (based on risk assessments), as well as carrying out periodical medical examinations of employees. The purpose of such medical examinations is to

determine the capability of the employee to perform specific work-related tasks, along with early detection of the symptoms of diseases relating to risks arising from the working environment.

The supervision of legal compliance in the area of health and security at the workplace is performed by the PHS (occupational health) and the Labour Inspectorate under the Ministry of Labour, Social Protection and Family (safety in the workplace).

The system of medical examination is set out by the aforementioned normative acts and the mechanism by ordinance of the Ministry of Health (No. 132, 17 June 1996). Medical examinations of employees are mandatory upon recruitment and then periodically, based on the mandatory assessment of hazards at the workplace and on risk assessment results. Employers are required by law to bear the costs of medical examinations.

Occupational Hygiene – under the PHS – was reorganized to become Occupational Health Medicine and the system of occupational health and safety need to be improved in order to comply with EU requirements.

Health-related behaviour

Tobacco and alcohol consumption, unhealthy diet and physical inactivity in Moldova are the main behavioural risk factors contributing to more than two thirds of the burden of NCDs. Healthier conditions can be achieved by the adoption and implementation of cost-effective measures on tobacco and alcohol, as well as promotion of healthy diet and physical activity. Adoption and implementation of such measures involves strengthening multisectoral cooperation, especially between the Ministry of Health, the Ministry of Agriculture and Food Industry, the Ministry of Finance, the Ministry of Economy, the Ministry of Internal Affairs, the Ministry of Education and local authorities, through establishment of clear areas of competence and responsibilities for each of the above-mentioned actors.

The Republic of Moldova signed the WHO Framework Convention on Tobacco Control (WHO, 2003) on 29 June 2004 and ratified it by Law No. 124 of 11 May 2007. Law No. 278 on tobacco and tobacco products (14 December 2007) was adopted in 2007 and is partially in harmony with Directive 2001/37/EC (5 June 2001) of the European Parliament and Council on the approximation of legislative acts and administrative acts of Member States concerning the manufacture, presentation and sale of tobacco products. Currently, the Ministry of Health is reviewing the aforementioned Law on Tobacco and Tobacco Products

and drafting two separate laws, one of which will specifically regulate tobacco control measures and the other will be focused on the tobacco production sector.

In 2012 the Government approved two national programmes: one on tobacco control and another on alcohol control. These Government Decisions established National Steering Committees on Tobacco Control and Alcohol Control, functioning as national interministerial coordinating mechanisms to enforce implementation.

In 2012 the Tobacco Law and the Law on Alcohol Production and Retail were amended by Law No. 22 (1 May 2012) on amending and completing some legislative acts. Restrictions on smoking in public places were introduced and alcohol retail during the night was prohibited (from 22:00 to 08:00).

In 2005 more than 50% of the adult population of the Republic of Moldova were overweight or obese (NBS, 2006), and these factors raise the risk of type 2 diabetes, CVD and some cancers. At present the anthropometric data relevant for the evaluation of nutritional status are collected by family physicians, but are not reported and analysed locally and nationally. A National Action Plan on Food and Nutrition as well as a nutrition surveillance system are being developed.

Health care facilities and programmes

The quality and safety of health care services are regulated by standards, protocols and guidelines approved by the Ministry of Health. Health care facilities providing health care services are accredited by the National Assessment and Accreditation Council for Health (NAACH) under the Ministry of Health. The activity of the private health care facilities is subject to licensing. The accreditation of public health care facilities did not become de facto an essential criterion upon which their operation is conditional. The adequate implementation of guidelines and procedures concerning nosocomial infections is lacking.

The health care institutions that provide health care services are responsible for carrying out supervision, prevention and control activities relating to nosocomial infections. Each hospital is required by ordinance of the Ministry of Health to have as part of its structure epidemiologists and assistant-epidemiologists (depending on the number of beds) to ensure such activities (supervision, prevention and control) are carried out. Currently, about 25% of hospitals have epidemiologists. Each case of nosocomial infection, as well as each outbreak of nosocomial infections are to be immediately reported to the *rayon*/

municipal Centres of Public Health. A weak internal control system for dealing with nosocomial infections within medical institutions and the lack of external control over the quality of the medical services provided are among the issues that remain unsolved.

Conclusions

Health protection is an inter- and multisectoral area, requiring the involvement and cooperation of all authorities and interested stakeholders at national and local levels. Ministries and their subordinated institutions involved in health protection activities cooperate amongst themselves and with local authorities, but the collaboration needs to be improved, both at the level of policy development and at the level of enforcement, monitoring and surveillance of public health protection measures. Improving the collaboration with producers, the private sector and nongovernmental organizations (NGOs) is also crucial.

Strengths

- Supportive legislative framework in the area of health protection.
- Existence of the functional system for hazard monitoring in food and goods, in the environment and workplace.
- Main areas of health protection are operational.

Weaknesses

- Lack of human and financial resources at national and *rayon* levels.
- Partial enforcement of legislation and regulations on health protection issues.
- Lack of guidelines and training to ensure their implementation.
- Slow reorganization process of the health protection system and poor delimitation of the tasks and responsibilities between competent authorities.
- Weak collaboration between different sectors.
- Lack of health promotion programmes at workplaces.
- Weak capacities in health risk communication.
- Lack of research in the fields of health protection and weak capacities for risk assessment.

Opportunities

- Involvement in the wider international community and political will expressed on the Association Agreement of the Republic of Moldova with the EU.
- Political recognition of the necessity to implement the "Health in all policies" approach established by law and as part of the National Health Policy (NHP).
- Technical assistance provided by international organizations and by the EU.
- Access to international and regional scientific evidence and EU practice in the different areas of health protection.
- Benefit from the experience of other countries in the region.

Recommendations

- Encourage implementation of reforms and reorganization of the existing systems in the area of health protection.
- Improve cooperation within and between interested ministries and the institutions subordinated to them, as well as with other interested stakeholders, to ensure the "Health in all policies" approach is central in all public health policy-making.
- Strengthen capacities of the Ministry of Health, PHS and other sectors in terms of health risk assessment, management and risk communication related to environmental, occupational and food safety.

Operation 5: Disease prevention

Definition

Disease prevention is aimed at both communicable and noncommunicable diseases and has specific actions largely delivered to the individual. Disease prevention services should include primary prevention through vaccination of population; and the application of vaccination or post-exposure prophylaxis to people exposed to a communicable disease.

It also includes the provision of information on behavioural and medical health risks, as well as consultation and measures to decrease them on the personal and community levels; systems and procedures for involving PHC and specialized care in programmes for disease prevention; the capacity for the production and purchasing vaccines; ensuring of reserves of vaccines; and the production and purchasing of nutritional and food supplements.

Secondary prevention includes evidence-based screening programmes for early detection of diseases; maternal and child health programmes, including screening and prevention of congenital malformations; the production and purchasing of chemoprophylactic agents; the production and purchasing of screening tests for the early detection of diseases, and capacity to meet current or potential needs (Marks, Hunter & Alderslade, 2011).

Vaccination

The Ministry of Health coordinates the National Immunization Programme (NIP). The Ministry must ensure that the NIP is integrated into the NHP and other sector-wide policy initiatives, including involving the health insurance system and the minimum package of health services. The NIP is coordinated by the Ministry of Health, along with the participation of the Coordination Council for the development and finance directions of the NIP, the NCPH, the State University for Medicine and Pharmacy, the National Medical Insurance Company, and other medical institutions.

The NCPH is authorized by the Ministry of Health to carry out the overall management of the NIP, and to ensure links to other departments within the health sector. It performs many functions, including the development of the National Immunization Policy and

long-term plans on immunization services; storage; and distribution of vaccines and injection supplies to district Centres of Public Health; and surveillance of vaccine-preventable diseases, including laboratory surveillance, training and social mobilization; research and other activities.

The NIP for 2011–2015 provides immunization against 11 infections: hepatitis b; TB; diphtheria; tetanus; pertussis; poliomyelitis; measles, mumps and rubella (MMR); Haemophilus influenzae type b; and rotavirus infection. The last one was introduced in 2012. Vaccination for pneumococcal infection (PCV) is planed to be introduced in 2013. Vaccinations against influenza, rabies and other diseases are provided to at-risk population groups. Only vaccines included in the NIP and approved by WHO can be used in the Republic of Moldova. A national vaccine storage established by the NCPH, certified by WHO, provides optimal conditions for vaccine storage. Parallel import of vaccines only takes place in specific instances. Vaccines given as part of the NIP are financed partially by the Global Alliance for Vaccines and Immunization (GAVI) but, starting with 2012, the Republic of Moldova must provide 20% of the annual budget for vaccines, increasing up to 80% by 2015.

Vaccination is free of charge and the Republic of Moldova maintains high vaccination rates, despite some anti-vaccination campaigns by certain NGOs.

The NCPH works with *rayon*/municipal Centres of Public Health to manage implementation of the NIP, and with PHC services and other relevant agencies in the health sector. District primary health administrations, PHC centres and family doctors are responsible for delivering immunization services to their local populations.

Other disease prevention services and activities

Prevention and control of lifestyle-related diseases – focusing on alcohol and tobacco control activities – represent a priority for the country. The national programmes on alcohol and tobacco control were developed and approved by the Government in the first quarter of 2012. In line with these programmes, specific services are due to be developed and implemented, such as smoking-cessation counselling services and counselling for people with at-risk levels of alcohol consumption. These services will possibly be funded by the HIFs (under the NHIC), with which service providers may have contracts. No system of easily available services for drug users has been developed.

Primary care plays an important role in implementing public health strategies for disease prevention. However, currently activities continue to be focused on treatment, with the exception of vaccination, counselling and monitoring of pregnant women, and the monitoring of infant and child health. PHC physicians alone do not have enough knowledge and capacity to consult and help people to live healthier lives, to identify people at risk and prevent these risks.

