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REGIONAL OFFICE FOR Europe

SELF-ASSESSMENT

OF PUBLIC HEALTH SERVICES IN THE REPUBLIC OF UZBEKISTAN

Technical report

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MINISTRY OF HEALTH OF THE REPUBLIC OF UZBEKISTAN

Key words

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List of abbreviations

CM	Cabinet of Ministers
WHO	World Health Organization
FOP	Feldsher-obstetric point
RAF	Rural ambulatory facility
LCH	Local community hospital
CDU	Central District Union (hospital)
GI	Gini-Index
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
WB	World Bank
SWOT-analysis	SWOT – method of analysis based on strengths, weaknesses, opportunities and threats factors.
MOH	Ministry of Health
PH	Public Health
PHC	primary health care
IHR	International Health Regulations
CSSEC	Center of State Sanitary-Epidemiological Control
CVD	Cardiovascular disease
CHD	coronary heart disease
NCEMC	National Center for Emergency Medical Care
GDP	Gross Domestic Product
NETEC	National Export-Import Insurance company “Uzbekinvest”
SIIC	State Inspectorate on Insurance Control (Gosstrahnadzor)
HEI	higher educational institution
HCF	health care facilities
HACCP System	Hazard Analysis and Critical Control Points system
FAO	Food and Agriculture Organization
PHCS	primary health care service
ES	emergency situation
PHLS	promotion of healthy lifestyle
PD	pharmacy department
TMA	Tashkent Medical Academy
TashPMI	Tashkent Paediatric Medical Institute

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1 Introduction

Since the first days of independence, significant changes have begun in the health system of Uzbekistan. By 1991, Uzbekistan had a rather developed health system but it was characterized by a centralized structure and imperfect managerial mechanisms. The health sector finance was in accordance with the number of beds in hospitals that led to their increase, and the number of medical institutions grew without consideration of the actual needs of the population in the medical services quality, which was low, especially in rural areas. Medical institutions were fit out with obsolete equipment, which was not able to provide high quality diagnostics and accordingly adequate treatment. In many cases, it was not possible to render a high-technological medical care even in specialized clinics due to a lack of efficient equipment and inadequate staff qualification. Moreover, the health system was completely unprepared for the new time challenges in the conditions of country transition to the market economic relations. At the early stages of the transition period some indicators of population health took a turn for the worse, for instance there was registered an increase in maternal and child mortality and the number of infectious diseases had gone up. That led to reduction of life expectancy, being an integral and resulting indicator of the population health state.

The health system of such kind did not meet the new requirements of the time and was not able to provide the population with a worthy level of health. Thus, the government of the country made a decision to make a radical reformation of the health system.

In 1998, a Presidential decree adopted the National Health System Reform Programme on a phase approach to the formation of the national health system model.

The National Health System Reform Programme is based on the principles of strict observance of social protection conditions of the population, universal availability of guaranteed medical care, and phase transition of some health institutions on mixed and private funding sources.

The main directions of health system reforms are:

- fundamentally new approaches to health system building, its infrastructure developing, aimed to create equal conditions to have primary health care both in urban and rural areas;
- a new conceptual and practical approach to motherhood and childhood issues, aimed to create conditions to delivery and upbringing a healthy generation;
- creation of a fundamentally new system of the population emergency medical care at all administrative-territorial levels;
- giving-up old stereotypes, significantly expanding the sector funding sources, including on the basis of paid and private health services development;
- optimization of the sector financing system, primarily by concentration budget resources in the first health care section, outpatient treatment and prevention instead of inefficient use of expensive hospital beds.

One of the main priorities of the national policy of the Republic of Uzbekistan is the preservation and health promotion of the population on the basis of healthy lifestyles formation and improving accessibility to skilled health care.

Among major factors contributing to effective functioning of the health system is the existence of the up-to-date organizational system ensuring healthy living of the population and the provision of qualitative free health care to every citizen under guarantee of the state.

The legal basis for protecting population health is, first of all, the Constitution of the Republic of Uzbekistan, which declares the right of every citizen to health care.

The Law of the Republic of Uzbekistan “On Health Protection” (1996) is directed to: ensuring the right of citizens to health protection from the state, promotion of healthy lifestyles of citizens, legal regulation of activities of state bodies, establishments, institutions, organizations and public associations in the field of protection citizens' health.

For further improvement of the regulatory framework of the health system, amendments and additions were made to the existing laws of the Republic of Uzbekistan: “On health protection”, “On State Sanitary Control”, “On AIDS Prevention”, “On Pharmaceuticals and Pharmaceutical Activity”, and “On Compulsory Treatment of Patients Diseased with Alcohol, Drug Addiction or Toxic Substance Abuse”. The laws of the Republic of Uzbekistan “On Prevention of Disease Caused by Human Immunodeficiency Virus (HIV)”, “On Drug and Psychotropic Substances”, “On Psychiatric Services”, “On Protection of Population from Tuberculosis”, “On Donation of Blood and its Components”, etc. were put in force.

Improvement of the regulatory basis of the health system made it possible to bring the legal acts and subordinate documents, which govern the functioning of health system bodies and institutions, into accordance with the modern realities and the level of socio-economic transformations in the society.

To improve the quality of medical services, a number of projects on capacity development of health care institutions are being realized in the country using loans from world leading financial institutions and international organizations.

Since the country achieved its independence, motherhood and childhood protection were raised as state policy issues.

The Ministry of Health, together with other ministries, agencies and nongovernmental organizations, implements a number of programmes where the main directions are:

1. Improvement of reproductive health of the population.
2. Screening of mothers and children.
3. Development of lifelong educational system, professional development of specialists and raising awareness of the population in the area of reproductive health as well as increase of medical culture.
4. Expansion of international cooperation on improvement of reproductive health of women, child delivery and upbringing.
5. Strengthening of material-technical base of childhood and obstetrics institutions.
6. Development of haematological services in the country.

Since 1 January 2004, the country has implemented the system of a compulsory medical examination of people who are going to marry that gives an opportunity to future newlyweds to plan a family, taking into account their state of health (Resolution of the Cabinet of Ministers No. 365, 25.08.2003 “On Approval of Regulation on Medical Examination of People, Going to Marry”).

The medical-genetic diagnostics service was organized, representing a network of screening centres. Its specialists provide medical aid to families with a high risk to have a child with developmental disabilities. A network of perinatal centres is being developed that provide women who have poor health with obstetrics services.

The country has undertaken steps to fill the markets with food products that contribute to the prevention of diseases caused by a lack of natural microelements such as iodine and iron. Since 2005, in order to prevent iron deficiency anaemia, “The National Flour Fortification Programme” has been implemented.

The implementation of state programmes has led to notable positive results on improving maternal and child health. The coverage of women with contraceptives has increased from 13% in 1991 to 57% in 2009. The infant mortality rate has declined from 35,5 in 1991 to 11,7 in 2009 per 1000 live births. The maternal mortality rate has dropped from 65,3 in 1991 to 30,1 in 2009 per 100 000 live births. An important stage of the health system

development has become the reforms in primary care facilities, which has transferred into an internationally recognized system of family doctors (general practitioners).

The priority of such a formulation of the matter is dictated by the fact that in order to receive first aid most of the population visits ambulatory facilities. About 54 million citizens visit them every year. Thus, the state of primary health care influences both the efficiency and quality of the entire health system and the preservation of human resources and population health.

Historically, the structure of primary health care did not meet the needs of the population, especially in rural areas. It was a two-sided problem. The first one is a complicated system of primary health care consisting of feldsher-obstetric point - ambulatory facility - local community hospital - central district (rayon) hospital. The second side is a budgetary load, characterized by the fact that the financing of rural medical institutions was based on the leftover principle. Finances were able to cover staff salaries, but there was not enough to provide qualified specialists, medicines and to renew medical equipment.

In 1996, the government of Uzbekistan adopted the nationwide programme on improvement of rural infrastructure and established a foundation for further positive changes in ambulatory services in rural areas. The aim of the reform was to improve the quality of medical care and to preserve free ambulatory medical care for the rural population. The changes envisaged the reduction of the multistage system of medical institutions to a two-level system. Instead of the previously existing feldsher-obstetric points, small rural ambulatory facilities, small local community hospitals and central district hospitals, the government proposed to build a network of new medical institutions - rural primary care units (RPCU) (FOP-RAF-LCH-CRU) ⇨ (RPCU-CRU).

Special criteria and standards were developed for rural primary care units in terms of good architectural design, supply of potable water, electricity, sewerage, heating and telephone facilities. The plans were made for construction and renovation of these institutions. By the end of 2009, there were 3166 rural primary care units. They covered the total population which exceeded 15 million people.

Development of these institutions had another important advantage - they gave the population a chance to get access to competent medical, not paramedical (feldsher) care. But the effective operation of these institutions is only possible with the availability of corresponding staff potential, namely, physicians prepared to provide medical care to both adults and children, or, in other words, general practitioners. This required economical and institutional integration of primary care physicians on the general medical practice principles, strengthening the professional development of physicians at outpatient clinics (polyclinics) and their interest in qualification rising, improving the wage system, ensuring the participation of physicians in managing resources and improving the quality of medical services.

The No. 2107, 10.11.1998 President Decree stated that the preparation of general practitioners is a key to solving a range of tasks outlined in the National Health System Reform Programme. Since we had not had this type of doctors before, it was decided to carry out their training in two ways - to train young specialists in medical universities and to re-train practicing medical specialists. Training centres for GPs are being organized for their continuing professional education under central district hospitals.

Training centres equipped with necessary equipment (training mannequins, models, computers) have been organized in medical universities to develop clinical knowledge and skills of graduate students.

Another important issue was to provide these institutions with modern medical equipment, apparatus and opportunity to introduce new mechanisms financing RPCU, based on the per capita principle. The government initiatives were supported by the World Bank, which invested resources to develop primary health care institutions of five regions, and then the experience is going to be introduced all over the country.

As the result of the reforms in primary health care the number of visits per a person has increased from 7,2 in 1991 to 9 in 2009. The analysis of activities of RPCUs in pilot regions showed that in comparison with 1998 the number of referrals to specialists has decreased to more than 30%, and to hospitals – to 27%.

However, there are still problems to be solved: insufficient material-technical base of CRUs, urban polyclinics and insufficient provision of RPCUs with qualified staff.

To help primary care physicians, regional diagnostic centres are being established in all regions providing the population with high-technological examinations (molecular-genetic examinations, computer and magnetic resonance tomography, Doppler-graphy, etc.) necessary to define a complicated disease accurately.

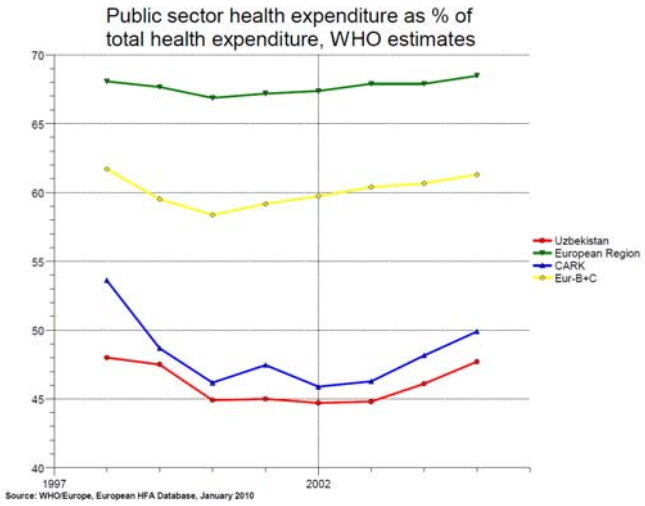
In Uzbekistan the national model for emergency medical care has been established. During the transition process it was centralized and now it is coordinated by the single Republican Scientific Centre for Emergency Medical Care (RSCEMC), which has branches in all regional centres. In addition, in 173 locations all over the country the emergency departments are being established under central district hospitals and central city hospitals.

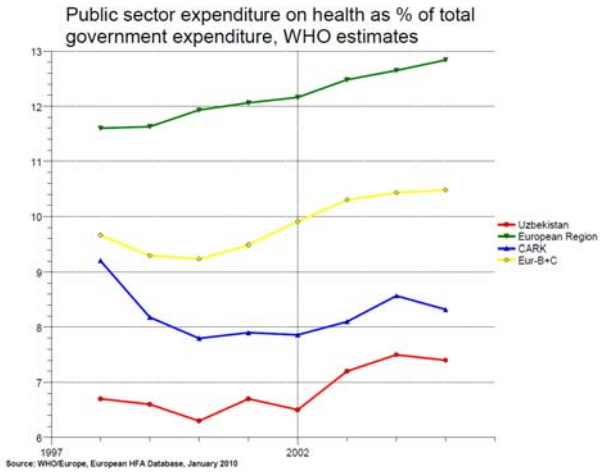
In addition to the listed in-patient (stationary) units, this system was also extended to emergency services with 194 stations and 1485 emergency teams, as well as medical units of the Ministry of Emergency Situations. The advantage of the created service over pre-reform service is that it brings together highly skilled specialists required to render patients emergency medical care.

The specialized high-technological medical care also reached its new level of development. Currently it is represented by specialized scientific-research institutes and specialized scientific-practical centres of national significance, which not only develops new treatment methods but also introduce the achievements of world medicine into the national health care practice. One example of this is the wide introduction of low-traumatic bloodless operations using endoscope equipment into domestic practice. The treatment methods introduced in these institutions reduce the number of days of patient’s stay in a hospital to the minimum; at present, the average hospitalization in the country is 3-5 days.

With the development of material-technical base and improvement of treatment techniques of medical centres and with development of the network of medical institutions of non-state ownership and of pharmaceutical market, since 2000 the Institute for coordination of medical care quality is being introduced in Uzbekistan. Currently the physicians are obliged to provide assistance in accordance with the state standards of diagnostics, treatment, and clinical protocols. These regulations are developed and constantly improved in accordance with the principles of evidence-based medicine.

The health financing and investing issues are of primary importance, but they are also quite complicated and complex ones. According to WHO estimates, in 2005 the public sector expenditures in percentage ratio accounted for approximately 48% of the total health expenditures, which is well below the European rates, but slightly below the average for CARK region. It should be noted that total public sector expenditures on health by 2005 were about 7,5% of all government expenditures.





Despite the fact that this indicator has insignificant trends, primarily associated with a reduction of tax burden on economic entities in connection with ongoing economic reforms, the government does not reduce health expenditures.

However, many issues related to the quality improvement of prevention and provided medical services in the health system and protection of human health have not been solved yet. The analysis of the number of citizens' appeals for qualitative health care, increase of paid services and reduction of availability to free medical care indicates that the activities of medical institutions in this service sector are not always effective.

There are problems in health system financing, particularly in insufficiency of financial resources and their inefficient use.

Currently, the health system is funded through health insurance funds and trust funds for health protection, which are guaranteed by the government. One of the ways to solve the financing and management problems of the health system is development of medical insurance system, which will make it possible to optimize the mechanism of state finance allocation as well as to develop the mechanism of rendering the population paid medical services.

The basis of health insurance in the country was laid in 2000 in the form of voluntary health insurance introduced by National Export-Import Insurance Company Uzbekinvest (UNIC). But it got real development only several years ago. According to State Inspectorate on Insurance Control of the Republic of Uzbekistan, if in 2005 there were only 3 companies providing voluntary health insurance services, in 2008 the number already reached 15.

The main reasons for such a long waiting period of health insurance introduction were relatively low level of profitability and specificity of this area, requiring a specialized infrastructure to provide such type of service. Currently, the Senate has considered a law project on health insurance which is being prepared for its approval.

Along with other directions, significant changes have also occurred in the staff structure and in the personnel training sphere. The medical training scheme was fundamentally revised and the transition to a two-level system of higher medical education (bachelor's and master's degrees) has been accomplished. Starting from 2000, 2590 general practitioners – bachelors were prepared in the system of the undergraduate education. 650 doctors on 58 specialties have been trained at the master's level for 2009-2010. 72 144 physicians work in health care and scientific-educational institutions of the Ministry of Health.

The reforms undertaken in Uzbekistan and in health institutions restructuring envisaged a decrease in the number of medical staff. Since 1999 till present time their number has declined. Provision per 10 000

population decreased from 29,8 in 1999 to 26 in 2009. The same year the number of nurses per 10 000 of the population was 104.

The fundamentally new initiative is organization of departments on training highly qualified nurses - bachelors of nursing. In 2002 there were 121 first graduates who were directed to health care institutions of the republic as “Leading nurses”. The corresponding qualification characteristics and state educational standards for higher and secondary medical education have been developed.

2 Country Profile

Uzbekistan - one of the largest countries in Central Asia is located in the heart of Asia between two rivers, the Amu Darya and the Syr Darya. The territory borders on five countries: Kazakhstan, Turkmenistan, Tajikistan, Kyrgyzstan and Afghanistan along 6,221 km. The total area of the country is 448,9 thousand km^2, the population density is 62 people per km^2. Uzbekistan declared its independence on August 31, 1991; in administrative-territorial terms it consists of the Republic of Karakalpakstan, 12 regions (provinces) and the capital Tashkent.

The network of over 10 000 mahallas (local communities) covers the entire territory of the republic. Mahallas are a unique national formation, which includes all families residing in a certain area, representatives of different nationalities.

According to the Presidential Decree, since 1998 mahalla committees and mahalla councils began reviving; the functions of which are to control over social protection and social provision of low-income population in a particular neighbourhood. The mahalla committee assists the mahalla area inhabitants to organize celebrations, weddings, funerals, and, if it is necessary, to help the poor and lonely old people.

At present, the mahalla's contribution to issues of spiritual and moral education of citizens, youth, effective functioning of social sphere, provision of public safety and insurance of law observance is growing up.