The prevention of congenital malformations and anaemia forms part of the standard monitoring of women during pregnancy. Starting in 2001, pregnant women and women in the first six months after delivery receive folic acid and iron supplements free of charge (the costs are covered by the NHIF). Despite providing these free-of-charge supplements, research results showed high levels of anaemia among pregnant women (43.0%) and women of childbearing age (27.3%). To reduce these deficiencies, the first National Programme on Iron and Folic Acid Deficiency Reduction for the years 2012–2017 has been approved by the Government. According to this programme, all flour to be used in the food industry must be fortified with iron and folic acid.

For pregnant women prenatal screening takes place for Down syndrome and other chromosomal disorders. The screening of neonates for phenylketonuria and inborn hearing loss is provided in maternity hospitals. Prevention of haemorrhagic disease by prescribing vitamin K in neonates is not included.

In order to better inform pregnant women, alongside the standard consultations, all women receive a perinatal care card during the first antenatal care visit. This card includes standards for check-ups, consultations, antenatal interventions and educational messages for mothers. Pregnant women are also required to receive the "Expectant Mother's Guide", which provides information regarding child development from conception to birth, along with recommendations for child care, feeding and other information. Nevertheless, there is inadequate provision of educational materials on pregnancy and child care.

Iodine deficiency is a problem in the Republic of Moldova and to reduce this deficiency a third National Programme on Iodine Deficiency Disorders for 2011–2015 has been approved by the Government.

The number of cases of breast cancer in the Republic of Moldova (45.8 per 100 000 women in 2004 and 44.3 per 100 000 in 2010) is stable, and the same is true for cervical cancer (16.1 per 100 000 women in 2004 and 15.5 per 100 000 in 2010). No cancer screening mechanisms are in place, which results in detection in late stages and high mortality rates.

Ongoing population screening programmes for (cervical and breast) cancer are provided during special annual campaigns, supported by the NHIC. However, these cover only a small part of the population. Cervical cancer screening was introduced as part of regular gynaecological practice; nevertheless, it is unsystematic and no standards for quality assurance and control are in place. There are no screening programmes for colorectal or prostate cancers.

Mortality rates from diseases of the circulatory system has decreased over recent years (SDR from 805 per 100 000 population, all ages, in 2004, to 731 per 100 000 in 2010), which can be partly explained by applying screening measures for hypertension and its management. Medication for continued treatment of hypertension is partly covered by the NHIF. It is important to note that the rural population is most affected; death rates are almost twice that of urban areas, in both men and women.

The social determinants of health are not sufficiently taken into account in policy development and planning intervention activities. Without further understanding of health inequalities and social determinants, the appropriate financial resources cannot be directed towards addressing them.

Two national programmes are currently under way: the National Cancer Control Programme and the National Programme on Cardiovascular Diseases Control. Nevertheless, a National Working Group was established under the auspices of the Ministry of Health with the purpose of evaluating the existing policies on NCDs and – based on the evaluation results – to develop the National Plan on NCD Control (to cover the missing parts of the drafted or approved programmes on cancer, diabetes, CVD control, and so on).

Conclusions

Some well-organized and functional prevention measures are in place in the Republic of Moldova for vaccine-preventable diseases. National programmes on nutritional deficiencies (iodine, iron and folic acid) have been developed, and implementation started. Treatment services for smoking, drug and alcohol addiction are not yet well developed and are not equally distributed throughout the country. No cancer screening mechanisms are in place, which results in detection in late stages and high mortality rates.

Prevention services do not target health inequalities and poor people and people from rural areas have limited access to such services.

Strengths

- The NIP is well managed and is applied across the country (include in Transnistria); unified nationwide protocols based on the good, safe vaccination practices are in place. The awareness level of the health sector, public authorities and civil society is high in relation to health risks related to infectious diseases.
- Intersectoral strategies for prevention of micronutrient deficiencies (iodine, iron and folic acid provision) and relating to risk factors (alcohol and tobacco use and misuse) have been developed on the basis of recommended, cost-effective ("best buy") strategies.

Weaknesses

- Weak policy framework on prevention of major NCDs (CVD, cancer, diabetes). Lack of policies and strategies on physical activity and healthy nutrition.
- Insufficient funding allocated for national and regional prevention programmes.
- Insufficient motivation of health workers to provide health promotion activities.
- Low level of knowledge and capacities of health workers to provide preventive services and public health specialists to provide and organize preventive activities.
- No cancer screening mechanisms in place, and lack of funding, resulting in detection in late stages and high mortality rates. No funding for screening services.
- Consideration of health inequalities is not incorporated into strategies and programme development.

Opportunities

- Development of a National Action Plan on NCD prevention and control, based on an NCD situational analysis.
- Capacity building of public health specialists and health managers in order to increase their knowledge and capacity to develop, implement and evaluate local public health policies, involving different sectors in addressing the NCDs and associated risk factors.
- Introduction of new vaccines based on the following criteria: severity and burden of disease, cost–benefit assessment, efficacy, safety, and so on.

Recommendations

- Continue to develop the policy framework on NCD prevention and control, and incorporate the intervention for risk groups in order to reduce health inequalities.
- Develop and implement a bonus system for family doctors to motivate them to pay more attention to prevention activities.
- Develop and implement cancer screening mechanisms for breast, cervical, prostate and colorectal cancers.
- Develop and implement a new mechanism for spending NHIC funding for prevention measures.
- Optimize the financing of national prevention programmes.
- Strengthen divisions at Centres of Public Health on health promotion and disease prevention.

Operation 6: Health promotion

Definition

Health promotion is the process of enabling people to increase control over their health and its determinants and thereby improve it. It is important element of public health and addresses both communicable and NCDs. Health promotion includes a range of activities such as:

- the promotion of changes in lifestyle, practices and environmental conditions to facilitate the development of a "culture of health" among individuals and the community;
- educational and social communication activities aimed at promoting healthy conditions, lifestyles, behaviour and environments;
- reorientation of health services to develop care models that encourage health promotion;
- intersectoral partnerships for more effective health promotion activities;
- assessment of the impact of public policies on health;
- risk communication. (Marks, Hunter & Alderslade, 2011)

Since 2005, greater attention has been paid to health promotion activities and some progress has been made in recent years. To promote healthier lifestyles, the Ministry of Health developed the National Programme for the years 2007-2015 and collaborates with the following entities.

- **Ministry of Education**, on the promotion of healthy nutrition, physical activity and health education in schools. Some aspects of health promotion are included in the school "Civic Education curricula"; however, the problems addressed are too general. For the schoolchildren aged 12–14 years a facultative "Health Education hour" is envisaged, but the necessary information-based support (guides, manuals, and so on) is not available.
- **Ministry of Agriculture and Food Industry**, on food safety and healthy diet, mainly to increase production of fruit and vegetable and ensure their availability on the market.
- **Labour Inspectorate**, on prevention of occupational diseases and accidents and to ensure healthy workplaces.

Activities related to healthy diet, physical activity, and obesity prevention and control

An important element of health promotion is to ensure healthy nutrition in schools. According to national legislation, it is forbidden to commercialize food products with high energy density in schools (including preschools). However, there are fewer choices for children to consume fruit and vegetables in educational institutions (preschools, schools and other education institutions) and there is an inadequate level of healthy food promotion.

In collaboration with various NGOs, recommendations on healthy nutrition and healthy behaviour have been developed (manual and exercise book for teachers and students, respectively, from professional colleges), which are to be approved by the Ministry of Education as part of the training curricula in the country's vocational education institutions.

A handful of projects implemented at community level address some strategies for promoting healthy nutrition and prevention of NCDs, but these are not implemented regularly and are not national in scope.

Physical education is part of the school curricula in the Republic of Moldova. For two hours per week, children engage in different physical exercise activities at school and the majority of schools have equipped sports halls. Physical activities have begun to be promoted by family doctors – not only to patients but also in the framework of communication, information and educational activities that are carried out periodically.

Health promotion activities on tobacco and alcohol

Tobacco smoking and hazardous alcohol use are the most important social and health concerns at national level. A fairly large proportion of the adult population of the Republic of Moldova consumes alcohol. Prevalence of smoking in the country is also high among the adult male population, at 51.1%. Due to a lack of resources, activities at national level for health education and health promotion directed towards reducing tobacco and alcohol consumption are limited only to seminars, speeches, lectures, and information materials within the framework of the WHO World No Tobacco Day (31 May) and the World No Alcohol Day (2 October).

With WHO and EU support, the Communication Strategy for a National Anti-tobacco Campaign was recently developed and approved by the Ministry of Health. A National Communication Strategy for Alcohol Control is also being developed. Before lunching campaigns, the national baseline knowledge, attitudes and practices (KAP) surveys were carried out. During 2012 and 2013 a number of communication and health promotion activities are to be developed and implemented. Evaluation of the communication campaigns will be carried out at the end of 2013.

Activities directed to drug abuse prevention and control

National actions to prevent and tackle drug consumption and illicit trafficking are provided in Government Decision No. 314 of 17 March 2007 on the approval of measures to combat drug addiction and drug-business, and in the National Anti-drug Strategy.

The national standards on reducing risks associated with injecting drug use and the national standard on providing psychosocial assistance to drug users were approved by Order of the Minister of Health No. 551 of 30 June 2011.

In the Republic of Moldova, various NGOs implement measures to reintegrate and re-socialize drug addicts in residential settings. There are 19 mutual aid groups offering psychosocial support to drug addicts in outpatient conditions. Existing programmes do not provide any measurable objectives and performance indicators that would allow evaluation of their envisaged activities and impact. In addition, a lack of adequate financial coverage for such activities has a negative influence on their implementation.

At all levels, there is a lack of educational and information programmes for young people to familiarize them with the consequences of consuming psychotropic substances, as well as to motivate them to adopt a healthy lifestyle.

Activities related to prevention of infectious diseases (HIV/AIDS, TB)

The Republic of Moldova has a legal framework on the prevention of HIV/AIDS and TB, incorporating various laws,[8] the National TB Prevention and Control Programme for 2011–2015, and communication strategies for the prevention of HIV/AIDS and TB.

The health and education sectors, NGOs, and other public order services are involved in prevention activities. Educational/information materials are developed at national level within different projects, taking into account high-risk groups, age and language(s) spoken. It is worth mentioning that the majority of prevention activities are funded by donors.

Communities (including young people, NGOs, local public authorities, families, schools) are actively involved in implementing activities to prevent HIV/AIDS and TB. Communication, information and education activities are based, to a great extent, not only on accumulation of knowledge but also on communication for behaviour change.

Complex annual and multiannual plans are in place in the field of HIV/AIDS and TB prevention and control. Surveillance and control services for HIV/AIDS and TB are focused on high-risk population groups.

Activities related to prevention and control of occupational and work-related health hazards, including workplace health promotion

Public health specialists from the regional Centres of Public Health and the NCPH are involved in promoting the need for healthy working conditions. Groups of workers from different fields are trained on specific public health issues. Workplace risk analysis and risk assessment in big companies is conducted systematically; however, in small and medium-sized companies, it is only performed occasionally. Incidence of injuries, accidents at the workplace and occupational diseases are also monitored.

8 Law No. 23-XVI on prevention of HIV/AIDS (10 February 2007) and Law No. 76 to amend and supplement Law No. 23-XVI (12 April 2012).

Activities undertaken in this area are intersectoral in nature; mutual collaboration takes place between the work protection departments of the enterprises involved, and the Ministry of Labour, Social Protection and Family.

No surveys are conducted on the KAP of the target groups of the population, which means that activity planning is not survey based. No health education materials are currently being developed.

Services for the prevention and control of occupational health hazards and workplace dangers are not aimed at the entire population, and aspects such as poverty, ethnicity, sex and other socioeconomic factors are not taken into consideration.

The issue of injuries and trauma (drafting of legislation, information campaigns, prevention activities, workshops, training) is tackled at intersectoral level, involving the Ministry of Health, the Ministry of Labour, Social Protection and Family, the police, and so on. Educational/information materials on preventing trauma, accidents and violence are financially and technically supported by various donors within the framework of the specific projects. Due to a lack of continuous financial and technical support, these activities were only implemented for a short period of time.

The Public Health Services make efforts to involve the community, family and school in activities related to prevention of trauma and violence through education and communication, "round table" meetings, and various group activities (competitions, exhibitions, and so on).

Activities related to dental hygiene education and oral health

Dental hygiene and oral health in the Republic of Moldova are addressed less systematically, at the level of educational institution, within one-off activities (lessons, contests, themed events, and so on) or within certain projects implemented at community level. At the national level this issue is not properly addressed (programmes, action plans, awareness campaigns, and so on).

Conclusions

The legal framework for health promotion in the Republic of Moldova is only partly developed and consists of a national programme on health promotion and specific

activities within various health programmes and action plans. Information materials on health education are developed sporadically, to an insufficient extent, by organizations implementing individual national or regional projects. These materials address only few public health problems (TB, HIV/AIDS, and reproductive health, for example). At national level, health promotion activities are organized by health education specialists from regional (*rayon* and municipal) Centres of Public Health on World Prevention Days/Weeks/Months, with activities focusing on prevention lectures, individual talks, themed evenings, training sessions, and so on.

Strengths

- Political commitment to health promotion and disease prevention activities, reflected in various policy documents.
- Methodological and financial support provided by international organizations in health promotion and disease prevention activities.

Weaknesses

- Insufficient funding of national and local health promotion interventions/activities.
- Insufficient involvement of local public authorities in the development and support of local-level activities.
- Insufficient motivation of health workers
- Lack of surveys on NCD risk factors.
- Insufficient capacities and resources for developing and printing health promotion materials on priority public health issues for different target groups.
- Insufficient administrative capacity in health promotion (structures, trained staff, local trainers, hobby clubs).

Opportunities

- Financial support and technical assistance provided to the health sector by international organizations and certain donor countries (Switzerland, Romania, Poland, Germany, the EU, and so on).
- A large number of NGOs and resource centres active in the health and social spheres, which could be used as resources in partnership programmes.

Recommendations

- Develop a strategy and an action plan for health promotion and health communication.
- Optimize the financing of national prevention and health promotion programmes.
- Train and motivate health promotion specialists at *rayon*/municipal levels to develop and carry out health promotion activities.
- Optimize activities to promote physical activity, healthy nutrition, oral health, prevention of accident and injury, and to reduce tobacco, alcohol and drug use, and so on.

Operation 7: Assuring a competent public health and personal care workforce

Definition

Investment in and development of a public health workforce is an essential prerequisite for delivery and implementation of the Public Health Services and activities. Human resources constitute the most important resource in delivering Public Health Services. This operation includes the education, training, development and evaluation of the public health workforce, to identify the needs of the Public Health Services to address efficiently priority public health problems and to evaluate adequately public health activities (Marks, Hunter & Alderslade, 2011).

Improvements in the health of the population depends, in large part, upon the quality and preparedness of the public health workforce, which is, in turn, dependent upon the relevance and quality of its education and training. The Republic of Moldova has long faced the problem of ensuring competent staff in public health – broadly speaking, there is an insufficient number of health professionals, in particular certain specialists. The number of physicians and nurses working in public medical institutions dropped by 38% and 50% from 1994 to 2010, respectively, posing a major challenge for the health system. There are too many health professionals in certain disciplines and in urban areas, while there are too few epidemiologists, public health professionals, laboratory staff and family doctors in rural communities. Although higher salaries have been offered to attract health workers to rural areas, staff shortages persist.

Evaluation of the human resources structure

The Ministry of Health of the Republic of Moldova runs a database on human resources. The annual statistical report of the NCHM provides data on the number of doctors in the health system. In terms of human resources in health care, there is a shortage of health professionals with higher medical education in the rural area, and a surplus of physicians in urban areas. In 2010, compared to 2009, the number of doctors decreased from 10 761 to 10 612; and the number of medical workers with secondary medical education fell from 23 141 to 22 996. In addition, the number of health workers per 10 000 people is below the European average (29.8 doctors per 10 000 inhabitants in the Republic of Moldova and 32.3 doctors per 10 000 inhabitants in the EU; the number of health workers with secondary medical education is 64.5 per 10 000 people in the Republic of Moldova and 77.5 per 10 000 in the EU). As regards the number of family doctors, there is a significant imbalance: 5.2 per 10 000 people in the Republic of Moldova and 8.5 per 10 000 people in the EU. This could be one of the factors affecting the quality of primary medical services and health indicators, which are below the EU level.

The lack of specialists has a negative impact on the quality of public health statistical indicators. In some districts, there is an undersupply of cardiologists, psychiatrists, oncologists, endocrinologists and gastroenterologists. Because of the lack of specialists, these types of diseases are detected at later stages of the disease and the treatment becomes more complicated and costly.

In 2012, a Framework – concept on Health Human Resources and an Action Plan for its implementation were developed and approved by the MoH, aiming to improve the training policies for doctors and health workers with secondary education, bring their employment into line with the current requirements of the health system, improve the salary system and increase the motivation of health workers.

Capacity building for public health

Public health specialists usually obtain their official qualification after graduating from the State Medical University (SMU) public health faculty and after completing their residency in public health. Postgraduate training courses in public health, including hygiene and epidemiology, and health management are available for medical professionals at the same university. From 2011, short-term training courses were developed at the NCPH on specific items, according to a programme for continuous training (mainly for specialists from municipal and *rayon* Centres of Public Health).

The School of Public Health Management was created in 2003 at the SMU. The School is an active member of the Association of Schools of Public Health in the European Region (ASPHER). To date more than 100 Masters of Public Health have graduated from the School. Until 2007, only medical professionals were trained at the School, but from 2007 it has also been open for non-medical health professionals. At the moment, there is no specific training on "Health in all policies".

Because of the forthcoming general shortage of medical specialists, and especially in public health, the Development Strategy of the State University of Medicine and Pharmacy 'Nicolae Testemitanu' for 2011–2020 was approved (in 2011), the main goal of which is to increase the quality of education and the development of a qualified medical workforce for the next decade by aligning training processes with international standards and European requirements. Special attention is paid to educating public health specialists. A special government programme has been established in 2011 to increase the attractiveness of rural regions for medical professionals. The main beneficiaries of this programme will be PHC health professionals.

In line with ongoing reforms in Public Health Services, a number of non-health professionals, such as sociologists, biologists, statisticians, psychologists, journalists, and lawyers are expected to be engaged in Centres of Public Health. For this reason, training courses are to be organized by the NCPH.

Health workers are trained at one of five state-certified medical colleges and at the SMU. The training and accreditation of doctors is strictly regulated and they must undertake continuing professional development at 5-year intervals. All doctors must pass state medical exams before undertaking residency and further training. Despite recent concerns about standards in basic medical and public health training, improvements have been made in postgraduate training in health management and family practice.

Following recent reforms, training programmes for family doctors and health care managers have been developed. The Faculty of Family Medicine was established at the SMU in 1998 and the first Chair in Management Training and Public Health was created in 2000. Only a small percentage of health managers have adequate training in public health. There is an increasing need for training in public health, health system administration and management, to increase capacity in these areas. The training of health care managers began in 2003 at the SMU's School of Public Health Management. In addition, since 2005, a Master's Programme and short courses for health professionals have been provided.