Population Profile

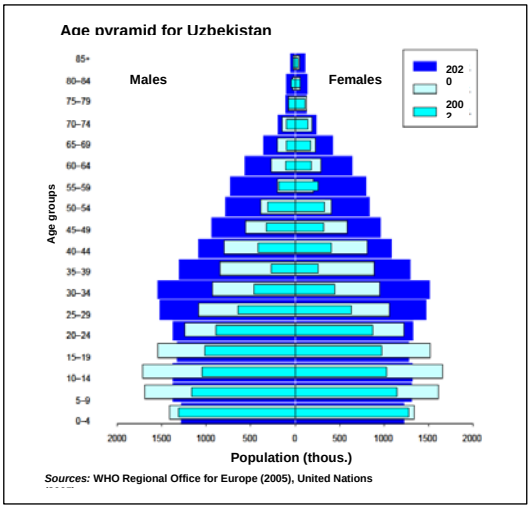
Uzbekistan is the most densely-populated country among five Central Asian republics. By January 1, 2010 the constant population of the Republic of Uzbekistan had been 28 001 thousand people with a slight predominance of women. On the population size Uzbekistan is placed third among CIS countries, after the Russian Federation and the Ukraine. However, in comparison with the mentioned countries, high birth rate and positive population growth are registered in Uzbekistan. The birth rate in Uzbekistan also remains above the average indexes for the European Region countries (group of B+C countries with high mortality rates by WHO classification) as well as positive natural population growth.

There are 120 cities/towns and 115 urban villages in the country, where in total live about 9.4 million people that is a little more than 37% of the total population.

The compositions of the population are dominated by ethnic Uzbeks (85%) and there are also small Diasporas of non-indigenous population of the republic of more than 100 nationalities having equal civil rights and opportunities.

About 88% of the population are Muslims (mostly Sunnis), 9% - Eastern Orthodox Christians. In total there are 16 religious confessions registered in the country.

The working-age population in 2008 was 16 321 9 thousand people. The number of people registered as job seekers for the same period was 22,9 thousand people. According to the Ministry of Labour and Social Protection of the Population 660,9 thousand new workplaces were created in 2008, including 436 thousand in rural areas.

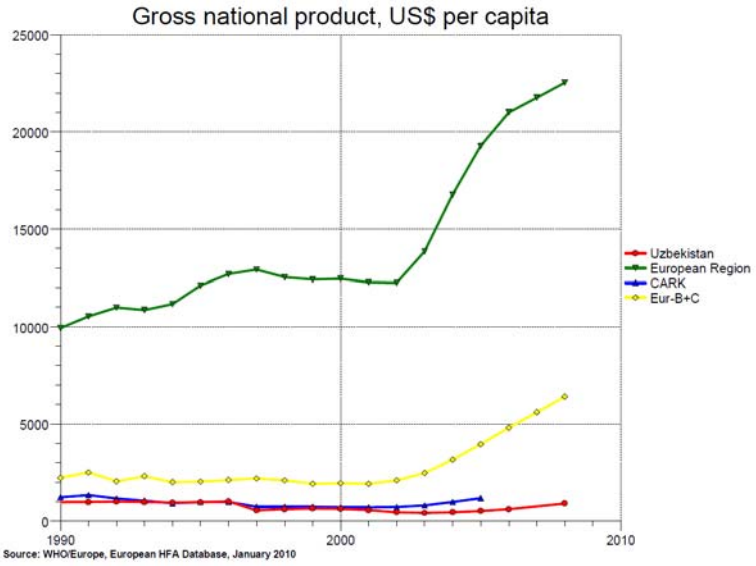


According to studies by WHO and UN, the forecasted demographic changes suggest that by 2020 the prevalence of the population aged 25-35 and the relative increase of the population of the older age category will have been observed. At the same time the proportion of the children population will relatively decrease. There is already such a tendency that the proportion of the population aged 0-14 decreased from approximately 41% in 1999 to 29,9% in 2009.

This situation indicates the necessity to introduce changes in the health system and social welfare policies.

Socio-economic Indicators

According to estimates by the United Nations Development Programme in Uzbekistan, Uzbekistan is among the countries that have been a significant progress the recent years. The human development index in Uzbekistan increased from 0,59 in 2005 to 0,62 in 2010, thus placing Uzbekistan among "middle" category countries on human development.



In 2003 the GNP made 1,720 US$ per capita in Uzbekistan, and over the past five years it has increased to 43%. The GNP ratio per capita in US$ is given in the following diagram in comparison with other countries of the European region and CARK.

In 2000, the Gini index for Uzbekistan was 29 (World Bank, 2005). The total coverage of the population with secondary education (ratio of the number of all secondary school students, regardless of age, to the population of the age group, officially corresponding to the period of receiving secondary education) in 2009 was 100%.

According to the data on poverty in Uzbekistan gathered during the survey of household budgets in 2001, 27,5% of the population of Uzbekistan (6,8 million people) could be classified as with low-income ("Living Standards Assessment", World Bank, 2003).

By 2003 the ratio of low-income people had been reduced to 26.2%. When applying the Millennium Development Goals, Uzbekistan determined that the poverty level in the country by 2010 will be 20%, and by 2015 it shouldn't be more than 14% that corresponds to a firm intention to reduce poverty twice as much, as indicated in the Millennium Declaration.

The high demographic potential and favourable age structure of the population of Uzbekistan will be retained in the long term, which raises a number of problems related to youth employment, improvement of employment structure of the economically active population, formation of structure and regulation of migration processes.

As in most developing countries, the most vulnerable groups of the population are rural people, large families, disabled, the unemployed, people with a low educational level and families with women as breadwinners.

In accordance with the government support, the population during the reform years were additionally provided with more than 550 hectares of irrigated lands for extending their personal household plots, which allowed to significantly increase the level of self-sufficiency of the population with foods. The share of personal subsidiary plots in 2007 accounted for 82% of the total meat production and for 88% of the total milk production. (Institute of Macroeconomic and Social Studies of the Republic of Uzbekistan /Analitika.org, 22.01.2007/).

According to information of the Ministry of Labour and Social Protection of the Population, in 2009 the number of people who applied to labour offices for job was 658,2 thousand people, which is 5,6% higher in comparison with 2008.

From the total number of people registered as job seekers, people aged from 18 to 30 make up 54,3%, from 30 to 50 years – 43 %.

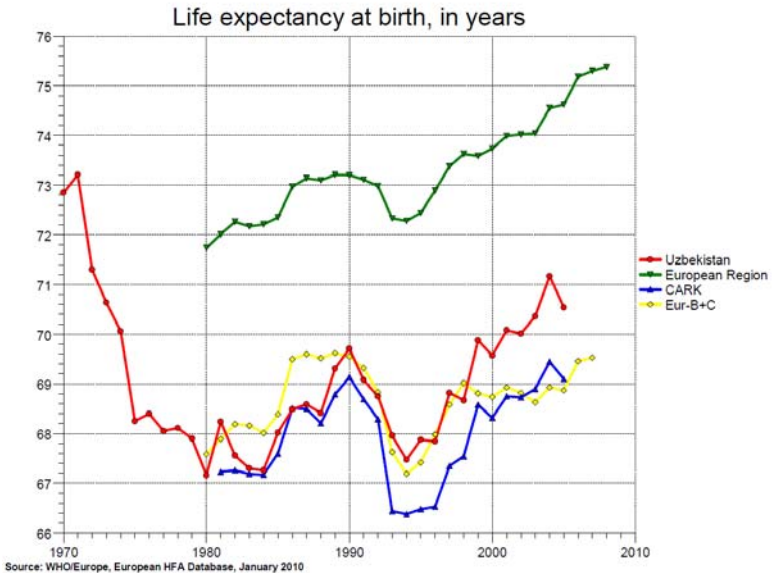
The number of citizens who were registered in labour offices as job seekers by the end of 2009 had been 20,1 thousand people against 22,9 thousand people in 2008, thus decreased to 12%.

In 2009 under support of labour authorities 566,3 thousand people were employed (86% from those who applied as job seekers during that period), which is 1,7% less than for the corresponding period of the previous year.

The income level is the main but not the only poverty determinant. In today's Uzbekistan poverty is associated with access to qualitative health services, education, basic utilities such as portable water and adequate sanitarian conditions. Thus, poverty reduction is a complex task, which is closely connected with the achievement of all other MDGs.

Basic Health Indicators

According to WHO estimates, the citizens of Uzbekistan born in 2003 can expect to live on the average 66 years (females - 68 years, males - 63 years). According to WHO estimates, in 2002 (WHO, 2004) the average healthy life expectancy for the population of Uzbekistan was 59,4 years (60,9 for females and 57,9 for males). According to data from the State Statistics Committee, in 2009 this figure was 72,9 years (70,6 – males, 75,2 - females). The following chart shows the average life expectancy at birth, measured in years of life.



Overall morbidity rate registered in the Republic of Uzbekistan 1991-2008 per 100 000 people

Group of diseases	1991	1995	2000	2004	2008
Respiratory system	17940.9	15215.1	11040.22	12029.45	12050.79
Cardiovascular system	1014.3	1076.7	1193.43	1410.24	1542.54
Nervous system	3739.0	3286.2	3506.24	1966.24	1621.16
Musculoskeletal system	747.8	570.1	765.30	841.63	868.19
Diseases of blood and blood-forming (haemopoietic) organs		5897.7	7823.3	8567.1	9091.9
Digestive system	3996.4	5360.1	4528.22	5760.97	6439.29
Malignant neoplasm	76.2	68.5	70.8	67.7	68.1
Uro-genital system	1617.0	1814.0	2194.61	2549.26	2692.71
Injuries and poisonings	3903.4	3258.9	2804.96	3377.41	3267.43
Mental disorders	257.3	232.1	267.81	213.70	194.05
Endocrine system disorders	865.6	1330.1	2472.85	2982.15	2684.22
All other diseases	8897.9	4429.5	3596.58	7172.43	7841.13
TOTAL	42979.7	42539.0	40264.32	46938.28	48361.51

Source: Institute of health and medical statistics of the Ministry of Health of the Republic of Uzbekistan

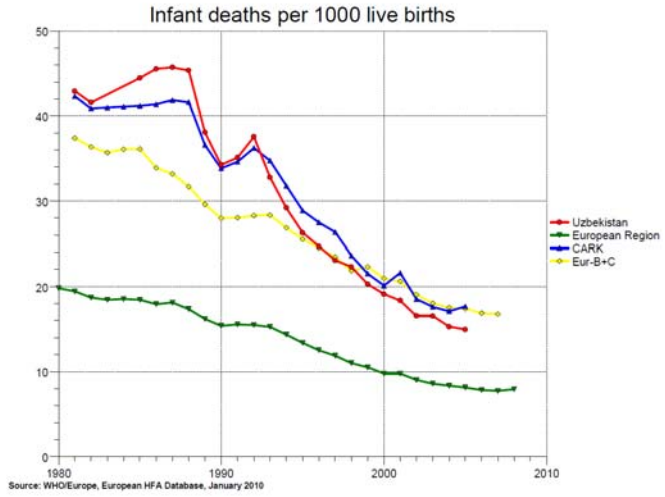
The proportion of deaths from noncommunicable diseases per 100 000 people is much higher than the proportion of deaths from communicable diseases, which is relatively similar to the average rate in the region.

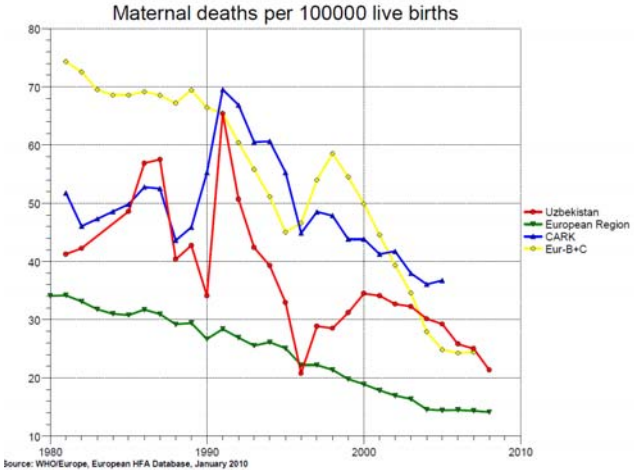
However, it should be noted that by the end of 2008 according to data from the State Statistics Committee the mortality rate from cardiovascular diseases had continued to decline and made up 719,6 per 100 000 people. The mortality rate from malignant diseases increased by more than 2 times and was 71,2. These rates for respiratory diseases and digestive diseases made up 49,5 and 62,5 per 100 000 people respectively.

Most common causes of death in the Republic of Uzbekistan 1991- 2008 per 100 000 people.

Cause of death	1991	1995	2000	2004	2008
Diseases of circulatory system	621.7	638.3	288.5	274.0	298.9
Malignant neoplasm	53.6	44.4	39.1	37.0	35.9
Injury and poisoning	60.1	45.5	43.2	37.8	34.3
Digestive diseases	27.0	32.2	30.6	31.8	32.3
Infectious and parasitic diseases	35.9	34.2	20.7	15.1	14.8
Respiratory diseases	106.7	104.7	63.5	42.9	36.9

Source: Institute of health and medical statistics of Ministry of Health, Uzbekistan.





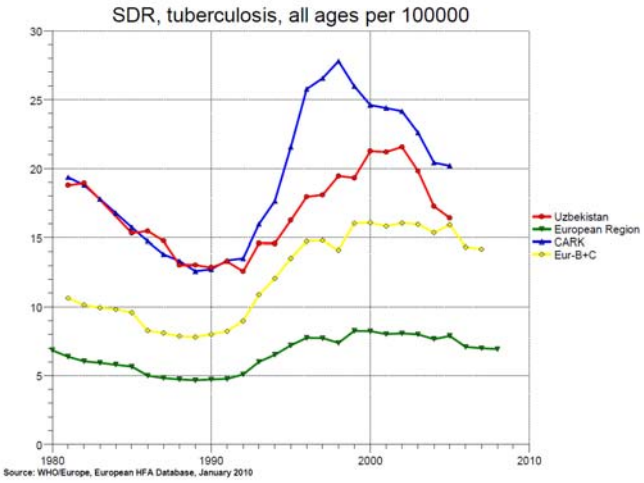
The infant mortality rate has been steadily declining for several decades, as indicated in the given diagram with the infant mortality rate per 1 000 live births, also conducted in comparison with other countries. It should be also noted that according to data from the State Statistics Committee in 2009 the infant mortality rate in Uzbekistan was 11,7 per1 000 live births.

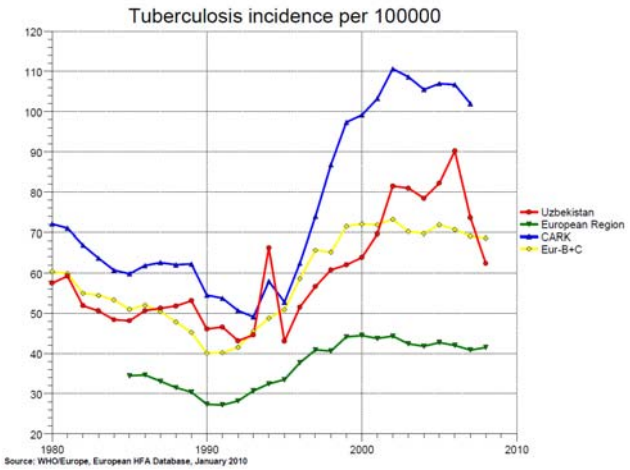
During the period since 1990 till nowadays the infant mortality rate in Uzbekistan has 2,5 times decreased.

In terms of maternal mortality there is also a tendency to its significant decrease. This is also well illustrated in the diagram showing the maternal mortality rate per 100 000 live births.

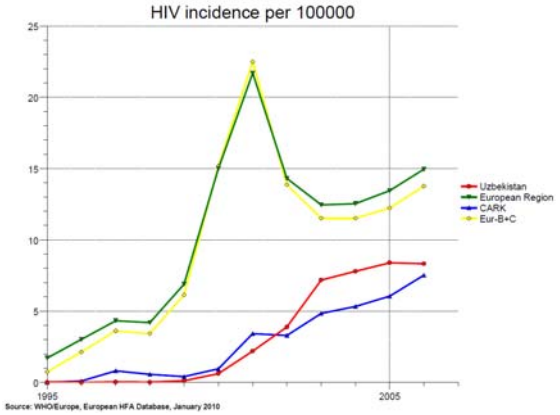
Tuberculosis and HIV/AIDS

With regard to tuberculosis it can be noted that although, against the sharp increase of tuberculosis cases since the late 90's, the standardized mortality rate for this disease per 100 000 people in Uzbekistan remains relatively high compared with the regional average rates, however, there has been a steady decrease of the rate.





The similar picture is observed in the country concerning HIV case growth in the late 90s. However, compared with the average rates of the European region and CARK countries, these rates are relatively lower.



Noncommunicable Diseases

In 2009 about 90% of all deaths in Uzbekistan were caused by noncommunicable disorders; external causes made up about 5%, infectious diseases - about 2,5%, incorrectly identified conditions - about 2%.

The main cause of deaths in Uzbekistan in 2009 were cardiovascular diseases, which made up 59,3% of all deaths, about half of which were caused by ischemic heart disease and about 1/4 – by cerebrovascular diseases.

The mortality rate from malignant neoplasm in Uzbekistan is relatively low and is equal to 7,5%. Respiratory diseases in 2009 made up 6,6% among all mortality cases in Uzbekistan. During the past 20 years the mortality rate from digestive diseases has increased significantly (6%), mostly due to chronic liver disease and cirrhosis. The mortality rates from external causes in Uzbekistan are also relatively low (2002).

In the chart below 10 top groups of health problems (in descending order, separately for males and females) are given, which account for about 90% of the total burden of diseases in Uzbekistan. The largest burden of diseases among both sexes relates to cardiovascular diseases and neuropsychiatric disorders.