Postgraduate education programmes for doctors and managers are delivered and managed by the relevant departments of the SMU. Additional training opportunities are provided through national and regional seminars, conferences and national and international workshops. In the national public health laboratories, job skills training is widely available for district-level personnel.

The main barriers to improving training of public health personnel include the inadequate quality and quantity of training centres, and a lack of trainers and up-to-date programmes. There is also a need for more evidence-based training materials to facilitate access to modern technologies, and for medical protocols focused on public health.

The role of the Ministry of Health in the planning of health professionals has always been very important or, in recent history, crucial. The Ministry has recently developed a draft Strategy for Health Workforce Development, which provides necessary measures to increase the attractiveness of public health specialties and reduce personnel shortages.

The introduction of the Bologna Process is an additional issue, which has led to the structuring of studies into several levels of health professional education – undergraduate, postgraduate professional education (such as residency, Master's degree, PhD), and periodic continued training. The description of the specific work for graduates is still to be fully defined, particularly in terms of the structure of undergraduate studies.

It is essential to attract different undergraduate (non-medical) staff with distinct profiles to work within public health. These professionals should have certain specific fields of knowledge in the health sector, which would also contribute to alleviating concerns that non-medical staff could interfere in the work of medical professionals.

It is necessary to carry out a feasibility and eligibility assessment of undergraduate public health studies. An audit of public health skills could be useful in identifying gaps and developing a multidisciplinary public health workforce. It is important to ensure that the key public health skills form the essential competency framework with which the public health workforce needs to be equipped. Investment is needed in innovative and creative management and leadership programmes.

Conclusions

The Republic of Moldova has long faced the problem of ensuring competent staff in public health – broadly speaking, there is an insufficient number of health professionals, in particular certain specialists. The number of physicians and nurses working in public medical institutions dropped dramatically from 1994 to 2012, posing a major challenge for the health system. Education and training in medical colleges, the SMU, the School of Public Health Management and the postgraduate training courses in the Republic of Moldova need to be strengthened, meeting the needs of current and future public health practitioners in order for them to contribute to improving population-level health.

Strengths

- Centralized education and training system secures uniformed standards for public health specialization and other public health-related training.
- Establishment of the SMU's School of Public Health Management that offers medical and non-medical professionals the opportunity to receive up-to-date training in public health and to obtain a Master's Degree (around 20 professionals annually).
- Improvement of the training programmes at the SMU and development of the Medical University Strategy for the years 2011–2020.

Weaknesses

- Shortage and/or ageing of public health personnel.
- Public health training opportunities are limited, including interdisciplinary training for all professions working within the public health field.
- Existing training programmes for medical students, graduates completing their residency and postgraduate programmes for public health practitioners are not in line with the current public health priorities.
- Lack of skilled trainers.
- Human resources management is weak and leads to uneven distribution of human resources or uneven distribution of assignments.

Opportunities

- The SMU's School of Public Health Management can contribute to the further education of highly skilled public health professionals.
- Renewed focus on the specialization of public health.

- Improved distribution, collaboration and cooperation between experts across the system.
- Use of continuous training methods for most relevant issues contributing to capacity building in PHC.
- Capitalize on the potential of the Regional Health Development Centre on Human Resources for Health for the SEEHN established in the Republic of Moldova.
- Involvement of non-medical professionals in the Public Health Master's Degree training programme.

Recommendations

- Finalize and approve the Health Human Resources Strategy for the health sector with a chapter on public health professionals.
- Develop good capacities at the NCPH for continuous training in public health issues.
- Revise and update training curricula and educational materials for health and public health specialists in medical colleges, the SMU, the School of Public Health Management and within postgraduate training courses, taking into consideration the new tasks and responsibilities of public health professionals.

Operation 8: Core governance, financing and quality assurance for public health

Policy development is a process that informs decision-making on issues related to public health.[9] It is a strategic planning process that involves all the internal and external stakeholders and defines the vision, mission, measurable health goals and public health activities at national, regional and local levels. Moreover, in the past decade, it has become more important to assess the repercussions of international health developments on national health status (Marks, Hunter & Alderslade, 2011).

Notwithstanding the many challenges involved with the stewardship of public health, there is some strength in its organization within the Ministry of Health, including a Deputy Minister and one Public Health Department (according to the new organization chart of the Ministry of Health, made available in 2012). This has given an important voice to public health within the Ministry and reflects the recognition of the importance of public health, both within the Ministry and the health system as a whole.

9 Ministry of Health Decree No. 777 of 7 August 2012.

A "Health in all policies" approach

Some major health determinants exist outside the health sector, and intersectoral collaboration between different stakeholders is crucial for disease prevention. Promoting health in other sectoral policies has become an important task of Ministry of Health since 2009, with many policy documents outlining the responsibilities and actions of different ministries and institutions. Efforts to focus on the principle of "Health in all policies" are prominent in the health sector, while other ministries do not recognize this commitment to a sufficient extent to regularly and proactively involve it in their policies, programmes and projects.

The Republic of Moldova has already adopted a number of relevant policy documents that were the result of effective cross-sectoral collaboration and are an example of health policy-making. The most important are discussed in further detail here.

The Law on State Public Health Surveillance (10/2009) established a legal basis for action on public health reform. The law sets out new approaches to public health: to protect, to prevent, and to promote. It sets out how such approaches will: (a) protect the population from health threats, led by central Government, with a modern PHS and strong front-line services; (b) empower local leadership and encourage broad responsibility across society to improve everyone's health and well-being, and tackle the wider associated influential factors; (c) positively promote healthy behaviour and lifestyles, including adapting the environment to make healthy choices easier.

Quality of life, health, health equity and well-being are explicitly identified as priorities, goals and objectives in a key national development document – the **Government Action Plan for the Years 2012–2015**. The chapter on Public Health states the aim to maintain and improve the health of the entire population by ensuring affordable access to health services by means of health insurance and programmes for disease control, health promotion and disease prevention. The main objectives are to improve the infrastructure of health institutions and the quality of health care, and to improve the efficiency of the public health system and the performance of the health care system.

The NHP, approved by Government Decision No. 886/2007 is one of the most important political documents in which the government recognizes health as a major priority of the state and society. The document serves as a tool for a systemic approach to health problems, and as a basis for intersectoral cooperation and robust national, local and sectoral action plans and programmes for public authorities promoting and improving

health. **The NHP** has four major general objectives: (1) to increase life expectancy at birth and healthy life years; (2) to support a higher quality of life and to reduce health inequity among all social groups; (3) to consolidate intersectoral partnerships for health; and (4) to increase personal responsibility for health. The means by which the objectives are to be achieved are manifold, including: (a) state engagement, whereby state institutions assume responsibility for the health protection of the population – the government will monitor implementation of the NHP and sectoral strategies and programmes developed on the basis of the NHP; (b) the legal framework, through the transposition of EU Directives[10] as a condition of implementing the NHP – the NHP should also be implemented together with other relevant national strategies; (c) intersectoral actions – national programmes and strategies with potential impact on health are to be based on intersectoral cooperation; (d) equity and solidarity – the main pillar of the NHP is to assure equitable and affordable access to health services for all citizens; (e) sustainable financing and generation of resources; (f) de-concentration and decentralization of responsibilities; and (g) community involvement.

Another important policy document has recently been approved by Government Decision No. 165/2011 (17 March 2011); namely, the **State Programme on development and technical-material endowment of Public Health Services for the years 2011–2016**. The main purpose of this document is to increase the effectiveness of Public Health Services through sustainable development of public health institutions. The objectives of the programme are:

- improving management of public health institutions;
- establishing an efficient system for the professional and continuous training of public health specialists;
- strengthening of the integrated information system;
- implementation of quality management for Public Health Services;
- implementation of new a communication strategy and programmes:
- building capacities for intervention in public health emergencies;
- strengthening capacities for research in public health.

The **National Strategy on NCD Prevention and Control**, adopted by the Parliament with Government Decision No. 82/2012 is the first national strategic document to tackle NCD, developed in line with the recent WHO Strategy for the Prevention and Control of Noncommunicable Diseases (WHO Regional Office for Europe, 2006) and the action plan for the implementation of the Strategy (WHO Regional Office for Europe, 2011). The goal

10 This refers to the approximation of Moldovan legislation, norms and standards to those of the EU.

of the Strategy is to reduce significantly the burden of NCDs and to avoid premature death through implementation of integrated intersectoral actions for improving quality of life and increasing life expectancy. The Strategy created the national multisectoral framework for NCD prevention, along with organization and implementation policies in all sectors, put in place to assess and manage four major risk factors in order to achieve the main objective; namely, to reduce by 17% the mortality rate due to preventable NCDs by 2020.

The Strategy proposes actions that focus on: improving access to health services; implementing national health programmes based on prevention; reducing the impact of major diseases on the public health system; integrating provision of preventive and basic care services for high-risk population groups; assuring the minimum basic package of medical services for vulnerable groups; promoting interventions to address the determinants of health; shifting care towards preventive health services; and reducing the impact of major diseases on the public health system.

National and local levels

Based on the Law on State Public Health Surveillance and Government Decision No. 820 (21 December 2010), the National Extraordinary Commission on Public Health consists of 17 central authorities and provides intra- and intersectoral coordination on early detection, risk assessment, risk communication, developing a national plan for responding to and management of public health events and emergencies. The preparedness for, management of and response during public health events at local level are coordinated by the *rayon*/municipal-level Extraordinary Commission on Public Health, which includes local public authorities. The responsibilities of the national and regional Centres of Public Health include preventive public health control measures, developing preparedness and response plans, and – during the public health events – risk assessment in order to obtain evidence for decision-makers.

In August 2011 the Government agreed the outline for the preparation of the National Development Strategy for the period 2012–2020 ("**Moldova 2020**"). The Ministry of Health contributes to considering equality and solidarity in preparing the new Development Strategy and in effecting the principles of "Health in all policies".

At the district level, Centres of Public Health are the coordinating body responsible for implementing public health activities.

Recent developments indicate that big changes are taking place in public health. For several years, public health was marked by the lack of an overall public health strategy, and suboptimal levels of strategic thinking on major organizational issues, including the roles and functions of public health institutions. This lack of strategy was also reflected in an absence of direction for the development of health intelligence; specifically, data collection and analysis. This is changing rapidly, but many challenges remain to be solved by proper implementation of core functions, as discussed in detail in this chapter.

It is clear that the need for change has been identified and that there is also a willingness to optimize the existing organization of public health. This is certainly proof of the strengthened governance of public health at the national level. A great challenge in the coming years is the reorganization of the PHS, by establishing 8–10 regional Centres of Public Health instead of the existing 36. This reform will allow the existing limited capacities and resources of small Centres of Public Health to be used more efficiently.

Alongside this limited progress at the national and regional levels in recent years (there is still need for substantial improvement in intersectoral cooperation), the Ministry of Health plays a leading role at the governmental level and utilizes the proficiency of the NCPH for intersectoral collaboration with other professional institutions at the national and/or local levels. This is particularly important in some areas, such as the fields of health promotion and disease prevention, whereby intersectoral cooperation is central to tackling inequalities and the determinants of health.

Only few NGOs operate in the public health sector. That said, a successful coalition was possible between the Ministry of Health and an NGO in the field of tobacco control, with the Anti-tobacco Coalition of NGOs active in advocating for the new Tobacco Law. In addition, NGOs are not necessarily representative of their constituent groups; for example, NGOs with more funding may be influenced to a greater extent by their financial supporters. The Ministry of Health has promoted the inclusion of NGOs, not only in the implementation phase but also at the design stage of several public health documents (such as the National Programme on Prevention and Control of Diabetes for the Years 2011–2015 and the National Programme on Prevention and Control of HIV/AIDS and STIs for 2011–2015).

While it appears that cooperation at the local level is improving, due to closer links between different sectors and NGOs, the deficiencies in the design of local policies are also more pronounced. In designing some of the environmental plans and programmes, various European Directives ensure commitment to the preparation of health impact

assessments,[11] but in practice sufficient staff capacity to cover all needs has not been established. Problems also spring, inter alia, from the financing methods for local communities (municipalities, regions) and, consequently, the reduced role of regional development agencies. The latter have a history of working closely with the public health institutions and have had a greater role in decision-making within regional projects.

There is, however, huge interest among the general public in health issues; health is very important among the population, which translates into the political agenda. The health sector as a whole receives substantial coverage in the national media on a routine basis, which represents a tremendous opportunity, and public health is empowered by such efforts.

The international context provides one of the greatest opportunities at present for promoting public health. WHO and the EU are becoming more active in the area of public health and this can be used as a basis for further promotion of public health in Republic of Moldova.

Evaluation of quality and effectiveness of personal and community health services

In recent years, health care services have been directed towards the accomplishment of the commitments set out in important public policy documents and reflected in key health indicators.

The following priorities serve as a basis:

- ensuring access by all Moldovan inhabitants to high-quality medical and pharmaceutical services;
- continuously improving quality and safety of health services by modernizing the technical and material basis of medical institutions, strengthening the infrastructure, and providing necessary equipment and medication;

11 Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made. Environmental assessment can be undertaken for individual projects, such as a dam, motorway, airport or factory, on the basis of Directive 2011/92/EU (known as the Environmental Impact Assessment (EIA) Directive) or for public plans or programmes on the basis of Directive 2001/42/EC (known as the Strategic Environmental Assessment (SEA) Directive). Environmental health impact assessment (EHIA) is a stage of EIA and SEA. The goal of these procedures is to ensure that plans, programmes and projects that are likely to have significant effects on the environment are subject to an environmental assessment, prior to their approval or authorization. Consultation with the public is a key feature of environmental assessment procedures.

- improving the training and motivation mechanisms for medical and pharmaceutical professionals, including ensuring availability of medical personnel in rural health care facilities.

All medico-sanitary institutions have lists of the medical services they provide. There is also a list of health services that are provided by the PHS institutions, in accordance with established responsibilities of the PHS.

The insufficient number of doctors in rural areas confirms that access to health services, as well as access to hospitals and prevention services is higher for the urban population (all population groups) compared to the rural population. The extent to which the population benefits from health services depends on the welfare of the people concerned – the availability of financial resources is an important condition for ensuring access to certain medical services. In the Republic of Moldova, 19.4% of the general population have no medical insurance (NHIC, 2011). These are mainly individuals from rural areas, where the majority of the population are farmers and/or unemployed. This group of the population can be considered vulnerable, because their access to health care services is limited (they can only access emergency and PHC). Depending on the level of wealth, in most cases the population seek health care at state institutions. However, the more prosperous the individuals, the less need they tend to have for health services provided by state institutions; as wealth increases, the share of those seeking health care services at public institutions decreases, and the share accessing services at private medical institutions increases.

A problem that persists is payment for some additional (payable) services by individuals that are hospitalized (inpatient care) – even those who have a medical insurance policy. A low level of addressability of the population (especially those in rural areas) to physicians for preventive treatment and control causes increased morbidity and mortality among these categories of the population.

Quality management of health services

The fundamental objectives of the Ministry of Health are the continuous improvement of the quality of services and increased access of individuals to medical services. These objectives are established within the NHP and Healthcare System Development Strategy for the period 2008–2017 (Ministry of Health, 2007).

The Ministry of Health has strongly promoted a number of important measures to maintain as a priority both the financing of the health sector from public funds and the volume of

medical care services delivered to the population. The main dimensions of health system performance include ensuring access to services, and improving the quality of medical services.

The best approach to ensuring patients' satisfaction is to implement a quality management system that – along with human resource management, and financial and strategic management – is an integral part of the general running of medico-sanitary institutions and is a defining feature of the Ministry of Health, of institutional policy and of the development strategy for health care service providers. According to Ministry of Health Order No. 139 (3 March 2010), the medico-sanitary institutions should have developed (by the end of the first half of 2010) and applied (beginning in the second semester of 2010) their own systems of quality assurance.

Accreditation of medical institutions

All medical institutions (public and private medico-sanitary institutions, Centres of Public Health, pharmaceutical companies, and so on) in the Republic of Moldova are required to be accredited and are primarily responsible for ensuring the quality of medical services provided.

An institutional quality management system was created and implemented by establishing Quality Councils, which ensure the integration of other quality control and quality assurance tools in medico-sanitary institutions, such as the Committee on Institutional Pharmacotherapeutic Form, the Bioethics Committee, the Internal Medical Audit Committee, the Committee on the Elaboration of Institutional Clinical Protocols, and so on. The NAACH organizes the assessment of the implementation of medical services' quality assurance principles; the assessment and accreditation of the medical institution is based on the provisions of the regulation framework of the relevant Quality Council for the medico-sanitary institution concerned, the Regulation on Internal Medical Audit, and other regulations relating to quality of health care. The NAACH has developed standards for the accreditation of activities, and standards for the evaluation of laboratories, based on ISO requirements (ISO 17025, ISO 15198). Accreditation is granted for a period of five years. During this time, accredited medico-sanitary institutions are audited annually. The National Accreditation Body of the Republic of Moldova promotes accreditation of medical laboratories in accordance with ISO 15189. Currently, there is only one accredited private medical laboratory under this international standard. There are also three Centres of Public Health laboratories accredited in accordance with ISO 17025.

The list of health care quality indicators is approved by the Ministry of Health, and serves as the basis for developing quality of care indicators for institutions and services.

Requirements (stipulated by the Ministry of Health) include:

- implementing quality indicators of medical assistance at institution level in relation to established quality indicators at national level, and extending them in compliance with existing internal requirements;
- monitoring institutional quality indicators and compiling reports;
- developing a system designed to stimulate employee performance/involvement in the achievement of quality indicators;
- participating in external analyses of the quality of services delivered.

Consolidation of internal (institutional) practices of evaluation and analysis of medical assistance quality

Achieving "quality" means guaranteeing that the deficiencies of the system will be identified and corrected, so that progress can be monitored. It is not enough just to establish and achieve the standards. The development of a quality culture throughout the health system can ensure the provision of homogeneous, high-quality, integrated medical services at local, regional and national levels. However, this necessitates an interdisciplinary approach and a continuous evaluation of the system, using techniques such as clinical audits. "High quality" also requires the information system to be able to provide feedback for health professionals and clients regarding the quality of services provided or received.

Some medical institutions have already established Quality Councils and introduced internal medical auditing. The PHS institutions are preparing and organizing departments of quality management (or a named responsible person) in PHC, which should ensure the quality of delivered services can be evaluated. It is necessity to develop quality standards and institutional quality indicators, and to establish mechanisms for evaluating the quality of the Public Health Services provided.

Management of processes, clinical guidelines and performance protocols

The National Clinical Protocols are developed on the basis of international guidelines, based on evidence, as well as clinical and economic efficacy. These are the tools used for clinical decision-making, which is often quite difficult. On the basis of the National Clinical

Protocols, the medico-sanitary institutions develop "Institutional clinical protocols" and "Clinical workplace protocols".

In 2009, groups of authors were established by the Ministry of Health for the development and approval of National Clinical Protocols and Clinical workplace protocols.

The web site of the Ministry of Health is a portal for clinical guidelines, National Clinical Protocols, standardized clinical protocols for family doctors, standardized clinical protocols in paediatric critical care, and medical standards.