10 Top groups of permanent health problems and disability for males and females in Uzbekistan (2002), ranked according to their weight in the total DALY number

Rank	Men		Women	
	Groups of permanent health problems	**Total DALY (%)**	**Groups of permanent health problems**	**Total DALY (%)**
1	Cardiovascular diseases	18,7	Neuropsychiatric disorders	21,.9
2	Neuropsychiatric disorders	16,6	Cardiovascular diseases	18,3
3	Unintended injuries	12,5	Respiratory infections	7,4
4	Respiratory infections	9,1	Digestive diseases	6,3
5	Digestive diseases	6,2	Infectious and parasitic diseases	5,3
6	Infectious and parasitic diseases	6,1	Sense organs diseases	4,7
7	Perinatal conditions	5,4	Malignant neoplasm	4,6
8	Malignant neoplasm	3,7	Unintended injuries	4,5
9	Respiratory diseases	3,6	Malnutrition	4,2
10	Sense organs diseases	3,4	Perinatal conditions	4,2

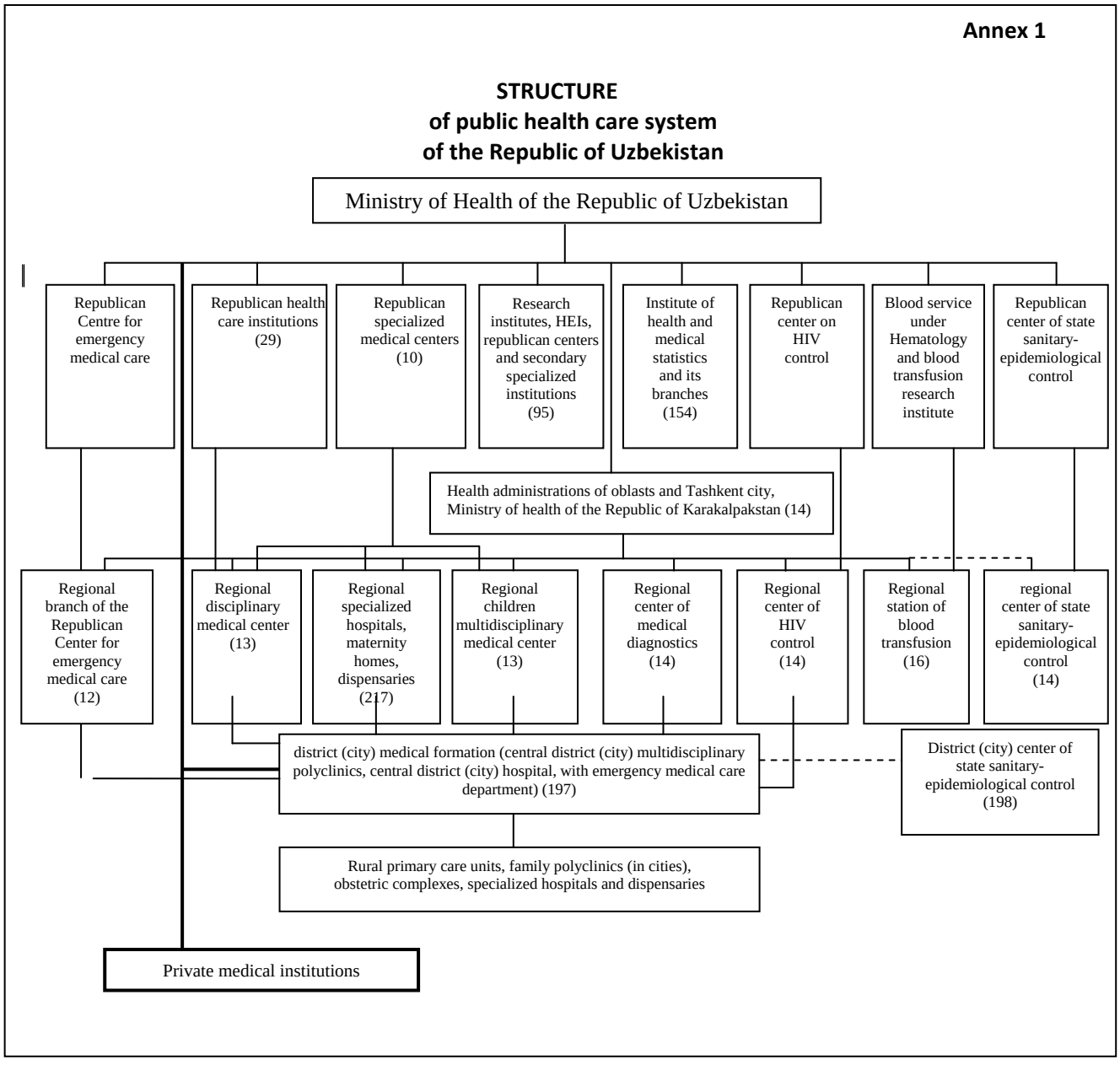
Among 10 top risk factors in terms of disease burden in Uzbekistan, when measured in DALY (Source: Summary survey of health in Uzbekistan, 2005, WHO Regional Office for Europe) the maximum disease burden among males is associated with alcohol consumption and high body mass index. They are followed in descending order by high blood pressure, high cholesterol, tobacco use, etc.

Among females, top causes are associated with high body mass index, high blood pressure, high cholesterol, indoor smoke from solid fuels, iron deficiency, etc.

3 Institutional Structure of Public Health System in Uzbekistan

At present the Republic of Uzbekistan has a unified health system, which is a combination of public, private and other health systems (the structure of health system is given in Figure 1).

Today the PH tasks in the country are carried out by the Sanitary-epidemiological Service and the Institute of Health and Medical Statistics of the Republic of Uzbekistan.



The State Sanitary-epidemiological Service of the Republic of Uzbekistan is represented by a multi-level system of institutions. Thus, in the Republic of Karakalpakstan there is the Republican Centre of State-epidemiological control, in regions of the country - regional centres, in Tashkent – the city centre of sanitary-Epidemiological Control, and in towns and districts of the country the activities on implementation of the state sanitary-epidemiological control are realized by town (district) centres of sanitary-epidemiological control (chief state sanitary doctors).

The following are the objectives of the sanitary-epidemiological services:

- prevention and control of infectious diseases;
- immunization;
- hygiene of children and adolescents, health and nutrition of children in kindergartens and secondary schools;
- food safety;
- radiation safety;
- prevention of occupational diseases;
- environmental health;
- epidemiological control and analysis;
- monitoring of working conditions;
- health education and promotion of healthy lifestyles.

Along with organization of sanitary-hygienic activities against infectious diseases, the efficient system of vaccination has been established in the country. Particular attention is being paid to ensuring the safety of blood services, improving the sanitary-hygienic culture of the population, promoting a healthy lifestyle, expanding the scale of infectious diseases prevention activities.

By improving the quality of medical care and the level of medical culture of the population, the number of infectious diseases in Uzbekistan is being decreased incessantly.

For 30 years there were no recorded cases of neonatal tetanus. Over the last 10 years there were no recorded deaths from measles. The number of patients with paratyphoid fever has 50 times decreased, with whooping cough – 8 times, with brucellosis - 4 times, with other Salmonella infections – 4,4 times, and with bacterial dysentery – 3,6 times.

It should be noted that due to radical reforms in the health system and expansion of the sanitary-epidemiological services, the immunization activities in our country have been carried out since 1996, almost covering completely the entire population. However, despite the progress in this direction, Uzbekistan is experiencing some difficulties connected with terms of vaccine delivery to the country. Vaccines are being delivered to the country from various sources. Firstly, some domestic remedies are being used, but, unfortunately, their quantity is not enough. Other equipments and means of protection come in the form of humanitarian aid, or bought at the expense of loans from foreign banks and from the state budget, or are also delivered through the WHO Regional Office for Europe. The late deliveries cause the break of children vaccination terms, which entails certain problems. So, the Government of the country is taking measures to develop its own production of vaccines and screening tests for children and adults in the country.

The health key is, first of all, cleanness and personal hygiene and sanitary-epidemiological control centres disseminate sanitarian and hygiene knowledge training the population in this direction.

In order to improve the quality of health, people should understand the value of it and must take care of their own health and the health of children. Therefore, promotion of healthy lifestyles is an issue of a great importance in our country. This work, coordinated by the Institute of Health and Medical Statistics, is an integral part of many-sided activities on PH improvement. The structure of the Institute includes the leading institute, located in Tashkent, its 14 branches all over the country the country, as well as 159 district and 14 city health centres. They work directly with health care institutions providing them targeted organizational and methodological assistance. Most of the medical specialists regularly participate in activities on hygienic, environmental awareness and healthy lifestyles promotion among the population. The institute and its branches regularly prepare methodological training aids, organize training sessions for people. In addition, manuals for school teachers are being developed and distributed. Since 2007, 83 000 brochures and more than 20 000 posters containing necessary information on how to protect own health and what rules should be observed so that children are born and grown up healthy have been published. The experts of the institute also cover the issue in articles, published in periodicals and take part in radio casts and television casts. The Institute of Health

and Medical Statistics opened its own official website http://www.zdorovye.uz/ to disseminate information on healthy lifestyles.

The Institute of Health carries out its activities jointly with the Women's Committee of Uzbekistan, public movement “Soglom Avlod Uchun” and “Mahalla” foundations, public youth movement “Kamolot” and others. Adolescent boys and girls, as well as teenagers are the main audience of measures organized in mahallas, educational establishments, military units, enterprises. Such activity is conducted in different forms such as discussions with doctors, “round tables”, Q&A evenings, seminars, contests, sport events. These measures have one goal to tell young people clearly and popularly about the benefits of healthy lifestyles (HLS), of sports and about danger of harmful habits, deadly drug addiction and AIDS.

The following divisions of the Institute of Health and Medical Statistics implement the following activities:

- **Department of Sociological Monitoring** makes control over various aspects of PH such as quality of patients’ life, lifestyles of certain population groups, prevalence of harmful habits, accessibility of health care services, satisfaction of the population with quality and volume of medical services.
- **Department of HLS promotion and training is** responsible for organizing and conducting activities on HLS formation and developing medical culture of the population.
- **Department of Media Relations** raises the population awareness on the matter and creating public opinion on health maintenance and capacity building.
- **Department of International Relations** coordinates cooperation with international organizations on improving the prevention systems and facilitating the informational support of health sector.
- **Department of Information and Communication Technologies** gets and maintains new hardware and software, computer spare parts and consumables to ensure uninterrupted operation and provides support to statistical service of the Institute.
- **Department of Medical Statistics** collects, processes and store health statistics, preparing analytical tabular materials on population health and on the activities of the health institutions. It makes a health database and maintains cross-sector collaboration on improving the process of collection, processing and keeping statistical information.

In terms of personnel strengthening it can be noted that specialist training in PH started in 2003. The PH post-graduate degrees are open to all who have a basic education (5-7 years). Training in master programme lasts 2 years on two specialties - Public Health and Health Management. Since 2003, 35 masters of PH have been trained.

In 2008 a new direction Nursing Organization and Management was opened for bachelors of nursing. In 2010 there were the first 12 graduators.

The PH School under Tashkent Medical Academy started its activity in 2006. Training lasts 3 semesters (252 hours – 1,5 years) on the following subjects: Public Health and Evidence-based Medicine, Basics of Health Care Quality Development and Health Management. Today we have about 2 000 master students in all specialties, 50 specialists in PH who have graduated from the School and 250 listeners of professor teaching personnel have been trained.

In the conditions of the reformation process the country PH requires such an information system that would be able to cover occurring changes deeply and comprehensively using up-to date information technologies. Today capabilities of modern information technologies in the HP sector are used extremely limitedly in daily work of specialists.

Therefore, and it is not for nothing, one of the priorities of the state is development information delivery to the society on all spheres of its life activity, including health.

One of the directions of the reformation process is to create a market for medical services and private health sector.

Today a non-governmental health sector exercises its activity in the country. About 4 000 business units (medical institutions) provide medical care to the population.

In accordance with Presidential Decree No. UP-3923, 19.09.2007, from October 1, 2007 all medical institutions providing paid medical services to the population (excluding dental and cosmetic) are free from all taxes and other mandatory payments for 5 years, in order to direct the released funds purposely to equip medical institutions with modern medical facilities. Moreover, up to January 1, 2013 all medical institutions, irrespective of ownership (excluding dental and cosmetic), are free from customs duties to import new medical equipment in accordance with the list approved by the Cabinet of Ministers.

In conclusion we can note that during the previous decades the most of the PH functions in the country were implemented by the health system, mostly by the sanitary-epidemiological control and sanitary education service. This service was mostly focused on reduction of infectious diseases, as well as on reduction of diseases associated with negative influence of environmental factors and working conditions. However for the recent two decades the demographic and epidemiological situation has changed in regard to disease burden, for example, the increase in proportion of traumas and non-communicable diseases is observed among top causes of morbidity and mortality.

In connection with the above said PH is becoming a prior area taking into account its preventive direction and targeted definiteness of the strategic priorities (social, economic, institutional, etc.).

In the framework of the reforms, undertaken by the Ministry of Health on the national level, in general, there is an understanding of necessity to strengthen the cross-sector collaboration in PH aspects. Along with the Ministry of Health other ministries and departments such as ministries of labour and social protection of the population, education and sports, science and environment, agriculture and water resources, forestry are also responsible for HP matters.

4 Assessment Purpose and Methodology

WHO/Europe has initially defined a complex of essential PH activity directions (mentioned above in the document), based on its experience in different countries as European and other regions. All these 10 directions have 3 main components affecting health of the population: health protection, disease prevention and health promotion (or promotion of healthy lifestyles).

This set of functional directions forms the framework for a practical web-based tool developed by WHO/Europe. This tool is designed to help countries assess their PH services and activities.

The objectives and tasks of self-assessment using this tool are:

- to create a common understanding of the main services and measures in the PH in the European region through the given definition for each indicated functional sphere;
- to inspire the ministry of Health, PH institutes, representatives of public organizations, experts and other interested sides to discuss and debate the main services and measures in the PH sphere;
- to submit the structure to the mentioned experts for their assessment of the country activity on all kinds of services and measures;
- to make a comparably quick analysis of the main strengths and weaknesses in PH services and activities the results of which will become the basis for development of strategies, plans, reforms and further PH services evaluation in general and on separate directions;
- to render assistance to define the best practical solutions of PH problems and to help countries in the European region learn using the experience of each other.

In July 2008 in the framework of a two-year cooperation agreement between the Ministry of Health of the Republic of Uzbekistan and the WHO/Europe the initial mission took place within the PH services component.

On the mission results the WHO country office presented a report, where it was recommended further to take necessary measures in the country on an overall assessment of PH services in order to analyse the effectiveness of the made measures, to develop the strategies for correcting the identified shortcomings and to support the activities on development of the positive reform processes.

According to a two-year (2008-2009) agreement on cooperation between the MON and WHO/Europe by an order of the MOH N18, 12.01.09 a special project working group was organized in order to conduct the initial assessment of PH services.

In March 2009, a working group meeting with WHO expert Mike Sedgley and WHO consultant professor Tatyana Ivanova was held in the framework of the WHO project.

The following information was presented at the meeting:

1. Modern PH concept;
2. Health system reforms in Uzbekistan;
3. Assessment of PH services - experience of Central and Eastern European countries;
4. The self-assessment tool for the evaluation of PH services;
5. Methodology and the tool practical use process (practical session).

Then the group began working to fill in the questionnaire. The coordinator of the group had preliminarily prepared the assessment realization stages plan.

The objectives, tasks, terms, information-collection and evaluation conducting procedures, as well as the full text of the questionnaire were once again introduced to the working group. The Questionnaire for Self-assessment of PH Services in Europe was used for the assessment. The main PH activity areas of the collected data are:

1. Supervision and assessment of health and well-being of the population.
2. Identification of health problems and health risks in the community.
3. Preparedness and planning of PH emergency cases.
4. Health protection services (environmental health, occupational health, food safety, etc.).
5. Disease prevention.
6. Health promotion.
7. Evaluation of quality and effectiveness of personal and community health services.
8. Assurance of a competent PH and rendering health care for an individual.
9. Leadership, management and initiation, development and planning of PH policy.
10. Research in the Health sphere.

The working group collected a large amount of information. The experts were answering specific questions, each in the own section. One, sometimes, two experts experienced in respective sections were responsible for completing each sector. The experts answered almost all given questions. However, some specialists not being working group members were additionally attracted to work on many other sections. Information obtained from other ministries and agencies was also used during the session. Later the compiled sections were sent to all working group members for their comments. Additional working group meetings (3 meetings) were also held to discuss individual questions and sections. It should be also noted that the consensus was reached as a result of discussion of all working group members, often based on the consent of the majority of members and/or on the basis of a strong view of the expert of a concrete field.

Upon receiving information from the experts, data were entered into the web-based version of the tool, according to the guidelines at http://www.epispmed.com/thetool.

The assessment tool was found to be very interesting and useful, but the group expressed their opinion that it was very big and complicated. The group also experienced some difficulties in scoring on each section, as there were no clear criteria for scoring.

In general, the self-assessment tool for evaluation of the PH services covers all areas of PH. It allows to determine the PH area achievements for the present day time and also to define problems and their solutions.

5 Assessment of the performance of the Essential Public Health Operations

1). Monitoring and Assessment of Population Health and Well-being

This area includes:

A. Creation and support of a wide-covering monitoring systems and a register of diseases and related to PH significant activities, constant data collection for assessing diseases and indicators of the population health.

B. Integration and data analysis (including community medical diagnostics) to identify the needs of the population, trends, gaps and inequalities in health state of some population groups (risk groups), action planning based on the facts and monitoring results of progress achieved towards health objectives.

C. Data publication in the form of different formats for wide audience.

Based on the evaluation results the situation is as follows (see Figure 1).

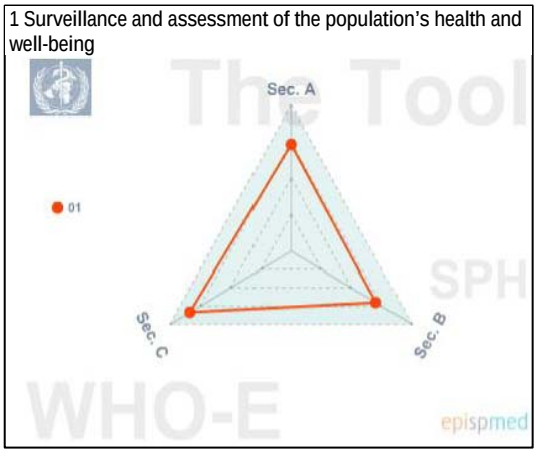


Figure 1.

When conducting this area of self-assessment the following key points were identified:

- The system of monitoring, data collection and registration has been adjusted and is functioning quite well, however, not all relevant factors (ethnic origin, socio-economic factors, such as income and education levels, etc.) are taken into account or integrated during analysis directed to define socially vulnerable population groups in terms of health status and effective planning.

- In general, the problem is with in-depth and detailed analysis of the collected data and it is often very difficult or even impossible to make an integrated data analysis, especially when data come from other ministries and agencies. It happens because of inadequate development of human resource and insufficient coordination between all of the involved sides.

- There is a system for informing and data publishing, however, insufficient investments into printing and dissemination of analytical reports and existing data, results in low awareness of health care providers and population in general.

The generalized SWOT analysis for this section is given in Table 1.

Table 1.

Strengths	Weaknesses
• In general, there is a well-established system of disease monitoring and registration in the country determining the birth and mortality rate statistics (86): collection, processing and analysis of birth and mortality rate statistics is undertaken by the State Statistics Committee of Uzbekistan; Institute of Health under the Ministry of Health of Uzbekistan is a separate structure dealing with medical statistics on health issues. • There are normative documents in the country on monitoring realization and defining the list and procedures of registration and collection data on all groups of diseases. • The system of monitoring and registration in regard to the following areas is well organized: environmental health (96), infectious diseases (86), non-communicable diseases (86), maternal and child health protection (86), social and mental health (86). There is a system of monitoring and registration of diseases related to nutrition (76), occupational health and injury prevention (76) but it requires more improvement. • Currently programmes on registers creation for certain diseases (cancer-register, tuberculosis register, oncology register, etc.) are being implemented. • The information is provided to WHO/Europe's database "Health for All". The statistical data are available to international organizations (WHO, European Centre for Disease Control).	• In the areas of disease monitoring and registration, the analysis does not always contain all relevant factors (e.g. ethnicity, socio-economic factors, such as income and education levels, etc.) The system is not always integrated and the analysis of complex indicators is not always made; and it is not often concerted with informational systems and indicators of other agencies. • The existing legal framework not always corresponds to international recommendations and requirements (although the consultations and activities in this direction are carried on). • The results of statistical data analysis do not fully allow determining the most important PH problems. • The insufficient capacity of institutions responsible for collection, processing and analysis of statistical data (human resources, financing and material-technical base), especially in regard to integrated data analysis. The country has a low human resource potential to make analytical work, especially in regions. • Inter-agency coordination directed to collect and make registration of the aggregated PH data, especially on NCD risk factors, traumas and diseases related to nutrition, is insufficient. • Insufficient attention is being paid to research of population behaviour and health inequalities, as well as to socio-economic indicators of various diseases. It influences the effectiveness of determination of socially vulnerable groups in regard to their health and the efficiency of the prior activities planning and financing.
The country has a potential demonstrating: • the ability to use computerized charts to identify trends and/or compare data by related categories (e.g. gender, age, etc.); • the ability to integrate and analyze data for community health state monitoring, dissemination of relevant information on PH issues and rendering assistance in identifying problems and threats to PH (76). • There are some simple programmes and software to generate various charts in the country, but only at the national level.	• There is no system of electronic registration and data collection, as well as of relevant infrastructure – unified electronic network for data collection and registration at all levels, thus complicating and reducing the monitoring quality. • The specialized computer programmes which identify the most important health problems are not introduced sufficiently into the health system. Also there are no computer programmes that generate standardized results and allow preparing advanced analytical reports. The integrated assessments of health status and health losses (Dali indices, etc.) are not used for data analysis. • The capacity for data analysis and interpretation as well as for application of modern technologies is concentrated only at the common national level and it is very limited.

• Different formats are comprehensively and effectively used for publication of data for all groups of key audiences: for decision-makers, health care providers at various levels, for general population and high risk groups. • The information periodical publication in different formats (in printed form, in electronic form on web pages) is undertaken. But information is mostly provided in a printed form.	• Insufficient coordination, motivation and funding of large-scale campaigns, publications and activities with involvement of population and public organizations. • Insufficient coverage of data analysis results, especially at the level of population and health care providers in the regions. • Limited access to information (sometimes on a paid basis), insufficient number of printed copies of informational materials for the population.
Opportunities	**Threats**
• In the framework of WB's "Health-2" project the activities on introduction of a unified information system for electronic monitoring of infectious diseases are being implemented. The list of infectious diseases is defined in accordance with WHO recommendations. • Periodically, with assistance from international organizations, for assessing the effectiveness of individual programmes the sentinel monitoring of first generation non-communicable diseases by socio-economic markers, gender, ethnicity, income and education levels is conducted. • Periodically the behavioural studies in regards to health are conducted, including studies on healthy nutrition and diet, lifestyles initiated by international organizations (UNICEF-2000, WHO-2005, WB-2008). In conducted studies in this area the methods recommended by WHO are used.	• When creating an electronic database on operational management and disease control, big difficulties may be associated with continuous maintenance of the system and development of infrastructure, as well as with data integration and analysis when several different ministries and agencies are involved into the process. • Lack of investments into the institutional system of training of specialists-statisticians in the PH area will worsen the human capacity problem in this area in future. • Lack of investments in research on a regular basis can lead to insufficiently rational planning, selection of priorities and implementation of national programmes and plans.

Conclusions:

- In general, the system of monitoring and assessment of various diseases is existing, but there should be more detailed analysis of necessary changes. It is necessary to improve the information system at regional and local levels, which will allow obtaining reliable and accurate data.

- When planning programmes and strategies it is necessary to take into consideration the interests of different population groups.

2). Identification of Health Problems and Health Hazards in the Community

This area includes:

A. Control over communicable diseases;

B. Control over environmental factors being health hazards;

C. Laboratory support of examining factors being health hazards.

Based on the evaluation results the situation emerges as follows (see Figure 2).

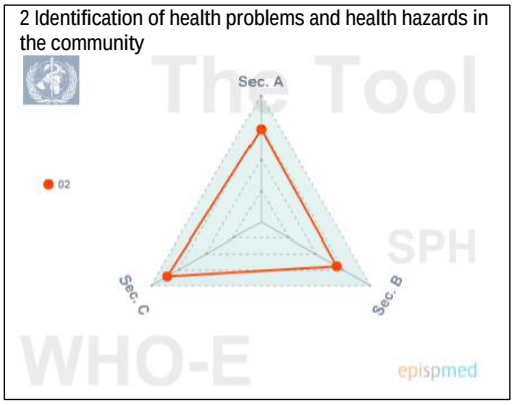


Figure 2.

When conducting the self-assessment of this operation the following key points have been identified:

- The mechanisms for infectious disease outbreaks detection and their investigation are worked out accurately in the country. Control over food production processes is regularly conducted jointly with veterinarian services, but the skilled personnel potential experienced in development and implementation of the HACCP system is inadequate. The legal and normative basis of food production needs more elaboration.

- In each SEC (Sanitary-Epidemiological Control) centre there is an ecology department, dealing with environmental issues, and the assessment of risk factors and population health indicators is undertaken in accordance with the criteria approved by the Ministry of Health of Uzbekistan, but there are no professionals trained to use modern models of assessment of risk factors and environmental influences on human health. The multi-disciplinary approach of identifying potential health threats is underdeveloped.

- A wide network of PH laboratories, carrying out research of PH threats and emergencies problems is functioning in the system of state health care. But cooperation between laboratories of various agencies, where such laboratories also work has not established sufficiently. The integration of databases with second generation sentinel monitoring has not been introduced yet. There is no a unified system of certification of laboratory diagnostics quality management in the PH area. There is a lack of budgetary funds for purchasing consumables, laboratory equipment that affects the quality of laboratory diagnosis.

The generalized SWOT analysis for this section is given in Table 2.

Table 2.

Strengths	Weaknesses
• The mechanisms for infectious disease outbreaks detection are worked out accurately , epidemiologists conduct investigations; case definition and recording are made. • The population groups with higher contagion risk of infectious diseases in epidemiologically problem areas are identified. • The control over food production in state enterprises is regularly conducted. • A legal base and agency level instructions for controlling zoogenous and vector diseases exists. • The investigation of zoonosis outbreaks is conducted jointly by SEC and veterinary services. • There are 118 laboratories certified by the	• When evaluating the contagion risk of infectious diseases such factors as poverty, low income level, education, housing quality, affordability of health services are not always taken into account. • Medical staff is not always vigilant enough in regard to possible outbreaks of infectious diseases. • There is no human capacity (technologists, nutritionists, microbiologists), skilled in development and implementation of HACCP system. • There are no sanitary and veterinary regulations and criteria for critical points in food production. • Many functions and services provided by laboratories of “UzStandard” Agency and those of Sanitary-epidemiological control service are duplicated;

Ministry of Health and 42 accredited laboratories for conducting microbiological analysis within the State sanitary-epidemiological control system. • Each health care facility has a control commission, which exercises regular control over medical and sanitary-epidemiological conditions of the organization.	some research works are not harmonized with the *Codex Alimentarius* recommendations. • A vector control system (automated system) within the State sanitary-epidemiological and veterinary control systems does not exist. • There are no specialized epidemiological departments in general hospitals. • There are no special programmes and processes for interagency communication implemented at hospital level in regard to outbreaks of zoonoses and vector and other infectious diseases. • An integrated data analysis at the country level, taking into account all relevant systems and integrated indicators is not made.
• There are regulatory and methodological manuals in the area of environmental protection and its impact on PH. • There is a special part “Ecology and PH” within the information system. • Studies on environmental risk assessment are conducted, especially in the Aral Sea area. • The law on labour safety and special regulations promoting work safety have been developed; assessment of risk factors at the workplace is conducted. • There is an Order of the Ministry of Health of Uzbekistan on procedures for conducting medical examinations depending on the performed work, including contraindications to job admission and examinations frequency. • Within the structure of CSSEC at all levels there are divisions performing control over atmospheric air condition, quality of portable water supplied to the population and water in reservoirs, undertaking analysis and risk assessment in accordance with the country's existing legislative and regulatory acts. • There is a legal framework defining the list and procedures for registration and collection of chemical and physical health hazards in food chain of medical facilities. • The determination of cause-effect relationships with disease outbreaks related to food is implemented in cooperation and with participation of international organizations and research institutions. • There are mechanisms for risk assessment in regard to food safety based on scientific evidence and recommendations of FAO/WHO. These risk assessment mechanisms are the basis for risk management and decision-making. • The country keeps to IHR. • Cross-sector trainings are regularly conducted in all regions of the country on issues of actions during emergencies posing a threat to PH. • The primary information in this area in regard to	• The existing risk and environmental health assessment methodology does not allow evaluating the “dose-effect” relationship and assessing the exposure; it is not harmonized with international recommendations. • There are no specialists trained in modern techniques and models for assessing risk factors in the environment. • A multi-disciplinary and integrated approach, which combines various scientific knowledge for identifying potential health threats, is poorly developed. • Control over atmospheric air quality, risk analysis and assessment are not carried out fully and properly at all CSSEC levels. • The current active control system for chemical and physical contaminations in food chain and passive control system do not allow disaggregating the data by socio-economic markers, gender, ethnicity, income and education levels. • There is no legal framework defining the list and procedures for registration and data collection on contamination risks in food chain of nonmedical institutions. • The existing system of risk assessment in regard to food safety does not account for the integrity of food chain “from farm to fork”. The risk assessment methods defined in the instructions of the Ministry of Health are not available to farmers and producers. • The efficiency of control over the quality of imported and marketed cosmetics and toys is insufficient. • The health risk assessment in regard to mass consumption goods is not conducted.

PH sector is covered by mass media: television, radio, press.	
• In the health system and outside of it there is an extensive network of PH laboratories involved in research of PH problems and threats in emergency situations (microbiological and sanitary-hygienic, radiation laboratories of CSSEC, microbiological laboratories in hospitals). • PH laboratories are easily accessible; they function at district, city, region and national levels. • The legal framework has been established in the country on introduction of laboratory accreditation system. • There are special regulations and standards for quality control of laboratories (State standards (GOSTs) and Sanitary rules and norms). • The functioning laboratories can conduct rapid screening tests in large quantities for routine diagnostics and control. • There are norms for assessing the quality of laboratories. • Some laboratories meet the international standards.	• The collaboration between laboratories of various agencies is insufficient. • The integration of databases and integrated analysis of data is underdeveloped. • A unified system of quality control certification for laboratory diagnostics in regard to all involved ministries and agencies is not introduced. • Inter-laboratory comparisons are not conducted periodically, which affects the quality of measurements in different laboratories. • The budgetary funds allocated for purchasing of consumables, laboratory equipment and supporting functioning of laboratories are not sufficient. • The quality of laboratory diagnostics is not always at a proper level.
Opportunities	**Threats**

• Many international projects in environmental sphere (implemented jointly with UN agencies and other donors) can be directed towards improvement of legal framework in regard to identification of contamination factors and risks in food chain.
• With support from international organizations it is possible to develop sanitary and veterinary rules and criteria for critical points in food production.
• It is possible to use and increase the potential of research institutions through additional funding of such research aimed at assessment of impact of environmental factors on human health.
• In the framework of intended programme of the Ministry of Health of Uzbekistan and “Health-2,3” project, it is planned and under discussion the introduction of a unified quality control system for laboratory diagnostics through:
  • improvement of legal framework, including revision of laboratory examination protocols in accordance with international recommendations (WHO);
  • increase in allocations for development of laboratory network;
  • improvement of organizational structure of PH laboratory network;
  • education and training of laboratory personnel, oriented towards quality control of laboratory diagnostics;
  • introduction of laboratory accreditation and quality management certification system.
	• The insufficiency of budgetary funds for purchasing consumables, laboratory equipment, as well as for maintaining this equipment, may lead to progressive decrease in the quality of these laboratories functioning.
	• It is necessary to establish a system of continuous training and retraining in various directions, associated with environmental impact, nutrition and PH laboratory services (laboratory assistants, technologists, nutritionists, microbiologists).

Conclusions:

- In general, there is a nationwide network of laboratories that are used according to needs of PH services. However, it is necessary to examine the results and available experience in optimization of laboratory service for dissemination of best results in the country, and to create a unified quality control system for PH laboratory services.

- It is necessary to adjust the mechanisms for quality assessment, control and assurance in regard to services in the area of management and PH, as well as to introduce decision making policy which is based on facts and evidences.

3). Preparedness and Planning in Case of Public Health Emergencies

This area includes:

A. Planning, study and response to PH emergencies.
B. Appointment an action coordinator in emergency situations.
C. Gained experience, maintenance of protocols and list of experts.
D. Implementation of International Health Regulations (IHR).

Based on the evaluation results the situation emerges are as follows (see Figure 3).

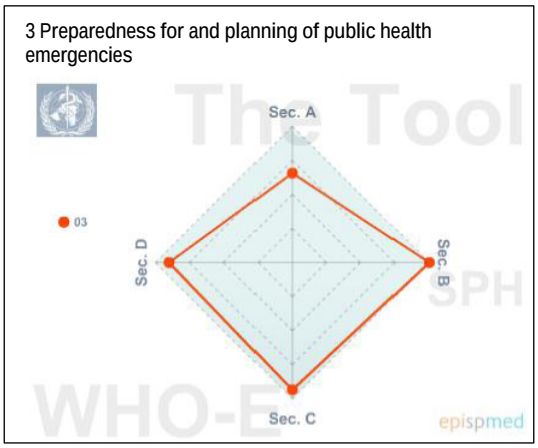


Figure 3.

When conducting the self-assessment of this operation the following key points were identified:

- Planning, study and response to PH emergencies is carried out in accordance with the state system of prevention and reaction to emergency situations, where the reaction forces are in high readiness. The corresponding legal framework for it exists.

- Appointment of an actions coordinator in emergency situations is done in accordance with the approved programmes of prevention and reaction to emergencies in the country. The system of regular accounting and reporting is well established.

- The gained experience, maintenance of protocols and list of experts are reflected in available written reports, which contribute to early identification and establishment of rapid response and decision-making mechanisms in future. The personnel training are carried out through a system of continuous professional development.

- The introduction of International Health Regulations (IHR) is reflected in action plans for emergency situations. Training of specialists on new IHR-2005 is conducted in the country, however, currently there is no special programme for the integrated introduction of IHR.

The generalized SWOT analysis for this section is given in Table 3.

Table 3.

Strengths	Weaknesses
• The state system of prevention and reaction to emergency situations and its 12 services functions in the country (Resolution of the Cabinet of Ministers No. 558 dated 1997). There is quite a strong legal basis, including the state programme for prevention and response in emergency and terrorism control situations. • Reaction forces are always in the state of high readiness. Command-staff, special tactical and thematic exercises are regularly conducted on various reactions to emergencies, including medical ones. • A network of diagnostic laboratories was created for this purpose. • There is an optimal infrastructure of counter-forces (in case of serious military conflicts and displacement of large groups of people).	• The individual protective devices in most cases are outdated. • There is a problem of tailing ponds that pose trans-boundary threats (Maili-Suu, Taboshar, etc.).