According to a special Order of the Ministry of Health on the system of internal medical audit, the Regulation on Internal Medical Audit and the "Practical guide on internal medical audit" were approved (Ministerial Order No. 519, 10 April 2008). Under this order, the directors of the municipal and district Centres of Public Health and medico-sanitary institutions shall:

- ensure the organization and implementation of quality assurance principles for the medical services delivered, using the provisions of the aforementioned Regulation on Internal Medical Audit and the "Practical Guide on internal medical audit";
- take effective measures to prevent discrepancies and errors in providing medical services.

In the PHS, internal audit quality assessment is limited to internal audit of laboratory activity, in compliance with ISO requirements. This type of audit is also used in the laboratories of accredited medico-sanitary institutions. Such audits are carried out sporadically, especially in regional settings, and a detailed assessment cannot be guaranteed, in order to continuously improve services. There is much room for improvement in this area, along with the need to train and raise the awareness of staff as regards the existing problems and the need to continuously improve the services provided.

Financing of the PHS

Funding is a major factor in determining the sustainable functioning of the health system and in creating favourable conditions for meeting population needs and the providing high-quality care and an appropriate volume of services. Currently, financing presents a significant barrier to achieving the aims of the public health system. Relative to the sums allocated to health care services, public health is very poorly funded. Public health should be given priority in funding through methods such as budget allocations, revenue services,

sales tax, income tax, tobacco settlement resources and public health programmes or plans.

Although the introduction of compulsory health insurance has increased the system's financial stability and improved public access to basic health services, inequity persists in terms of financial contributions to health, including the PHS. It is necessary to establish more effective collaboration on priority public health problems, in partnership with the NHIC, including implementing the National Programme on Healthy Lifestyle Promotion.

Conclusions

Some steps have been done to improve the governance in public health, but still deficits were identified during the evaluation. Among them are weak coordination and collaboration between different institutions and agencies, weak analytical capacity and lack of comprehensive and valid data on population health for decision making process; which brings to weak advocacy for public health. To strengthen the role of public health and permanently establish a system for assessing the impact of policies on health, it is also necessary to provide adequate human and financial resources. This would improve monitoring and evaluation of policies and programmes, and create "expert starting points" for decision-makers.

Strengths

- National legislation, health strategies and programmes offer a good legal and substantive framework for the actual integration of health into all policies.
- All health care facilities are at the stage of implementing and developing institutional quality management systems.
- All public health and the majority of health care institutions (including private ones) are assessed and accredited by the NAACH, according to approved standards, the compliance with which ensures the quality of services provided.
- Implementation of the national programmes in the health field increases people's access to the PHS.

Weaknesses

- Organizational weakness around the roles and responsibilities of key stakeholders and actors in the public health system. Public health institutions are not completely focused on public health priorities due to the lack of well-trained specialists (especially in regional settings).
- Intersectoral cooperation is underdeveloped and public health actors do not take a sufficiently strong leadership role.
- There are certain inequities in people's access to PHC services, related to an insufficient number of physicians in rural areas, and to the level of well-being of the population (access to some services that are not covered by the insurance package, and/or lack of ability to cover the costs of the insurance policy). Access to health services of people from vulnerable groups and disadvantaged population groups (such as unemployed people) is limited.
- Poor knowledge of medical professionals about quality management. There is a need for regular training in this field.
- Medical institutions have only partially developed and approved quality indicators to monitor and measure quality levels, with the purpose of continuously improving the services delivered.
- Insufficient number of standards in disease prevention and health promotion services, as well as a lack of public health guidelines available in the sphere of public health.
- Insufficient financing of the National Programme for Technical Development of the PHS.
- In the PHS, internal audit quality assessment is limited to internal audit of laboratory activity, as required by the ISO. These audits are carried out sporadically, especially in regional settings, and a detailed assessment cannot be guaranteed, in order to improve services.
- Lack of support from the key stakeholders in public health reforms.

Opportunities

- Public health reforms initiated in 2010 will increase the potential of municipal and *rayon* health services for public health governance.
- There is widespread interest among the general public in health issues.
- A positive international context for public health within WHO, the EU and the Organisation for Economic Co-operation and Development (OECD).

- Developing standards and indicators for delivering and monitoring EPHOs and core PHS

Recommendations

- Develop a National Public Health Strategy with clear vision and objectives on public health governance.
- Enforce the "Health in all policies" principle, developing and implementing health policies and strategic planning by strengthening the capacity of health authorities for monitoring and evaluation and improving communication and intersectoral collaboration.
- Continue the development of public health standards, in order to ensure the quality of personal health services and the PHS.
- Develop a quality assessment system and quantitative indicators for the qualitative assessment of health performance at community level.
- Develop the financing mechanism for PHS and advocate for sustainable and continuous financing of public health programs at national, regional and local levels.

Operation 9: Core communication for public health

Definition

The aim of the communication for public health is to increase population's knowledge and to promote healthy lifestyle, modifying the lifestyle, health services, and environment for improving population's health. This is the art and the technique to inform, influence, and motivate population regarding important health problems and health determinants. Communication should enhance its capacities to access, understand, and use information to reduce risk for health, prevent diseases, to promote health, to promote health services, to advocate for health policies, so as to increase well-being, life quality and health of population in communities (Marks, Hunter& Alderslade, 2011).

Communication development

In the Republic of Moldova, communication in the field of health is integrated into the objectives of the NHP and the 2009 Law No. 10-XVI on State Public Health Surveillance, representing an essential element of activities dealing with health promotion and disease prophylaxis.

In 2012 the Communication Strategy of the Ministry of Health for 2012–2014 was approved, as a continuation of the Communication Strategy of the Ministry of Health for 2009–2011. The aim of the Strategy is to develop in the medium term a positive institutional image and profile of the Ministry of Health (in the eyes of the public), in the context of accelerating health system reforms. It includes provisions on communication in public health crisis or emergency situations.

It should be mentioned that communication strategies have been and are being developed in various specific areas of public health, including: a strategic framework for HIV/AIDS communication, as a component of the National Programme on Prevention and Control of HIV/AIDS and STIs for 2011–2015; a communication strategy for the prevention and prophylaxis of avian flu, developed in 2008; a communication strategy developed for reducing tobacco consumption, focusing on current and potential tobacco users; a communication strategy for vaccination promotion, and so on. The communication strategies in the health field were developed with the technical support of international organizations. There are limited capacities (financial and human) at national level to develop, monitor and assess such strategies.

There is no general communication strategy for health, for health promotion and prevention of diseases through developing healthy behaviours and habits.

To assess the perception of the target population in relation to information sent within communication campaigns on health problems (prevention of avian flu and pandemic flu, prophylaxis of HIV/AIDS, TB, child trauma, and so on), pre- and post-testing studies were performed focusing on assessed KAP levels. Studies were carried out by different institutions with experience in research areas, contracted by international organizations, and the NCPH was consulted on the survey questionnaire, applied methodology, and preliminary results of the study.

In 2008, to increase the health communication capacities of the PHS and PHC services, with the financial support of the United Nations Children's Fund (UNICEF), over 100 seminars

were carried out in all of the Republic of Moldova's *rayons*, providing all family doctors with training related to communication issues, as an important element for health promotion. The purpose of this was to change behaviours in crisis situations, with a focus on avian flu and the new type of influenza A(H1N1).

Recently, the communication specialists of the Ministry of Health have developed the Communication Guide for the Ministry of Health. This Guide represents a set of recommendations/standards for monitoring the press, and a methodology for developing press releases, organizing conferences, briefings, communication activities in crisis situations, intended for use in medical-sanitary institutions.

Communication dissemination to different audiences

Communication when public health problems arise is carried out through implementation of communication strategies that have been developed for various situations. Hence, the target groups are identified, to focus the messages in the communication campaigns. The developed messages are intended to be accessible across languages, age groups, levels of education and should not contradict traditions, cultural norms and values. The messages are coordinated with the NCPH, together with experts in the area concerned, according to the provisions of the National Program on Healthy Lifestyle Promotion for the years 2007–2015.

The messages and information related to health promotion are more frequently conveyed through interpersonal communication, such as individual and group conversations, lessons, meetings, and so on. Mass-media methods are also used, including radio, television, printed press and electronic press. Web pages have been created to inform the population about specific subjects (NCPM Moldova, 2008; Aids Centre, 2010). The promotion of communication activities in health is also tackled within mass events and activities, such as festivals, concerts, and sports competitions. Volunteers providing peer-to-peer education, employees of youth centres, community leaders, public personalities, and representatives of different religious groups are involved in communication activities, among others.

The Plan of Activities for Mass-Media on Topics Related to Public Health is developed annually and coordinated with the National Public Audiovisual Institution "Teleradio-Moldova". Different national TV stations (Moldova 1, Prime TV, Jurnal TV, Publica TV) broadcast shows dedicated to health protection problems and communicate different information related

to health promotion in informative and entertaining shows. Periodically, information is presented about the existing epidemiological situation, important events linked to health system activities, as well as information and messages in line with the strategies/plans of the Population Communication Campaigns for promoting health and disease prophylaxis.

There is a permanent show on the national radio stations, broadcasted once per week, entitled "Medicine for all". It is dedicated to the priority public health problems, disease prophylaxis, education for health and health promotion. In line with the national legislation, (TV and radio) broadcasters are obliged to offer information dedicated to health promotion for at least 5% of the daily advertising time/space. However, not all radio and television stations observe this rule.

Problems exist in terms of participation in joint activities with mass media, due to doctors' insufficient training in communication. The heads of health institutions are not prepared for efficient communication in crisis situations. At the same time, the national mass media channels have limited capacities in terms of being able to analyse the situation in health areas. They also have a major interest in presenting sensationalized information to the public, and little interest in presenting messages or information regarding healthy behaviour for disease prevention, which, according to the legislation, should be provided free of charge. There are no interactive health-based shows in the country related to health, which would have established (planned) transmission schedules.