• The programme on epidemics and epiphytotics prevention has been developed. • Existence of a unified sanitary-epidemiological control service, quick-reaction medical epidemiological teams and toxicological and other groups. • Existence of observation and laboratory control network. • The relevant events (environmental, chemical, radiological and biological threats, large-scale disasters) are immediately investigated. • There are protocols for responding to emergencies.	• Upgrade tools of rapid diagnostics is required. • Insufficient funding of the Programme; it is necessary have new generation laboratory equipment. • Devices for chemical reconnaissance are outdated (of old generation). • Lack of quick-response radiological teams.
• There are clear instructions to trace the sources and contact people in case of infectious diseases or acute poisonings.	• The special report and calculations of needs in professional staff to respond to various PH threats are not available.
• There is a quite effective legal framework in the country for IHR (Resolution of the Chief state sanitary doctor No. 17, 26.08.2009, Order of the Ministry of Health of Uzbekistan No. 20, 23.09.2009). • IHR have been implemented in planning of emergencies.	• Currently there is no special complex programme on IHR implementation.
Opportunities	**Threats**
• Efforts are taken towards developing human resources – specialists from different ministries and agencies at national and regional levels - on IHR-2005 (with support from WHO and other organizations) as well as through a system of retraining and skills development. • The cooperation has been established with the U.S. Department of Defence on the Biological Threat Reduction Programme. • Lists of experts with experience in responding to potential chemical, radiological or biological threats to public health are prepared.	• Lack of funding for improving and maintaining the laboratory network can affect the on time detection of cases and adoption of responsive measures.

Conclusions

1. The system of emergency response is well established in the country. The practical experience shows that this area may also become an example of cross-sector cooperation.
2. However, there is a need to allocate additional funding for improving and maintaining the laboratory network. It is also necessary to fully introduce IHR into the current practice.

4). Health Protection Services (environmental health, occupational health, food safety, etc.)

This area includes:

A. Ability of experts to assess risks.
B. Measures taken by public health authorities for ensuring compliance with laws and regulations.
A. Cooperation with other authorities responsible for provision of health legislation observance, i.e. ability of responsible authorities to develop regulatory and control framework, protecting PH and watching over observance of regulations aimed at PH and environmental situation improving.

Based on the evaluation results the situation emerges as follows (see Figure 4).

The self-assessment of this operation has identified the following key points:

- A separate structure within CSSEC system monitoring the situation of environmental health, occupational health and food safety has been organised; the activities of these structures are supported by the relevant legislation. Currently there is a lack of specialists in the country trained to modern methods and models of performing risk assessment in environmental health, occupational health and food safety.

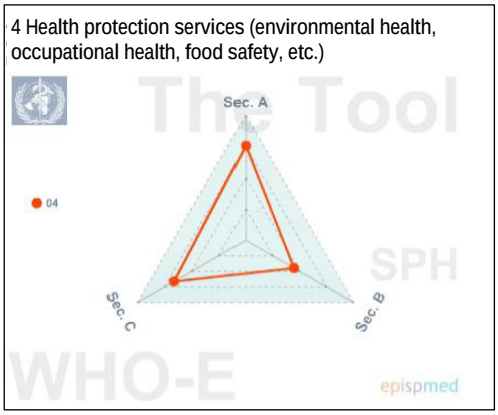


Figure 4

- Multi-disciplinary approach combining various scientific knowledge for identifying potential health threats is developed rather insufficiently. Joint epidemiological research is conducted with veterinary services and environmental health services on the basis of joint instructions. However, the relationships between ministries, agencies and organizations on injury prevention and food safety are not well established.

The generalized SWOT analysis for this section is presented in Table 4.

Table 4.

Strengths	Weaknesses
• The legal framework in the area of health and environmental protection exists, including regulatory instruments and manuals. • Within CSSEC structure at all levels there are divisions responsible for monitoring the environmental conditions and performing the risk analysis and assessment in accordance with country's legislative and regulatory acts (special parts within information system “Ecology and PH”). • Within CSSEC system there is a sufficient number of certified and accredited laboratories for performing all necessary research types. •	• The existing database does not allow disaggregating the data on socio-economic markers, ethnicity, income and education levels. This information collection system does not allow conducting a qualitative assessment of direct impact of environmental factors on human health.
• Epidemiological control of infectious and non-communicable diseases associated with public health risks has been implemented. • Methodology for ecohygienic zoning of administrative areas exists; assessment of risk factors and health indicators is carried out according to criteria approved by the Ministry of Health of Uzbekistan.	• There are not enough specialists in the country trained to modern methods and models for performing environmental risk assessment. • Control over atmospheric air quality, risk analysis and assessment are not carried out fully and properly at all levels of CSSEC, as there is not enough modern equipment. • The methodologies, currently in force in the country,

• Studies on environmental risk assessment are conducted, especially in the Aral Sea area.	do not allow evaluating the "dose-effect" relationship and assessing the exposure; they are not harmonized with WHO recommendations. •
• The Law on labour safety and special regulations promoting work safety have been developed. • There is an Order of the Ministry of Health of Uzbekistan on procedures for conducting medical examinations depending on the performed work and production conditions. • Periodical risk assessment of workplaces is conducted.	• Insufficient interconnection between ministries, agencies and organizations on prevention of occupational traumatism.
• The existing system of risk assessment of food safety is approved at the legislative level in the country. Risk assessment techniques have been defined in guidance materials. • Periodical control of food production is conducted. Investigations are conducted jointly with SEC and veterinary services. There is a Resolution of the Cabinet of Ministers of Uzbekistan No. 7, 13.01.2007 on implementation of HACCP system at all stages of food production. A series of conferences with participation of WHO, FAO/WHO on introduction of HACCP system in the country have been conducted.	• The existing system of risk assessment in regard to food safety does not account for the integrity of food chain "from farm to fork". • The functions of laboratories of "UzStandard" Agency and Sanitary-epidemiological control (SEC) service are often duplicated; some research works are not harmonized with recommendation of WHO, *Codex Alimentarius* Commission. • Risk assessment mechanisms and methods defined in the guidance materials of the Ministry of Health are hardly accessible for farmers and producers. • There is no functional separation between risk assessment and risk management at the level of producers and farmers.
• Joint epidemiological research is conducted with veterinary services and environmental health services on the basis of joint instructions. • Epidemiological surveillance results are presented in publications within both the Ministry of Health and other sectors as well as in publications of international organizations (UNDP, UNICEF, WHO, etc.).	• Multi-disciplinary approach combining various scientific knowledge for identifying potential health threats is developed poorly.
Opportunities	**Threats**
• The government pays great attention to health and environmental issues, and undertakes appropriate steps on strengthening the legal capacity in this direction. Additional seats have been provided in Oliy Majlis for deputies dealing with environmental and ecological aspects. • Strengthening of material and technical base of the state sanitary control service is undertaken in accordance with the implementation of the Resolution of the President of Uzbekistan No.700, 2008, including through attraction of foreign investments.	• Weak interagency coordination and integration in regard to environmental aspects, nutrition and occupational traumatism will delay the implementation of the adopted international documents and standards. • Support of donor organizations and technical agencies for preparation and strengthening of human resource research capacity in the country is required.

Conclusions

There are certain achievements in this area in the country, but it should be noted that this area requires a well-functioning cross-sector collaboration and development of integrated approaches, which need to be improved in our country.

- It is necessary to develop a comprehensive action plan for traumatism prevention with involvement of different stakeholders and determination of specific funding sources.
- Funding is required for integration and improvement of the existing programmes related to health protection, health promotion and disease prevention, taking into account the needs of practical health care.
- Promotion among the population of more meaningful approach to environmental health.

5). Disease prevention and 6). Health promotion

These two areas include:

1. Prevention Aspects:

A. ***Primary prevention*** - vaccination of children, adults and elderly people, and also provision of information on behavioural and medical risks; monitoring and measures at individual and community levels with involvement of primary health care (PHC) and specialised care; production and supply of food additives.

B. ***Secondary prevention*** - screening programmes for early detection of diseases; including screening and prevention of congenital malformations; production and supply of substances for chemoprophylaxis, etc.

Figure 5.

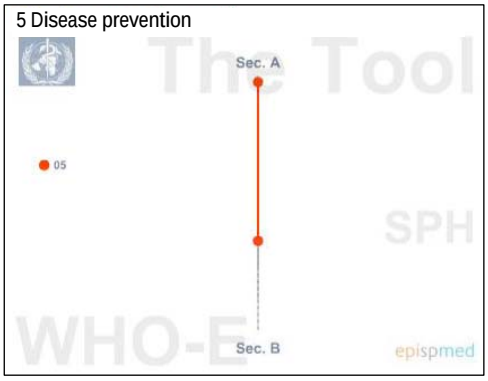
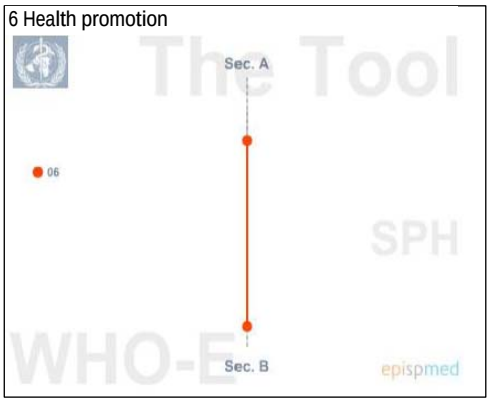


Figure 6.



2. **Health Promotion Aspects**, i.e. the process of enabling people to increase control over their health and its determinants, and thus improve its state, including:

A. Conducting health promotion activities for the whole population or for its groups of high risk of negative health effects occurring.

B. Opportunities for conducting cross-sector activities.

Based on the evaluation results the situation appears to be as follows (see Figures 5 and 6).

The generalized SWOT analysis for this section is presented in Tables 5,6.

Table 5, 6.

Strengths	Weaknesses
• The country possesses sufficiently strong legal base in regard to healthy nutrition, physical activity and obesity prevention, control of addictions, prevention of infectious diseases (HIV/AIDS, tuberculosis), occupational health and environmental health. • The Institute of Health and Medical Statistics work, coordinating activities on disease prevention and health promotion. • PH protection is a priority of the government policy (there are decrees, resolutions of the President and the Cabinet of Ministers of Uzbekistan in this direction). • The Republican Antiepidemic Commission under the Cabinet of Ministers and the system of control of infectious diseases operate at the national level. • The Institute of Health and Medical Statistics widely delivers information on health problems and risks to the population. • The network of primary health care institutions and	• There is no national coordinating body at the level of the Cabinet of Ministers on all aspects of population health and health system with the purpose of establishing effective cross-sector collaboration. • The mechanism for planning, funding and support of effective administration of activities of coordinating entities at the national level is not developed sufficiently and flexibly. • The system of monitoring services for reducing health risks is not sufficiently developed. • Some specialized entities passively participate in formulation of programmes aimed at prevention of diseases, especially of noncommunicable chronic diseases. • Regular screening of the most prevailing and prior diseases is not implemented. • Production of screening tests is not implemented in the country.

primary health care (PHC) services are accessible and free for the population. PHC institutions are actively involved in the implementation process of prevention programmes. • The calendar of vaccinations has been approved; it is updated when new scientific evidences appear and new vaccines are introduced. • Vaccination is provided by PHC institutions free of charge. • In all territorial units (oblasts) of the country the screening centres are organized for early detection of hereditary diseases, prevention of childbirth with malformations. • All pregnant women and newborns are examined in the screening centres. • Screening programmes are adapted to recommendations of international organizations. Within diagnostics and treatment standards there are recommendations on rational nutrition and physical activity. • Health classes are held in all secondary schools of the country; the special discipline - valeology (promotion of healthy lifestyles) – is introduced in HEIs. • Much attention is being paid to development of children's sports through construction of additional sports facilities all over the country, increasing attention to physical culture classes in all educational institutions, and promoting healthy lifestyles among children and youth. • Information-methodical materials on healthy lifestyles are developed based on priorities and possible behavioural changes: for high-risk groups, youth, women of childbearing age, elder people.	• Production of vaccines for children and adults is not implemented in the country. • System of vaccination quality monitoring does not always work (assessment of compliance with "cold chain", vaccine storage system, alternative storage system during electricity cuts off, etc.), as well as due to lack of modern laboratory equipment and reagents for early detection of infectious agents. • There is no integrated system of stimulation and control over food industry with the purpose of supporting the production of healthier, safer and more dietary food products (in connection with necessity to improve legal framework and attraction of additional investment). • Medical workers of PHC institutions are not enough motivated to provide services related to healthy nutrition and physical activity. • Health classes in educational institutions are conducted as extracurricular (not mandatory) activities and those classes are not always delivered by specialists in this area or specially trained teachers. • Attendance of recreation complexes and sport sections is done on a paid basis and, therefore, is inaccessible for low-income population groups. • Not enough funds are allocated for development of education-methodical and information-educational materials, as well as for monitoring and evaluation of behavioural changes of the population after conduction of health education. • Lack of qualified specialists, who should implement monitoring and evaluation activities.

• Over the past few years the government has adopted a number of important documents on regulation of consumption of tobacco and alcohol products by the population, as well as on prevention of drug abuse and HIV/AIDS control.
• Preventive measures (in particular, national anti-advertising campaigns) towards reduction of active use of tobacco and alcohol products are widely conducted for different population groups, especially for women and juveniles.
• There is a network of drug abuse institutions, AIDS centres and tuberculosis clinics across the country, which greatly facilitates preventive and curative work in these areas.
• Awareness raising aspects of HIV/AIDS prevention and drug control are included into curricula of secondary schools, colleges and HEIs.
• The Ministry of Labour and Social Protection of the Population organizes regular courses on HIV and drug abuse prevention for migrant workers.
	• Uzbekistan has not yet joined the WHO Framework Convention on Tobacco Control.
	• While developing national strategies and fundamental documents the following matters are not taken into account:
	  • pricing policy to control tobacco smoking;
	  • necessity of cross-sector collaboration.
	Not sufficient funds are allocated:
	  • for monitoring and assessment of tobacco smoking prevalence, as well as
	  • for development of education-methodical and information- educational materials.
	• Health care institutions practically don't provide monitoring services for those who want to quit smoking.
	• No studies of public opinions are undertaken in regard to alcohol consumption, smoking and healthy nutrition, healthy lifestyles and examining behavioural changes of the population.
	• Low involvement of PHC and health related sectors, connected with various factors, including weak cross-

• For the general population the information-educational materials about dangers of drugs, prevention of HIV/AIDS and tuberculosis are developed and disseminated.	sector cooperation and insufficient supply of qualified psychologists and social workers. • Insufficient allocation of teaching hours devoted to exploring HIV prevention, drug abuse and addictions within school programmes.
• Large enterprises possess their own medical services involved in prevention of occupational traumatism. • Monitoring of occupational injuries is conducted. • Employees of enterprises and organizations are under periodical professional examinations. • List of diseases, with which patients are not admitted to certain kinds of work, has been established. • There are rules of occupational safety. • There is a list of activities/services in the area of environmental health.	• Small and medium-sized enterprises do not pay enough attention to occupational health aspects and labour safety measures. • Insufficient funding of activities in the area of environmental health.
• Activities and services in mental health area are carried out and bear multi-disciplinary nature. • The government pursues policies towards strengthening the role of PHC in promotion of mental health of the population and suicide prevention. • Dentists regular examine school and preschool children.	• Currently, the system of depression prevention, stress management, etc. at PHC level is not yet sufficiently developed, including policies of various enterprises and institutions. • Lack of understanding of importance of regular preventive visits to dentists among majority of the population and lack of appropriate educational activities in this direction.
Opportunities	**Threats**
• Draft law on restriction of tobacco and alcohol consumption has been developed. • The development of national strategy for prevention and control of non-communicable chronic diseases (NCCD) has started; its priority relates to influencing modifiable risk factors such as nutrition, inactive lifestyle, prevention of smoking and alcoholism. • Many international donor organizations have shown great interest in health prevention and promotion issues, especially in NCCD, for example, planned IDA project “Health-3”, JICA, TICA, etc. •	• When activity coordination of all organizations is weak, and there is no cooperation between agencies it will be difficult to implement programmes fully at a national level.

Conclusions

1. It should be noted that today the state pays intent attention to important issues of prevention and health promotion aspects. However, only the health system is continuing to play the main role in the implementation of all state programmes in this sphere, though these issues must be solved through cross-sector collaboration and involvement of nongovernmental entities.
2. In this sphere, adoption of a state strategy or a programme with relevant financing as well as inclusion of all health related public sectors (e.g., outcomes and impact on human health of food industry, transport and agricultural policies, policies towards ensuring appropriate occupational conditions, etc.) into the policy plays a specific role.
3. At the same time it is necessary to set mechanisms for conducting regular integrated analysis of risk and behavioural factors at a cross-sector level and for taking appropriate policy decisions based on facts and evidences.

7). Evaluation of Quality and Effectiveness of Personal and Community Health Services

This area includes:

A. Ensuring quality of personal and community health services in regard to disease prevention and health promotion based on standards developed in accordance with the international requirements.
B. Evaluation of personal and community health services in regard to disease prevention and health promotion.
C. Application of evaluation results in policy, management, organization and provision of resources for improving health care services.

Based on the evaluation results the situation appears to be as follows (see Figure 7).

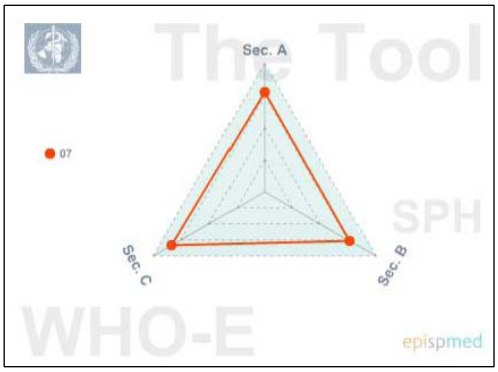


Figure 7.

When conducting the self-assessment of this operation the following key points were identified:

- Within the Ministry of Health the Department on Development of Diagnostic and Treatment Standards and the Centre for Evidence-Based Medicine are established, which are responsible for developing clinical guidelines, standards and protocols. However, the process of monitoring their implementation into practice is quite difficult.

- For identification of health needs mainly the data from the Institute of Health and Medical Statistics and survey data are used. However, when analyzing the health state of the population, modern technologies and tools which allow the creation of an overall picture and effectively plan actions at community level, are not sufficiently applied.

- The series of periodical assessments of health state of the population, staff, guarantee, beds provision, assessment of material and technical base of outpatient and hospital facilities are undertaken. Different assessment mechanisms are adopted in the country in regard to implementation of national and international programmes; there is also a fairly good experience in assessing services quality, but there is no a standard approach to assess the quality of medical facilities. There is either no a system of such activity long-term planning and financing.

- Based on the results of assessment of the existing databases, as well as special research conducted with assistance of international donors, the decisions are taken by the Government towards improving personal and community health services. Along with this, there is insufficient capacity for making analysis and assessment of existing database for evidence-based managerial decision making.

The generalized SWOT analysis for this section is presented in Table 7.

Table 7.

Strengths	Weaknesses
Identification of needs • For identification of health needs mainly statistical data from the Institute of Health and Medical Statistics and survey data are used. • Regular collection and analysis of statistical data on health service provision is undertaken that includes health indicators of the population, staff supply, beds provision, material and technical base of outpatient facilities. • Monitoring of the needs of the population in	• When analyzing the health state of the population, modern technologies and tools (e.g. medical-economic evaluation, integrated health indicators), allowing to effectively plan actions at the community level, are not sufficiently applied. • No monitoring of free medical care provision to vulnerable groups is undertaken, and needs of these groups are not systematically identified. • Inadequate funding of activities aimed at evaluation of service provision quality, conduction of screening

preventive vaccinations is undertaken, age-specific contingent is determined in accordance with immunization schedule. • Contingent of people (high-risk group) is identified for covering them with preventive programmes (vaccination, supplementation, etc.) and providing free medical assistance to vulnerable groups. • With assistance of international donors the monitoring of implementation of preventive programmes (vaccination, supplementation, etc.) is undertaken. • Procedures for provision of in-patient services, categories of citizens entitled to free rehabilitation are determined.	programmes, effectiveness of large-scale educational programmes for medical workers, development of information materials, etc. results insufficient quality of the provided services. • Monitoring of needs of the population in rehabilitation services is not conducted efficiently. • Special studies on identification of migrants, ethnic groups are not conducted.
Evaluation of services • Primary health care provides free medical services to the population. • Availability of medical services is ensured through strengthening of primary health care (rural medical centres, polyclinics) • Rehabilitation centre for human trade victims is organized. • Regular medical examination of persons arrived from abroad is conducted. • Evaluation of rehabilitation services is carried out based on statistical data (disability rate, number of persons received rehabilitation services). • All age groups are included into disease prevention activities. • Statistical data related to analysis of preventive measures is available. • Database of specialized personnel, providing health services to communities, is available. • Experience and capacity is available in the country for assessing the service quality, mainly at PHC level and within maternal and child health protection service, gained under implementation of various international projects. This experience is based on evaluation of implementation of various programmes using methodologies and principles of improving the quality of medical services (auditing, self-monitoring, external and internal monitoring, etc.)	• Existing evaluation more often does not allow assessing the quality of provided health services, because mostly quantitative indexes are analyzed rather than qualitative ones. • Provided services do not always meet modern requirements and standards in connection with lack or insufficient awareness of existing standards of medical care. • There is no standard criteria for assessing the availability of services at both community and personal levels. • Effective evaluation of preventive services at community level is not always undertaken. Most of the attention is paid to and the resources are allocated for individual clinical services, rather than for providing preventive services at community level. • Assessment of services regarding ethnic groups, and poor population groups is not made. • Surveys on satisfaction of population with medical and rehabilitation services are not regularly conducted. • The population more often is not involved in undertaken measures on disease prevention, as well as in evaluating the quality of the provided state services. • System of second generation sentinel monitoring is not available. • There are no databases which identify duplication and fragmentation of health services at community level.
Application of assessment results • Based on assessment results, the decisions are taken by the Government towards improving personal and community health services. • The Department on Development of Diagnostic and Treatment Standards and the Centre for Evidence-Based Medicine responsible for developing standards and protocols have been established under the Ministry of Health. • Effectiveness of individual clinical services is mostly evaluated by separate individual or group	• Inadequate analysis of database to incorporate changes into strategic and operational plans. • Based on the existing statistical data it is not always possible to make effective decisions for planning and evaluation of activities at community level. • Existing database of specialized personnel is not adopted for conducting systematic analysis, thus not allowing making management decisions. • Inadequate monitoring of introduction of diagnostic and treatment standards into practices of medical institutions.

research projects or research works. • Under the support of international organizations, on the basis of the situational analysis of various health spheres' activities, important decisions on the national strategies and action plans development are made.	• Inadequate human resource capacity for development standards and protocols in regard to provision of health care services at the community level. • There are no special programmes on evaluation of introduced technologies and innovations.
Opportunities	**Threats**
• The government undertakes and promotes preventive programmes aimed at community health improvement. • Close cooperation is maintained with concerned organizations (NGOs, associations, social services, etc.). • There are several examples on making the situational analysis with support of international organizations, which can be applied to make evidence-based decisions. Thus, for example, it is planned in the long term to create an information system/database based on the situation analysis, conducted within "Health-2" project for identification of duplication/gaps of public health laboratory services. • In Navoi region a pilot project is being implemented on creation of a manageable real time database on personnel and institutions per districts/cities. • With assistance of international donors special research is held on assessment of effectiveness of preventive programmes at community and personal levels.	• Human capacity in implementing preventive programmes at the community level, aimed at reducing disease burden, including development of modern standards for ensuring the quality of preventive services is not sufficient. • Preventive measures are often ineffective due to the fact that they are mainly implemented by health care institutions. Poor coordination of joint activities and insufficient involvement of related ministries, agencies, general public into implementation of preventive programmes result their low efficiency. • Lack of effective system of mentoring, internal and external monitoring and regular evaluation of medical care quality may affect the quality of implementation of state programmes, adopted standards and protocols of medical care. • Lack of capacity to make detailed critical data analysis often results their hasty or wrong interpretation, which in turn leads to adoption of irrational policy decisions.

Conclusion

Today, the service provision quality is an important priority of the state policy; there is some experience in this regard in the health system. However, it is necessary to arrange mechanisms for performing evaluation, auditing of activities, controlling and ensuring public health service quality. Certain difficulties are associated with integration of adjacent sectors, as well as with involvement of the community.

8). Provision PH and Individual Health Care with Competent Workforce

This PH area includes:

A. Workforce planning: identification of PH service needs for effective addressing of priority problems in this area; adequate assessment of PH protection measures; workforce management and rational decision-making of occurring problems.
B. Standards of education, on-site trainings in economics, bioethics and human resource management.
C. Education and accreditation: personnel development and evaluation. Through licensing of public health specialists the requirements for future specialists in regard to related training and experience in the area of public health are established.

Based on the evaluation results the situation appears to be as follows (see Figure 8).

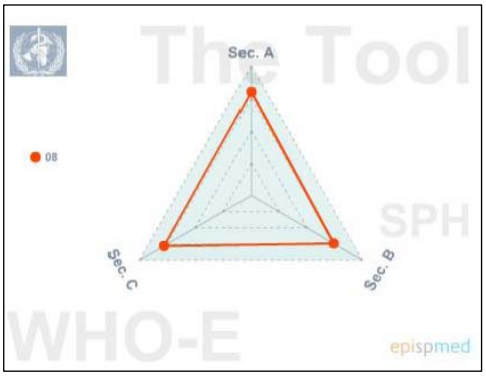


Figure 8.

When conducting the self-assessment of this operation the following key points were identified:

A. Workforce planning

Planning of PH workforce is carried out at the national level. PH is a relatively new sphere in the country, so there is different understanding in regard to organizational structure and functions of specialists in this area; today certain measures are undertaken towards achieving a common vision. Currently there is a shortage of qualified public health specialists in Uzbekistan. The government in cooperation with international projects financially supports the training of qualified health workforce and development of special programmes, as well as research and analysis of needs for PH specialists; also the opportunities for adjusting of needs assessment system for PH specialists and effective workforce planning with consideration of demographic changes and regional specifics are also being discussed.

B. Standards

The training of PH specialists is a relatively new area of medical education. The existing State educational standards of PH specialists training should be improved. The activities on development and unification of basic requirements for PH specialists training programmes within medical education are undertaken, however, the training system of specialists from other related agencies (social workers, pharmacists, veterinarians, etc.) is not involved in the reform process yet. All undergraduate (bachelor's) and graduate (master's) level training programmes are to be improved with consideration of new areas, and to impart effective skills and knowledge. Measures on ensuring a multi-disciplinary working environment have been being undertaken, national strategies and action plans have been being developed in different areas for recent years.

C. Education and Accreditation

Currently, specialist training is carried out at graduate level (magistrature) with concentration in "Public Health and Health Management", and for nurses – in magistrature with concentration in "Nursing Organization and Management". PH specialist training programmes at postgraduate (aspirantura) and doctoral (doctorantura) levels are available. There is a capacity (training facilities – School of Public Health, medical and non-medical HEIs) for effective PH specialist training. The system of continuous postgraduate education (epidemiologists, head doctors, etc.) has been established. Along with this, additional training for PH specialists, nurses and managers is provided within joint projects of the Ministry of Health and international organizations. Health protection, Health promotion and Disease prevention training courses are available at all levels of medical education (college, HEI, advanced training). However, the quality of education is affected by the shortage of qualified teachers - economists, financiers, managers, which also affects the quality of PH specialists training both on medical and non-medical specialties. An effective monitoring system of such programmes implementation has not been established yet.

There is a legislatively established evaluation and accreditation method of training process programmes for colleges, HEIs and advance training system.

The generalized SWOT analysis for this section is presented in Table 8.

Table 8

Strengths	Weaknesses

• Planning of PH workforce is done at the national level.
• According to the prior specified needs of the country, the preparation of specialists is undertaken in magistrature with concentration in "Public Health and Health Management". In addition, for nurses the preparation of specialists is undertaken in magistrature with concentration in "Nursing Organization and Management".
• There is a system and methodology for assessing the needs for country human resources (86).
• A phase process of ensuring public health system with trained workforce has been settled (86).
	• Currently there is no a clear single conception of population health and public health care, adopted at the legislative level, as well as a clear definition of subcategories of PH specialists, particularly among already practicing specialists (there is no a single qualifying characteristic of PH specialists).
	• There is no agreement on norms for determining the needs in PH specialists with consideration of demographic changes and regional specifics (either in according with "per 10 000 population" or other principles).
	• System and methodology of workforce planning and distribution with decentralization and allocation of responsibilities/duties at national and sub-national levels are not sufficiently organized.
	• Financing of professional training activities and development of special programmes, as well as of researches and analysis of needs for PH specialists are desired to be better.
	• Currently there is a shortage of qualified public health specialists:
	  • in promotion of healthy lifestyles
	  • in system analysis and proposals development
	  • in health policy development
	  • in management of personnel in the PH area.

• Mechanisms ensuring the compliance of human resources with standards (education, certification, licensing) are available and applied, however, they are not maximum effective (7b). • There are strategies and measures ensuring a multi-disciplinary working environment (in different areas). There is a system for formation and development of cross-sector working groups and experts in various areas (8b). • The training and development of management personnel include evidence-based standards, methodology and quality improvement principles, trends and know-how in the area of health, however not effectively enough (7b).	• Existing State educational standards of training at undergraduate and graduate levels should be improved in accordance with international content and quality standards and requirements for this direction. • Standards and training system for managers of different sectors, determining PH policy, especially on basis of social determinants and evidence-based decision-making, are not considered. • There is no standard approach and completely streamlined system for effective monitoring of knowledge and skills implementation at the country level. • Insufficient cross-sector integration among PH specialists outside of the health system. • Lessons are learned and opportunities of cross-sector working groups are assessed after each event (issue) in public health; however, there are no unified system and mechanisms for it in the PH area.
• Tashkent Medical Academy (TMA), Tashkent Paediatric Institute (TashPMI) and their branches in Ferghana and Nukus train PH and management specialists at undergraduate and graduate levels, preparing specialists in public health area -	• The system of on-site (on-the-job) learning in the country is underdeveloped. • The training system for managers of different sectors, determining PH policy, especially on basis of social determinants and evidence-based decision-making has

epidemiologists and hygienists. • There is functioning School of Public Health under TMA, as well as graduate programme in public health (Master of Public Health) (8b). There are legislative and academic requirements for assessment of competences of School of Public Health at national level. • All master students of all medical HEIs are required to take courses on Clinical Epidemiology, Principles of Evidence-based Medicine, Health Management, and Principles of Medical Care Quality Improvement. • The trainings on Health Protection, Health Promotion and Disease Prevention are available at all levels of medical education (college, HEI, advanced education). (86). • There are accredited programmes and institutions providing PH programmes at postgraduate (aspirantura) and doctoral (doctorantura) levels. • Advanced training of practicing PH managers/management specialists and specialists (epidemiologists, head doctors, etc.) is provided on the basis of TashIAME and with support of international organizations. • PH courses are included in university curricula of Pharmaceutics (76), Nursing (86) and Dentistry (86) programmes. If necessary, PH personnel work jointly with veterinary services. PH personnel include social workers. • There is a legislatively established evaluation and accreditation process for training programmes in colleges, HEIs and advanced education system.	not properly considered. • All training programmes at the undergraduate and graduate levels need to be improved. Thus, there are no such modern disciplines as Clinical Epidemiology, Principles of Evidence-based Medicine and Medical Care Quality Improvement in the curriculum of undergraduate programmes. Programmes on Health Protection, Health Promotion and Disease Prevention do not fully provide specialists with all necessary knowledge and practical skills, needed for improvement and expansion of various areas of activity. • PH specialist programme at School of Public Health of TMA cannot fully satisfy all personnel training needs, and nursing programme does not fully cover practical public health needs. • Shortage of qualified teachers - economists, financiers, managers affects the quality of PH specialist training both in medical and non-medical specialties. • Integration between training programmes of medical and non-medical specialties, associated with PH sector, is insufficient. • Public health studies are not sufficiently covered by academic programmes in veterinary medicine (5b). • Medical HEIs do not provide training for specialists in socio-medical area.
Opportunities	**Threats**
• Currently in the framework of WB “Health-3” project design, with assistance of international consultants, the necessary changes are worked out in regard to training programmes in accordance with European standards in line with the Bologna criteria. • Certification system is under development (the project of UNICEF-TashIAME). •	• Currently the quality of PH specialist training is affected by the shortage of qualified teachers with international experience. Long-term cooperation projects with leading teacher preparation programmes in the area of PH will become a helpful mechanism for the country.

Conclusions

Sufficiently effective measures on strengthening human resources in the area of public health are being undertaken in the country. There is an established educational system in the area of PH services. However, there are still some difficulties in this area, and additional measures and efforts should be undertaken to overcome them:

- To elaborate and adopt a common human resource policy on the basis of a unified vision of public health and definition of functions and roles of PH specialists.

- To consider ways of strengthening the teaching capacity in PH area, to provide CME/CPD opportunities for teachers (especially, opportunities for on-site trainings).

- To modernize the old and introduce new integrated curriculums into the system of core faculties of TMA and TIAME in the PH area, to strengthen material and technical base of core faculties, particularly in terms of information and communication technologies, Internet access, etc.

- To optimize the system of accreditation of curriculums in PH area for PH specialists and health related specialties (veterinarians, pharmacists, psychologists, social workers, dentists, etc.) with integration and unification of curriculums on PH issues. To optimize the system of certification and licensing of PH specialists. To create flexible mechanisms for quality control and continuous improvement of training programmes for PH specialists based on international experience.

9). PH Policy Leadership, Governance, Initiation, Development and Planning

This area includes:

A. Analysis and evaluation of PH services strategic planning process.
B. Analysis and evaluation of PH policy planning process and application of reliable information system during its development at the national, regional and local levels.
C. Cross-sector and interdisciplinary approach in development of a strategic plan for PH.
D. Monitoring and evaluation of PH policy and programmes.

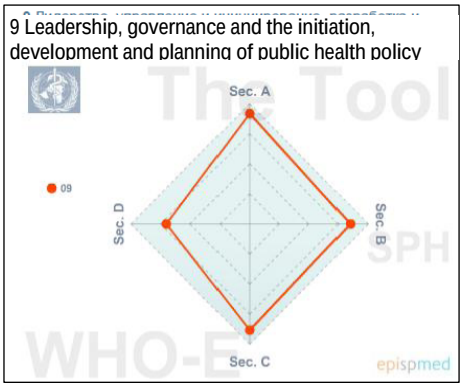


Figure 9

Based on the evaluation results the situation emerges as follows (see Figure 9).

1. Development of PH Policy - Strategic planning is implemented at the level of the Government of the Republic of Uzbekistan. Important legislation and state on the corresponding and prior PH areas are adopted, which take into account the local and regional characteristics of population health, demography, ecology, as well as international trends and epidemiological situation in the world, generally accepted international norms, indicators, standards and recommendations.

2. Elaboration of local and regional plans of the PH services development is based on laws, decrees and resolutions made by the management and used by the government of the country. The local and regional characteristics of population health and reliable evidence-based information are not always and reflected sufficiently.

3. Recent years, in the process of PH policy and strategic documents development a special emphasis has been being made on a multi-disciplinary, cross-sector approaches used at the national, regional and local levels. Solutions and strategies are made in the basis of the use of the existing information system. However, the implementation of the adopted PH policy and strategies show that various health related sectors do not always effectively interact and interrelate, especially at the regional and local levels; moreover not always the social determinants of health are considered.

4. Public health policy and programmes are periodically monitored and evaluated at the national, regional and local levels. However, it is not always possible to make a fully integrated data analysis, especially when data from other ministries and agencies are involved.

The generalized SWOT analysis for this section is presented in Table 9.