Communication in public health is performed by health institutions through their web pages; interpersonal communication with patients; some activities involving mass media, which include radio and TV shows on public health issues and specific slots discussing projects that promote health, involving national and local media channels.

It should be mentioned that the majority of health institutions have no trained unit/person to develop press releases and/or organize press conferences for informing the wider public. On the other hand, the poor technical equipment of health institutions (photo/video cameras, lack of monitors' systems) does not allow information/messages on education for health and health promotion to be conveyed efficiently.

The Ministry of Health has concluded various agreements on international collaboration (Israel, France, Poland) for supporting training in communication, health promotion, and education for health, as well as financial and logistical support for different communication campaigns, and behaviour change for preventing communicable and NCDs.

Advocacy for the development and implementation of healthy policies and environments

Since 2010, the Government of the Republic of Moldova has started to pay more attention to communication. Government Decision No. 1211 (27 December 2010) was approved, providing for every ministry/agency subordinated to the Government to have an official subdivision – an Information and Communication Service – the employees of which would have public servant status. As a result of the Decision, the main goal of every ministry is to develop an efficient system of communication with citizens. Communication topics include promoting reforms and enhancing the public image of each agency/ministry.

Communication for health is mainly the responsibility of the Ministry of Health, which collaborates in this field with other ministries, agencies, NGOs and international organizations, among others. There is significant need for the health system to focus its efforts on communication in health arena.

Communication, information and education aspects represent a constituent part of various national programmes and action plans in the area of public health, such as control of alcohol and tobacco consumption programmes, population vaccination programmes, and so on. Other policies, strategies, structures and programmes of different ministries dealing with certain public health problems have been developed in collaboration with the Ministry of Health, and communication and promotion of health is one of their main components. The Ministry actively collaborates with the Ministry of Labour, Social Protection and Family, the Ministry of Education, the Ministry of Youth and Sport, the Ministry of Environment, the Ministry of Internal Affairs and so on.

The decision-makers acknowledge the importance of public health problems and the need to develop and implement interventions in this area; as a result, it was possible for the Government in 2012 to approve various programmes in complex areas of national interest, such as the area of tobacco control, flour fortification, control of alcohol, and a national strategy for preventing and controlling priority NCDs in the Republic of Moldova.

The active participation of civil society and mass media outlets in advocacy for health problems is particularly important. The Ministry of Health is open and transparent in its activities relating to developing and consulting on legislative acts, as well as the promoting interventions in the public health area at different levels.

Rapid dissemination of information is an important factor in the advocacy process. According to the most recent Opinion Barometer (November 2011) (IPP, 2011), the number of individuals preferring to inform themselves using the Internet has sharply increased: from 5.7% in 2008 to 24.9% in 2011. In this context, in August 2010, the Government of the Republic of Moldova created an Electronic Governing Centre, with the aim of increasing significantly, by 2020, the population's access to information, by using e-Services. It should be mentioned that many ministries – including the Ministry of Health – are covering health problems in the media through various social networks, including Facebook, Twitter, and so on.

The mass media have been trained in some communication problems for health, for instance the prevention of HIV/AIDS, TB prophylaxis, the prevention of pandemic flu, and so on; they have been provided with relevant communication guides. Hence, these problems have been better covered in the national media. At the same time, other health problems – such as prophylaxis of NCDs, reduction of behavioural and environmental risk factors – are not adequately reflected in the media.

Public health communication training and capacity development

Professional and continuous training, as well as training focused on certain public health issues lead to building better communication capacities. Currently the country has no well-developed curriculum for communication in health areas, for initial and continuous training of medical workers and other categories of specialists (such as mass media, community leaders, teachers, and so on). It is worth mentioning that the only module on communication for health is taught in the SMU's School of Public Health Management, and the number of trained individuals is limited. The communication component of the Avian Influenza Control and Human Pandemic Preparedness and Response Project – funded by the World Bank – focused on developing and including curricula related to communication in crisis situations as part of the continuous training programme for family doctors, which also includes a component on interpersonal communication. Unfortunately, this is not popular among family doctors in the Republic of Moldova.

As part of the implementation of some projects for promoting health and prophylaxis of diseases, training is offered in communication for health, tackling specific areas for family doctors, journalists, youth centres, community leaders, NGOs, and so on. However, this training is not continuous and does not cover the existing needs. Some examples of such training include prophylaxis of HIV/AIDS and TB, supported by the Global Fund to Fight AIDS, TB and Malaria. Another joint project of UNICEF and the World Bank supported

training for specialists in 2008 at the regional Centres of Public Health and family doctors' centres in the fields of communication for health, behavioural change, and communication in crisis situations, among other topics.

In the Republic of Moldova, communication, information and education activities are organized at the national level by the NCPH (the Health Promotion and Communication Centre subdivision), at the local level by the municipal and district Centres of Public Health. The specialists at the NCPH have the required capacity but no human resources to support other ministries and departments in planning, implementing and assessing communication activities. The NCPH promotes messages and information material intended for communication and education activities in the area of public health. Unfortunately, not all of the organizations implementing projects in the field of health promotion request information materials for distribution (booklets, posters, leaflets, brochures, video and audio spots, and so on).

Specialists in health promotion from the NCPH are trained in planning and monitoring communication activities – in collaboration with the mass media – specifically on communication for behavioural change and communication in crisis situations, with a principal focus on health promotion and education for health. Specialists in these fields need to be trained on an annual basis, taking into consideration the process of health workers' migration from the regional centres.

The web pages of the Ministry of Health, the NCPH, and health institutions make available to the public statistical data on demography, morbidity from communicable diseases and NCDs, as well as providing practical recommendations on how to prevent diseases and reduce risks. The statistical yearbook is published annually, reporting on the sanitary-epidemiological situation in the country (condition of water reservoirs, air, educational institutions, workplaces, and so on), and can be accessed via the NCPH's web site (NCPH, 2010).

Public health communication evaluation

National statistics are studied to assist the planning of communication activities. For example, in line with the Global Youth Tobacco Survey (GYTS) for Moldova in 2008 (GYTS, 2008), half of Moldovan students aged 13–15 years started smoking at the age of 10 years, and currently 11.3% of them smoke. 60% of respondents stated that they were exposed to tobacco smoke in public places and 53.3% at home. These data are taken into consideration

when planning the anti-smoking communication campaign, in order to try to reduce smoking prevalence among teenagers. Another evaluation modality is monitoring the media regarding the impact of awareness campaigns on the public over a certain period of time.

Qualitative and quantitative studies are also used whenever it is necessary to assess a specific subject, for instance perception and attitude of different target groups regarding the introduction of new vaccines in the national immunization schedule.

Before implementing information and communication campaigns related to various public health issues, the KAP level of different population groups would usually be assessed. The existing national surveys may be used, for instance the Demography and Health Survey from 2005 (NCPM Moldova & ORC Macro, 2006) for problems related to tobacco and alcohol consumption, use of iodated salt, to assess levels of knowledge and behaviours regarding HIV/AIDS and TB, and so on. In the event that no data are available, a study would be initiated. After the implementation of communication campaigns, studies are performed to assess the results, to identify to what extent the KAP of the population have improved.

Monitoring of quantitative indicators for implementation of communication activities (amount of informative material, number of conversations, meetings, parties involved, and so on) is carried out by assessing the statistics from medical records.

To assess the success of implementing health communication policies, data from the Institute of Public Policies' Public Opinion Barometer are used. This Barometer is carried out on annual basis, and sometimes even several times per year.

Conclusions

Communication, information and education activities for public health are implemented partially by the Ministry of Health through health institutions. Some communication activities are implemented in partnership with other ministries and departments, NGOs, educational institutions, local authorities, and so on. Communication strategies in specific fields are developed and implemented with the financial support of international organizations. There are limited capacities (financial and human) at national level to develop, monitor and assess such strategies. Aspects related to communication in health are included in different public health action plans and programmes, but these are not well coordinated and not all of them are implemented.

Educational institutions do not have developed curricula for communication in health for the initial and continuous training of medical workers (and others). Training is organized occasionally within certain projects, which are financially supported by international organizations (such as the World Bank, UNICEF, WHO, the United Nations Population Fund (UNFPA), and so on).

By reorganizing the state PHS, units for health promotion and communication in health were established at national and *rayon* levels.

Strengths

- Presence of political support in developing and implementing communication strategies in the health field.
- Increasing use of different sources for communication in health: mass media, Internet, social networks, and so on.
- Inclusion of a communication component in public health action plans and programmes.
- External support in developing and implementing communication strategies.
- Establishment of units for health promotion and communication in health, within the state PHS.

Weaknesses

- Insufficient funding of national and local programmes for health and healthy lifestyle promotion, including communication and information activities.
- Insufficient intra- and intersectoral collaboration in the field of communication in health.
- Communication for public health is not included in the training curricula of medical workers and journalists.
- Insufficient capacities of human and administrative resources in the area of communication in health (trained units and personnel, local trainers and interest clubs).
- Dispersed implementation of communication strategies in public health, without coordination of activities with the Ministry of Health.
- Insufficient involvement of different stakeholders (communities, local public authorities, mass media, doctors, nurses, teachers, and so on) in organizing and supporting communication in health activities.

Opportunities

- Willingness of international organizations to offer financial assistance and techniques for supporting communication in health activities.
- Active involvement of civil society and mass media in advocacy activities relating to health issues.
- Transparency of the Ministry of Health in developing strategies and polices in the public health field.
- Trend towards developing new government information technologies (IT) (e-Governing).
- Reorganization of the State Sanitary-Epidemiological Service into the state PHS.