Table 9

Strengths	Weaknesses
• Policy development - the process of PH services strategic planning is carried out regularly at the state level under the control of the Ministry of Health of Uzbekistan. The process involves all stakeholders (96). • A number of laws, decrees and resolutions of the President and the Cabinet of Ministers, defining the public policy in various spheres reflecting PH aspects, as well as several action plans in regard to certain prior diseases (mainly infectious) have been adopted. Policy documents developed at the country level are fundamental at the national and sub-national levels (106). • There are also the permanent Extraordinary	• Other ministries and agencies are not sufficiently involved in the process of PH strategy development. Strategies and action plans are not always integrated and harmonized with the information systems of other agencies. • Registration and accounting system is not perfect; therefore, the results of data collection and analysis are not always reliable. There is no an information system network to control over infectious and non-communicable diseases at the country level. • The results of statistical data collection and analysis of on non-communicable diseases do not

Government Commission under the Cabinet of Ministers and the Main Department for Sanitary-Epidemiological Control under the Ministry of Health of the Republic of Uzbekistan, which regularly monitor and assess international PH rends (106). • There is an information system on infectious and non-communicable diseases, and its data reports are regularly submitted to superior health authorities as (annual, semi-annual, quarterly). • Information system allows to promptly detect infectious diseases at the community level (96). • PH policy is developed and implemented primarily by the PH system with consideration of opinions and recommendations of related state sectors, which, if necessary, are actively attracted in this process (86). • There is a national contingency plan in regard to outbreaks of infectious diseases, as well as emergencies/ disasters. • Assessment of other sectors impact on health is considered, and is a part of planning and regional development (76). • There is an information system providing data on population health. However, it should be upgraded (76). • PH strategy was developed with consideration of individual the PH areas and social determinants of health; they are the basis for the national and sub-national policy, as well as for development of programmes at the regional and local levels (86). • Periodical monitoring and assessment of PH programmes is conducted based on the developed indicators and standards (the most successful are maternal and child health care, epidemiological control services, etc.) (86). • The Ministry of Health jointly with international organizations and institutions monitors the population health and develops the PH policy with consideration of PH system development strategy in the EU.	always reflect their exact prevalence level, because of low diagnostic quality and low medical aid are evident. • There is no a PH department or a coordinating unit in the structure of the Ministry of Health of Uzbekistan; at the same time all relevant functions are mainly carried out by the Main Department for Sanitary-Epidemiological Control and by all existing units responsible for different spheres, which sometimes prevents the integration and prompt interdisciplinary decision-making. • When making decisions in the PH area relevant factors (e.g., poverty, inequality and other social determinants of health) are not always considered. • The country, especially some of its regions, are not enough provided with qualified specialists, who know how to properly evaluate and analyze the influence of certain factors on population health.
Opportunities	**Threats**
• Health policy and reforms implemented in the Republic of Uzbekistan allow improving the management and effective implementation of measures in the PH area. • Prior directions for PH development have been identified at the state level. A PH health concept has been developed and is under discussion. • PH institutions are being equipped within “Health-2” and “Health–3” projects of the World Bank. • PH school and faculties have been established to train PH specialists; their capacity should be strengthened. • Resource analytical centres have been established under health institutions; these centres allow improving the system of registration and recording of information on infectious and non-communicable diseases.	• Insufficient coordination of joint activities of involved ministries and agencies in the PH area does not allow to maximally effectively influence the health-related factors. • There is no a specific cross-sector agency or a coordinating committee on PH issues at the government level, which makes it difficult to fully develop, adopt and implement a comprehensive policy/strategy and action plan on the basis of effective cross-sector collaboration. • Plans and effective measures on gradual professional development of PH specialists and physicians on time detection and diagnostics of diseases should be developed. • It is impossible to influence the policy of evidence-based decision-making without optimization and modernization of the registration system.

Conclusions

A. Currently several strategies and programmes on improvement of the PH services are being developed, which in turn significantly influence the strategic decision-making. However, above the listed problems within disease and risk control system, insufficient cross-sector cooperation, as well as insufficiently organized monitoring and evaluation system of PH measures effectiveness do not form the basis for strategic decision-making.

B. It is also necessary to consider the motivation mechanisms for leadership and initiative, as well as to strengthen human resource capacity in the PH area.

10). Health Research

Research is a fundamental informational source for policy development and service delivery. This area includes:

- Research aimed at expansion of knowledge base for evidence-based policy making at all levels;
- Development of new research methodologies and innovative technologies for problems solution in the PH area;
- Partnership establishment with research centres and academic institutions on conducting on time research work to develop and implement evidence-based decision-making at all PH levels.

Figure 10

Based on the evaluation results the situation appears to be as follows (see Figure 10).

When conducting the self-assessment of this operation the following key points were identified:

- In Uzbekistan there are research institutions/centres, medical institutions conducting research in the PH area. In terms of financing, there are grants available for conducting research; however, the provided funding does not cover all the expenses. There is a shortage of qualified personnel with advanced knowledge and skills in the PH area. Existing available databases are not adapted for making system analysis, which doesn't allow to identify the prior issues and to prepare evidence-based analytical materials.

- The prior directions for epidemiological and scientific research are determined by the Main Department for Science and Educational Institutions of the Ministry of Health, which monitors advanced practices, published in the country and abroad. Moreover, the directions for epidemiological and scientific research are determined in accordance with capacities of research institutions and centres, rather than practical needs of the health system. As a result, not all research is put in practice because of absence of demand and its isolation from the real conditions in PH.

- For decision-making in the PH area, the Institute of Health and Medical Statistics, research and medical institutions make situation analysis and scientific developments in this direction. However, due to different reasons, to make effective management decisions the prepared analytical materials do not always contain recommendations defining "cost/benefit" or "cost/effectiveness" ratios.

- Currently, the government in cooperation with international organizations is implementing the projects on data collection and analysis process improvement, introduction of modern information technologies for data collection and analysis.

The generalized SWOT analysis for this section is presented in Table 10.

Table 10

Strengths	Weaknesses
Opportunities for research initiation in the PH area • The department for science and educational institutions of the Ministry of Health includes the research coordination unit. • There are research and medical institutions in the country carrying out research in the PH area. • Currently, prior areas and programmes for PH research (environment and people, maternal and child health care, infectious and noncommunicable diseases) have been identified.	• There is insufficient coordination between various research organizations on research conducting. • Interaction between PH workers of research centres and academic institutions to do collaborative research is insufficient. There are no cooperation mechanisms between the practical system of PH, research centres and academic institutions on carrying out collaborative research. • Prior research areas are not always effectively determined; PH priority areas are not used as a basis for individual research, done by researchers outside the health system.

• The government allocates grants to fund research in this area. • There are databases on different directions at the national and regional levels. • A training system for specialists in the area of PH research has been established. • Various medical journals and periodic articles are published to disseminate research results among PH health managers. • Development of PH research takes into consideration urgent PH issues. • Specialized government agencies (Higher Attestation Commission and Science & Technology Coordination Committee) monitor the implementation and practical significance of PH area works during and after research. • Pilot programmes on introduction of modern technologies and innovations in PH are implemented through current projects. • The Ministry of Health monitors the advanced practices published by other organizations and agencies in the country, as well as experience of international organizations. • Successful initiatives of other countries are adapted to national specifics and put in practice by the Ministry of Health. • In agreement with the WHO Regional Office for Europe, information exchange on advanced PH practices at European and international levels is conducted. • Within the decision-making process in the PH area, the analysis of situation and current scientific developments in the area is being done. • The Institute of Health and Medical Statistics collects, analyzes and disseminates PH information. • Within the projects in collaboration with international donors, the demographic and sociological research is being carried out. • With the assistance of international donors, the research works on poverty, housing, education accessibility, nutrition and unemployment are being done. Proved research results with inclusion of broader health determinants are taken into account.	• There are no criteria/standards for identification of prior research areas as part of the PH services. The motivation (including funding) for research in PH area is insufficient. The provided grants do not cover all research expenses. • Directions for epidemiological and research are determined in accordance with capacities of research institutions/centres, rather than practical needs of the health system. • Human resource capacity of research institutions/centres, medical institutions, having advanced research knowledge, methodologies and skills in the PH, is insufficient. • The existing training programmes do not fully provide specialists with advanced research skills and knowledge in the PH area. • Special PH research assessment programmes are not used. Research results are not assessed. • The existing databases are not adapted; as a result they do not allow to identify prior issues and to prepare evidence-based analytical materials. • There is no a research network disseminating research results and new publications in magazines/web sites. • Insufficient state funding and low interest and motivation for innovations in the PH area from individual specialists and research centres do not produce the expected results. • Not all research in the PH area is put into practice because of absence of demand and its isolation from the real PH conditions. • Collection and analysis of PH related information is being done within the existing system. • There are no modern statistical programmes to prepare analytical materials for decision-making. • Analytical data obtained from existing statistical data are not always subjects for further research initiatives. Prepared analytical materials do not always provide recommendations with definition of “cost/benefit” or “cost/effectiveness” ratios to make effective management decisions due to different reasons: - introduction of information technologies on information collection and analysis is insufficient; - lack of modern statistical programmes; - human resource capacity for preparation of analytical materials and information technologies introduction for automated data collection and analysis is insufficient; - funding for development of analytical materials, introduction of information technologies for automated data collection and analysis is insufficient. • Demographic and sociological research is not done regularly and requires additional funding. The results of research on poverty, housing, education accessibility, nutrition, unemployment are not always integrated in analytical reports and correlated with population health.

Opportunities	Threats
• In Navoi region a pilot project is being implemented on creation of a manageable real time database of personnel and institutions per districts/cities. • Within the projects and with participation of international donors, information technologies are being implemented for data collection and analysis (electronic monitoring of infectious diseases, blood safety).	• Research cannot become a fundamental source of information for policy development and service delivery without established interaction between practical health and research institutions, and also without sufficient funding of research activities in the prior areas.

Conclusions

The country possesses a sufficiently strong structure of research institutions, which is currently used for conducting research in the PH area. However, the human resource research capacity in PH area has not adequately developed.

- It is necessary to attract additional resources for conducting regular research.
- Education/retraining of specialists/teachers on:
    - identification of practical PH needs to do epidemiological and scientific research;
    - organization and realization of epidemiological and other research with definition of “cost/benefit” or “cost/effectiveness” ratios;
    - fundraising for conducting epidemiological and other research;
    - use of information technologies for automated data collection and analysis.

- The functional responsibilities of the Main Department for Science and Educational Institutions of the Ministry of Health (or newly established department) should include the dissemination of epidemiological and scientific research results, as well as new publications in magazines/web sites.
- It is required to provide necessary financial resources for being done epidemiological and scientific research, introduction of information technologies for automated data collection and analysis.
- Preparation of qualified specialists for conducting regular research on population mental health.
- To do research on evaluation of needs and effective human resource planning.
- It is necessary to thoroughly assess the capacity of research institutions/centres involved in PH research.
- To evaluate epidemiological and research works and their implementation within practical health care.
- To improve coordination between various research institutions/centres involved in epidemiological and scientific research.

6 Findings and Conclusions

Summarizing the evaluation results, it is possible to divide all identified strength and weaknesses into four structural public health functions.

A. Strategic management

Major Achievements and Strengths

Establishment and transformation of the Institute of Health and Medical Statistics was one of the aspects of the structural reforms. The primary role of the Institute is data collection. Another function deals with promotion of health, primarily through preparation and dissemination of information on broad PH aspects.

International partners are playing a significant role in the carried out reforms. For example, in the framework of "Health-2" project the PH strategy of the Republic of Uzbekistan for 2010-2020 was developed, which was under discussion during several years and is currently at the stage of approval. Now a number of strategic documents in the area of non-communicable diseases and related risk factors (such as nutrition, smoking, obesity, etc.) are being discussed in the country.

In the area of primary health care the reform focuses on services standards and quality. Application of evidence-based medicine in decision-making and distinctions between the regions of the country are the matters of particular attention.

Identified Problems and Existing Opportunities

In general, one of the problems of PH services is absence of a common vision and a common integrated national plan, which various ministries and agencies are responsible for under the condition that effective horizontal cooperation between the units of the PH system and various ministries and agencies has been reached. And much time is required to solve necessary issues of integrated monitoring and evaluation of ongoing transformations.

The Coordination Council on Reproductive Health and the Republican Emergency Anti-epidemic Commission on Infectious Diseases under the Cabinet of Ministers of Uzbekistan deal with a number of PH issues. Within the mentioned Public Health Strategy, the establishment of the Coordination Committee under the Cabinet of Ministers on PH issues is envisaged to expand the PH role with inclusion of aspects on non-communicable diseases, traumatism and road safety, etc. This will help introduce a cross-sector approach in planning, coordination and implementation of proposed action plans and reforms with involvement of non-governmental organizations at all levels of the PH system.

The health information collection system requires complex modernization. Collected data are not always linked initially to social determinants of health and other important criteria (e.g., gender, socio-economic status, education level, generally accepted age categories, live-birth, etc.). Very little information is collected in the country on risk factors and evaluation of population behavioural changes, which are important for the adoption of a relevant evidence and fact based policy. Implementation of the made decisions remains problematic and often includes cross-sector aspects.

B. Resource Generation

Major Achievements and Strengths

The health system reform includes strengthening of PH services, transformation of PHC and emergency medical system. The common objective of the reforms is to strengthen curative and preventive care provided to the population and to introduce cost-effective technologies in the country.

Formal decisions have been made towards equipping the PH laboratory services; recently modern equipment has been installed within the framework of the programme supported by the U.S. Government on laboratory strengthening, including infectious diseases electronic monitoring. The Global Fund finances anti-malaria laboratories, including provision with microscopes.

With regard to human resources, the 2007 Decree of the President of Uzbekistan stipulates strengthening of health professionals training, including at primary care level and within sanitary-epidemiological control services. Additional workplaces have been created for graduates within sanitary-epidemiological control service system.

In 2006 the School of Public Health was established, where a graduate programme (PH Master's level) and a course on health management have been implemented. The school offers training courses in different PH aspects for nurses and physicians, and also includes a graduate programme on PH.

The Institute of Health and Medical Statistics is also responsible for promotion of healthy lifestyles, including personnel training.

In general, currently with assistance of international organizations the reforms in regard to training of PH specialists are being implemented, new challenges and new priorities with their consequences for personnel training have been identified.

Identified Problems and Existing Opportunities in the Country

Despite the implemented reforms, there is a considerable variation in conditions of laboratories, equipped in accordance with different standards. In district and regions laboratories with outdated equipment is often used; there is a considerable variation in standards of modernization, especially with regard to conditions of premises.

The workforce problem at the regional level also exists; in particular, it is associated with difficulties to attract personnel to rural areas. Creation of better incentives for rural health workers is a key issue to be solved. The general problem of the PH area relates to low payment.

It is necessary to establish a system of personnel needs assessment at the country level. The recruitment process should be adjusted to consider the real needs.

It is necessary to strengthen the capacity and maximize the opportunities for enhancing training quality within the School of Public Health. The content of the training programmes also needs to be radically revised. There is a need to strengthen research capacity – current deficiency is due to insufficient incentives and capacity for conducting research. Health promotion and disease prevention programmes at all levels of medical education should be strengthened with accent on practical skills in the PH area. Curriculums of PH related disciplines must be also integrated and updated.

C. Financing

Major Achievements and Strengths

PH funding is very limited. It is necessary to convince the Ministry of Finance of the need and importance of more full-value funding and prioritizing of the PH aspects at the national level.

Personnel training on management and finance issues have been streamlined within existing PHC reform.

Identified Problems and Existing Opportunities in the Country

At the national level there is a problem of preserving a large number of hospital beds in order to maintain the budgetary allocations, which significantly affects the performance of health services. Currently, the attempts are

being undertaken to address this issue, including through piloting of funding based on the cured cases, i.e. based on results rather than the involved resources.

D. Service provision

Major Achievements and Strengths

Today, the basic PH services are provided by the health system, particularly by PHC and sanitary-epidemiological control services.

The Institute of Health and Medical Statistics and its centres are actively involved in health promotion activities: they produce and disseminate informational material; work with mass media; work with secondary schools; train school staff on healthy lifestyles; conduct national and local campaigns on different priorities.

PHC and specialized medical care staff work with the population, mainly with risk groups and at the individual level.

National and regional diagnostic centres conduct mass examinations of the population for prevention and early detection of diseases.

Identified Problems and Existing Opportunities in the Country

Unlike infectious diseases (tuberculosis, HIV), the prevention of non-communicable diseases (NCD) is not covered by major projects, which in turn requires appropriate actions (considering burden of diseases).

Development of strategic documents in various PH priority areas opens up significant opportunities for activities implementation; however there is a need for effective coordination of activities and implementation of these programmes, with resource planning and commitment programme implementation at all levels. Development of health strengthening services is carried out mainly with efforts of various donors; this work should be introduced into the health system.

The Institute of Health and Medical Statistics has branches at every level and provides a logical link between data collection and health promotion, since such data can be used to develop policies and concrete measures. However, its capacity is not fully active: there is no optimal application of the collected data for planning of services and implementation of activities. Health promotion activities in general are often limited to publication of information materials. It is necessary to use its capacity more effectively with involvement of monitoring and assessment functions, scientific research, sociological studies, and to strengthen capacity with regard to analysis and interpretation of collected data for decision making.

Thus, the conclusion can be made that strategic management within PH services requires further attention. This applies to strengthening the role of strategic management of the Ministry of Health and increasing its capacity for reasoned protection of PH interests at the state level both in health and economic terms.

The country must set a unified vision of PH system, perhaps by transmitting a full range of PH services to the health system with possibility of a cross-sector integration of the provided services. Based on this vision it is necessary to develop a comprehensive action plan for PH optimization taking into account the issues of strategic management, resource (financial and human) provision, and service quality assurance within PH prior areas at all levels.

It is especially necessary to strengthen the components based on disease burden in the country and to link them with the main socio-economic determinants of health. Realizing the existence of a double burden of infectious and non-communicable diseases in the country, it should be noted that because of the historical development of public health services, the focus on prevention and control of non-communicable chronic conditions is not strong enough.

The following elements should be of principal significance for reforms in the PH area:

- Availability and effectiveness of community and personal health services;
- Expansion and enhancement of health promotion and disease prevention services, taking into account the main causes of disease burden in the country, especially such risk factors of NCDs as active healthy lifestyle, nutrition, smoking, etc.;
- Ensuring preparedness for epidemics, control of communicable diseases and control of other dangerous to health environmental factors;
- Optimization of health informational systems;
- Cross-sector activities (consideration of health interests in policies of all sectors);
- Cooperation with international partners;
- Involvement of local communities and citizens.

7 General recommendations

1). To Strengthen a Cross-sector Collaboration on PH Issues

- Creation of the Coordination Committee on Public Health under the Cabinet of Ministers of the Republic of Uzbekistan and establishment of collaboration mechanisms. This committee will allow lobbying PH issues both in terms of service provision, planning and coordination and in economic terms.

- Unified vision is described in the project "Public Health Strategy in the Republic of Uzbekistan for 2010-2020": it is necessary to accelerate the adoption of this Strategy, taking into account the outcomes of the present report on self-assessment of the PH services in Uzbekistan with involvement of other ministries and agencies. On the basis of this strategy it is necessary to start developing a comprehensive action plan for the prior areas.

- To strengthen the role and involvement of adjacent sectors in the field with involvement the capacity of local governments, NGOs and communities in addressing PH issues.

2). To Include Social Determinants of Health into all Strategies and Structural Systems of PH Services

- Along with supporting aspects of infectious diseases, to highlight as a priority the control of noncommunicable diseases that constitutes the main burden of traumatism and mortality in the country. To undertake a decision-making policy based on evidence and facts, including analysis of social determinants of health.

- To seek opportunities for streamlining and modernizing the information system at the regional and local levels, allowing the obtainment of reliable and accurate data according to current indicators, determinants and criteria for data collection (age, sex, social status, education, etc.).

3). To Assess Personnel Capacity and Develop Complete Personnel Strategy in the Area of Public Health

- To introduce a unified definition of "Public Health" specialty. On the basis of a unified vision of the PH system and definition of functions and roles of PH specialists, to develop and adopt a common personnel policy using a multidisciplinary approach, special techniques and tools for planning and distributing PH personnel.

- Creation of a unified system for evaluation of effectiveness of continuing education courses, a system of continuous quality improvement for PH specialists. To develop a system of on-site (on-the-job) training and a mechanism to monitor the gained knowledge.

- Modernization of old and introduction of new integrated curriculums into the system of core faculties of TMA and TIAME in the PH area, as well as strengthening of material-technical base of core faculties, particularly in terms of information and communication technologies, Internet access, etc.

- To optimize the system of accreditation of updated training programmes in the PH area for PH specialists and adjacent specialties (veterinarians, pharmacists, psychologists, social workers, dentists, etc.) with integration and unification of curriculums on PH issues. To optimize the system of certification and licensing of PH specialists. To create flexible mechanisms for quality control

and continuous improvement of training programmes for PH specialists based on international experience.

- To include the activities on results of epidemiological and scientific researches, new publications in magazines/websites dissemination into the functional responsibilities of the Department of Science and Educational Institutions of the Ministry of Health (or create a new department).

- It is necessary to conduct a detailed assessment of capacity of research institutes/centres involved in PH related researches.

- It is necessary to attract additional resources and build research capacity for conducting regular studies, especially on risk factors, behavioural changes, etc.

- Issues of personnel training for development of health economics, quality of education in nonmedical specialities related to health system, as well training of qualified teachers are important. It is necessary to consider ways of strengthening the teaching capacity in the PH area, providing CME/CPD opportunities for teachers (opportunities for on-site trainings).

4). To Introduce an Integrated System of Evaluation of PH services with the Purpose of their Continuous Quality Improvement and Necessary Transformations

- To consider possibilities for organization of production of vaccines for children and adults and screening tests in the country.

- In promotion of healthy lifestyles it is necessary to consider the roles of primary health care and the Institute of Health and Medical Statistics with its divisions, and respectively to raise interest of PHC medical workers and encourage them.

- To ensure regular implementation of screening programmes for the most common diseases.

- To examine the results and experience available in the country on optimization of laboratory services to disseminate the best results in the country, to create a unified system of quality standards for PH laboratory services.

5). To Make analyses of Investments in PH Services and Consider Mechanisms for Public Funding and Attraction of Additional Investments

Before today, a full-scale assessment of PH funding mechanisms has never been undertaken in the country. Today, funding of PH programmes is being undertaken by the government together with international organizations; however it is already necessary to consider mechanisms for the existing and for a long-term funding and investments required for implementation of major governmental programmes in this area. The involvement of several public sectors also accounts for certain difficulties in terms of funding of such programmes.

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9 Terminology

Accreditation - procedure for issuing, by duly authorized body, of certificate regarding assurances that this particular organization, institution, individual, product, or service meets established requirements and quality standards.

Accessibility of medical care - real practical possibility for patients and population groups to obtain required and necessary medical care in physical, economic and social terms.

Adverse effect on human health - impact of human environment factors, threatening human life or health, or life or health of future generations.

Ambulatory care - preventive medical and diagnostic rehabilitative care provided by outpatient clinics (including general/family practice) within established capacity.[1]

Attending physician - doctor providing medical care to patients during their surveillance and treatment in out-patient or in-patient institutions.

Basic medical care - scientifically substantiated list of services to be provided on obligatory basis to each population group.

Budgetary-financed health institution - organization created by government bodies, agencies, local administrations to implement administrative, social, cultural, scientific, technical or other non-commercial functions, which is financed from relevant budget or state extra-budgetary fund, based on income and expenditure estimates.

Community (municipal) health services - health and environment protection services at local level, regardless of whether they are public or private. Municipal health is considered as public health in the broadest sense, covering the issues impacting the overall health of the population, environmental health, health service, and health care administration.

Cross-sector coordination - joint coordinated actions of different agencies at national, regional and local levels within community cooperation process.

Deterioration of health - loss or change in organism structure or function (anatomical, physiological, mental) due to illness, injury or poisoning. “Deterioration” should not be confused with “disorder”, for example, loss of limbs – it’s a deterioration rather than a disorder.

Disabled person - person having deterioration of health with a persistent disorder of body functions due to illness, consequences of injuries or defects, leading to limitation of activity and calling for their social protection.

Disability (limitation of activity) - any restriction or loss (due to deterioration, deviation or injury) of ability to operate within such limits and in such ways, that are considered as normal for person within given cultural environment.

Emergency medical care – quick travelling primary or specialized medical care provided in case of urgent live-saving indications.

Environment – human habitation and productive activity conditions, surrounding natural and human-created material world.

Environmental enhancement - activities aimed at mitigating or eliminating of adverse agents and factors of physical, social and aesthetic environment of natural and anthropogenic types for human health, including chemical and biological agents, housing, manufacturing and other conditions.

Environmental protection - system of measures aimed at ensuring harmonious interaction between society and nature, preservation and reproduction, rational use of natural resources and improvement of environmental quality.

Exposure to risk - susceptibility of individual, group of people or population as a whole to impact of any factor or set of factors that may have adverse health effects; probability of realization of such an impact, its character and strength, predictable on the basis of scientific data using mathematical and epidemiological methods.

Family doctor - doctor, specially trained to provide primary health care to family members regardless of their gender and age.

Feldsher - medical worker with completed secondary vocational education, who has right to provide immediate emergency medical and first aid at feldsher-accoucheur point; physician's assistant in medical and sanitary-epidemiological institutions.

General practice - form of medical practice, under which the physician bears permanent responsibility for providing primary medical care to patients in community and which individually is not limited to specific nosological units or specific age or family groups.

General practitioner - licensed graduate of medical higher educational institution, which provides individual primary and continuing medical care services for individuals, families and the population, regardless of gender, age or disease type.

Health - state of complete physical, mental and social well-being and not just absence of diseases or physical defects.

Health administration authorities - structural units of agencies and organizations, ensuring administration of medical and sanitary service provision to the population.

Health economics - economic aspects of health care activity ranging from evaluation of costs of services and resources to assessment of their effectiveness.

Health improvement - positive changes of basic health indicators of individual, population group or population as a whole.

Health institutions – non-commercial organizations included into nomenclature of health care institutions, providing curative and preventive care, undertaking state sanitary-epidemiological control, forensic medical and forensic psychiatric examination, as well as organizations intended to maintain the mobilization reserve of medicines and medical products.

Health policy - set of decisions on and commitments for a particular course of action oriented towards implementation of specific goals and objectives on medical and sanitary service provision to the population.

Health promotion - process enabling people to increase control over their health and improve it.

Health protection - set of political, economic, legal, social, cultural, scientific, medical, sanitary-hygienic and anti-epidemic measures towards preservation and strengthening of physical and mental health of every person, supporting his long and active life, providing him with medical and pharmaceutical care in case of health loss.

Health services - specialized system of health care bodies and institutions.

Health system - set of administration authorities and health care organizations, whose activities are aimed at preservation and strengthening of public health, provision of medical and pharmaceutical care, implementation of state sanitary-epidemiological control, a system of organizations, institutions, enterprises, associations, scientific societies, specialists and other business entities regardless of their departmental affiliation and organizational and legal form, which are involved in production, provision, quality control, realization of medicines, medical equipment, medical services, implementation of disease prevention activities, organization and administration of public health related processes and finances, professional development of medical workers at undergraduate and graduate levels.

Health system administration – part of administration management; rational method, which involves step-by-step separation of administrative activities that promote full deployment of human, technical and financial resources of administrative bodies, thus ensuring optimal service provision at minimum costs.

Health system infrastructure - basic resources making up health care system, which includes medical and sanitary services, facilities, institutes and agencies, organizations, as well as their employees engaged in different health programmes.

Health system management - structures and processes, through which the reforms needed for the whole population towards prevention, treatment, rehabilitation and promotion of population health are defined and effectively implemented.

Health system organizations - legal entities that provide medical and pharmaceutical care to the population, supply medical goods and medical equipment, and conduct research, educational, informational, awareness raising and sanitary-epidemiological activities.

Health system planning – determination, for a specified period of time, of optimal material, financial and human resources related to public health, required for implementation of the set of inter-related socio-economic and medical activities aimed at ensuring of high level of health and physical development, enhancing work capacity, increasing life expectancy and active longevity of people, prevention of diseases and meeting the needs of the population in all kinds of curative and preventive care.

Health workforce or human resources for health - set of individuals able to work on different health care professions or being trained on them; demographic characteristics of these individuals; their social characteristics in terms of education, experience and values; changes in both number and qualifications of available staff, required for providing demanded medical-sanitary services to the population.

Hospital - medical facility designed to provide round-the-clock sanitary care.

Hospitalization - process of admission of patients to stationary medical institutions and their stay there.

Integrated approach to public health protection - modern strategy towards health promotion at individual, family, group and community levels, aimed at controlling risk factors that increase the probability of major diseases.

Guaranteed medical care - types of medical care provided through budgetary allocations and other funds.

Licensing – granting, by duly authorized state body, of permission to engage in certain professional activities.

Lifestyle – process of interaction between living conditions and personal qualities, including knowledge, belief, culture, education of the individual. Lifestyle of social group and/or population as a whole is defined by interaction of real living conditions (political, economic, social, etc.) and traditions, values, culture existing within this group or population as a whole.

Mahhala - (from Arabic – a part of a city) a city block in Islamic countries where residents organize a community and self-govern its activity.

Maternity and childhood protection - system of government, public and medico-social activities, providing conditions for healthy childbirths, all-round development of younger generation, and also prevention and treatment of women and children diseases.

Medical care - complex of medical services, aimed at preservation of life, health recovery in case of acute diseases, achievement of remission in case of chronic diseases, ensuring normal delivery and upbringing of healthy child.

Medical education - learning and training process, after which the individual receives the right to practice medicine.

Medical insurance – type of insurance of the population for which the medical insurance company (the insurer) on the basis of insurance premiums creates the insurance monetary fund, through which it is obliged to finance the medical care of its insured citizens in amount and under conditions stipulated by the insurance contract.

Medical practice - implementation of health services by medical staff directly in relation to patient.

Medical service - any examination, treatment and other action with preventive, diagnostic, curative or rehabilitative focus, performed by physician or other medical worker and having completed independent meaning and determined value.

Mental health - condition of dynamic process of mental activity, characterized by determination of mental phenomenon, harmonic relationship between reflection of reality circumstances and attitudes of individual to them, adequacy of human body reactions to social, psychological and physical (including biological) living conditions due to ability of individuals to control their behaviour, plan and implement their course of life in micro- and macro-social environment.

Morbidity - prevalence of diseases among the population or its specific groups.

Mortality - demographic indicator of physical health, characterizing the process of population decline due to death.

National health system - set of authorities, public health sector administrations and all health care organizations, whose activities are aimed at prevention, preservation and strengthening of population health, as well as provision of medical and pharmaceutical care in case of health loss.

Nurse - paramedical worker with secondary or higher medical education; works under the guidance of physician in various medical-sanitary and educational institutions.

Nursing staff - workers with secondary medical education majored in "nursing, midwifery, medical business" and allowed to perform professional activity in accordance with established procedures.

Paid (medical) service – type of medical care provided on reimbursable basis under the contract in excess of state-guaranteed free medical care.

Per capita rate - calculated indicator of minimal funding needs to ensure government guarantees of free medical care per one citizen of administrative territory.

Periodical medical examinations - active health examination conducted to monitor health status, detect early signs of diseases, including occupational ones.

Pharmacies - enterprises, institutions and organizations of state, municipal and private ownership, implementing pharmaceutical activity.

Physician - specialist, who in accordance with established procedures was accepted into medical school, duly recognized and located in the country, successfully completed the prescribed medical training course and received the qualification, providing a legal right for conducting medical practice, diagnostics, treatment and rehabilitation services.

Physical development - process of development of physical qualities and abilities, characterized by both anthropometric data and individual capability to perform physical activity with consideration of age, gender and occupational characteristics.

Physical health - condition characterized by the level of physical development, physical ability and adaptive ability of individuals, groups of people and society as a whole, ensuring achievement of quality of life and well-being of society and preservation and strengthening of population health.

Polyclinic – curative and preventive facility providing general and specialized outpatient care to the affixed population within established capacity.

Population health – medico-demographic and social category, reflecting physical, mental and social well-being of people undertaking their life activities within certain social communities; health of the population, stipulated by comprehensive influence of social and biological factors, evaluated by demographic indicators, characteristics of physical development, morbidity and disability.

Prevention - system of medical and non-medical measures, aimed at preventing and reducing of abnormality and disease risks for health, preventing or slowing their progression, reducing their adverse effects.

Preventive programme - systematic description of basic goals, objectives, directions for disease prevention, health preservation and promotion.

Preventive medical examinations - type of medical care aimed at identification and assessment of impact of various conditions, risk factors and diseases for further implementation of health-improving and curative interventions.

Primary health care – general medical aid directed towards treatment of the most common diseases, injuries, poisonings and other emergency conditions predominantly at the place of residence of citizens, as well as conduction of sanitary, anti-epidemic, preventive measures, hygienic education, family, motherhood, fatherhood and childhood protection measures.

Primary prevention - set of measures (activities) mainly of social nature towards developing and enhancing of effects of beneficial health factors and restricting or eliminating of adverse health risks.

Private medical practice – entrepreneurship activity on provision of medical services without formation of legal entity, carried out by citizens with higher or secondary medical education.

Protection of human environment - set of political, economical, legal, social, cultural, scientific, sanitary-hygienic and anti-epidemic measures aimed at reducing and eliminating of harmful effects of human environment factors on human health.

Public Health – field of science and concrete activity for public health protection and promotion, life prolongation through social mobilization and implementation of appropriate institutional measures at various levels.

Public sector of the health system – health authorities and their subordinate health organizations, realizing activities under the state order, the main funding sources of which are budgets at all levels and extra budgetary funds

Quality of care - set of properties characterizing medical technologies and their implementation results and confirming correspondence of medical care to current medical science and technology development level, standards, as well as to patient needs.

Right of citizens to health protection - right of citizens, which is ensured through environmental protection, creation of favourable working and living conditions, recreation, education and training, production and marketing of high quality food products, as well as provision of affordable medical and social care to the population. The state ensures health protection of the population regardless of gender, race, nationality, language, social origin, employment status, place of residence, attitude towards religion, convictions, and membership in public associations.

Risk factors - potentially hazardous for health factors of behavioural, biological, genetic, environmental, social character of environmental and productive environment, increasing the likelihood of diseases, their progression and poor outcome.

Safe working conditions – working conditions under which the impact of harmful or dangerous industrial factors on personnel is excluded or their impact levels do not exceed the established standards.

School of Public Health - organizational form of training of medical and non-medical specialists (teachers, social workers, administrators, journalists) on public health/health care issues, mainly at the graduate level.
Secondary prevention - set of medical, social, sanitary-hygienic, psychological and other measures aimed at early detection and prevention of exacerbations, complications and chronic disease, as well as of disability, causing misbalanced adaptation of patients in the community, reduction of work capacity, including invalid state and premature mortality.

Socially significant diseases - diseases caused by predominantly socioeconomic conditions bringing harm to society and requiring social protection of the human being.

Specialized medical care - second level of qualified medical care provided by medical specialists in specialized departments, hospitals and other medical facilities, equipped with special medical equipment and instruments and having medical specialists as their staff.

Standard of living - level of consumption of material and cultural welfare by the population and level of satisfaction of needs in these welfare at this stage of society development.

State health system - system of executive authorities, government bodies and local administrations (hokimiyats), authorized on behalf of the government to plan and implement measures towards realization of state public health policy for protection of population health.

Tertiary prevention - set of measures on prevention of exacerbations of developed diseases, their transitions into chronic form, occurrence of disability and invalidity.