Recommendations

- Develop the Public Health Strategy, including the component of communication in public health.
- Streamline the funding intended for national and local prophylaxis programmes and communication and information activities in health field.
- Enhance intra- and intersectoral collaboration in the field of communication in health.
- Include a communication component in undergraduate, graduate and postgraduate education for medical workers and journalists in the field of communication in health.
- Train and motivate specialists from the health sector and other relevant sectors in the health promotion and communication.
- Technically empower the health institutions to organize communication activities.
- Encourage active involvement of different stakeholders (communities, local public authorities, mass media, doctors, nurses, teachers, and so on) in organizing and supporting communication in health activities.
- Create a unit within the Ministry of Health to develop and implement communication strategies in public health.

Operation 10: Public health-related research

Definition

Research is fundamental to informing policy development and service delivery. This core public health operation includes:

- research to enlarge the knowledge base that supports evidence-based policy-making at all levels;
- development of new research methods and of innovative technologies and solutions in public health;
- establishment of partnerships with research centres and academic institutions to conduct timely studies that support decision-making at all levels of public health (Marks, Hunter & Alderslade, 2011).

Public health-related research includes the capacity to initiate or participate in timely epidemiological and public health system research, considering the resources required to do so (such as databases and other IT) and dissemination of research findings. The purpose of research is to support policy decision-making. The active use of research evidence in the design of policy and the public sector's capacity to collect, analyse and disseminate health information are important in this respect.

The autonomy of health research institutions is reduced due to their double subordination – to the Ministry of Health and to the Academy of Science. This situation does not allow them to develop strategic research and discourages competiveness; in addition, the majority of funding is are allocated to the institutions of the Academy of Science.

The main research findings of researchers at the NCPH and the SMU are published in peer-reviewed journals and made available to the general public through press releases. The results are presented at conferences and information days.

Capacity for timely epidemiological and public health system research

In recent years, the national authorities have become more aware of the importance of research for rapidly developing public health. Nationally supported public health research projects assist the development of public health policies and strategies; enabling decision-making to be supported by expertise, knowledge and facts.

There are experts with diverse public health backgrounds that can carry out relevant research in the field of public health. A specialized and extensive database is available for different research projects, containing health statistics and covering the field of public health (birth, mortality, disease incidence and prevalence).

The NCPH is the main institution that develops research plans, establishing future topics for public health research. Currently, 12 public health research projects are ongoing at the NCPH (at least one of which is conducted by a young researcher). Most national research is financed by the Academy of Science, according to Code on Science and Innovation of the Republic of Moldova (No. 259, 15 July 2004), as well as by grants and international projects, and by the Ministry of Health. It is important to mention that there is insufficient financing for public health research projects. These institutions also open bidding for proposals for research projects and programmes to be submitted (for example, the Academy usually calls for projects to be submitted twice per year, and every five or six years for research programmes).

In addition, the EU funds research that is linked to the European Commission Framework 7. This is designed to stimulate public health research, so most of the projects of the NCPH are of this kind, in areas such as: health management and policy; NCDs; communicable diseases and microbiology; health behaviour and education; environmental health, including climate change; and children's health.

Currently the draft Strategy on Research and Innovation Development by 2020 is being debated, which will facilitate access to European public health experience and improve the quality of research.

Conclusions

It is crucial that research evidence is used for designing and supporting policy in the field of public health. Through research, new methods and technologies can be developed. Projects are established so that the findings are accessible not only to the researchers but also to the wider interested public, which in turn also influences policy development. There are many research projects implemented by various institutions and different sectors, as public health concerns a broad range of related fields.

The area in which the most research has been conducted is epidemiology of communicable diseases. Conversely, there has been insufficient research in the field of nutrition, environmental health, food safety, and other areas.

Insufficient coordination and collaboration between major national health institutions limits the utilization of public health project findings. Strategic planning is needed to foster efficiency in public health research areas.

Strengths

- Various institutions collect substantial amounts of data on a wide range of health risks, and on services and their utilization.
- Survey reports and research findings are published on public web sites.
- Research projects funded from public sources are required to present their results to the general public.

Weaknesses

- Lack of applied research in public health, hampering strategic planning and policy-making processes.
- Research evidences are not shared at all levels of government and the Ministry of Health does not have oversight of all information.
- Fragmentation of resources and limited funds for nationwide research projects.
- Lack of financing for public health research projects.
- Poor cross-sectoral research and poor use of research capacity for public health purposes.
- No clear national strategy in the area of public health research.

Opportunities

- Defining priorities and consolidating networks of institutions that could jointly negotiate bigger shares of research funds to be allocated for public health.
- Participating in bilateral or multilateral research projects with EU Member States.
- Applying for funds for young researchers.

Recommendations

- Change financial mechanisms for public health research projects.
- Focus on research evidence for designing and supporting public health policy.
- Adopt a new Code on Science and Innovation of the Republic of Moldova, giving greater autonomy and opportunities to research institutions.

6. Summary of general conclusions and recommendations for intervention

Table 6.1. Conclusions and recommendations

	Conclusion	Recommendation
1.	Insufficient political focus on public health and promotion of the "Health in all policies" principle. Collaboration, cooperation and partnerships in public health are still weak.	To require coordination of all political documents (laws, strategies, national programmes and plans) with the Ministry of Health – important from the point of view of the public health agenda. To establish and use intersectoral committees to strengthen cooperation and partnerships (intersectoral, community involvement and NGOs, international, regional and so on) in all relevant areas, in particular with a focus on the broader determinants of health.
2.	Insufficient secondary legislation to implement the provisions of the 2009 Law on State Public Health Surveillance No. 10-XVI and lack of a National Strategy on Public Health	To support further development of public health legislation, regulations, and policy frameworks. To develop and approve a National Strategy on Public Health for the years 2013–2020, for priority setting.
3.	Weak public health response to threats due to insufficient specialist knowledge and skills relating to risk assessment at community, regional and national levels.	To strengthen capacities of the PHS (staff, equipment) in terms of management of public health emergencies. To develop and introduce into the SMU's education programmes new curricula for the management of public health emergencies.
4.	Insufficient financing of public health (services and activities).	To perform long-term cost–benefit analysis and communicate results to policy-makers, as well as designing projects to attract investments. To ensure stable and sufficient financing of public health, along with control and monitoring mechanisms, and to ensure equity and access. To redirect specific taxes for the financing of public health programmes. To use properly – that is, as per its intended purpose – the Fund for Prevention Measures of the NHIC.

5.	Gaps in human resources for health in terms of number, distribution, training, motivation, incentives, and so on.	To approve and implement a Health Human Resources Strategy and related Action Plan for strengthening the processes for human resources planning and development (including number of professionals, their profile, specialization, education, curricula, core competencies, professional satisfaction, incentives and migration issues).
6.	Historically well-developed network of public health institutions, but a fragmented and extended network of Centres of Public Health remains and is not sufficiently oriented towards new public health challenges.	To optimize the structure of the PHS through regionalization, creating regional Centres of Public Health. To strengthen and adapt the PHS to enable them to address new public health threats and areas (paying attention to access, equity, accountability and sustainability).
7.	Inadequate focus on and provision of services in the areas of disease prevention and health promotion.	To create instruments for improving health promotion and disease prevention (in the surveillance system, and in services in all areas of public health, delivered at both the population and individual levels).
8.	Great variety in public health laboratory services provision, technology development and personnel skills, with weaknesses in some areas.	To adopt the concept of strengthening regional public health laboratories to enable them to address new public health threats and to maintain safe living and occupational environments (air, water, food, commodities, safety).
9.	Insufficient quality assessment of PHS and activities.	To adopt quality indicators and introduce a continuous quality improvement culture in public health and accreditation process of public health institutions.
10.	Lack of integrated information and communication system, plus variation in quality of data and insufficient indicators for monitoring and evaluation.	To improve information and communication, in particular health information system integration (IT, data collection/surveys, producing health and health-related indicators).

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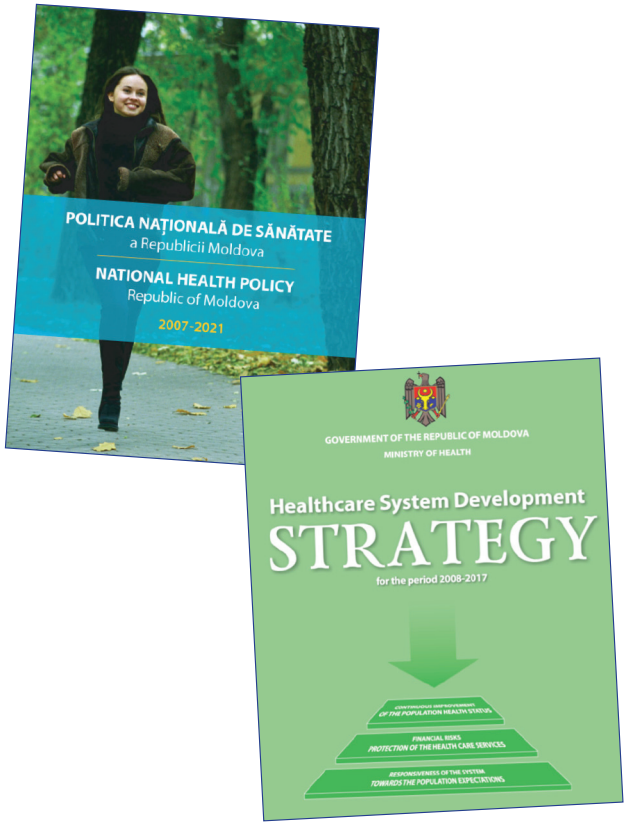

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